

What We Teach:

K-12 Educators' Perceptions of Curriculum Quality

Julia E. Seaman and Jeff Seaman



Bay View Analytics

What We Teach:

K-12 Educators' Perceptions of Curriculum Quality

Julia E. Seaman, Ph.D.
Research Director, Bay View Analytics

Jeff Seaman, Ph.D.
Director, Bay View Analytics



Bay View Analytics

2020

CONTENTS

| | |
|----------------------------------|----|
| Acknowledgments..... | 1 |
| Executive Summary | 2 |
| Overview | 4 |
| Background | 5 |
| Results | 6 |
| Curriculum Adoption..... | 6 |
| Effectiveness..... | 9 |
| Review Sites | 13 |
| Professional development | 14 |
| OER and Licensing Awareness..... | 19 |
| Technology | 24 |
| Conclusions..... | 26 |
| Methods..... | 28 |
| Questionnaire | 28 |
| Definitions | 29 |

The cover design is by Mark Favazza (www.favazza.com).



What We Teach: K-12 School Curriculum, Bay View Analytics
is released under a [Creative Commons Attribution 4.0 International \(CC BY 4.0\)](#). Report available at
www.onlinelearningsurvey.com/oer.html.

ACKNOWLEDGMENTS

This project is one of a series of reports been made possible by the support of the William and Flora Hewlett Foundation. The Foundation was instrumental in helping to frame the overall project, and in providing support for data collection, analysis, and report creation. We also thank the Global Healthy Living Foundation for their support in the administration of the Hewlett Foundation grant.

Previous reports in this series were published under the name Babson Survey Research Group. Our research efforts as the Babson Survey Research Group began with a national report on online learning in 2004, and continued with annual online learning reports for over a decade. When the researchers left their teaching roles at Babson College, the college initiated an arrangement whereby the brand would continue for future reports. Now, over a hundred reports and over a million downloads later, it is time to redefine that relationship as our research focus evolves. We offer special thanks to Babson College; they have been a tremendous partner.

No survey report is possible without the willing cooperation of the respondents. We wish to thank all the K-12 teachers and administrations. We hope that our report accurately reflects your detailed and thoughtful responses.

We are particularly appreciative of the detailed comments and observations that our respondents provided. We have included a selection of these comments throughout the report. The quotes are as close to the original as possible; some changes were made to remove personally identifying information, and to correct typos.

The authors need to thank other members of the Bay View Analytics team: Nate Ralph for his extensive copy editing, I. Elaine Allen for her review and feedback, and Mark Favazza, whose graphics skills are evident on the report covers.

Julia E. Seaman
Jeff Seaman
Bay View Analytics
2020

EXECUTIVE SUMMARY

The curriculum market is incredibly diverse, with over a hundred different publishers representing many hundreds of specific curriculum options. Three commercial publishers (Pearson, McGraw-Hill, and Houghton Mifflin) command the largest market shares, but together account for less than half of adoptions. The number of districts constructing their curriculum from multiple sources is almost as large as the portion selecting from one of the top three publishers.

K-12 school districts have mixed feelings about the curriculum they have adopted. When asked to rate the overall quality of materials, only a small percentage classify their selection at the top of the scale, with most giving fair ratings.

Curriculum based on open educational resources (OER) — materials that are free for educators and students to use, customize, and share — represent a small portion of all K-12 recent adoptions, at slightly over 5%. OER are concentrated in Mathematics, where 14% of adoption decisions were OER (compared to 4% for English Language Arts, 2% for Science, and 1% for History and Social Studies). Despite the small numbers, those who select OER view the overall quality as slightly better than commercial alternatives, and considerably better on multiple specific aspects of teaching and learning, such as extending the core knowledge to novel tasks and situations, and collaborating with others.

The use of external curriculum review sites during the selection process is associated with higher OER adoption rates; districts that did not employ an external review site in their selection process were least likely to adopt an OER solution.

There is a strong relationship between the perceived effectiveness of professional development to support a curriculum, and the perception of that curriculum's quality. However, the effectiveness of most professional development materials do not get high ratings. Only 40% of respondents rated professional development materials in the top quarter of the range, with over a third rating quality as under 50 out of 100.

School districts are well-versed in including student technology use as part of the learning process. Virtually all provide student internet access across their entire campus, and a majority have some sort of one-to-one laptop or tablet arrangement for their students.

This study was conducted prior to the closures of U.S. schools brought on by the COVID-19 pandemic in spring 2020, and the resulting education landscape is bound to have an impact on districts' plans, including the curricula they choose. However, it is also likely that the key findings of this study will remain true post-COVID-19.

OVERVIEW

This study examines curricula adoption decisions and use among K-12 schools and districts in the U.S. A total of 2,137 respondents are included in the analysis, composed of district administrators, school-level administrators, and in-class teachers. As part of the broader questions surrounding adoption decisions, the study includes a more detailed examination of OER awareness, OER adoption rates, the impact of OER on teaching and learning, and the relationship between the effectiveness of the adopted curriculum and the overall effectiveness of the professional development used to support it.

The responses for this study were collected prior to the shift to emergency distance learning in schools and districts across the country spurred by COVID-19. Such a massive effort on the part of so many in the K-12 universe will no doubt impact their options, strategies, and future plans, so the results presented here need to be viewed through that lens. That said, the fundamental results will still apply. Exposure to external reviews during the selection process impacting the outcome, and the strong relationship between the perceived effectiveness of professional development materials and the perception of a new curriculum's quality will remain true post-COVID-19.

One reassuring finding related to K-12 emergency distance learning is the high degree of technology experience reported by most districts. While this is by no means the same as delivering education at a distance, it does show that teachers and administrators are going into the current situation with considerable experience with technology integrated education.

BACKGROUND

The groundwork for this study comes from previous investigations on the discovery, selection, and adoption processes for K-12 full-course curricula materials. Key findings from a previous survey and report¹ used in designing this report include:

Adopting a full-course curriculum is a group activity. Teachers have decision-making power in 94% of districts, followed by district-level administrators (75%) and principals (73%). Outside experts and parents are included in the adoption process in about half of all districts, but rarely have decision-making power.

There is no single factor that drives a district's selection process; most districts cite five or more factors as "very important" or "critical" to their decision-making process. Comprehensive content, working with current technology, and cost are cited most often. Districts with higher rates of students in poverty considered cost more important than districts with lower rates of poverty.

Districts select full-course curricula materials from a myriad of publishers. Three of these — McGraw-Hill, Pearson Education, and Houghton Mifflin Harcourt — are selected far more often than all other publishers.

The vast majority of a district's adoption decisions are driven by an external factor: changing standards. Districts typically consider 3 to 5 alternatives initially, narrowing that number to 2 or 3 for a final choice. Most decision processes take the better part of a year to complete, with only 10% taking longer than that. The curricula materials being replaced are usually 6 to 10 years old.

Awareness of copyright and the public domain is much higher among districts than is awareness of Creative Commons licensing. Nearly three-quarters of respondents claim some level of awareness of OER, but this drops to only one-third when awareness of licensing is included. Only 40% of districts have any level of awareness of the federal #GoOpen campaign.

¹ I.E. Allen and J. Seaman, What We Teach: K-12 School District Curriculum Adoption Process, 2017, Babson Survey Research Group, 2017.

RESULTS

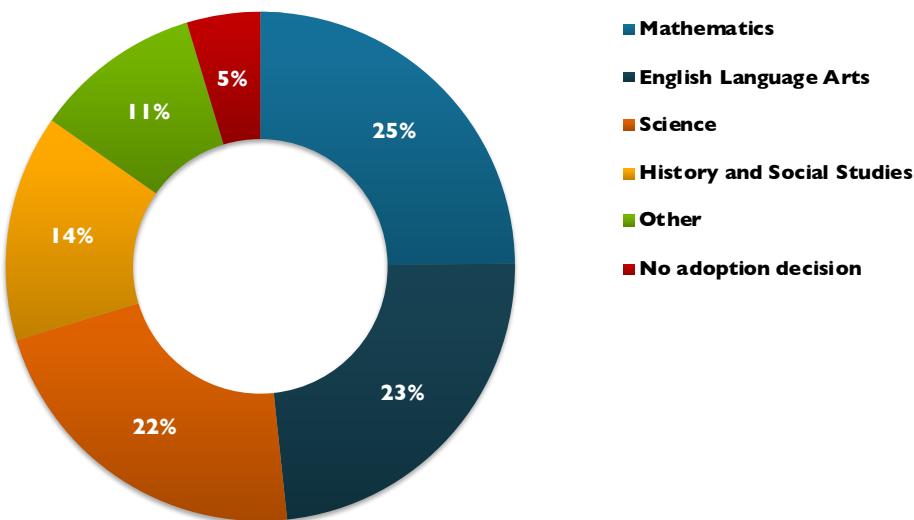
Curriculum Adoption

A curriculum is only as good as its implementation and oversight. If the leadership of the school does not insist on teachers working the curriculum with fidelity, no curriculum will be effective. (English Department Chairperson)

The most important part of any adoption process is the active input of the teachers who will use the resources. (Superintendent)

As with previous reports in this series, the current survey focuses on "full-course curricula materials adopted in the past three years," with over 95% of all districts reporting that they made at least one such decision in that period. If the district made more than one such adoption decision, they were asked to respond based on the decision that they were most familiar with. Mathematics, English Language Arts, and Science were selected at roughly equal rates, while History and Social Sciences were selected about two-thirds as often.

Curriculum Subject Area



The curriculum market is incredibly diverse; the study identified over 100 different *publishers* in use. This number is a low estimate, as it lumps all associated publishers (Pearson, Prentice Hall, Longman, and Scott Foresman are all included as Pearson, for example). The actual number of *curriculum* options is far higher, as most publishers have multiple offerings.

Perspectives

The curriculum we adopt, ultimately, will not change education — it's the conversations about curriculum, between teachers and staff, that will. (Principal)

The curriculum we use is put out by the state and we can use our own resources. I just wish we didn't have to teach to a test. (Social Studies Department Chairperson)

A curriculum is only as good as its implementation and oversight. If the leadership of the school does not insist on teachers working the curriculum with fidelity, no curriculum will be effective. (English Department Chairperson)

A number of the new curricula that we have been evaluating for purchase does a much better job of having students think and expand their creative and scientific processes than the old books we have been using. (Grade 6 to 8 Science Teacher)

A strong curriculum is essential to building equity for students. When districts do not select a curriculum, a student's education is based on the collection of teachers she has had over the course of her academic career. If they are all good, she will have a sound education. If not, her education will have gaps. (K-12 Curriculum/Instructional Director)

Commercialized products and texts are part of the problem in education, like a magic bullet, which we all know doesn't exist. The continued suppression of teacher capacity by pushing these products maintains the status quo of de-professionalization in education. (Grade 9 to 12 Mathematics Teacher)

Creative freedom is important in a classroom as long as you still teach the curriculum. Not every child learns the same nor do they learn at the same time. (Social Studies Department Chairperson)

Curriculum is getting too cookbook — and teachers who are unaware of how to teach material get complacent. Creativity is absolutely critical to effective instruction. (Science Department Chairperson)

I have realized that materials are really a small part of student success. It is really about the teacher's ability to establish relationships, know their content, and create equitable, differentiated assessments that help students reach their fullest potential. (Assistant Superintendent)

I teach at an independent school, thus am not required to use any particular, pre-established curricular program. (Grade 9 to 12 English Language Arts Teacher)

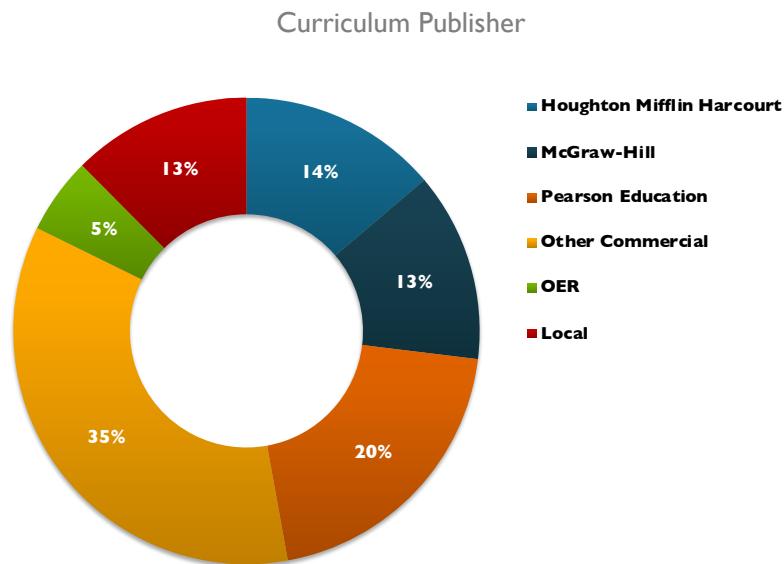
Our curriculum is problem-based and I like this approach to teaching. It still allows me the freedom to use my own labs and papers as long as I am covering the content and objectives. (Grade 6 to 8 Science Teacher)

Scripted curricula are good for beginning and developing teachers, but they need to provide space for creative thinking on the part of the teacher who wants to go beyond what is provided. (English Department Chairperson)

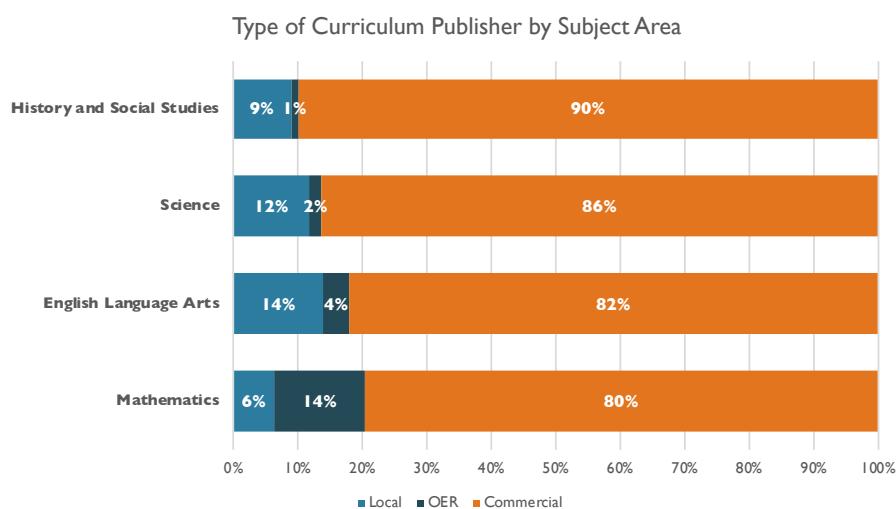
The curriculum is controlled by the state. As a result, it us up to the district to follow that. It is up to the teacher to work to provide the creativity implied in these questions. (Social Studies Department Chairperson)



Three commercial publishers (Pearson, McGraw-Hill, and Houghton Mifflin) command the largest market shares, but together make up less than half the market. The proportion of districts that have taken a "roll-your-own" approach to building their curriculum is almost as large as the portion selecting from one of the big three. Comments from these districts show a wide variety in approaches, often selecting material from multiple sources to build what they believe will be the best fit for their students.



When examined across all subject areas, publishers providing open educational resources (OER) curricula make up a bit over 5% of the market. This is concentrated in Mathematics, where 14% of adoption decisions were OER — 4% were for English Language Arts, 2% for Science, and 1% for History and Social Studies. The roll-your-own curriculum option is most common for English Language Arts (14%), and least common for Mathematics (6%).



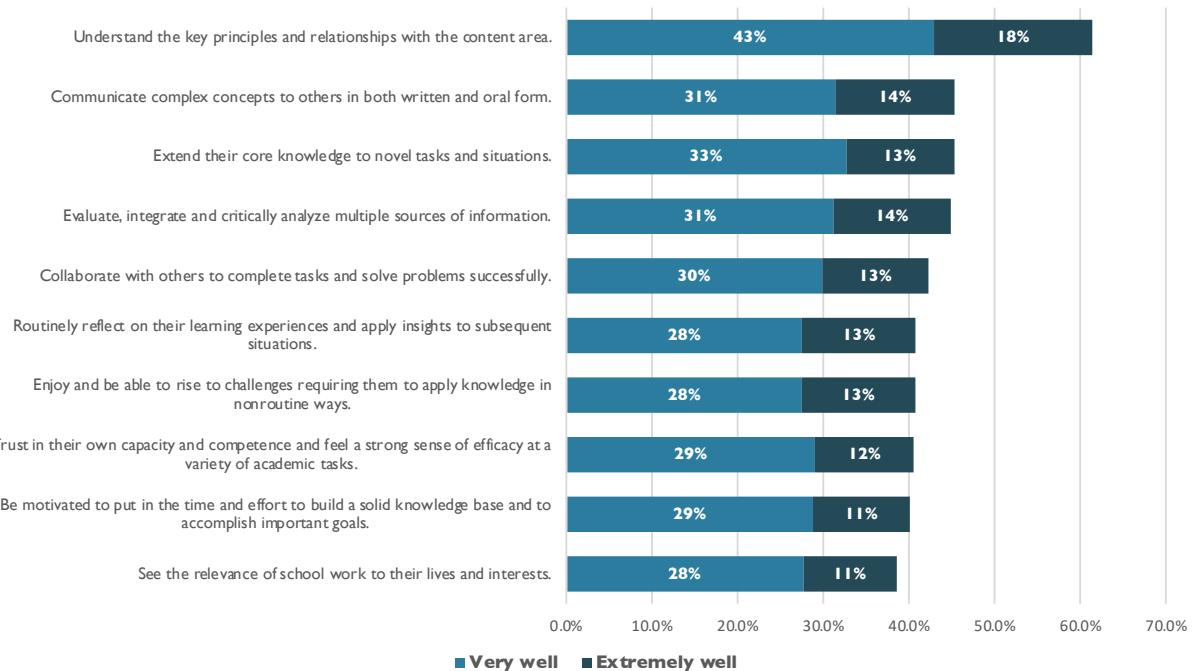
Effectiveness

My department loves it. It embeds all the routines and philosophies that the citywide training supports, allowing me to build capacity in a department for those who were not able to participate in the training. (Assistant Principal)

Student scores have gone down and students are advancing into higher grades with little reading ability. (Social Studies Department Chairperson)

Respondents were queried about how well the adopted curriculum supported ten different aspects of deeper learning² ("In your personal opinion, how well does the selected curriculum help or encourage students to do the following?"). A majority (61%) rated their curriculum as "Very well" or "Extremely well" for only one of the ten learning competencies examined: "Understand the key principles and relationships with the content area." The other nine dimensions tested received ratings of around 40%.

How well does the curriculum help or encourage students to do the following?



² Hewlett Foundation, "Deeper Learning Competencies, April 2013," https://hewlett.org/wp-content/uploads/2016/08/Deeper_Learning Defined_April_2013.pdf

Perspectives

Content is not challenging and the supporting materials are not well designed. (Math Department Chairperson)

Gets us out of the “memorize and repeat” rut we fell into when standardized tests became the rage. Forces students to think and problem solve collaboratively. (Science Department Chairperson)

It's way closer to common core math and developing mathematical thinking in students than any other curriculum we evaluated. (K-12 English/Lang Arts Dir.)

Level of presentation to the students could be better. Also, the supplemental materials need to be easier to access. (Grade 9 to 12 History and Social Studies Teacher)

Many of the units lack depth or limit the selected readings. The skills are repetitive. (English Department Chairperson)

The content is good and relevant, but I feel the organization and teacher-friendliness could be improved. (Middle/Junior High Principal)

The curriculum focuses on teacher instruction and preparation. Teachers building their content knowledge to provide better instruction. I think this strategy is best for kids. A box set of curriculum does not educate kids. Teachers educate kids. (Principal)

The curriculum is a work in progress and needs ongoing adaptation. Some teachers are more capable than others in adapting the curriculum and integrating content with skills. (Science Department Chairperson)

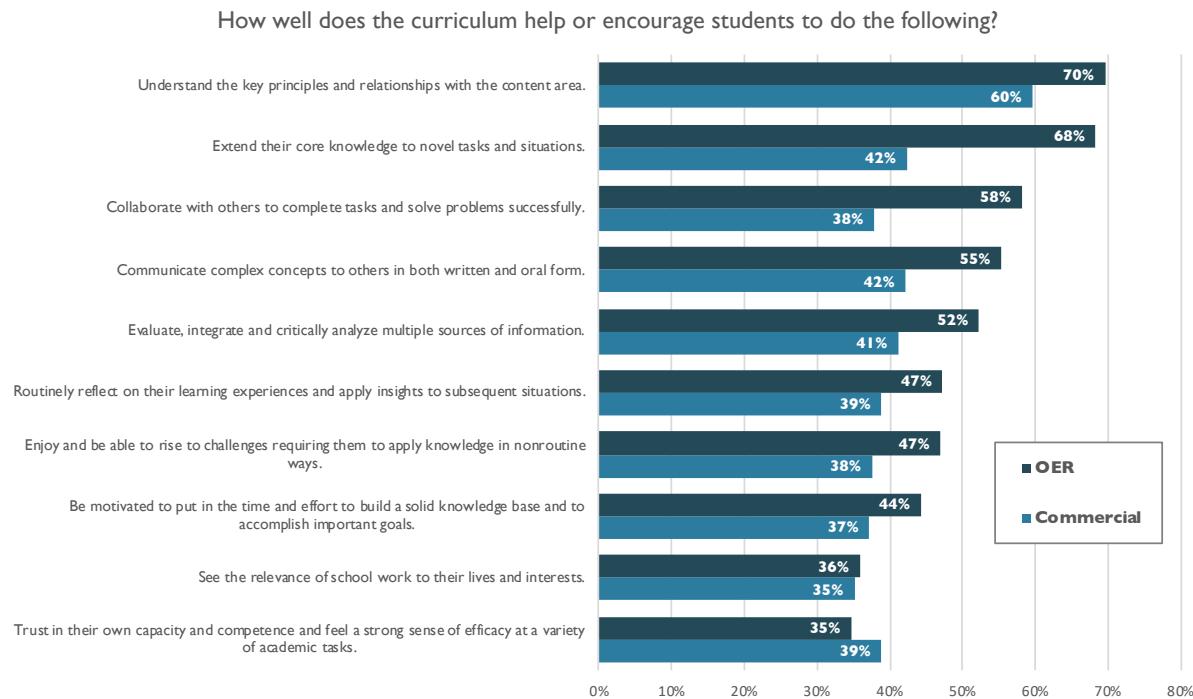
The curriculum resource, like all "off the shelf" products, isn't perfectly aligned with state standards. (Assistant Superintendent)

The textbook is actually just fine, although it is below grade level reading. All the other supplemental material seems cheap and not well thought out. (Grade 9 to 12 History and Social Studies Teacher)

There is not enough writing instruction or support. It "Assigns" writing, but does not "Instruct" writing. (Assistant Principal)

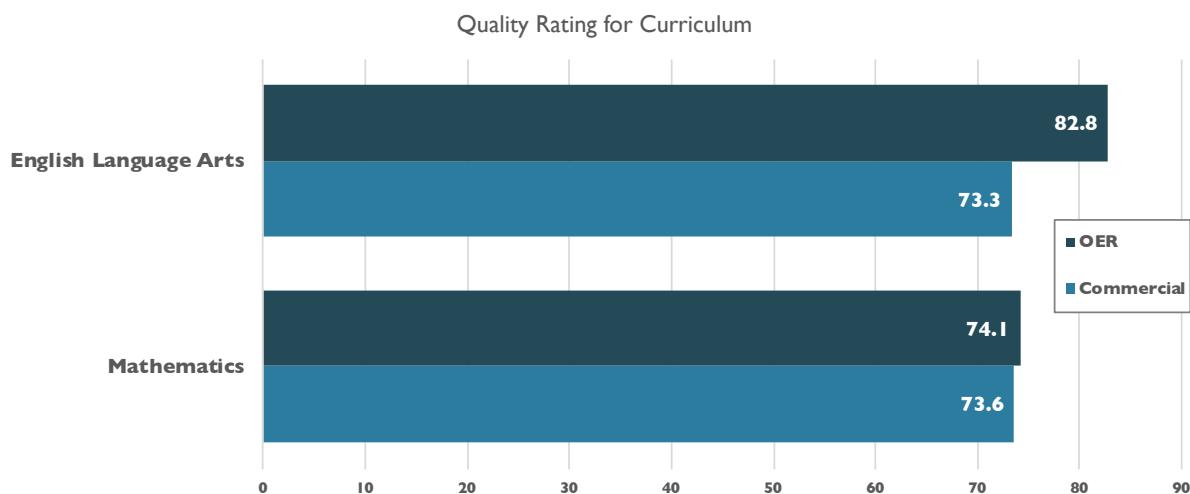
Well aligned with our learning targets, provides a variety of resources for staff to select, encourages application to novel problems. (Assistant Superintendent)

Those who had adopted OER-based curriculum rated their curriculum higher on 9 of the 10 tested deeper learning dimensions, often by a considerable margin. The only area where OER curriculum was rated lower than commercial alternatives was when respondents were asked how well their curriculum helped or encouraged students to "Trust in their own capacity and competence and feel a strong sense of efficacy at a variety of academic tasks." Of those respondents using OER, 35% rated their curriculum as performing "Very well" or "Extremely well," compared to 39% of those using commercial alternatives.



When asked whether a curriculum helped or encouraged students to "Extend their core knowledge to novel tasks and situations," 68% of OER users rated OER curricula "Very well" or "Extremely well," as compared to only 42% of those using commercial alternatives who gave that rating; this was the greatest disparity between OER and Commercial curricula evident in responses. OER was rated as superior for "Collaborate with others to complete tasks and solve problems successfully" (58% compared to 38%). The margins are smaller for the remaining aspects, but a clear pattern of those using OER providing higher rankings is evident across the full range of factors.

Respondents were asked to rate the overall quality of their adopted curricula on a scale of 0 to 100, based on their personal experiences.³ Those using OER provided a slightly higher overall rating than those using commercial curricula (an average rating of 76, compared to 73 when examined across all subject areas). The difference is primarily due to the rankings of those teaching English Language Arts, where the OER rating was nearly ten points higher than commercial alternatives.

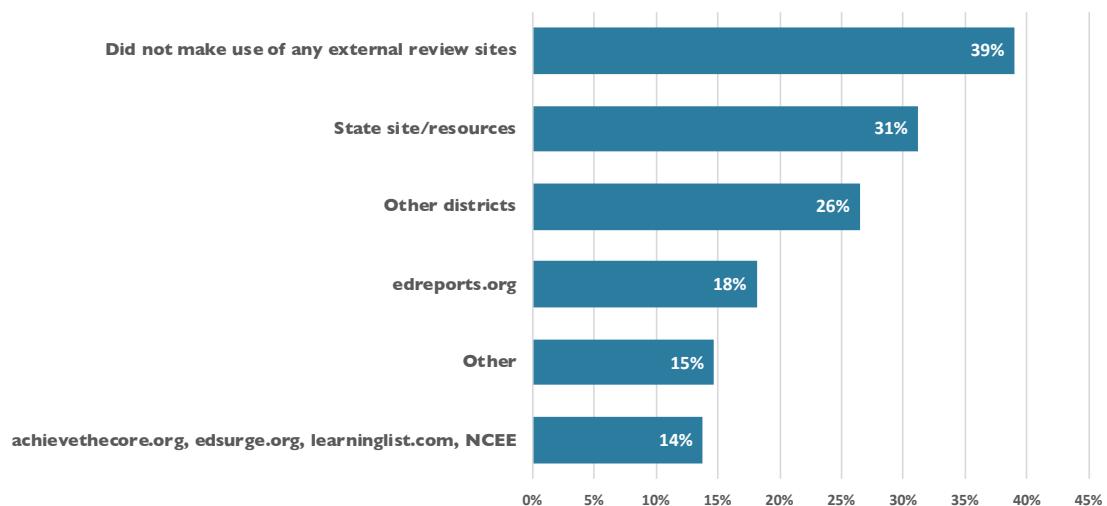


³ The specific question wording was "On a scale of zero (terrible) to 100 (perfect), what is your personal rating of the overall quality of the selected curriculum. Please consider all aspects of the curriculum, including content coverage, level of presentation, organization, included supplemental resources, etc."

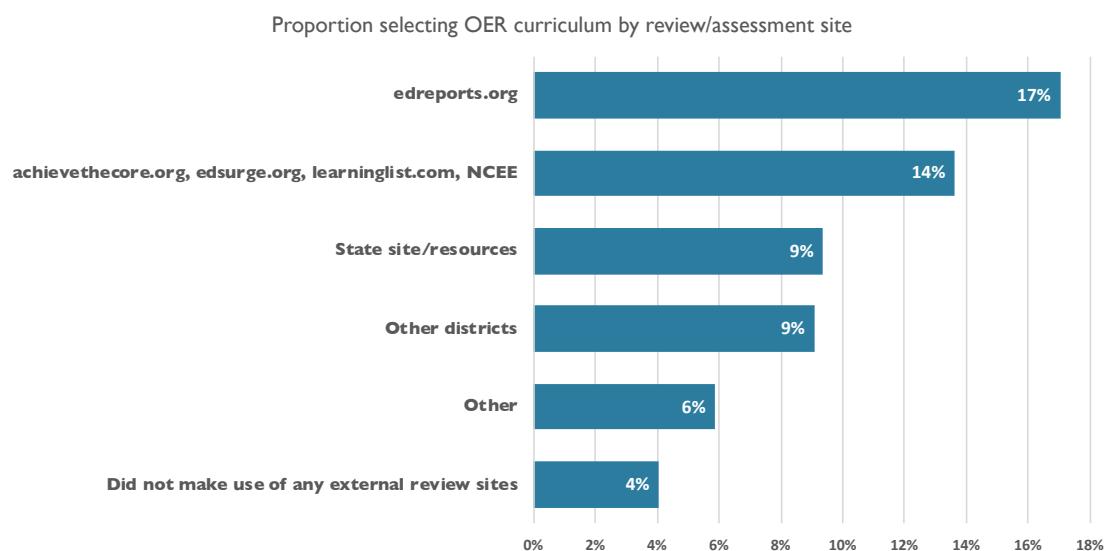
Review Sites

Most adoption decisions (61%) made use of an external review site, primarily taking advantage of state resources (31%) or other districts (26%). Among the sites specializing in curriculum review, edreports.org (18%) was cited more often than all others combined (14% total, across achievethecore.org, edsurge.org, learninglist.com, and NCEE).

What external review/assessment sites (if any) were used in the curriculum selection process?



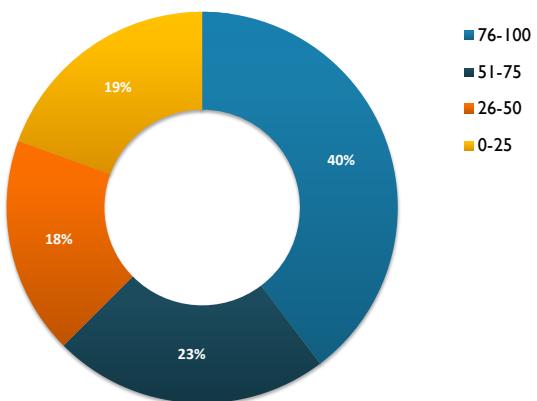
Districts that made use of an external review site were more likely to select an OER curriculum solution than those that did not. Only 4% of districts that did not employ any external review chose an OER-based curriculum, increasing to 9% of those who use other districts or state resources to guide their decision. OER adoption rates are highest among those who used edreports.org as part of their review process.



Professional development

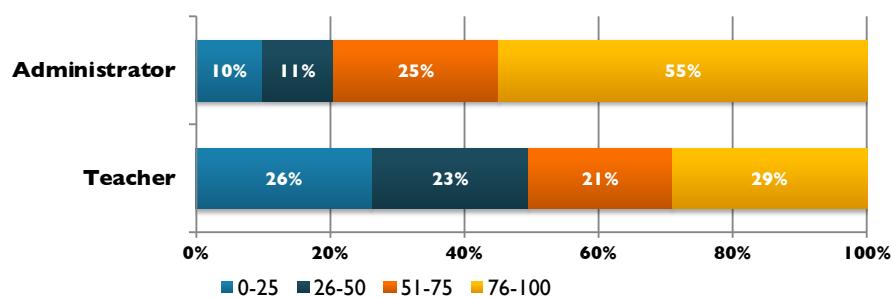
Respondents provided a wide range of evaluation on the effectiveness of the professional development⁴ materials employed along with the adoption of a new curriculum. When asked to rate the effectiveness of professional development materials as part of the adoption process using a 0 to 100 scale, 40% of respondents rated the professional development in the top quarter of the range (76 to 100). This means that 60% saw the quality as lower than this, with over a third providing a rating quality of under 50.

RATING OF THE EFFECTIVENESS PROFESSIONAL DEVELOPMENT



A pattern that has been apparent throughout these studies is that administrators have a more positive view of most aspects of teaching and learning than teachers do. This pattern is repeated here: 55% of administrators believe the quality of professional development materials was in the top quarter of the ratings, while only 29% of the teachers receiving that professional development gave it that rating. Likewise, only 10% of administrators rated the professional development in the bottom quarter, compared to 26% of teachers who gave that rating.

EFFECTIVENESS RATING OF THE PROFESSIONAL DEVELOPMENT



⁴ Measured using the question "On a scale of zero (terrible) to 100 (perfect), please provide your personal rating of how effective the professional development was for teachers delivering the selected curriculum. Please consider all aspects, such as timeliness, frequency, scope of coverage, appropriateness of the topics, etc. in your rating."

The most common comment from both teachers and administrators who rated the professional development materials at the bottom of the scale was that none was offered.

Perspectives

We just bought the books and got access to online materials with no training. (K-12 Administrator)

We created our own materials which is not ideal. (Grade 9 to 12 Social Science Teacher)

I received NO professional development for my curriculum. (Grade 9 to 12 Social Science Teacher)

No PD was given. Teachers had to learn on their own. (K-12 Administrator)

I have not had any content-specific professional development in 13 years. (Grade 9 to 12 Social Science Teacher)

Very little was provided, curriculum was just given to us and we had to learn how to use, very little access to tutorials on use of it (Grade 9 to 12 Mathematics Teacher)

No professional development came with the resource. (K-12 Administrator)

However, merely offering some form of professional development does not, by itself, result in a better rating. Many teachers and administrators rated the professional development that was provided as very poor.

Perspectives

It was a 2-hour workshop that basically just taught how to access resources. (Grade 6 to 8 Social Science Teacher)

The trainers did not understand or care about how the district was implementing the curriculum, so they did not personalize their training. There was little to no training on assessments. Each time they came to visit the district (at least 4 times) they covered the same things and could not answer the same questions. (Grade 6 to 8 English Language Arts Teacher)

Poor presentation... we knew more than publisher rep giving the presentation, very little hands on or practical information delivered (K-12 Administrator)

We have had this curriculum for 3 years now, and I have only been to one hour long training on a specific lab that follows with the curriculum, and another 45 minute session on the content material and online resources involved with this curriculum. (Grade 6 to 8 Natural Science Teacher)

Administrators who rated the provided professional development materials as 90 or above out of 100 stressed the quality of the instructors and how the professional development was specifically tailored for the needs of their teachers.

Perspectives

By letting the teachers help with the development it touched on what they needed and thought rather than an outside source telling them what they need to focus on. (K-12 Administrator)

Each professional development day was structured to the needs of our teachers and where they were at based on feedback. (K-12 Administrator)

The trainers are classroom teachers themselves and address issues that could arise in the curriculum in a more realistic manner. They often offered options on the implementation and showed connections between topics in the current text, as well as connections to topics in previous and/or future course texts. (K-12 Administrator)

We were painstaking in making the training fit the needs of our teachers and personalized to the needs of our students. (K-12 Administrator)

Presenter was former classroom teacher who was able to relay how he used the materials in his classroom and he had us role play as students, which helped, too! (K-12 Administrator)

Instruction provided by real classroom teachers who teach real kids every day. Not some retired teacher who doesn't remember what real classrooms or like or by former teachers who figured out they can make more by leading "training sessions." To be legitimate (my view), you have to have skin in the game. (K-12 Administrator)

Teachers who rated their professional development as 90 or above spoke of the quality and frequency of their training.

Perspectives

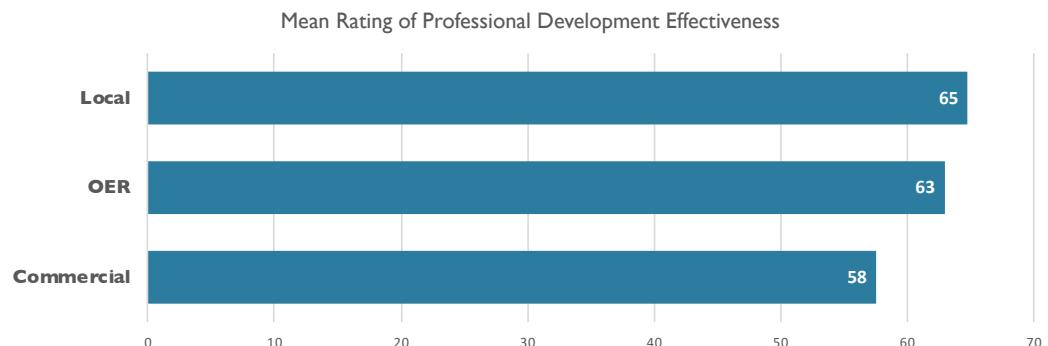
My professional development was done through the National Math and Science Initiative over the past 3 years. They provided me with the best professional development sessions I have ever received in my 30 years of teaching. (Grade 9 to 12 Natural Science Teacher)

You must get training and approved to teach the Project Lead the Way curriculum before you can access it. It is the REAL DEAL!!! (Grade 6 to 8 Career Education Teacher)

The PD is continuous. All teachers are well trained. Including training on how to supplement the heck out of it on a DAILY basis. (Grade Pre-K to 5 Natural Science Teacher)

Trainers came to school before we implemented the program. They came in the summer and three times during the year. They supported teachers where they were in the process and did demonstration lessons in the classroom each visit. (Grade Pre-K to 8 Elementary Teacher)

Districts that created their curriculum locally gave the highest rating for the effectiveness of the associated professional development. Those adopting OER gave a slightly lower mean rating, with both groups rating the effectiveness of the professional development higher than those in districts that adopted a commercial curriculum.



There is a strong relationship between how teachers rate the effectiveness of their curriculum's professional development materials and their perception of curriculum quality. Only 24% of those who rated their professional development in the bottom third of a 0-100 scale rated the curriculum quality as 80 or higher, compared to 77% among those who ranked their professional development in the top third of the range.



It is important to understand that while there is a very strong relationship between the rating of the effectiveness of professional development and the perception of curriculum quality, this data does not show that one is the cause of the other. It may well be that professional development gets lower scores for poorly-rated curriculum because of the nature of the material, not the quality of the professional development being offered.

OER and Licensing Awareness

A state-wide initiative to provide OER resources would be a brilliant idea and could save millions of dollars for school districts. (Assistant Superintendent)

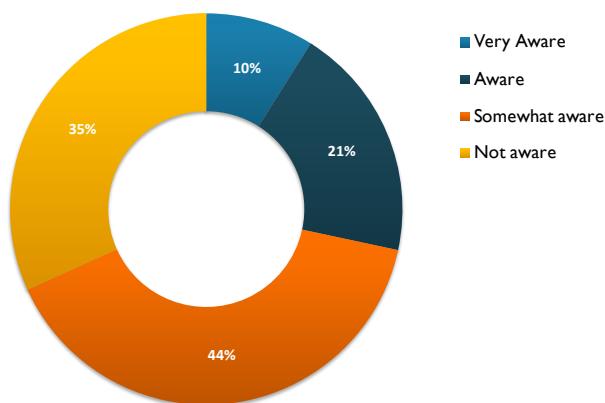
Most of the open source science resources have been of poor quality. It lacks a uniform voice--and looks like it was cobbled together by a bunch of people who don't agree to a common narrative or approach to the discipline. (Grade 9 to 12 Science Teacher)

Many faculty members may assume that they know what the term open educational resources means, when they may only have a vague understanding of the details. Some confuse "open" with "free," and assume all free resources are OER. An awareness question needs to provide enough of the dimensions of OER to avoid confusion, without being so detailed as to overeducate respondents, and cause them to claim to be "Aware" of OER.

This report uses a question tested in previous reports in this series, shown to have the best balance in differentiating among the varying levels of awareness, without leading those with no previous knowledge of the concept.⁵ This specific wording has remained consistent to support year-to-year comparisons.⁶

When K-12 academics were asked to self-report their level of awareness of OER the overall level was low, with only 10% reporting that they are "Very Aware," and an additional 21% saying that they are "Aware." It is worth noting that most users of OER-based curriculum are unaware that it is OER — only 31% reporting that they are "Very Aware" or "Aware" of OER.

AWARENESS OF OPEN EDUCATIONAL RESOURCES

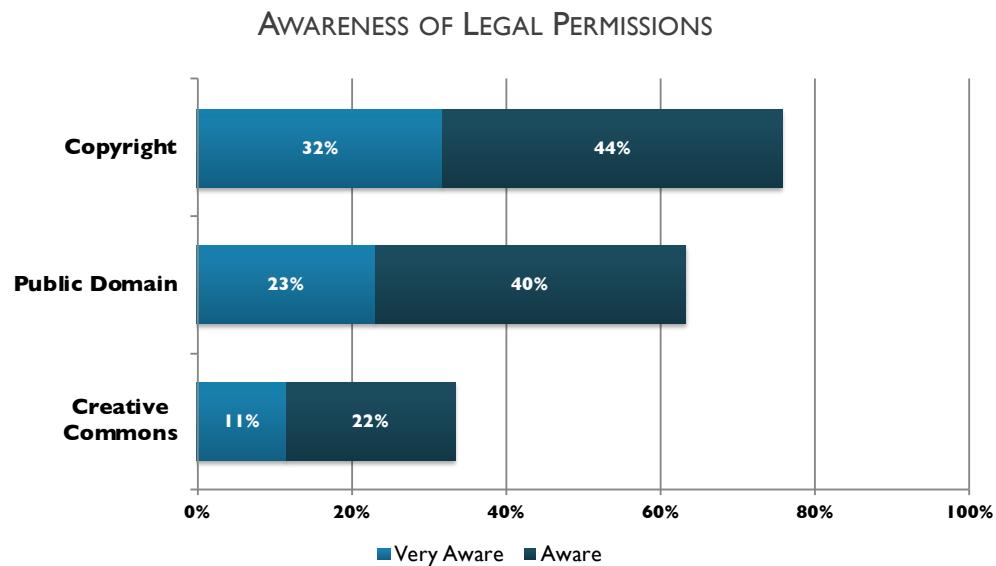


⁵ Additional details are provided in the Methodology section of this report.

⁶ While the question wording is consistent over time, the sample for this report has a different (and broader) composition than previous K-12 reports in this series, so direct year-to-year comparisons are not possible.

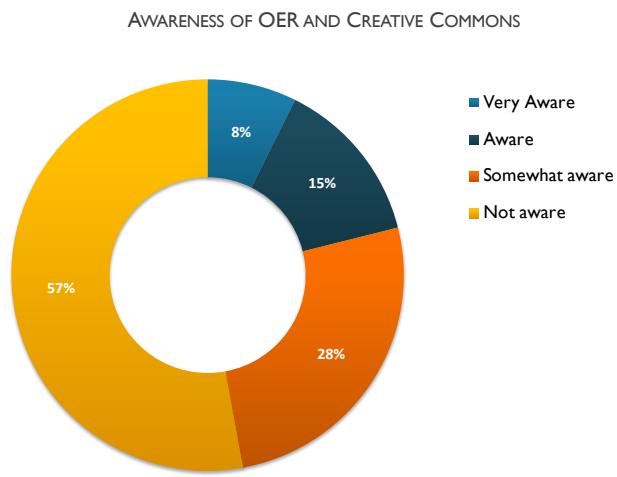
A teacher's awareness of the term "open educational resources" does not ensure that they fully understand the ideas of open licensing, and the ability to reuse and remix content, which are central to the concept of OER.⁷ Probing K-12 academics to determine their level of understanding of these concepts is critical in determining their true awareness of OER concepts.

Awareness of Creative Commons is low, with only one-third of all respondents reporting that they are "Aware" or "Very Aware." Awareness of Copyright and Public Domain is much higher, but by no means universal.

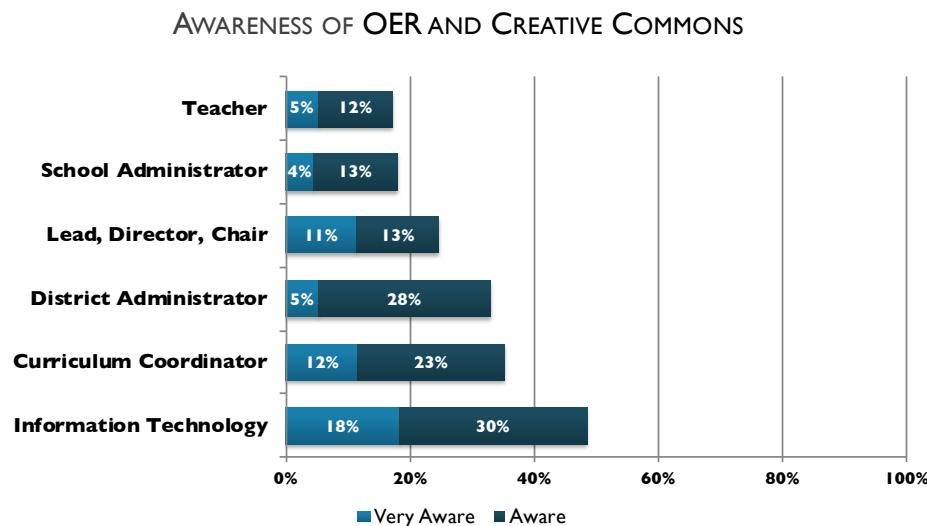


⁷ David Wiley, The Access Compromise and the 5th R, Iterating Toward Openness, <http://opencontent.org/blog/archives/3221>

The level of Creative Commons awareness is critical in the context of this study. The difference between those who report that they are aware of OER and those who report that they are aware of *both* OER and Creative Commons licensing provides an indication of the depth of understanding of OER and its concepts. If respondents who report that they are unaware of Creative Commons licensing are removed from the "Aware" categories, we create a much stricter index of OER awareness, one that includes only those who are aware of both the term and the type of licensing that goes along with it. When controlled for awareness of Creative Commons, the OER awareness rates drop from 10% to 8% for those reporting that they are "Very Aware," and from 21% to 15% for those saying that they are "Aware."



OER awareness is lowest among teachers and administrators at the K-12 school level. District-level administrators, curriculum coordinators, and information technology managers have higher levels of awareness; however, in all cases, those aware represent a minority.



Perspectives

Freely available resources are always a welcome addition to our teaching curriculum. (Grade 9 to 12 Science Teacher)

I have heard about open source curriculum, really would like to know how to access, use and supplement in teaching and learning! (Grade Pre-K to 5 Mathematics Teacher)

We adopted OER materials developed by another district. Poor implementation, no training, no commitment to utilizing. (Assistant Superintendent)

I intend to spend time this summer working to understand OER materials. (Grade 9 to 12 Mathematics Teacher)

I would appreciate being to be able to use OERs that are high quality materials. This makes more sense than purchasing textbooks that are not modifiable to meet specific learning targets and that become dated easily. (Grade 9 to 12 Science Teacher)

I would like more free access to lessons that are problem or case-based, and more student-centered materials. I'm aware of some clearinghouses with samples, but I have lost the website addresses. (Grade 6 to 8 Science Teacher)

In a small rural district like ours, I do not have the time spend hours searching OER for material to use in my classroom. (Math Department Chairperson)

Illustrative Mathematics is very well put together with a low floor, high ceiling approach. Students are given tasks that lead them to discovery. (Grade 6 to 8 Mathematics Teacher)

Open Educational Resources help me develop my own dynamic curricula that differentiates for specific student needs and that can easily be used to inspire and enhance student learning. (Grade 6 to 8 Science Teacher)

My insufficient computer skills are a factor in my lack of expertise in using something like OER. I am working to bolster this deficiency, but at 60 years old, this old dog is not fast at learning new tricks. (Grade 6 to 8 Mathematics Teacher)

OER is the wave of the future. Quality needs to be determined before use. (Grade Pre-K to 5 Teacher)

OER puts too much onus on the educator to research, create and deliver instruction, along with the plethora of other responsibilities inherent to our position. (Grade 6 to 8 History and Social Studies Teacher)

Open resources are beginning to look more and more attractive to us as the cost of textbooks grows and as new editions are published with greater frequency, forcing adoption of expensive new editions. (Science Department Chairperson)

Open source curriculum is changing education because the access point (a computer) is widely available to teachers and the cost is nil. (Grade Pre-K to 5 History and Social Studies Teacher)

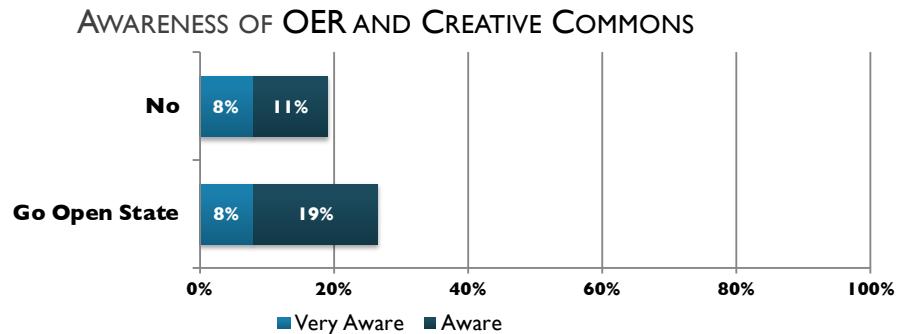
The modules provided by EngageNY are rigorous and help define a clear standard (as does any good curriculum). (Superintendent)

There are not a lot of open resources for Robotics. Paid subscriptions have potential, but are too expensive for my school. (Grade 6 to 8 Teacher)

The U.S. Department of Education's #GoOpen initiative "supports States and districts choosing to transition to the use of openly licensed educational resources to transform teaching and learning."⁸ Individual states can be classified as #GoOpen if they:

- Adopt/Implement a statewide technology strategy that includes the use of openly licensed resources as a central component.
- Develop and maintain a statewide repository solution for openly licensed resources.
- Participate in a community of practice with other #GoOpen states and districts to share learning resources and professional development resources.
- Create a webpage to share the commitment to #GoOpen and document the state's progress.⁹

The potential impact of #GoOpen on OER awareness was examined by comparing the difference in respondents in #GoOpen states to those in the rest of the country. There is a small difference in the level of OER awareness among K-12 educators in "#GoOpen" states, with 19% saying that they are "Aware," as compared to 11% of those in other states.



⁸ <https://tech.ed.gov/open/>

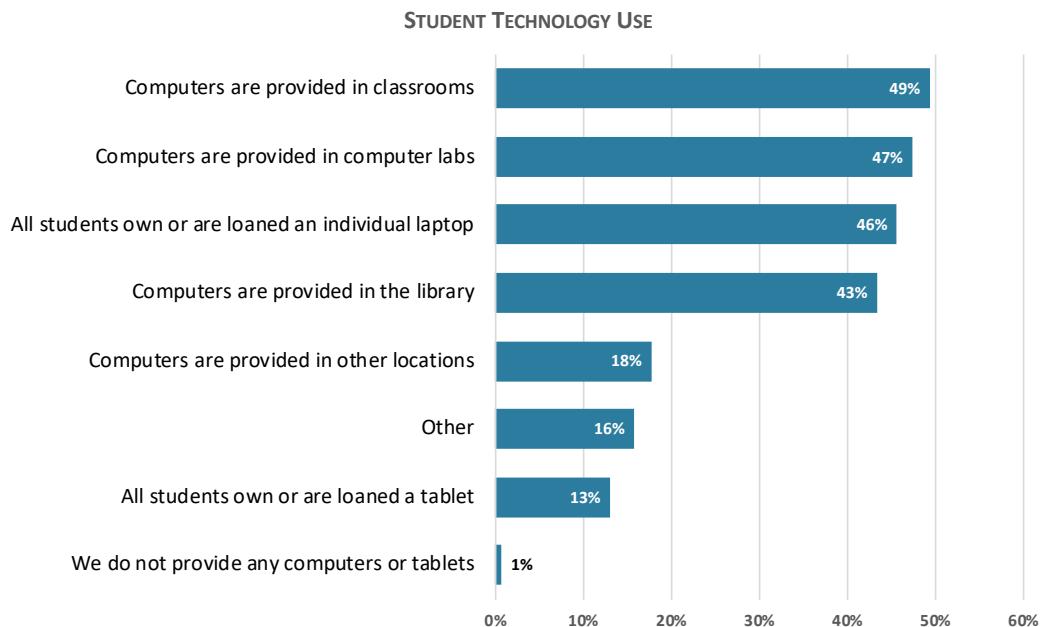
⁹ <https://tech.ed.gov/open/states/>

Technology

Some classrooms have dedicated computers and others have access to computer carts to provide one-to-one computing for students. Students can also bring their own devices to school and connect to the open network on campus. (Science Department Chairperson)

Technology has become an increasingly important component of most K-12 curricula. Lessons increasingly use computers to present material and interact with students and digital materials are replacing much that was previously only available in print. The high degree of technology experience reported by most districts is especially reassuring for the transition to emergency distance learning. Teachers and administrators are going into the current situation with considerable experience with technology integrated education.

Virtually all districts provide some level of computer access for their students, with only 1% reporting that they did not provide computers or tablets in some form. The vast majority of districts provided multiple means of computer access, with roughly one-half providing computers in the classroom or in computer labs, and an almost equal amount (46%) reporting that at least some subset of their students own or are loaned a laptop; an additional 13% report that their students own or are loaned a tablet. The most commonly mentioned devices are Chromebooks, with other types of laptops or iPads also cited in multiple comments.



Perspectives

iPads, Chromebooks and desktops are all widely available, but not 1:1. (Curriculum Coordinator)

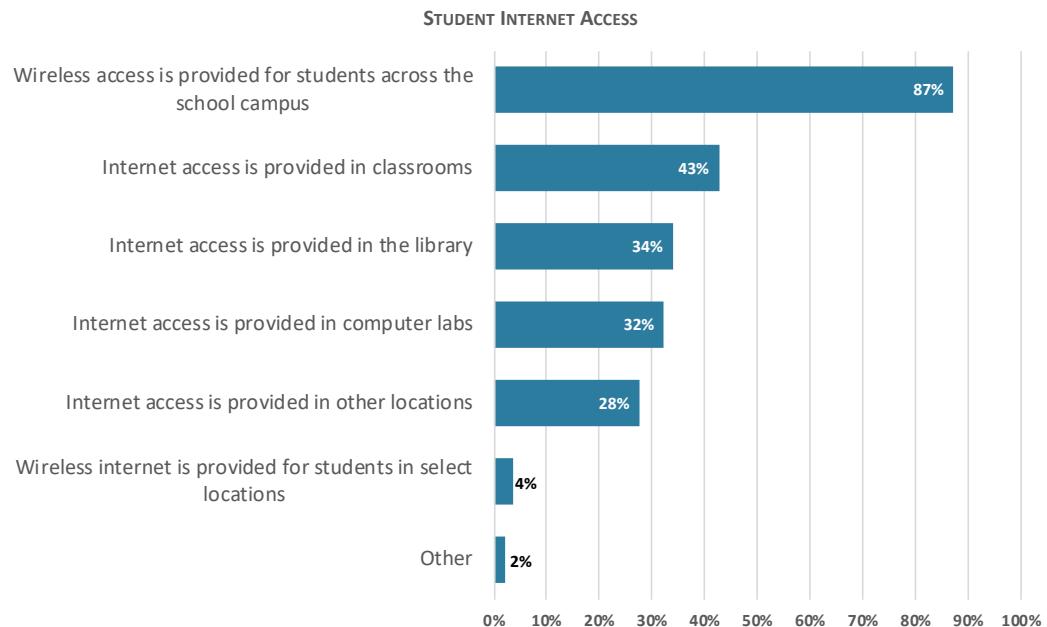
We are moving toward a 1:1 Chromebook model. (K-12 Social Studies Director)

Chromebook and laptop carts can be checked-out for use in the classroom, but there are not always enough carts for each and every department to access technology at the level we would like. There is a need always for more access to technology — especially in the language arts classroom where the expectation to engage students in research is an ongoing expectation. (English Department Chairperson)

All freshmen have Chromebooks. (Math Department Chairperson)

Carts of Chromebooks give our schools about 1 device per 2 students. (Assistant Superintendent)

Wireless internet access is also widely available at most schools, with 87% of respondents stating that it is provided across the campus. Other forms of internet access is provided in classroom, the library, computer labs, and other locations in the school. It is extremely rare for a school to report that they do not provide any internet access for their students.



Conclusions

We know from our previous studies that the curriculum adoption process for K-12 school districts is a group activity involving teachers, district-level administrators, and principals. We also know that the criteria used is multifaceted, with most districts citing five or more factors in their decision. Both the previous reports and the current results show that decisions are frequent, with 95% of all districts making at least one such decision in the past three years.

The curriculum market is extremely varied, with over 100 publishers represented in the adoptions reported in the current study. Three commercial publishers — McGraw-Hill, Pearson Education, and Houghton Mifflin Harcourt — have the largest market shares, but together still account for less than half of all adoptions. The rest are composed of a number of OER providers, many smaller commercial publishers, and a sizable portion of districts who built their own curriculum from multiple sources.

Adoption of OER-based solutions make up just over 5% of the market, mostly concentrated in Mathematics, where 14% of adoption decisions were OER (compared to 4% for English Language Arts, 2% for Science, and 1% for History and Social Studies). The OER adoption rate is much higher among districts that use external curriculum review sites (such as edreports.org) as part of their decision process.

Most districts give their adopted curriculum a fair to good rating, with an average overall rating of 75 out of 100. When queried about ten specific "deeper learning" aspects, a majority rated their curriculum as doing "Very well" or "Extremely well" for only one of the ten aspects examined.

Those who adopted OER-based curriculum gave a somewhat higher overall rating to their curriculum and thought that it was doing much better on deeper learning than those using commercial alternatives, giving higher ratings on 9 of the 10 tested dimensions — often by a considerable margin.

The study results show a strong relationship between the perceived effectiveness of professional development on a curriculum and the perception of that curriculum's quality, with those thinking that the professional development was more effective also rating the quality of the curriculum higher. However, most professional development does not get high ratings for effectiveness. Only 40% of respondents rated the professional development in the top quarter of the range, with over a third rating quality as under 50 out of 100.

Technology is pervasive among the surveyed districts. Virtually all report some level of student computer access, with a large proportion reporting a one-to-one provision of a laptop (46%) or tablet (13%). Likewise, universal wireless access for students is very common, coupled with access to classroom, library, and lab computers.

An important consideration for all research conducted prior to the closures of U.S. schools brought on by the COVID-19 pandemic in Spring 2020 is how the recent event may have altered respondent opinions and experiences. The rapid shift to emergency distance learning may have accelerated a conversion to increased reliance on digital curricula, as well increased dependence on technology, both in the classroom and for remote students. Multiple publishers have made and will continue to adjust their offerings to reflect the changes in district needs.

If anything, the relationship between the perceived effectiveness of professional development on a curriculum and the perception of that curriculum's quality can be expected to be even stronger at a time when all teachers and administrators are adopting new teaching approaches.

METHODS

The "universe of interest" for this study is composed of all public school districts in the United States that operate schools. Information on these districts comes from the Common Core of Data (CCD) from the U.S. Department of Education's National Center for Education Statistics (<http://nces.ed.gov/ccd/ccddata.asp>).

Participants were invited to the study using via email invitation, which was sent to randomly selected school districts using a commercial source for email addresses. A reminder email message was sent two weeks after the first message. Both the invitation and the reminder message contained a unique URL that, when clicked, would open up the survey form in a web browser and pass the unique survey ID.

All potential respondents were informed of the funding source for the study (The William and Flora Hewlett Foundation), and who was conducting it ("researchers at Babson Survey Research Group"). They were also told: "All survey respondents are provided complete anonymity; the William and Flora Hewlett Foundation does not see individual-level results. No personally identifiable information is released."

Analysis for this report includes responses from 933 K-12 administrators, and 1,204 K-12 teachers. These responses come from all 50 states and the District of Columbia. The respondents represent 1,307 different school districts with a total enrollment of 16,266,684 students.

Questionnaire

The questionnaires used in this study are based on those used in previous Babson Survey Research Group studies on K-12 educators. New questions and changes to existing questions were pre-tested in multiple preliminary surveys to judge questionnaire length and clarity of all the questions. The pre-test also queried teachers about what aspects of curriculum selection and use they thought they were qualified to answer. Based on the results of a first test, and feedback from teachers and school administrators, a revised version of the questionnaire was tested in a second pre-test to confirm that all the issues were properly addressed.

The most problematic area in the design of the questionnaire was the imprecise knowledge of K-12 teachers and administrations on publisher and curriculum names. Testing revealed that asking for publisher and curriculum names without providing a picklist of alternatives resulted in inferior quality data. To address this issue, we collected as many sources as we could find to construct an extensive select list, and then used these results for a second test using revised subject-specific curriculum

lists. This second test also probed respondents on how comfortable they felt answering questions on selected topics, as well as a series of open-ended questions to understand their level of knowledge. The final questionnaire was designed based on the results of the two pilots.

OER awareness was measured using the same approach as previous reports in this series, with questions about awareness of licensing mechanisms along with a general question on OER awareness. OER curriculum adoption was tallied from the results of the respondent selection of the curriculum adopted, and then computing the proportion of these that are from known OER providers. The impact of curriculum adoption decisions on teaching and learning was addressed using a series of questions on deeper learning, an overall rating of the curriculum, and an open-ended "why did you give that rating" question. The relationship of perceived curriculum success to the level of professional development was examined using questions about the source, delivery, and overall effectiveness of the professional development, along with an open-ended "why" question.

Definitions

In addition to examining the curriculum adoption process, this study also explores the particular class of materials classified as open educational resources (OER). Creative Commons defines OER as:

Open Educational Resources (OER) are teaching, learning, and research materials that are either (a) in the public domain or (b) licensed in a manner that provides everyone with free and perpetual permission to engage in the 5R activities.

- *Retain – make, own, and control a copy of the resource*
- *Reuse – use your original, revised, or remixed copy of the resource publicly*
- *Revise – edit, adapt, and modify your copy of the resource*
- *Remix – combine your original or revised copy of the resource with other existing material to create something new*
- *Redistribute – share copies of your original, revised, or remixed copy of the resource with others¹⁰*

An important aspect of the examination of the use of educational resources is the licensing status of such materials: who owns the rights to use and distribute the material, and whether the faculty member have the right to modify, reuse, or redistribute said content. The legal mechanism that faculty are most familiar with is that of copyright. The U.S. Copyright office defines copyright as:

¹⁰ <https://creativecommons.org/about/program-areas/education-oer/>

A form of protection provided by the laws of the United States for "original works of authorship", including literary, dramatic, musical, architectural, cartographic, choreographic, pantomimic, pictorial, graphic, sculptural, and audiovisual creations. "Copyright" literally means the right to copy but has come to mean that body of exclusive rights granted by law to copyright owners for protection of their work. ... Copyright covers both published and unpublished works.¹¹

Of particular interest for this study is the copyright status of the primarily textual material (including textbooks) that faculty select as required materials for their courses.

Copyright owners have the right to control the reproduction of their work, including the right to receive payment for that reproduction. An author may grant or sell those rights to others, including publishers or recording companies.¹²

Not all material is copyrighted. Some content may be ineligible for copyright, copyrights may have expired, or authors may have dedicated their content to the public domain (e.g., using Creative Commons public domain dedication¹³).

Public domain is a designation for content that is not protected by any copyright law or other restriction and may be freely copied, shared, altered and republished by anyone. The designation means, essentially, that the content belongs to the community at large.¹⁴

An intermediate stage between traditional copyright, with all rights reserved, and public domain, where no rights are reserved, is provided by Creative Commons licenses. A Creative Commons license is not an alternative to copyright, but rather a modification of the traditional copyright license that grants some rights to the public.

The Creative Commons (CC) open licenses give everyone from individual authors to governments and institutions a simple, standardized way to grant copyright permissions to their creative work. CC licenses allow creators to retain copyright while allowing others to copy, distribute, and make some uses of their work per the terms of the license. CC licenses ensure authors get credit (attribution) for their work, work globally, and last as long as applicable copyright lasts. CC licenses do not affect freedoms (e.g., fair use rights) that the law grants to users of creative works otherwise protected by copyright.¹⁵

¹¹ <http://www.copyright.gov/help/faq/definitions.html>

¹² <http://legal-dictionary.thefreedictionary.com/copyright>

¹³ <https://creativecommons.org/publicdomain/zero/1.0/>

¹⁴ <http://whatis.techtarget.com/definition/public-domain>

¹⁵ Personal communication from Cable Green, PhD, Director of Open Education, Creative Commons

The most common way to openly license copyrighted education materials — making them OER — is to add a Creative Commons license to the educational resource. CC licenses are standardized, free-to-use, open copyright licenses.¹⁶

¹⁶ State of the Commons report: <https://stateof.creativecommons.org>

APPENDIX

CURRICULUM SUBJECT AREA

| | |
|----------------------------|-----|
| Mathematics | 25% |
| English Language Arts | 23% |
| Science | 22% |
| History and Social Studies | 14% |
| Other | 11% |
| No adoption decision | 5% |

CURRICULUM PUBLISHER

| | |
|---------------------------|-----|
| Houghton Mifflin Harcourt | 14% |
| McGraw-Hill | 13% |
| Pearson Education | 20% |
| Other Commercial | 35% |
| OER | 5% |
| Local | 12% |

TYPE OF CURRICULUM PUBLISHER BY SUBJECT AREA

| | Subject area | | | |
|------------|--------------|-----------------------|---------|----------------------------|
| | Mathematics | English Language Arts | Science | History and Social Studies |
| Local | 6% | 14% | 12% | 9% |
| OER | 14% | 4% | 2% | 1% |
| Commercial | 80% | 82% | 86% | 90% |

HOW WELL DOES THE CURRICULUM HELP OR ENCOURAGE STUDENTS TO DO THE FOLLOWING

| | Very well | Extremely well |
|--|-----------|----------------|
| Understand the key principles and relationships with the content area. | 43% | 18% |
| Extend their core knowledge to novel tasks and situations. | 33% | 13% |
| Communicate complex concepts to others in both written and oral form. | 31% | 14% |
| Evaluate, integrate and critically analyze multiple sources of information. | 31% | 14% |
| Collaborate with others to complete tasks and solve problems successfully. | 30% | 13% |
| Trust in their own capacity and competence and feel a strong sense of efficacy at a variety of academic tasks. | 29% | 12% |
| Be motivated to put in the time and effort to build a solid knowledge base and to accomplish important goals. | 29% | 11% |
| See the relevance of school work to their lives and interests. | 28% | 11% |
| Routinely reflect on their learning experiences and apply insights to subsequent situations. | 28% | 13% |
| Enjoy and be able to rise to challenges requiring them to apply knowledge in nonroutine ways. | 28% | 13% |

HOW WELL DOES THE CURRICULUM HELP OR ENCOURAGE STUDENTS TO DO THE FOLLOWING?

| | Commercial | OER |
|--|------------|-----|
| Trust in their own capacity and competence and feel a strong sense of efficacy at a variety of academic tasks. | 39% | 35% |
| See the relevance of school work to their lives and interests. | 35% | 36% |
| Be motivated to put in the time and effort to build a solid knowledge base and to accomplish important goals. | 37% | 44% |
| Enjoy and be able to rise to challenges requiring them to apply knowledge in nonroutine ways. | 38% | 47% |
| Routinely reflect on their learning experiences and apply insights to subsequent situations. | 39% | 47% |
| Evaluate, integrate and critically analyze multiple sources of information. | 41% | 52% |
| Communicate complex concepts to others in both written and oral form. | 42% | 55% |
| Collaborate with others to complete tasks and solve problems successfully. | 38% | 58% |
| Extend their core knowledge to novel tasks and situations. | 42% | 68% |
| Understand the key principles and relationships with the content area. | 60% | 70% |

QUALITY RATING FOR CURRICULUM

| | Commercial | OER |
|-----------------------|------------|-----|
| Mathematics | 74% | 74% |
| English Language Arts | 73% | 83% |

WHAT EXTERNAL REVIEW/ASSESSMENT SITES (IF ANY) WERE USED IN THE CURRICULUM SELECTION PROCESS?

| | |
|---|-----|
| Did not make use of any external review sites | 39% |
| State site/resources | 31% |
| Other districts | 26% |
| edreports.org | 18% |
| Other | 15% |
| achievethecore.org, edsurge.org, learninglist.com, NCEE | 14% |

PROPORTION SELECTING OER CURRICULUM BY REVIEW/ASSESSMENT SITE

| | |
|---|-----|
| edreports.org | 17% |
| achievethecore.org, edsurge.org, learninglist.com, NCEE | 14% |
| State site/resources | 9% |
| Other districts | 9% |
| Other | 6% |
| Did not make use of any external review sites | 4% |

RATING OF THE EFFECTIVENESS PROFESSIONAL DEVELOPMENT

| | |
|--------|-----|
| 76-100 | 40% |
| 51-75 | 23% |
| 26-50 | 18% |
| 0-25 | 19% |

EFFECTIVENESS RATING OF THE PROFESSIONAL DEVELOPMENT

| Effectiveness Rating | Teacher | Administrator |
|----------------------|---------|---------------|
| 0-25 | 26% | 10% |
| 26-50 | 23% | 11% |
| 51-75 | 21% | 25% |
| 76-100 | 29% | 55% |

MEAN EFFECTIVENESS RATING OF THE PROFESSIONAL DEVELOPMENT

| | |
|------------|----|
| Local | 65 |
| OER | 63 |
| Commercial | 58 |

MEAN CURRICULUM QUALITY SCORE BY PROFESSIONAL DEVELOPMENT SCORE

| Effectiveness the professional development | Mean Quality Score |
|--|--------------------|
| 0-10 | 54.7 |
| 11-20 | 59.3 |
| 21-30 | 61.7 |
| 31-40 | 63.3 |
| 41-50 | 66.7 |
| 51-60 | 73.6 |
| 61-70 | 74.5 |
| 71-80 | 78.1 |
| 81-90 | 84.5 |
| 91-100 | 87.8 |

AWARENESS OF OPEN EDUCATIONAL RESOURCES

| | |
|----------------|-----|
| Very Aware | 10% |
| Aware | 21% |
| Somewhat aware | 44% |
| Not aware | 35% |

AWARENESS OF LEGAL PERMISSIONS

| | Creative Commons | Public Domain | Copyright |
|----------------|------------------|---------------|-----------|
| Very Aware | 11% | 23% | 32% |
| Aware | 22% | 40% | 44% |
| Somewhat Aware | 22% | 23% | 16% |

AWARENESS OF OER AND CREATIVE COMMONS

| | |
|----------------|-----|
| Very Aware | 8% |
| Aware | 15% |
| Somewhat aware | 28% |
| Not aware | 57% |

AWARENESS OF OER AND CREATIVE COMMONS

| | Very Aware | Aware |
|------------------------|------------|-------|
| Information Technology | 18% | 30% |
| Curriculum Coordinator | 12% | 23% |
| Lead, Director, Chair | 11% | 13% |
| District Administrator | 5% | 28% |
| Teacher | 5% | 12% |
| School Administrator | 4% | 13% |

AWARENESS OF OER AND CREATIVE COMMONS

| | Very Aware | Aware |
|---------------|------------|-------|
| Go Open State | 8% | 19% |
| No | 8% | 11% |

STUDENT TECHNOLOGY USE

| | |
|---|-----|
| Computers are provided in classrooms | 49% |
| Computers are provided in computer labs | 47% |
| All students own or are loaned an individual laptop | 46% |
| Computers are provided in the library | 43% |
| Computers are provided in other locations | 18% |
| Other | 16% |
| All students own or are loaned a tablet | 13% |
| We do not provide any computers or tablets | 1% |

STUDENT INTERNET ACCESS

| | |
|---|-----|
| Wireless access is provided for students across the school campus | 87% |
| Internet access is provided in classrooms | 43% |
| Internet access is provided in the library | 34% |
| Internet access is provided in computer labs | 32% |
| Internet access is provided in other locations | 28% |
| Wireless internet is provided for students in select locations | 4% |
| Other | 2% |

OPEN

The curriculum market is extremely varied, with over 100 publishers represented in the adoptions reported in the current study. Three commercial publishers — McGraw-Hill, Pearson Education, and Houghton Mifflin Harcourt — have the largest market shares, but together still account for less than half of all adoptions. The rest are composed of a number of OER providers, many smaller commercial publishers, and a sizable portion of districts who built their own curriculum from multiple sources.

Adoption of OER-based solutions make up just over 5% of the market, mostly concentrated in Mathematics, where 14% of adoption decisions were OER (compared to 4% for English Language Arts, 2% for Science, and 1% for History and Social Studies). The OER adoption rate is much higher among districts that use external curriculum review sites (such as edreports.org) as part of their decision process.

Most districts give their adopted curriculum a fair to good rating, with an average overall rating of 75 out of 100. When queried about ten specific "deeper learning" aspects, a majority rated their curriculum as doing "Very well" or "Extremely well" for only one of the ten aspects examined.

Those who adopted OER-based curriculum gave a somewhat higher overall rating to their curriculum and thought that it was doing much better on deeper learning than those using commercial alternatives, giving higher ratings on 9 of the 10 tested dimensions — often by a considerable margin.

The study results show a strong relationship between the perceived effectiveness of professional development on a curriculum and the perception of that curriculum's quality, with those thinking that the professional development was more effective also rating the quality of the curriculum higher. However, most professional development does not get high ratings for effectiveness. Only 40% of respondents rated the professional development in the top quarter of the range, with over a third rating quality as under 50 out of 100.

Technology is pervasive among the surveyed districts. Virtually all report some level of student computer access, with a large proportion reporting a one-to-one provision of a laptop (46%) or tablet (13%). Likewise, universal wireless access for students is very common, coupled with access to classroom, library, and lab computers.



Bay View Analytics



BY

What We Teach: K-12 Educators' Perceptions of Curriculum Quality
is licensed under a Creative Commons Attribution 4.0 International License.
Report available at: <http://www.onlinelearningsurvey.com/oer.html>.

ISBN 978-0-9968848-5-3



9 0000 >

9 780996 884853