

State Support for Open Educational Resources: Key Findings from Achieve's OER Institute

Executive Summary

Open Educational Resources (OER) offer unique new opportunities for educators to share quality learning resources, especially in an increasingly digital world. Forty-six states and the District of Columbia have adopted the Common Core State Standards (CCSS), providing them with the unprecedented advantage of being able to share resources that are aligned to this common set of standards. To leverage these parallel efforts and support states and districts that are implementing the CCSS, Achieve is working with a collaborative of seven states that participated in the Achieve OER Institute: California, Illinois, Louisiana, Minnesota, North Carolina, Washington and Wisconsin. This work builds off Achieve's previous efforts to create a series of eight rubrics that measure OER alignment to standards and other attributes of quality and to develop an online evaluation tool that allows educators to easily tag and rate resources.

The goals of the OER Institute are to:

- Encourage collaboration among states for the implementation of OER;
- Increase awareness and use of OER in states to support successful implementation of the CCSS at the state, district, school and classroom levels;
- Assist states in implementing high-quality, CCSS-aligned OER;
- Increase the number of quality OER that are aligned to the CCSS and increase access to those OER for districts and teachers; and
- Train state and district personnel to use the OER rubrics and the Achieve OER Evaluation Tool.

To meet these goals, Achieve brought seven states together virtually and through an in-person meeting during the ongoing, year-long effort. Through these discussions, **three areas for continued cross-state collaboration** emerged:

- Establishing commonalities in defining quality;
- Sharing quality, standards-aligned resources; and
- Sharing metadata about quality resources.

These three areas are closely linked; working toward accomplishing each one individually necessarily supports the other two. This work is continuing to evolve, but **four key findings** to date include:

- States face a number of common challenges and barriers to implementation, including a lack of knowledge about OER and uncertainty about the quality of resources available online;
- Experts from multiple sectors, including standards, curriculum and technology, must work together to use OER successfully in CCSS implementation;
- States must develop a common understanding of processes for measuring quality and vetting resources; and

OPEN EDUCATIONAL RESOURCES

The William and Flora Hewlett Foundation defines Open Educational Resources (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 repurposing by others.

- States must assess their technology and capacity needs to implement technology-based innovations.

Introduction

Open Educational Resources (OER) are teaching, learning and research resources that are either placed in the public domain or contain an open license that permits others to share, reuse and modify them.¹ OER offer great opportunities for increasing equity and access to high-quality K–12 education. Some state education agencies now have offices devoted to identifying and using OER and other digital resources, such as the Washington State Office of Superintendent of Public Instruction’s [OER Project](#). Curriculum developers are creating OER content, web developers are building and stocking online libraries, and teachers are accessing and using OER in classrooms. The quality varies among the vast amounts of OER available, however, just like print and digital educational resources with traditional copyright. Seeking out high-quality resources in this environment can be a time-consuming and frustrating exercise for educators, curriculum directors, instructional coaches, parents, students and state agencies.

As states implement the [Common Core State Standards](#) (CCSS) in mathematics and English language arts/literacy, they have the opportunity to leverage the “common” in the CCSS by sharing exemplary tools, resources and practices. Educators can leverage the larger scale created from common standards by sharing OER aligned to the CCSS across state borders, and are more likely to have confidence in alignment of OER created or vetted outside of their state.

To support educators who are seeking high-quality OER for effective teaching and learning, Achieve worked with an advisory panel of OER experts to accomplish the following: 1) researched and identified attributes that contribute to OER quality, including alignment to the CCSS; 2) developed a series of rubrics to help gauge these attributes; and 3) created a process that can be used to evaluate and rate OER. For example, how well does a resource explain content? How well does a resource assess student learning? Answers to these kinds of questions are essential, especially for states and districts looking to provide teachers with specific OER.

In total, Achieve developed [eight rubrics](#) with significant input and feedback from an advisory panel of OER experts.² The eight rubrics are:

Rubric I — Degree of Alignment to Standards;

Rubric II — Quality of Explanation of the Subject Matter;

Rubric III — Utility of Materials Designed to Support Teaching;

Rubric IV — Quality of Assessments;

¹ The William and Flora Hewlett Foundation. www.hewlett.org/programs/education-program/open-educational-resources.

² Members of the OER Rubrics Advisory Panel: Karen Fasimpaur, K12 Handhelds; Drew Hinds, Oregon Department of Education; Lynn Lary, Springfield Public Schools, Oregon; Jeff Mao, Maine Department of Education; Karl Nelson, Washington Office of Superintendent of Public Instruction; and Joel Thierstein, Kentucky State University

Rubric V — Quality of Technological Interactivity;

Rubric VI — Quality of Instructional and Practice Exercises;

Rubric VII — Opportunities for Deeper Learning; and

Rubric VIII — Assurance of Accessibility.³

About the Institute

While the responsibility for implementing the CCSS will ultimately be shared among states, districts, schools and other partners, states are uniquely positioned to lead the effort.⁴ There are lessons states can learn from each other even though capacity and approach to implementation can vary. With this in mind, Achieve developed the OER Institute to:

- Encourage collaboration among states for the implementation of OER;
- Increase awareness and use of OER in states to support successful implementation of the CCSS at the state, district, school and classroom levels;
- Assist states in implementing high-quality, standards-aligned OER ;
- Increase the number of quality OER that are aligned to the CCSS and increase access to those OER for districts and teachers; and
- Train state and district personnel to use the OER rubrics and the Achieve OER Evaluation Tool.

This ongoing, year-long effort that began in spring 2012 included webinars for states to discuss issues such as the use of open licensing and measures of quality, as well as an in-person convening in November 2012 for state teams to share current progress in using OER and discuss ways to use OER in their transition to the CCSS. This meeting also included strategic planning and capacity-building activities that helped build a model for other states that are considering a more systematic use of OER content as they implement the CCSS.⁵ Currently, Achieve is assisting state progress in this area and supporting collaboration between the states in several ways, such as creating opportunities to share resources and

OER EVALUATION TOOL

Achieve partnered with the Institute for the Study of Knowledge Management in Education (ISKME) and its online library of OER, [OER Commons](#), to create an online Evaluation Tool. The source coding is freely available for any interested group to include the tool as part of its own repository. Furthermore, the ratings data from the online tool are collected by OER Commons and shared through the Learning Registry. The Learning Registry is a joint effort of the Department of Education and the Department of Defense, with the support of the White House and numerous federal agencies, nonprofit organizations and other entities.

³ Training materials for using the OER rubrics, including a handbook, presentation slides, and videos are available at <http://www.achieve.org/oer-rubrics>

⁴ Achieve and Education First Consulting. "A Strong State Role in Common Core State Standards Implementation: Rubric and Self-Assessment Tool." March 2012. www.achieve.org/files/Achieve-CCSSrubricandstatetoolFINAL.pdf

⁵ OER Planning Framework for strategic planning and capacity building activities available at <http://www.achieve.org/oer-rubrics>

OER metadata through technology innovations that support sharing and collaboration, such as the [Learning Registry](#). The Learning Registry is a project of the U.S. Department of Education and the U.S. Department of Defense, developed with other private, nonprofit, and government groups such as SRI International, Lockheed Martin, National Science Digital Library (NSDL), Navigation North, and the Butte County Office of Education Center for the Advancement of Digital Resources in Education to create a framework to assist educators in the sharing of data that describe resources, including reviews and alignment to educational standards.

Identifying states, assembling state teams and developing an activities plan

The 35 states that comprise Achieve’s American Diploma Project Network were invited to participate in the OER Institute. Chief state school officers from seven states — California, Illinois, Louisiana, Minnesota, North Carolina, Ohio, Washington and Wisconsin — committed to form state teams and participate in the Institute. Achieve encouraged the states to assemble teams of five to seven members, including state and district technology and curriculum leads, as topics related to OER span both areas.

In spring and summer 2012, Achieve held conversations with state team leaders while simultaneously conducting research on states’ policies and projects that affect technology, curriculum, and open and online resources. Together, these efforts helped identify the types of discussions and activities that would benefit the group of states as a whole, and they provided a better understanding of each state’s broader educational goals.

Virtual convenings, fall 2012

Four virtual convenings were scheduled prior to the in-person OER Institute Meeting. In conversations with state teams, it became clear that states identified two major challenges to implementation: a lack of knowledge among educators regarding OER use and the difficulty in seeking out quality resources. These virtual meetings gave participants the opportunity to discuss these challenges, as well as other topics and issues related to using OER in CCSS implementation. Achieve partnered with the U.S. Education Delivery Institute to help structure the conversations and facilitate discussion to best serve the state teams.

OER Institute Meeting

In November 2012, Achieve convened teams from the seven participating states at the OER Institute Meeting. States gathered to create a shared vision for OER implementation, develop ways to realize their vision and discuss OER implementation across state groups and with others in related state or district roles. Goals for each state team at the meeting included:

- Understanding the status of OER initiatives in their state;
- Setting a vision for how OER fit into their state’s goals for instructional materials;
- Discussing ways to achieve the state team’s vision;
- Identifying the challenges with implementing OER and discussing possible solutions to specific issues;
- Learning how other states are using OER; and
- Establishing clear next steps for the state team.

In partnership with the U.S. Education Delivery Institute, Achieve set an agenda and developed activities to assist teams in achieving these goals. The meeting served as an opportunity for state teams to meet and discuss within their own states, as well as for team members to share ideas across states.

Areas for Ongoing Cross-State Collaboration

Through cross-state conversation, three areas for ongoing collaboration emerged:

Establishing commonalities in defining quality

States use different processes to vet curricular and instructional materials for quality. States have relied on several measures of quality, such as the Achieve OER rubrics, the [Educators Evaluating Quality Products \(EQuIP\) rubrics](#) and the [publishers' criteria for the CCSS](#) to support their processes. They also use various methods of training evaluators. If states understand and can verify the appropriateness of another state's review process or method of training evaluators, as well as the similarities with their own processes, the door is open for sharing information and resources. The group committed to exploring ways in which evaluators could obtain digital badges to show that they have been trained to rate resources. Digital badges are online representations of a skill or other designation earned by a user which, in this case, would be appropriate training on vetting resources. Thus, if states are seeking out quality resources developed in other states, they could easily find out if a rater with an appropriate badge evaluated a given resource.

Sharing quality, standards-aligned resources

Once states have agreed on ways to define what quality means and can verify that a resource has been vetted for quality, then these states can begin creating avenues for teachers to share high-quality resources. States will also need to collaborate to resolve challenges related to this, such as sharing quality CCSS-aligned texts for English language arts and literacy resources that may have copyright licenses that restrict sharing among educators. OER Institute states committed to seeking out ways to share quality resources and are furthermore interested in sharing data about resources to improve cataloging and searchability of resource libraries. For example, even if a single resource is available in two separate OER repositories, evaluative ratings and other data about the resource could be shared through the Learning Registry. Once a resource is rated and its evaluation data are shared through the Learning Registry, users could access the ratings data regardless of how or where they access the resource, thereby increasing the flow of information and usefulness of high-quality resources and saving time for educators.

Sharing metadata about high-quality resources

States in the OER Institute shared schema for metadata⁶ with one another, including the fields (categories of tags) by which a resource could be tagged. State teams found that they were in different stages of the process of tagging resources. To establish state progress and goals for using for metadata, Achieve developed and states completed a needs assessment. The results of a needs assessment will

⁶ Metadata describe different qualities about a resource. For instance, metadata about an online learning resource could include the intended user (e.g., a teacher or student), subject matter (e.g., math or English), academic standards that it is aligned with or a host of other information. Metadata is expressed through tags (i.e., keywords and terms) that users attach to objects and resources. As previously mentioned, this information allows educators with specific needs to search for resources more easily. Implementing a system of metadata tagging involves agreeing upon a set of tags as well as the process of actually tagging the resources.

inform areas that are best suited for collaboration and would benefit most from direct facilitation by Achieve.

Key Findings from the Institute

States face a number of common challenges and barriers

From the outset of this project, two of the challenges most often cited in conversations with state teams were lack of knowledge among educators about OER and uncertainty about the quality of the resources available online. In response, North Carolina has been developing OER communications strategies for educators to address this challenge. Washington has already begun organizing and carrying out a quality review process for full OER courses to ensure that it is providing high-quality resources to teachers. California and Illinois stressed the importance of creating a shared vision regarding quality and OER in their states from the outset. Another challenge cited by multiple teams was a lack of capacity to develop, seek out, evaluate and tag resources. Louisiana will use its trained corps of Teacher Leaders to address this challenge by using Teacher Leader training sessions to disseminate knowledge about OER, and Minnesota will leverage collaborations with other groups in the state to seek out quality resources to be included in the state's digital library.

Experts from multiple sectors must work together

For OER to reach its full potential in supporting CCSS implementation, resources must be vetted for quality, and technology infrastructure must be in place to facilitate access to these resources. Meeting these needs requires cooperation and collaboration across multiple sectors and among state educators with different areas of expertise. Specifically, standards and curriculum experts and education technology experts must work together in new and unique ways to ensure that quality resources make their way to teachers. State teams included members from multiple sectors to bridge these gaps in implementing OER. Furthermore, meeting these needs requires conversations across areas about how systems to share resources with and among teachers should be properly implemented in each state. For instance, while curriculum experts would apply their skills in determining the standards alignment of resources, technology experts would work to determine how best to tag and catalog resources to improve searchability for educators. This cross-sector work becomes increasingly important as technology systems are brought to scale and the CCSS are implemented statewide.

States must develop a common understanding of processes for measuring quality and vetting resources

If states intend to share quality resources with one another and among districts, they must be able to come to an agreement or understanding about how the quality of the resources will be measured. All seven states involved in the Achieve OER Institute are also members of the EQuIP Collaborative. Through this initiative, states are training educators to use the EQuIP rubrics to measure the alignment of lessons and units to the CCSS. To date, educators have applied the EQuIP rubrics to traditional instructional materials developed by educators and vendors. States are also using the Achieve OER rubrics to measure specific aspects of open resources. The OER Rubrics are uniquely situated to evaluate OER found online, ranging from student-directed games and activities to resources for teachers. Each of these tools has specific purposes, and states are using them separately and together to evaluate resources. For example, in its effort to solicit OER units and course-length materials for review, the state of Washington is

choosing to use the OER rubrics, the EQuIP rubrics and the publishers' criteria for the CCSS in a review conducted by educators selected through an application process. North Carolina is also using the OER rubrics to evaluate resources that will be uploaded to its online Instructional Improvement System, as well as using the EQuIP rubrics to train educators throughout the state on measuring quality for separate lessons and units. Both states are using these measures of quality in similar but slightly different ways. To ensure that raters are qualified to evaluate resources and to provide greater awareness of how a resource was vetted, a system of digital badging could be used by these states to give validity to ratings and support the sharing of quality resources. Educators are more likely to share resources if they are able to verify the process by which resources were deemed high quality.

States must assess their technology and capacity needs

In discussing how to share resource metadata, it became clear that assessing the needs of the states involved was a necessary first step. The metadata needs assessment will provide Achieve and these seven states with information needed to advance this work, such as information on state plans and their status in implementing plans for tagging resources, as well as commonalities between state plans and potential challenges in implementation. Results from the needs assessment will be shared with all states to find goals and desired outcomes that states have in common. States need to be able to find common ground to begin sharing resources and data about resources. This effort provides a basis for conversations to begin and collaborations to be forged.

Conclusion

Challenges and barriers remain for states using OER in their CCSS implementation plans, but each state team is addressing the specific challenges in using OER as they implement the CCSS. States also have found that they share some common challenges and have used experts in both curriculum and technology conversations. To foster cross-state collaboration, it will be important for states to understand separate processes for measuring quality and each state's needs for technology to share resources and data.

The following section will detail each OER Institute state team's strategic planning discussions and early stages of execution, including background information on applicable policies and technology resources for each state.

California

Background

Recent policy developments related to instructional materials: In 2009, California passed legislation that suspended the process and procedures for adopting textbooks until the 2013–14 school year.⁷ Later legislation extended that suspension until 2015–16.⁸ Historically, the state required that students in grades K–8 use textbooks included in the state’s list of adopted materials, while districts could decide which textbooks to use for high school students. Under recent legislation, California school districts may now use state funds to purchase nonadopted materials in K–8 as well, as long as those materials are determined by the district to be aligned to the California standards for that content area.⁹ The composition of the district review panel is described in California Education Code.¹⁰

Technology resources, capacity and partnerships: The California Learning Resource Network (CLRN), an online portal that provides standards-alignment review of electronic learning resources, including OER.¹¹ This effort is aided by five county offices throughout the state. Teachers from each of the counties regularly review resources to be added to the site. These resources include those that are openly licensed or freely available on the Internet, and the reviewers validate their alignment to CCSS. CLRN also includes full online course materials that show alignment to the iNACOL Standards for Quality Online Courses.¹² Content created by teachers is supported by California’s Brokers of Expertise Portal, which is a partner in the national Learning Registry project.

VISION STATEMENT

California students will have access to quality resources, which include content delivered through any media, such as textbooks, online resources and open resources.

Strategies for Implementing OER

The California team identified the following strategies for supporting OER implementation statewide:

- Engaging leadership at both the state and local levels so that they understand the feasibility, value and importance of this vision;
- Openness to joining other states and groups to maintain a searchable OER repository;
- Improving and facilitating student access to computing devices;
- Including ways to use OER in the classroom in teacher preparation programs in the state, so that new teachers understand the benefits of OER;

⁷ Assembly Bill X4 2 (Chapter 2, Statutes of 2009-10 Fourth Extraordinary Session).

⁸ Senate Bill 70 (Chapter 7 of the Statutes of 2011).

⁹ Assembly Bill 1246 (2011-2012 session).

¹⁰ www.leginfo.ca.gov/cgi-bin/displaycode?section=edc&group=60001-61000&file=60200-60210

¹¹ www.clrn.org

¹² http://www.inacol.org/research/nationalstandards/iNACOL_CourseStandards_2011.pdf

- Seeking to remove barriers preventing teachers from using resources that will best help them teach their students;
- Increasing awareness among veteran local educators regarding the benefits of OER, to encourage the use of OER in their classrooms.

Challenges and barriers: The California team faces a number of potential challenges in implementing these innovations. The first is the ability of students to readily access digital resources. The second is determining what kind of professional development is necessary for teachers to understand how to access and modify OER. Other challenges included developing appropriate communications and talking points for leadership in the California Department of Education and being cognizant of how this change could influence California’s No Child Left Offline initiative — one that is committed to creating a system in which every K–12 student in the state has access to the Internet. Finally, the group agreed it needed to come to consensus on whether only digital materials would include an open license or whether print materials would also be open.

Putting it into action

Engaging stakeholders: The California Department of Education Curriculum Frameworks and Instructional Resources Division staff is working to engage the internal stakeholders to form a clear vision and mission for moving forward that includes discussion of OER.

Recent developments and outlook: California State Superintendent of Public Instruction Tom Torlakson has begun referencing OER in his discussions of teachers’ and students’ access to high-quality instructional resources. This is a significant, early milestone in this work.

The California Department of Education plans to hire an education programs consultant as an expert on school library/media services to include knowledge of the use of state and federal initiatives for the proliferation of OER in schools.

Illinois

Background

Technology resources, capacity and partnerships: Illinois will begin piloting the Illinois Shared Learning Environment (ISLE) system in August 2013. ISLE is a technology platform that will integrate student data, curricular supports, learning resources, technology applications and opportunities for professional development. Illinois plans to make ISLE available to all Illinois Race to the Top districts following its initial pilot. The state is also planning to make ISLE available to more districts statewide after that initial scaling. Illinois has developed a team of content area specialists in both English language arts/literacy and mathematics at regional offices throughout the state. These specialists are tasked with helping teachers in Illinois implement the CCSS, as well as transition to CCSS-aligned tests in 2014–15.

Strategies for Implementing OER

The Illinois team sees this work being carried out in three key steps over the course of the coming year:

- Vetting and curating resources through state collaboration;
- Sharing outputs with other states/groups (Illinois understands the added value of leveraging the common standards to share learning resources among states); and
- Making sure OER fits within existing state plans for implementing new technologies and the CCSS.

VISION STATEMENT

Learners will be engaged with quality, free, targeted learning resources that are accessible to all.

Challenges and barriers: The Illinois team’s biggest challenge is the lack of knowledge of and skepticism surrounding open licensing among both teachers and administrators throughout the state. Furthermore, launching the ISLE pilot involves a great deal of work in a relatively short span of time, given the time constraints set by the state. The ISLE pilot launch set for August 2013 is in the not-too-distant future. Among the many other tasks required to launch the pilot, teachers in the pilot districts will need to be provided resources before the launch. Last, Illinois seeks to overcome the challenge of ensuring that educators in the state share a vision for resources as they transition to the CCSS.

Putting it into action

Engaging stakeholders: The Illinois team wants to engage various groups to help overcome the challenges and barriers, such as improving the knowledge about OER among educators and alleviating concerns about OER quality. These groups include leadership at the Illinois State Board of Education to help promulgate a shared vision for OER. Furthermore, Illinois may seek assistance from a nonprofit group, Creative Commons, to help educators and administrators in the state understand open licensing. Finally, Illinois will engage teachers from various teachers’ groups, as well as the PARCC working groups in the state and the P–20 working group, to help increase knowledge and awareness of OER.

Louisiana

Background

Recent policy developments related to instructional materials: In 2012, Louisiana made an important policy shift regarding instructional materials. Prior to April 2012, Louisiana districts were required to spend at least 90 percent of their local budget for instructional materials on state-approved materials. The state lifted this requirement in 2012, which gives districts greater flexibility over their instructional materials budgets.

Additionally, the Louisiana Department of Education found through its curriculum review process that textbooks submitted for review were not fully aligned to the CCSS and the assessments currently under development by the [Partnership of the Assessment for College and Careers](#).¹³ Consequently, the Louisiana Board of Elementary and Secondary Education took no action to approve the adoption of new textbooks in December 2012. Districts may purchase instructional materials using non-state funds but will not be able to make use of the state's contracts with publishers.

Technology resources, capacity and partnerships: In January 2013, Louisiana launched [LouisianaBelieves.com](#), an overhaul of the Louisiana Department of Education website. The goal of the new website is to improve navigation and help point teachers, students and parents toward resources that best suit their needs. The site includes a library with the resources most often accessed by teachers and parents as well as data detailing academic results and school funding. In preparation for the transition to more rigorous standards and assessments, the Louisiana Department of Education released an interactive online [Classroom Support Toolbox](#) for educators and school districts. The toolbox, a feature of LouisianaBelieves.com, replaces the state-run Comprehensive Curriculum and is an effort to provide increased clarity and support for teachers and districts without prescribing how to teach. The concept for the toolbox came as a result of feedback from educators and districts that have been preparing for the coming transition to assessments that will measure the knowledge and skills demanded by the CCSS. This toolbox will be open to all, both inside and outside Louisiana. The Department of Education will use a group of Teacher Leaders to help identify high-quality resources that are aligned to the CCSS¹⁴.

Strategies for Implementing OER

Louisiana will use OER in its CCSS implementation plan through the development of an online portal for educators to access digital and open resources. This portal would offer opportunities for teachers to search for resources, as well as upload and rate them. Experts would vet these resources using rubrics. There would also be videos and other examples modeling instruction tied to Louisiana's Compass teacher

¹³ More information on this review process and its findings are available at <http://www.louisianabelieves.com/academics/content-and-textbooks>

¹⁴ More information on Louisiana's Teacher Leaders is available here <http://www.louisianabelieves.com/resources/classroom-support-toolbox/district-support-toolbox/school-teacher-collaboration>

VISION STATEMENT

Create an open set of resources for teachers across the state that supports effective, CCSS-aligned instruction and teacher decision-making that leads to student mastery.

evaluation system. Louisiana wants to consider district input in implementing these changes, including offering districts the flexibility to include the resources they have already procured and are using in schools. Louisiana will be sure to use appropriate communications, including using the aforementioned teacher networks. Louisiana is also interested in sharing resources and metadata about these resources with other states.

Challenges and barriers: One challenge for the Louisiana team is identifying existing systems in the state to which the new statewide system should connect. The team understands the importance of leveraging existing resources but also sees how this could add complexity. Moreover, sharing with other states could add even

more complexities, including the technical infrastructure needed to facilitate this, ensuring appropriate vetting of resources, and making sure these resources are easily accessible for teachers.

Putting it into action

Engaging stakeholders: Videos demonstrating excellent implementation of the CCSS will be shared with educators as they become available. Ongoing job-embedded feedback directly from teachers on the resources in the online toolbox will help ensure that the kinds of curricular resources needed are those either developed or selected.

Recent developments and outlook: Louisiana decided to launch a website with educational resources so that it can be ready for use by educators during the 2013–14 school year. The state hopes to build a number of resources, both at the unit and full-course levels. Furthermore, Louisiana is working to grow its teacher-leader cadre, including a new set of teachers beginning in spring 2013, some of whom would become resource curators.

Minnesota

Background

Recent policy developments related to instructional materials: In 2012, Minnesota passed Chapter 273 legislation, which requires that a catalog of publicly available digital learning content, aligned to Minnesota academic standards, be developed by June 30, 2013. The requirements include methods for indexing by academic standards, a method for students and teachers to provide feedback, a sustainability plan for this system, and recommended methods for including student performance data in the catalog. Three groups are collaborating on this effort: the Online Learning Advisory Council, the Minnesota Department of Education and Minnesota Learning Commons.

Technology resources, capacity and partnerships: Minnesota Learning Commons is a web portal for online education resources and educational opportunities, tools and services for public K–12 and higher education. It was created by a partnership of the Minnesota Department of Education (MDE), the University of Minnesota, and Minnesota State Colleges and Universities, and it seeks to provide a central location for online learning for Minnesotans. Additionally, the MDE has partnered with [SciMathMN](#) to develop frameworks¹⁵ supporting the delivery of Minnesota’s mathematics and science standards, housed on the virtual [Minnesota STEM Resource Teacher Center](#). SciMathMN is an education and business coalition advocating for quality science, mathematics and technology education in Minnesota. Together, these resources and infrastructure offer opportunities to leverage a growing, robust collection of OER.

Through partnerships with professional education organizations, MDE has a large volunteer base of high-quality teachers who have served as developers, reviewers and contributors of quality, research-based materials and who provide ongoing support. Minnesota is also working with Tidemark Institute and Clark University to develop and build into the system professional development and e-learning opportunities that will aid in the delivery of materials. Server space for resources is given as in-kind support from partnering organizations with the potential to bring materials to state hosting in the future.

The development of the STEM frameworks has included work with other states; for example, Minnesota has been collaborating with North Dakota since 2012.

Strategies for Implementing OER

The Minnesota team will develop the Minnesota Digital Curriculum Referral Catalog, which will be a searchable index of instructional resources that are available and aligned Minnesota’s academic standards. Minnesota Learning Commons will host this catalog, and it will include a rating system for content based on user feedback.

¹⁵ Frameworks are resources developed to help teachers translate the Minnesota state standards into classroom practice and, ultimately, assist in student achievement of those standards. The single resource developed to address a specific cluster of benchmarks is referred to as a “framework” (singular).

The team intends to assemble comprehensive OER course materials that, if used in their entirety, will meet the Minnesota academic standards for a course. These courses would include:

- Packaged modules that could be adopted to supplement or substitute for a traditional textbook package (e.g., printable items, test bank, lesson plans, supplements, multimedia learning activities);
- A system that allows for real-time data collection and feedback to student and teacher;
- Dynamic content that can be modified and supplemented over time; and
- Free, openly licensed materials.

VISION STATEMENT

To build the capacity of Minnesota schools to provide equitable, high-quality curriculum for ALL students in the most cost-effective manner, the team proposes that Minnesota build a comprehensive system of OER.

During the winter of 2013, the Minnesota team developed a needs assessment for existing resources and priorities in middle and high school English language arts and mathematics and now plans to administer and compile the results. During the summer, the team will develop a collection, curation and quality assessment plan for OER that will be included in the Minnesota Digital Catalog. The team also will identify end-user groups for the collection in collaboration with the Online Learning Advisory Council, determine OER for initial inclusion in the Minnesota Digital Catalog and outline a plan for the development of comprehensive courses. The Minnesota team proposes that by 2015, Minnesota schools will have access to and use a system of curated digital OER aligned to Minnesota K–12 academic standards in grades 6–12 in mathematics and English language arts. This system would lay the foundation for continuing development of a complete range of open digital content in all subject areas and grade levels.

Challenges and barriers: The key challenges for Minnesota in this effort are finding the financial and human resources needed to create and/or compile OER and designing and implementing a system for ensuring that OER materials are of high quality.

Putting it into action

Engaging stakeholders: Minnesota is developing a needs assessment survey that will be used to determine priorities and resources for course creation as the Minnesota team moves forward. The development of this needs assessment involves collaboration between Minnesota’s OER Institute team, the Online Learning Advisory Council, Minnesota Learning Commons, MDE staff and others.

Recent developments and outlook: In the months immediately following these initial conversations, the Minnesota accomplished the following:

- The team is engaging staff across several divisions at MDE, and there is a new emphasis on collaboration and leveraging of materials and resources.
- Minnesota’s online STEM frameworks for mathematics and science education average 60,000 page views each month. Many districts use information in the frameworks to improve their professional development and curriculum and instruction. This success enhances educators’ interest in other online opportunities.

North Carolina

Background

Technology resources, capacity and partnerships: The North Carolina Department of Public Instruction is developing HomeBase, which includes both an Instructional Improvement System (IIS) and Student Information System. The IIS will provide portals for students, teachers, parents and local administrators to access data and resources to inform decision-making related to instruction, assessment, and career and college goals. Students, teachers, parents and administrators will use the IIS in the following ways:

- Students will engage with interactive, CCSS-aligned resources; take assessments; and collaborate with other students.
- Teachers will supplement teaching with quality materials, perform formative assessments, see student performance diagnostics and engage with professional development modules.
- Parents will track their child’s performance according to predetermined goals, use at-home activities and communicate with educators.
- Administrators will view student performance, view teacher effectiveness data and make decisions using these data.¹⁶

North Carolina state and local educators have already begun tagging resources to be included in the IIS using rubrics and a tagging schema adopted by the state. The state developed its metadata schema in collaboration with a group of states receiving Race to the Top funding.

Strategies for Implementing OER

An initial step for North Carolina is the development of specific performance measures that reflect established goals for the work. North Carolina also intends to perform a tech readiness survey of districts in the state; instruction with these resources may need to be adjusted based on available technology. North Carolina is focusing on communications and knowledge dissemination regarding these changes in instruction.

This knowledge dissemination includes information for educators about how OER fits within the state’s vision and mission for HomeBase where resources originate and how the quality of the resources is defined and identified. Furthermore, the team will disseminate information about the EQuIP and OER rubrics and how each is being used in the vetting of materials, along with the importance of using of rubrics in both professional development and lesson evaluation. Finally, North Carolina intends to communicate with educators about copyright issues related to using open licensing and the differences between new, digital resources and traditional resources, such as textbooks.

¹⁶ www.ncpublicschools.org/homebase/improvement/.

VISION STATEMENT

North Carolina offered the following vision and mission statements for instructional improvement system in its Race to the Top application:

Vision — All education stakeholders in North Carolina will have access to and use of HomeBase to meet their specific needs.

Mission — For all students to graduate college and career ready, HomeBase will provide free, high-quality digital resources, aligned to North Carolina standards. It will be equally accessible to all stakeholders to support teaching, scaffold instruction and differentiate learning.

Challenges and barriers: One key challenge for the North Carolina team was communicating these innovations to all interested stakeholders. For this reason, the team spent significant time discussing communications strategies for these groups.

Putting it into action

Engaging stakeholders: Additional communication has been established to reach more educators in North Carolina. This effort includes training state consultants so they can distribute accurate information about HomeBase when they are delivering professional development about implementation across the state.

Recent developments and outlook: Many steps to communicate with all stakeholders have occurred since the OER Institute, including webinars, weekly communications and training for educators in North Carolina. Furthermore, to help inform teachers on how and when to use the OER and EQIP rubrics, a graphic organizer was created and distributed among educators.

Stronger communication throughout the state has made a big difference in creating a common understanding. One challenge North Carolina intends to address is making sure the work of the [North Carolina Digital Library](#) project, which is a library of educational resources, does not contradict or overlap the efforts of the state team, and offers the opportunity to ensure that these separate efforts complement one another.

Washington

Background

Recent policy developments related to instructional materials: In 2012, the Washington legislature passed House Bill 2337, which set requirements for the state to develop a library of high-quality, openly licensed K–12 courseware aligned to the CCSS. The legislation states that, in doing so, Washington “will be able to provide students with curricula and texts while substantially reducing the expenses that districts would otherwise incur in purchasing these materials. In addition, this library of openly licensed courseware will provide districts and students with a broader selection of materials, and materials that are more up-to-date.”¹⁷ The intent is not to explicitly build an online database but rather to develop a process to review full-course OER and OER units that can be available for teachers to use in classrooms.

Technology resources, capacity and partnerships: The Washington Office of Superintendent of Public Instruction (OSPI) Digital Learning Department has set up a [website](#) for its OER program that includes resources that can assist teachers in using OER and places to find OER. Furthermore, using funding allocated as part of HB 2337, OSPI hired a full-time OER program manager. The OER program is a cross-agency collaboration at OSPI with stakeholders in the Departments of Teaching and Learning and Educational Technology combining forces with the Digital Learning Department. This partnership brings together stakeholders with curriculum and CCSS expertise and those with an understanding of the licensing issues and digital requirements of OER. External collaborators include the Washington Library Media Association, whose members are experts at researching and curating resources, and Washington’s nine Educational Service Districts.

To review OER materials as described above, OSPI issued an informational solicitation for Washington educators to review materials and be compensated for their services. Mathematics and English language arts experts are also required to attend separate training sessions for the reviews.

Strategies for Implementing OER

Washington’s strategies for supporting the use of OER in CCSS implementation include:

- Development and execution of a review process for full-course OER and select units aligned to the CCSS in the 2012–13 school year. This work includes:
 - A solicitation of open materials from vendors/developers;
 - A review of those materials by selected reviewer teams; and
 - A review process that uses the CCSS publishers’ criteria, the EQUiP rubrics and the Achieve OER rubrics.
- An OER awareness campaign to increase understanding among local educators.

¹⁷ Washington House Bill 2337

Challenges and barriers: Washington sees several pivotal areas where challenges and potential barriers to OER need to be addressed.

- Despite the growing recognition of OER, many district stakeholders remain unaware of the full potential of the option, highlighting the need for outreach efforts. Of particular note is the need to communicate with school boards and help provide guidance in creating district policies around effective OER usage and development.
- Concerns regarding resource quality and attention to the significant instructional shifts present in the CCSS are evident when speaking with district representatives, and concerns have been raised about non-OER materials as well. A robust model review process will be helpful in identifying quality resources and highlighting curricular gaps that might need addressing.
- Washington understands that local districts and schools could have issues accessing these materials due to a lack of technology or bandwidth.

Finally, the team is interested in making sure that this effort is sustainable beyond the two pilot courses that are being reviewed.

Putting it into action

Engaging stakeholders: To increase awareness among local educators, Washington has planned a set of information sessions throughout the state in winter and spring 2013. OSPI staff and OER experts facilitate these discussions, which provide background on OER as well as the state’s implementation efforts. To provide feedback, the state is surveying participants’ awareness levels and understanding of OER immediately following the information sessions and plans to do so again to see if knowledge has improved.

Recent developments and outlook: Washington’s first OER Day awareness event in the Seattle area was filled to capacity, eliciting a highly favorable response and generating much interest. In fact, smaller-scale follow-up events were requested by most of the state’s Educational Service Districts, and thus a second OER Day event was held in Spokane.¹⁸

OSPI facilitated a review process in April and May 2013 that will serve as a resource and model for school districts considering the use and/or adoption of OER. The initial review, led by OSPI, examined OER in Algebra 1/Integrated Mathematics 1 and units in 11th–12th grade English language arts. OSPI recently posted the [results of this review](#) on the OSPI website with ratings and reviewer comments, along with a report discussing their process and results.

VISION STATEMENT

Washington’s vision statement highlights three important factors:

- Wide-scale awareness about and access to OER;
- Identification of quality materials aligned with the CCSS; and
- Elimination of barriers and facilitation of effective use of materials.

¹⁸ More information on these events, including handouts and presentations, is available at <http://digitallearning.k12.wa.us/oer/events.php>

The Washington OER project looks forward to sharing the information about these evaluated OER with schools to help inform their instructional materials choices. OSPI is developing a plan to provide grants to collaborating districts to fill any gaps necessary to make more robust, standards-aligned curriculum options. These resources would then be used in voluntary pilot programs throughout the state. Washington is formulating next steps for how it will launch the pilot.

Wisconsin

Background

Recent policy developments related to instructional materials: Through the state’s budgetary process, the Wisconsin Department of Public Instruction (DPI) has secured funding for the current fiscal year for the WISElearn educator resource portal project, an online portal and content management system for teachers to access digital resources, which is also designed to serve as a virtual professional learning social network.

Technology resources, capacity and partnerships: Resources on WISElearn will be tagged using a schema that aligns to the [Learning Resource Metadata Initiative](#) (LRMI) tagging standards. Through a federal [Enhancing Education Through Technology](#) grant, Wisconsin has already developed a set of CCSS-aligned resources to be included in the portal.

The current funding for Wisconsin’s statewide student information system and data warehouse dashboard system creates a basis for launching the WISElearn effort. Wisconsin also has funding from the U.S. Department of Education [Gaining Early Awareness and Readiness for Undergraduate Programs](#) projects that can be leveraged for the WISElearn and OER efforts, again in alignment with overall CCSS implementation strategies. Staffing adjustments are being made to repurpose existing roles and to fill vacancies with new roles that better serve the mission of this work.

Wisconsin’s [BadgerLink](#) team is in the midst of revising its user interface. BadgerLink is a project of the DPI Division for Libraries and Technology. Its goal is to provide access to quality online information resources for Wisconsin residents in cooperation with the state’s public, school, academic and special libraries and Internet service providers. Simultaneously, BadgerLink is leading an effort at tagging its content to the CCSS taxonomy by leveraging the LRMI standards.

The state superintendent’s [Digital Learning Advisory Council](#) is a key group of stakeholders for the Wisconsin team. The team is also integrating the efforts of the Council of Chief State School Officers [Innovative Learning Networks](#) based in regional Cooperative Educational Service Agency (CESA) #1 in southeastern Wisconsin. Finally, the team has a partnership with the two primary virtual online learning providers in Wisconsin — the Wisconsin Virtual School and the Wisconsin e-School Network — under a memorandum of understanding that creates a seamless option for all school districts in the state. The operating name for the group is the [Wisconsin Digital Learning Collaborative](#). The organizations provide a new opportunity for actively engaging in the establishment of high-quality open curricular content via their learning management system environment.

Strategies for Implementing OER

The Wisconsin team aims to be intentional as it develops its online portal. The team intends to survey internally in Wisconsin to see what local educators are already doing in the state and externally to see how other states are doing similar work. It will explore what the Race to the Top states are accomplishing to avoid “reinventing the wheel” and take advantage of the states’ experience, as this program intended. The team will also include local educators in the development of content for this portal and making sure

that it is quality and CCSS-aligned. Wisconsin hopes to evaluate technology readiness among districts and schools, including bandwidth and wireless capability, the availability of devices for teachers, and the availability of devices for students.

VISION STATEMENT

OER will provide an easy, equitable platform for all stakeholders to access dynamic, aligned digital resources that will transform teacher collaboration, professional development, student learning and success toward college and career readiness.

Challenges and barriers: One barrier for the Wisconsin team is the technology itself. These systems are complicated, and they must be scalable statewide and integrate with each other. The team is working closely with technical experts as partners to help determine the correct pathway toward the end goal. The team believes a very important component of this effort's success is to thoroughly understand the various interoperability standards and to be able to articulate these standards to all partners, including people with very limited technical knowledge. The team understands this challenge exists even within the DPI itself and that bringing on colleagues is critically important. The State Educational Technology Directors Association and the U.S. Department of Education Office of Educational Technology are working on communication components

that will help the team address this challenge. Finally, the team sees the limited time available to complete this work as a challenge. There is high demand from educators for these innovations. For the team to be able to address some of these issues statewide, it believes it must focus and devote the resources needed to deploy these technologies. The team has decided to focus on incremental improvements along with the big picture — these steps show progress and provide regular updates to districts that this work is moving along.

Putting it into action

Engaging stakeholders: The Wisconsin team consists of individuals with a mix of specialties — ranging from representatives from the DPI CCSS implementation team, representatives from or the whole team the instructional media services team, the CESA virtual school director, a classroom teacher, a CESA technology directory, and a tagging specialist from the DPI Division for Libraries and Technology. In addition, the team wants to engage other content members from the CCSS implementation team as well as other department content specialists. The team will develop next steps to align OER with the publishers' criteria for the CCSS¹⁹ and Achieve OER rubrics as well as Wisconsin's vision of quality instruction and resources.

Recent developments and outlook: In the collaboration with other states, Wisconsin has clearly identified the two strands of the team's work: technology tagging work and instructional resources. Its goals around the portal development and the process to select aligned materials are based on having the mechanics of tagging and portal development aligned with national standards.

The collaboration with other states has helped to move the team's knowledge forward and reduced the amount of duplicated work. The team has clearly identified the role of OER in the future of education

¹⁹ More information on the publishers' criteria for the CCSS: <http://www.corestandards.org/resources>

content and curriculum alignment. It is promoting this role as an awareness topic in the state with the intent of helping guide districts on how to make informed decisions. The team continues to discuss the two strands of technology and resources.

The Wisconsin team is focusing on incremental improvements. The team intends to convene work groups from the Wisconsin OER Institute team along with additional people involved with the Digital Learning Advisory Council efforts around the content work. State funding will allow the state to move formally into the process of engaging broader teams on a recursive basis across the state in identifying, vetting and tagging content. The team believes that the state's budget for this work will be a key milestone.

Another future goal for the team is to adopt various interoperability standards as it moves ahead with the various statewide data and information systems, i.e., student information system, data warehouse and dashboards system, WISElearn learning management system, content repository, and professional learning community portal. Interoperability standards are an organized and agreed-upon way for diverse technology systems to interact, allowing for the exchange of information

Glossary of Terms

Digital badge – an online representation of a skill or other designation earned by a user

Interoperability standard – an organized and agreed-upon way for diverse technology systems to interact, allowing for the exchange of information

The Learning Registry – a joint effort of the Department of Education and the Department of Defense that is creating an open technology framework to which any content creator can publish, and any technology vendor can leverage for their applications in order to facilitate the sharing of data about educational resources and tools. More information on the Learning Registry is available at <http://www.learningregistry.org/>

Learning Resource Metadata Initiative (LRMI) – an effort co-led by the Association of Educational Publishers and Creative Commons to create a standard tagging specification for learning resources that includes alignment to learning standards, such as the CCSS. More information on the LRMI is available at <http://www.lrmi.net/>

Metadata – descriptive digital information about data, objects, and resources or, colloquially, data about data

OER Commons – a website for teaching and learning materials created by the Institute for the Study of Knowledge Management in education that offers engagement with resources for curriculum alignment, quality evaluation, social bookmarking, tagging, rating, and reviewing <http://www.oercommons.org>

Open Educational Resources (OER) – 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 repurposing by others

Tag – a keyword or term assigned to piece of information that helps describe an item and improve search and discovery of digital information and resources