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Rethinking the State Role in Instructional Materials Adoption: Opportunities for Innovation and Cost Savings

Insights from a Forum for State Board of Education Members and other State Education Leaders

- How well are state instructional materials policies serving our aims to foster excellence and equity in education?
- How cost-effective is the nearly $9 billion a year taxpayer investment in textbooks and other traditional instructional materials?
- What innovations might allow us to rethink how states invest public dollars for classroom content?
- What larger societal trends are changing expectations for the use of instructional materials in schools?

These and other important questions were the focus of a National Association of State Boards of Education (NASBE) forum for state board members and other state education leaders from nine states in September 2009. Participating states included: California, Florida, Indiana, Louisiana, Mississippi, Oregon, Texas, Virginia, and West Virginia. The forum was generously supported by a grant from the William and Flora Hewlett Foundation.

While textbook and instructional materials adoption processes and markets have been an occasional subject of study and critique, there is mounting evidence that our current system—having evolved over many decades of reliance on the traditional printed textbook—is not serving the needs of educators and students as well as it could in the 21st century and is in urgent need of updating.[1] There are a number of good reasons why the time is ripe for states to reframe and modernize their policies around the evaluation and selection of high-quality instructional materials:

- **State budget challenges**, coupled with the one-time availability of **federal stimulus funds**, are spurring state leaders to identify and pursue effective, cost-saving innovations, including through the textbook adoption process.
- The majority of states are moving toward **common academic standards** in English language arts and mathematics that, once adopted, will offer unprecedented economies of scale in the U.S. instructional materials market for content developers and users.
- **Recent technological innovations** provide opportunities both to: a) enhance coverage, interactivity, the timeliness of, and access to instructional materials and b) enhance teacher insights into student engagement and understanding of curricular content.
- **Copyright innovations** fostered in part by the open source movement that offer paradigm-shifting opportunities to states interested in investing for the long-term in cost-effective systems of instructional materials development and distribution.

In addition, the larger arch of federal and state education policy has been moving toward teaching and learning innovations that include strong accountability for student academic attainment and achievement, while moving away from compliance-minded regulation and management of educators and instructional practice. In public statements to date, both President Obama and U.S. Secretary of Education Duncan have gone to great lengths to emphasize the need for openness to new ideas and new approaches to ensuring that all of today's K-12 students are college and career ready by the time they graduate from high school.

Based on presentations and rich dialogue at the NASBE forum, this brief outlines the major components of state

Open Educational Resources (OER)[2]

Questions and Answers

What is OER?

Open educational resources (OER) include materials, tools, and media used for teaching and learning that are free from copyright restrictions or are publicly licensed for anyone to use, adapt, and redistribute. More simply put, OERs are open resources that can be remixed, modified, and redistributed by anyone.

How are OERs different from other digital or free resources?

OERs are distinguished by the fact that they are open, meaning that they can be modified and redistributed freely by anyone. While all OERs are free and most are digital, it is important to distinguish resources that are digital and/or free, but not open. Materials that are digital may or may not be free. Many require the payment of annual licensing fees and prohibit any modifications or redistribution. Similarly, most materials that are free (in terms of cost) do not allow modification or remixing. In addition, free proprietary resources may not always be free and often present data privacy issues, especially for schools.

Why is OER important?

Because they are open, OERs give teachers and learners the ability to remix and customize content, which is an important part of differentiating instruction. In order to differentiate instruction, it is necessary to have a large amount of content that can be remixed and redistributed in a variety of ways and formats that meet different students' needs in terms of language level, learning style, interests, etc. OERs allow this remixability, both legally and logistically. At a higher level, OERs serve the common public good. They can be used by all learners everywhere without paying license fees or risking legal challenges. When the development or acquisition of educational materials is publicly funded, it is in the public interest to require or encourage open licensing as much as possible. Doing so leverages the public investment for the public good, guaranteeing that the benefits will be available to all forever.

What challenges might states face in employing OERs at scale?

States that foresee OERs as a major component of their instructional materials adoption policies and practices will need to address a number of factors related to cost allocation, quality-assurance, and sustainability. While OERs can be free, there remain costs to store and distribute that content, to ensure that there is ready access by students and educators to devices to access that content (whether to computers, other technology devices, or printers), and that educators have the necessary skills and support to use it well. Quality assurance processes will need to be instituted to ensure that modifications to state-approved content are appropriate and timely. And, to provide for sustained availability and use of OERs over time, states will need to ensure that there is leadership within the public education system with the responsibility, authority, and resources to do so. It is possible—and perhaps even preferable—that the costs associated with such leadership could be shared across states.

What OERs are already available and where can I get more information?

- CK12 Flexbooks – www.ck12.org/
- Creative Commons - www.creativecommons.org
- Curriki – www.curriki.org/
- FreeReading – www.freereading.net/
- K12 Open Ed – www.k12opened.com/
- Monterey Institute for Technology in Education – www.montereyinstitute.org
- OER Commons – www.oercommons.org/
- Open Education Community - http://opened.creativecommons.org/
- Wikibooks – www.wikibooks.org/

textbook adoption policies, as well as principles for 21st century instructional materials (with an emphasis on the potential role for open educational resources), and offers state policy recommendations for updating adoption policies to effectively manage the ongoing shift to a hybrid—print and digital—instructional materials model. In addition, a number of innovative state examples are highlighted.

Updating Instructional Materials Adoption Policy for the 21st Century

"Effective teachers need to incorporate digital content into everyday classes."

– U.S. Secretary of Education Arne Duncan

While each state treats the process of instructional materials adoption differently, according to Dumas most share three general characteristics:

- Legislation and/or formal policy that calls for teachers and all students to have access to instructional materials;
- Legislation and/or formal policy establishing the process for the selection, purchase, and distribution of these materials; and,
- A clearly established adoption cycle, which most often staggers the burden and costs associated with instructional materials adoption over the course of four to seven years (or even longer).[3]

The majority of states allow school districts and/or schools to independently establish their own processes to select instructional materials, but more than one-third centralize that decision-making process at the state level. These so-called "state adoption" states comprise some of the most populous states in the nation—including California, Florida, and Texas—and are therefore widely seen as having a disproportionate influence on available products and trends in the instructional materials marketplace.

The instructional materials adoption policies in use today have evolved over decades in a period of exclusive reliance on printed textbooks. Without question, however, these policies are being challenged by the rise of computing technology, the Internet, and multimedia digital content (a growing proportion of which is user-generated) in society writ large. In fact, outside of the public schools, it is students (children and youth) and their use of computers, high-tech devices and the Internet who are fundamentally remaking our relationship with content publishers of every type: news, books, music, television, and movies. Nearly 8 in 10 students regularly use the Internet for classroom assignments.[4]

Recent market research suggests that educators themselves are hungry for digital content and the professional development necessary to take advantage of it. Educators report they would begin to use or would use a larger variety of classroom technologies (including laptops, electronic

Indiana State Board Seeks Innovation in Instructional Materials

"As technology continues to evolve, Indiana's broad and inclusive definition of a textbook will enable districts to evolve in their use of such materials, whether packaged for them or packaged by them."

– Indiana State Board of Education and State Superintendent

In an open letter to Indiana educators about instructional materials, the Indiana State Board of Education and State Superintendent wrote in February 2009 that educators should feel no obligation to utilize the standard form of social studies textbooks and to give thought to what book or other instructional materials can best help bring academic studies to life.

Further, the state board announced that it had reinterpreted the definition of a textbook in Indiana code to allow school corporations to use and be reimbursed by the state for computers and other data devices, instructional software, Internet resources, interactive, magnetic and other media, and other "systematically organized material." Because computers or other data devices are necessary to deliver the content, the state board included them within the definition.

The letter goes on to note that school corporations have already been successful in working with vendors to purchase, for example, low cost, content-loaded mini-laptops, while others have developed their own materials for use with computers. Further, the board encouraged districts and schools to collaborate to lower the cost of purchasing textbooks, computers and other data devices, and their content.

California Calls for Adoption of Open Educational Resources

"California's classrooms will have access to a wider range of online teaching materials that best serve the unique needs of our students, parents, teachers and schools."

– California Secretary of Education Glen Thomas

In May 2009, Gov. Arnold Schwarzenegger launched an initiative to make California the first state in the nation to offer schools free, open, digital textbooks. Content developers were invited by the state to submit materials for review so that schools would have access to standards-aligned digital math and science textbooks—available for download or print—in time for the start of classes in fall 2009. The covered subjects included geometry, algebra II, trigonometry, calculus, physics, chemistry, biology/life science, and earth science.

Several publishers—including individual experts in academia—met the submission deadline of June 15, 2009 by delivering sixteen free, digital textbooks intended to be the primary resource for a course of study, and by agreeing to ensure the stability of that content for two years (although formatting changes are permitted.)

While California uses a state adoption process for K-8 materials and a local-selection process at the high school level, this unprecedented state-level adoption was directed at the high school level. As such, the digital textbooks were reviewed for alignment with California's content standards, but not with social content review standards as is required by other California adoptions of instructional materials. In this case, the overwhelming majority of submissions were found to have complete or very high levels of alignment with the corresponding content standards and are now available for use in California classrooms.

whiteboards, and handheld devices) if only academic content were available. Teachers also report interest in the "eTextbook" concept (that is, an electronic copy of a traditional print textbook that can be downloaded from the Internet or read on a computer or other technological device), with 71 percent reporting they would like to use or increase their use of eTextbooks in the next few years.[5] With the premise that it is inevitable that every American student will eventually have their own "eTextbook," a proposal was even floated during the Presidential transition to provide a "Kindle in every backpack," referring to Amazon's popular eBook reader.[6]

While there are few experts who would argue that the current state textbook adoption process is not at times overly complex and anachronistic, only recently have states begun to consider changes that would allow for real innovation. Many of these state innovations have focused on the uses of technology and digital content, but a few states have begun to experiment with so-called "open source" content, more accurately referred to as "open educational resources." Open educational resources (OER) include materials, tools, and media used for teaching and learning that are free from copyright restrictions or publicly licensed for anyone to use, adapt, and redistribute.

Principles for 21st Century Instructional Materials

To reshape what is currently a highly constrained marketplace in support of our stated educational aims, participants at the NASBE forum recognized the need to lay down a set of high-level principles for 21st century instructional materials that would provide a vision and guide for longer-term efforts. Participants considered the following characteristics as both necessary and desirable for instructional materials:

- ★ They allow for flexible use and control over content by users to meet a range of instructional approaches and modalities and the individualized needs of all students, including access by students with disabilities.
- ★ They are closely aligned with state standards for what students should know and be able to do and with the state accountability system.
- ★ They are accessible "on demand" at the time and place of learning, whether in or out of school.
- ★ They are cost-effective and represent good value for the investment of public dollars.

- They address the needs for ongoing educator professional development.
- They are vetted by subject matter experts and educators to ensure academic quality.
- They are updated frequently to reflect new developments in the content areas and be consistent with the development of new standards and assessments.
- They engage learners through multiple media (in print, online, audio, video), as well as through interaction and simulation.
- They are able to be supported by or grow from voluntary, collaborative inter-state efforts.

Seeking Innovation through Instructional Materials Adoption Policy

With a clearer vision of the most desirable characteristics of instructional materials, participants at the NASBE forum heard a number of examples of the ways states and non-traditional publishers could unleash innovation—if only state instructional materials policies were revised to take better advantage of technological and copyright innovations. While each state's policies are unique and could benefit from a close review, a number of general leverage points were identified, including:

- Shortening—perhaps significantly—state adoption cycles (which are typically about six years in length today) to take advantage of collaborative content

Creative Commons: Permissions Licensing for a Digital Age

The expanded use of open educational resources (OER) can be facilitated by application of new types of licenses designed to provide more flexibility to traditional copyright law. The best known source for these licenses is Creative Commons (CC), a nonprofit organization that works to "increase the amount of creativity (cultural, educational, and scientific content) in…the body of work that is available to the public for free and legal sharing, use, repurposing, and remixing." The idea is to give individuals, companies, and institutions a standardized way to grant a range of copyright permissions to their works. This is in contrast to the all-or-nothing default ("all rights reserved") of traditional copyright law. Following are the six basic types of free licenses provided by Creative Commons, adapted from the CC website.

Attribution—lets others distribute, remix, tweak, and build upon a work, even commercially, as long as they credit the original creator. This is the most accommodating of licenses offered, in terms of what others can do with works licensed under Attribution.

Attribution Share Alike—lets others remix, tweak, and build upon a work even for commercial reasons, as long as they credit the original creator and license their new creations under the identical terms. This license is often compared to open source software licenses. All new works based on the original will carry the same license, so any derivatives will also allow commercial use.

Attribution No Derivatives—allows for redistribution, commercial and non-commercial, as long as it is passed along unchanged and in whole, with credit to the creator.

Attribution Non-Commercial—lets others remix, tweak, and build upon a work non-commercially. Although the new works must acknowledge the original creator and be non-commercial, they don't have to license their derivative works on the same terms.

Attribution Non-Commercial Share Alike—lets others remix, tweak, and build upon a work non-commercially, as long as they credit the original creator and license their new creations under the identical terms. Others can download and redistribute a work, and can also translate, make remixes, and produce new stories based on the original. All new work based on the original will carry the same license, so any derivatives will also be non-commercial in nature.

Attribution Non-Commercial No Derivatives—This license is the most restrictive of the six main licenses, allowing redistribution. It allows others to download a work and share it with others as long as they mention the original creator and link back to you, but they can't change them in any way or use them commercially.

Source: Creative Commons, online at creativecommons.org.

Texas Upends Traditional Textbook Business Model

"I am signing House Bill No. 4294 into law because it will further propel Texas schools into the 21st century and ensure that our students have access to the most up-to-date information available in each subject."

– Rick Perry, Governor of Texas

With the passage of two bills (HB 2488 and HB 4294) by the Texas legislature in 2009, the traditional business model for textbooks may never be the same. Taken together, the bills:

- Provide Texas school districts the flexibility—once they have purchased a classroom set of state board of education-adopted textbooks for each subject and grade level—to purchase with state textbook funds an expanded range of instructional materials and digital content/electronic textbooks, including the technological equipment necessary to support the use of that digital content. The total amount of state support for instructional materials, however, is still calculated on the model of one book per student per subject at a cost of $XX per book (with that dollar figure determined by the state during the time of an adoption cycle).

- Define a new category of electronic textbook: "open-source textbooks." These are textbooks "available for downloading from the Internet at no charge to a student and without requiring the purchase of an unlock code, membership, or other access or use charge, except for a charge to order an optional printed copy of all or part of the textbook."

- Provides the state commissioner of education with the ability to purchase one or more open-source textbooks for a subject or grade level through a competitive process and from the state textbook fund. A state-developed open-source textbook must be irrevocably owned by or licensed by the state for use in the applicable subject or grade level and the state must have unlimited authority to modify, delete, combine, or add content to the textbook after purchase.

A number of other significant changes to the adoption process were included in these bills and the Texas State Board of Education is currently reviewing state agency rules to align the state's textbook adoption and distribution process with the legislation.

development and digital distribution mechanisms. In so doing, state boards of education should consider how frequently content updates are likely to occur in any given subject and the importance of aligning instructional materials to newly adopted state standards and assessment systems. Costs of more frequent adoptions could be managed by shifting to an annual licensing model or by employing open educational resources.

★ Publishing (in readily accessible, open, and standardized formats) detailed information about state standards so small and non-traditional publishers—including publishers of and contributors to open educational resources—can more easily align high-quality content with what students should know and be able to do.

★ Building into the adoption process stronger incentives and expectations for the continual update, revision, and improvement of instructional materials approved for use. Open content would allow for teachers, students, and experts to more easily participate in any systems of ongoing improvements and enhancements.

★ Ensuring that the unique qualities of digital and open content are fairly assessed during state adoption reviews vis-à-vis print materials, including especially their dynamic and intentionally non-linear organization.

★ Reconsidering the extent of *a priori* state reviews of instructional material quality and appropriateness in exchange for regular evaluations of the extent of actual use of approved content by teachers and

students, as well as of the contributions the instructional materials make to student achievement.

- For those states that employ textbook depositories and/or state textbook caravans to distribute and market approved instructional materials to local school systems, establishing clear guidance on how digital and open content publishers can fairly participate in this system and/or establishing alternate, medium-neutral approaches to state supported instructional materials distribution and marketing.

State boards of education that are revising their instructional material adoption policies will need to consider ways to effectively manage the ongoing shift to a hybrid (print and digital) instructional materials model. Since many states are facing similar challenges in making this transition, there is a unique opportunity not only to learn from the experiences of other states, but also to engage in interstate content development collaboratives. Such collaborations can be enabled through open educational resources, especially if such efforts are initiated with clear expectations about the public ownership of content for the expenditure of public dollars.

Related Recommendations

Participants at the NASBE forum left convinced that as a fundamental matter of equity and civil rights state boards of education and other state policymakers need to re-examine and modernize state policies and practices for instructional materials adoption and use for the 21st century. At the same time, participants deeply understood that instructional materials policies are only one component of a larger system of resources and policies related to academic standards, accountability systems, teacher effectiveness, and student achievement. In recognition of the inter-related nature of education policy and out of a desire to promote the use of digital and open educational resources in the states, participants also generated several

West Virginia: Making the Digital Transition

"What does West Virginia Code and West Virginia Board of Education Policy mean for county adoption of instructional materials?

"By definition, textbooks in West Virginia include:

- books,
- instructional materials (systems of instructional materials or combinations of books and supplementary materials which convey information), and
- learning technologies (include, but are not limited to, applications using computer software, computer assisted instruction, interactive videodisc; other computer courseware and magnetic media).

"This language is from legislation last revised in 1993. Today's language would include 21st Century Tools for Schools, DVDs, online learning, e-learning resources, Web 2.0 tools and content-aligned digital resources. Funds for textbooks can be used to purchase instructional materials in any format that provides every student access to content that is current and accurate at home and at school.

"Digital content meets West Virginia Code and provides better access to up-to-date information than is possible with traditional textbooks, which may be up to six years old by the time they reach the classroom. By rethinking the purchase of one textbook for every student, the monies saved can be used to purchase digital and electronic resources such as laptops, site licenses, and subscription-based digital content."

Excerpted from the West Virginia Department of Education's brochure, *Weighing the Options: Making the Digital Transition—Adoption of Instructional Materials*. Available online at: wvde.state.wv.us/materials/documents/MakingtheDigitalTransitionBrochure.pdf

recommendations beyond those strictly addressing instructional materials policy:

- State and federal policymakers should support efforts to ensure robust Internet connectivity to classrooms. Schools are likely to find that available Internet connectivity is insufficient to support large-scale and regular access to digital content, especially interactive and multimedia content, and will need to pursue strategies to increase available bandwidth and to more aggressively manage traffic over local networks.

- Teacher skills and professional development will remain an ongoing issue, necessitating the need for continued dialogue with schools of education and professional associations and unions to ensure the educator workforce is able to rise to the challenge of more technologically dependent classrooms. State boards of education can look to teacher preparation program approval and licensure policies, for instance, as levers to clarify their expectations.

- As the use of digital and open content becomes more prevalent, state boards of education will need to more seriously consider the knowledge and skills students need to effectively and safely navigate and contribute to online content in all its forms (text, image, video, audio). State boards should consider expectations for student technology skills and how "new" digital and media literacies—including Internet safety and ethics—are included in state standards and assessment systems.

Endnotes

1. See, for example, the following critiques on textbooks published over the last two decades:

- H. Tyson-Bernstein, *A Conspiracy of Good Intentions: America's Textbook Fiasco* (Washington, DC: Council for Basic Education, 1988);
- P. Altbach, G. Kelly, H. Petrie, and L. Weis (eds.), *Textbooks in American Society: Politics, Policy, and Pedagogy* (Albany, NY: State University of New York Press, Albany, 1991);
- C. Finn and D. Ravitch, *The Mad, Mad World of Textbook Adoption* (Washington, DC: Thomas B. Fordham Institute, September 2004). Available online at www.edexcellence.net/detail/news.cfm?news_id=335;
- A. Tamim, "A Textbook Example of What's Wrong with Education: A former schoolbook editor parses the politics of educational publishing," *Edutopia* (November 2004). Available online at www.edutopia.org/muddle-machine;
- M. Ezarik, "The Textbook Adoption Mess—And What Reformers are Doing to Fix It," *District Administration*, March 2005. Available online at www.districtadministration.com/viewarticle.aspx?articleid=197;
- G. Fletcher, "How Would You Like Your Content?," T.H.E. Journal (April 2008). Available online at thejournal.com/articles/22390.

2. With thanks to Karen Fasimpaur of K12 Open Ed for her contribution to this material.

3. P. Dumas, *Textbook and Instructional Materials Adoption Policy and Procedures* (Honolulu, HI: Pacific Resources for Education and Learning, February 2006). Available online at www.prel.org/products/pc_/textbook.pdf.

4. Federal Communications Commission, *Status Report on National Broadband Plan* (Washington, DC: Author, September 29, 2009). Presentation available online at www.fcc.gov/openmeetings/2009_09_29-ocm.html.

5. Market Data Retrieval, *K-12 Technology: The Latest Usage and Buying Trends* (Shelton, CT: Author, June 9, 2009). Available online at www.schooldata.com/pdfs/060909_Webinar_Presentation.pdf.

6. T. Freedman, *A Kindle in Every Backpack* (Washington, DC: Democratic Leadership Council, July 15, 2009). Available online at http://www.dlc.org/documents/DLC_Freedman_Kindle_0709.pdf.

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