Open Educational Resources and Public Policy: Overview and Opportunities
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Abstract
At its core, public policy is about solving problems. This paper explores how public policymakers can leverage Open Educational Resources (OER) as a solution. OER policies are laws, rules and courses of action that facilitate the creation, use or improvement of OER. We specifically focus on OER policies that are formally adopted by government entities and that directly connect to OER. Based on our review of the OER policy environment, there are four primary categories: licensing policies, resource-based policies, inducement policies, and framework policies. For each category, we provide examples and discuss the strengths, challenges, similarities and opportunities. We conclude that the public policy environment provides manifold possibilities to leverage OER as a solution, and policymakers at every level of government can take action.

Keywords
open educational resources, oer, public policy, open policy, open licensing, textbooks, education

Introduction
Public policy is the framework in which governments operate — how resources are allocated, what actions should be taken, and how decisions are made. Public policy is most commonly understood in the context of laws and regulations that are visible in everyday life, such as traffic laws or paying taxes. However, it extends broadly and deeply throughout all levels of government — local, state, national and international — and includes many layers of rules, regulations and priorities that constantly evolve in response to new circumstances and outside pressures (Kraft and Furlong, 2007: 5).

At its core, public policy is about solving public problems. As technology has created new capacities to support teaching, learning and sharing knowledge, policymakers have increasingly looked to technology as a solution. For the first time, it is possible to disseminate information to a wide audience at virtually no marginal cost. Digital content can be updated and improved in real time, and distributed instantly with the push of a button. Learners can enrich their own education through the wealth of knowledge available over the Internet, and teachers can educate students on the other side of the world almost as easily as students in their own classroom. These features have the potential to dramatically increase the efficacy and availability of educational opportunities that could address a wide variety of public problems — from the economy to the environment to public health.

Since the movement for Open Educational Resources emerged more than a decade ago, proponents have advocated OER as the most effective model for content in the digital environment (Allen, 2013). OER are defined 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 or re-purposing by others (Atkins, Brown, & Hammond, 2007). OER are
both free of cost and open licensed, meaning that users have the legal right to reuse, revise, remix and redistribute the content.

The purpose of this paper is to explore how public policymakers can leverage Open Educational Resources (OER) as a solution to public problems. We provide a definition of OER policy, an overview of existing examples, and discuss opportunities for the future. This paper does not attempt to provide a comprehensive list of OER policies, nor does it advocate for specific policies. Instead, the goal is to give readers a foundational understanding of the OER policy environment.

**Defining OER Policy**

Generally, OER policies are laws, rules and courses of action that facilitate the creation, use or improvement of OER. OER policies may be principles, laws, regulations or funder mandates, and may be enacted by governments, institutions, corporations or funders. To help distinguish between policies and their potential impacts, there are three important elements to identify.

- **Forum**: the general system or level of government in which the policy operates.
- **Scope**: the limits of the policy, including the timeframe and to whom it applies.
- **Actor**: the entity responsible for formally adopting a policy.

For the remainder of the paper, we will narrow the definition of the term OER policy to the subset of OER policies that are formally adopted public policies that directly relate to OER.

Formally adopted policies are the strongest examples of public policy. Formal policies include laws, regulations, decrees and contracts, and the strength of the policy typically correlates to the formality of the process through which it is enacted. Formal policies are advantageous because they are more durable against shifts in politics, personnel and priorities — to reverse a policy typically requires going through the same process through which it was enacted. In contrast, non-formal policies last only as long as a government decides to support them. For example, initiatives set up by one administration may get eliminated if the government changes. Both formal and non-formal approaches to government action on OER have advantages — it is a tradeoff between endurance and expediency. However, our purposes are best served by focusing on formal policies.

We also narrowed our scope to policies that directly relate to OER, either through explicitly calling for OER or necessarily creating it through open licensing. This distinguishes between OER-focused policies and the broad range of policies that can enable OER as part of a larger framework. For example, a policy supporting digital learning materials might enable the creation, use or improvement of OER, but it is strongest if it either specifically prioritizes OER or requires the use of an open license. While significant opportunities exist for advancing OER through the implementation of broader policies, we are limiting this paper to direct OER policies.

It is important to note that OER policies do not necessarily include the term OER. While it can be advantageous to mention OER for the purpose of building visibility or using commonly understood language, whether a policy uses the term OER is unimportant so long as it includes
an equivalent description. Equivalent descriptions should address both elements of the OER definition — that OER are free of cost and released with open copyright permissions.

Overview of OER Policy
In this section, we provide an overview of formal OER public policy based on our examination of existing and proposed policies that fit the definition we proposed in the previous section.

In our examination, we observed great variation depending on the unique characteristics of the nation, level of government and educational systems in which policies operate. However, we also observed trends and similarities that yield four primary categories for OER policies.

- **Licensing Policies**: insert open licensing requirements into existing systems that create educational resources.
- **Resource Policies**: allocate resources directly to support OER.
- **Inducement Policies**: call for or incentivize actions to support OER.
- **Framework Policies**: create pathways or remove barriers for action to support OER.

Below we provide selected examples of policies from each category and discuss their strengths, challenges and similarities. We should note that we draw many examples from United States (U.S.) policy forums because we are most familiar with the U.S. policy environment. We fully recognize that many significant advances in public policy pertaining to OER have been achieved worldwide, and the examples we provide are not necessarily representative of the global distribution. Similarly, many effective policies have been enacted in non-government forums, such as institutions and schools, but these are beyond the scope of this paper. For a more comprehensive list of policies, see the OER Policy Registry at [www.oerpolicies.org](http://www.oerpolicies.org).

**Licensing Policies**
Licensing policies insert an open licensing requirement into systems or programs that already create educational materials, thereby creating OER. This is a particularly strong public policy strategy, because the argument is clear: if the public pays for it, the public should have the right to use it freely and fully, thereby getting the maximum return on its investment. Government entities can implement licensing policies by conditioning grants and funding allocations on open licensing of the outputs, or in some cases, by exercising their rights as the copyright holder for works created by public employees. Strong licensing policies make licensing mandatory and apply a clear definition for open license, ideally using the equivalent of a Creative Commons Attribution (CCBY) license that grants full reuse rights provided the original author is credited. The implementation stage of these policies is also important; policies should ideally have systems in place to ensure that creators comply with the policy and properly apply an open license to their work.

**Federal Government, United States.** The most prominent example of an OER licensing policy in North America comes from the U.S. Department of Labor’s (DOL) Trade Adjustment Assistance Community College and Career Training (TAACCCT) Grant Program. Launched in 2011, TAACCCT provides $2 billion in grants over four years to improve workforce training programs at eligible higher education institutions. In each of the program’s three funding rounds to date, DOL has conditioned grant funding on the use of a CCBY license or appropriate free software.
license for all works created through the program (DOL, 2014). In the 2013 solicitation for grant applications, DOL states that the goal of this policy is to "ensure that the Federal investment of these funds has as broad an impact as possible and to encourage innovation in the development of new learning materials" (DOL, 2013: 21).

DOL adopted this open licensing policy under its authority to set the terms of grant applications, as specified in the program’s authorizing law (19 U.S.C. 2371(c)(2)). The law itself is not an OER policy because it does not address open licensing or OER, but this example illustrates how the implementation of broader policies can advance OER. Overall, TAACCCT is still a strong example of an open licensing policy, as it specifies the ideal license and makes licensing mandatory. The extent to which grantees will comply with the requirement remains to be seen, as the first round of grants will not be complete until the fall of 2014. However, a project launched by a coalition of non-governmental organizations offers free support to grantees to ensure they successfully comply with the licensing policy (Meinke, 2013).

City of São Paulo, Brazil. Another example in this category is a 2011 decree by the municipal government of São Paulo, Brazil stating that educational works produced within municipal schools must be licensed under the equivalent of a Creative Commons Attribution Non-Commercial Share Alike license and posted publicly on the Internet (Decree 52,681, 2011: Art. 1). Pre-existing policy stated that the government holds the copyright produced by public employees. Therefore, the government was able to exercise its rights as copyright holder to release the works under an open license. The decree also extends the licensing policy to works produced through contracts (Art. 2). This is another example of a strong licensing policy. Although it uses a more restrictive license, the policy is issued by the copyright holder directly, which simplifies compliance and reduces ambiguity. Similar policies have been proposed at the state and federal level in Brazil (Vollmer, 2011), but thus far have not been enacted.

European Commission. The European Commission’s Erasmus+ Programme also contains an open licensing policy. Announced in 2013, Erasmus+ aims at “boosting skills, employability and supporting the modernisation of education, training and youth systems” (European Commission, 2013). The 2014 Programme Guide states that grantees who produce materials, documents and media “should make them available for the public, in digital form, freely accessible through the Internet under open licences” (European Commission, 2014: 12). The award criteria for grants requires applicants to describe how they will make any relevant resources available according to this policy (112). The program allows grantees to select the terms of their open license, but specify that it should be “without disproportionate limitations.” Therefore, this licensing policy is not as strong as the two previous examples, because the definition of an open license is not strictly defined, and because it is not compulsory. However, the policy is still highly significant because of the magnitude of the program, €14.8 billion for 2014-2020 (18), and its connection the European Commission’s Opening Up Education initiative.

Resource Policies
Resource policies allocate funding, staff time, or other resources specifically to support the creation, use or improvement of OER. Typically these policies create programs that carry out OER activities, either directly or through grants to outside entities. This approach can be highly effective for achieving targeted outcomes, as policy language can be crafted to include detailed
instructions that ensure the resources are used most effectively — for example, specifying that OER should be created for specific subjects that will have the highest impact. However, because of the inherently limited nature of resources, this type of policy tends to have a shorter and narrower scope. The potential impact of a resource policy depends on both the value of the resources provided and the strength of the framework in place to use them effectively.

State of Washington, United States. Washington has been a pioneer in this category, with policies that allocate OER funding in both K-12 (primary and secondary) and higher education. Washington enacted its K-12 policy in 2012 through legislation instructing the state superintendent to create a library of OER and conduct an awareness campaign to promote adoption of these resources by schools (H.B. 2337, 2012). The state appropriated $250,000 per year for fiscal years 2013-2015 in support of these activities (H.B. 2127, 2012, Sec. 501(1)(n); S.B. 5034, 2013: Sec. 501(1)(m)), and the program is authorized through 2018. The public policy case for this legislation focused on the shortcomings of the existing textbook system and the opportunity to collaborate with other states. Washington was spending $130 million per year on textbooks, yet they were only available in print and were at least seven years out of date on average (Green, 2012). Washington's adoption of the Common Core — curriculum standards in Mathematics and English common to 45 U.S. states — also created the opportunity for schools to leverage existing OER aligned with the standards, which includes materials that are more up-to-date and significantly less expensive. Overall, this policy is a strong example because it has both funding and a clear framework for implementation. Thus far, the program has successfully begun constructing an OER library and has conducted numerous presentations and workshops across the state (Soots & Nelson, 2013).

State of Washington, United States. Washington’s higher education policy was enacted three years earlier in 2009 through an approximately $2.2 million one-time appropriation for fiscal years 2010 and 2011 aiming to “enhance online distance learning and open courseware technology” in community and technical colleges (H.B. 1224, 2012: Sec. 605(10)). The policy language specifies that the funds must be used to support OER as a means to “increase access, affordability and quality of courses,” with a sole focus on courses that impact the greatest number of students. Similar to Washington’s K-12 policy, the case for this bill centered on the high cost of textbooks for students, which the state partially subsidizes through student financial aid programs. In contrast to the K-12 example, this policy took a relatively unstructured approach, providing only generic guidance on how the funds should be used and leaving the details up to the state agency charged with implementation. In this case, the less structured approach was successful. With additional support from the Bill & Melinda Gates Foundation, Washington’s community college system used this funding to launch its now widely recognized Open Course Library (OCL) program. Between 2010 and 2013, OCL worked with teams of faculty to outfit the system’s 81 highest enrollment courses with free and low-cost courseware, emphasizing the creation and improvement of OER (Washington State Board for Community and Technical Colleges, 2013). The program has been an overall success, saving students an estimated $8.3 million to date and effectively supporting the creation and use of OER through professional development programs (Allen, 2014).

State of California, United States. California enacted resource-based policy in 2012 aiming to create a library of open textbooks for 50 high enrollment courses. In contrast to Washington’s
higher education policy, California provided detailed instructions for the program through two separate bills: one establishing an online library to hold open textbooks (S.B. 1053, 2012: Sec. 2), and the other establishing a faculty council to oversee the development and review of open textbooks (S.B. 1052, 2012). The policy has experienced delays in the implementation phase because of a matching funds condition in the state’s $5 million appropriation — for every state dollar the program wants to spend, it must raise another dollar from Federal or private sources first (S.B. 1028, 2: Sec. 5(f)). While matching funds is a valid strategy to double public investments, the fundraising process can also delay implementation. California's faculty council held its first meeting in early 2014, nearly a year late, and open textbooks are not expected to be available until the 2014-2015 academic year (Murphy, 2014).

Federal Government, United States (proposed). The U.S. Congress is also considering a proposed resource policy entitled the Affordable College Textbook Act (S. 1704, 2013). This bill would provide grants to support open textbook pilot programs at colleges and universities with the goal of making textbooks more affordable for students. The proposed language provides specific guidelines for grant applications, use of funds, and reporting requirements to ensure that applicants follow best practices and freely share the results of their work. The language also includes a strong definition of the term “open license” that specifies the equivalent of a Creative Commons Attribution license:

The term “open license” means a worldwide, royalty-free, non-exclusive, perpetual, irrevocable copyright license granting the public permission to access, reproduce, publicly perform, publicly display, adapt, distribute, and otherwise use the work and adaptations of the work for any purpose, conditioned only on the requirement that attribution be given to authors as designated. (§3(4)).

National Government, Poland. We feel it is important to highlight Poland’s open textbook program under this category, even though the OER component is not policy-based. In April of 2012, Poland’s national government created a broad program to expand information and communication (ICT) in K-12 schools (Centrum Cyfrowe, 2013). As part of its implementation of this program, the Polish Ministry of Education launched a government-funded pilot program that includes the development of digital textbooks. Through the advocacy work of the Polish Open Education Coalition, the Ministry has announced that it will apply an open license to all government-sponsored textbooks (Centrum Cyfrowe, 2013.). This example illustrates how public policy can be leveraged to advance OER, even when the policy language does not specifically mention OER.

Inducement Policies
Inducement policies advance OER by expressing support or making a call for action. These policies often seek to influence practitioners such as faculty or schools to engage with OER. This category shares many similarities with resource policies, but rather than providing resources, these policies operate by leveraging incentives or endorsements to “pull” as opposed to providing resources to “push.” Strong inducement policies offer compelling incentives or strong influential endorsements.
State of Minnesota, United States. Minnesota leveraged its performance-based funding system to promote the use of OER in the Minnesota State College & Universities (MnSCU), the larger of the state’s two public higher education systems. As part of its biannual higher education appropriation bill, the state legislature included OER as one of MnSCU’s five funding-dependent performance goals (S.F. 1236, 2013: Art. 1, Sec. 4). The goal states that MnSCU must collect data on the use of OER and formulate a plan to reduce student instructional material costs by one percent. Five percent of the MnSCU’s 2015 budget is conditioned upon meeting three out of five of the goals. This approach is a strong example of an inducement policy, because it leverages existing state funding to advance OER. While compliance is technically optional — MnSCU could meet three of the other goals or opt to forfeit the funds — the goal provides a strong incentive likely to result in the creation, use and improvement of OER. This policy was strongly advocated by students in the MnSCU system to increase the institution's commitment to lowering the cost of textbooks (Howe, 2013).

State of North Dakota, United States. Two resolutions passed by the U.S. state of North Dakota provide another example of an inducement policy. The resolutions call for the expanded use of open textbooks in the state's public higher education systems. One commissions a study on open textbooks exploring the potential to partner with other states for adoption (H.C.R. 3009, 2013), and the other directly calls on the governing board and faculties of the state's higher education system to increase the use of open textbooks (H.C.R. 3013, 2013). These resolutions are inducement policies because they seek to influence the behavior of others by calling for action and providing information. The results of the study are likely to legitimize open textbooks as a cost-reducing strategy and show the clear benefits of inter-state collaboration. The direct call to action is likely to be influential because the public higher education systems depend on the state legislature for a significant portion of their funding. While this approach is not as strong as the Minnesota example, it illustrates how governments can advance OER independently of resource-based support or incentives.

Framework Policies
Our final category is framework policies, which create or change policy structures to advance OER. This is by far the broadest category, as it captures all policies that do not directly lead to the creation, use or improvement of OER, but instead create pathways or remove barriers in support of future action. The strength of a framework policy depends on the significance of the changes it makes toward enabling OER, although the ultimate success depends on future actions.

National Government, Indonesia. Indonesia's 2012 higher education law contains a strong example of a framework policy. In general, the law makes a broad set of reforms defining the government’s relationship with the nation’s tertiary institutions. Within this law is a provision stating that "the Government shall develop open learning resources for use by the whole Academic Civitas" (No. 12 of 2012 §79(4)). The law does not include specific resources or guidelines for implementing this provision, but it creates a clear pathway for future government action on OER. Indonesia already had a thriving OER movement prior to the enactment of the law, including a national open university and numerous OpenCourseWare repositories (James, Tynan, Marshall, Webster, Suddaby, & Lewis, 2011: 69). Nizam & Santoso (2013:18) present that the higher education law will provide a strong base for expanded work on OER.
State of Utah, United States. Another example in this category is a policy established in Utah’s public K-12 schools stating that educators have the right to share materials they have created for noncommercial purposes (R227-111, 2009). This policy differs from the licensing policies discussed above because it does not require open licensing. Its primary function is to clarify copyright ownership so that educators who wish to share materials they create are free to do so. While the policy does not directly produce OER, it has played a role in facilitating Utah's statewide open textbook pilot program, which works with teachers to adapt open textbooks each year to align with Utah's state standards (Bliss & Patrick, 2013: 6). This is an example of an OER policy that does not mention OER explicitly; it provides an equivalent description by defining open licensing for educational materials and requiring that materials, if openly licensed, be distributed for free.

Provinces of Alberta, British Columbia and Saskatchewan, Canada. A final example is the recent Memorandum of Understanding (MOU) between the Canadian provinces of Alberta, British Columbia and Saskatchewan (Redford, Clark, & Wall, 2014). The MOU expresses the participants' shared desire to collaborate to develop OER and outlines basic principles and expectations for future actions. British Columbia has already made significant advances on OER through a government-sponsored initiative launched in 2012 to develop, review, and disseminate 40 open textbooks (BCcampus, 2014). Like Poland’s open textbook pilot program, British Columbia’s OER work has been programmatic rather than policy-based. In this case, the non-formalized approach has been highly successful and achieved significant outcomes on a short timeline, as compared to California’s formalized program, which launched around the same time but is only now getting off the ground.

Opportunities
In this final section, we will discuss the opportunities for each of the four categories of OER policies we identified.

Licensing policies present perhaps the most obvious opportunity for governments to leverage existing systems to create OER and ensure the public gains the maximum benefit from its investments. Government at all levels typically funds the development of educational materials in some capacity — whether through grant programs, research funding, or the salaries of educators at public institutions and schools. We provided examples of conditioning grants on open licensing for deliverables and exercising government-held copyrights to apply an open license. A significant opportunity not represented in these examples is for governments to enact blanket laws or regulations requiring that all government-funded materials carry an open license. An analogous policy focused on research articles, the Fair Access to Science and Technology Research Act, is currently under consideration in the U.S. Congress (S. 350, 2013).

Although the need for governments to allocate specific support makes resource policies more difficult to enact, they are an effective mechanism to accelerate OER creation in strategic areas. One of the advantages of OER is that once created, the material can be used forever, for free by everyone. There is a tremendous opportunity for governments to collaborate and pool resources to develop a robust OER infrastructure with content across basic fields, from which the entire world could benefit. Resource policies could also focus on supporting innovators and entrepreneurs to establish sustainable models that can ensure the continuous improvement of
OER in the future. Equally important to the creation and improvement of content is support for adoption and use. Educators are still adapting to the digital environment, and ease of discovery and use are important conditions to enable OER adoption (Allen & Seaman, 2012: 3). Out of the four policy categories, resource policies are best equipped to provide support to educators, so prioritizing adoption in this category may use public resources most effectively.

Inducement policies can provide a good avenue in environments where funding is scarce. In cases where the policy provides a sufficiently strong incentive, this category can achieve similar ends to resource policies. The example from Minnesota provides a particularly strong model that leverages existing resources to incentivize institutions to support OER. More than a dozen U.S. states and a number of systems in other countries use performance-based funding (Miao, 2012), which could similarly incorporate OER. Policymakers could go a step further and condition public funding on the adoption of OER policies at the institutional level. On the other end of the spectrum, the example from North Dakota illustrates how a government can back OER independently of providing resources.

The broadest range of policy opportunities exist in the framework category, as there are manifold ways policy can create pathways for OER in different forums, including paving the way for other types of OER policy. Given the significant opportunity for collaborative OER development, Canada’s example of a tri-province agreement is particularly noteworthy. Countries, states and municipalities — especially those that share languages and cultures — may consider similar agreements. Another significant area of opportunity for framework policies is in removing barriers. In forums where public policy influences the tenure and promotion process, incorporating OER could remove a significant disincentive to publishing openly rather than through proprietary outlets. Other barriers that can be addressed through public policy include procurement policies that prevent the use of free resources, or exclusive vendor contracts with book companies.

**Conclusion**

Overall, there is a tremendous opportunity across the globe to leverage OER policy to solve problems facing society. Our examination of existing policy efforts illustrates the breadth of OER’s relationship with public policy, spanning all levels of government and a wide range of policy areas. The specific policy opportunities vary greatly based on the particular forum, but we feel confident concluding that every government can enact some form of OER policy — whether it is as broad as a government-wide open licensing mandate or as simple as a resolution in support of OER. While public policy is one of many avenues for advancing OER, it provides a particularly important lever for creating change in that even small changes to policy can have a large impact on the creation, use and improvement of OER. For this reason, public policy is an important part of a global framework to advance education and knowledge for the public good.

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