Investigating the Intersections of Open Educational Resources and Inclusive Educational Practices

by

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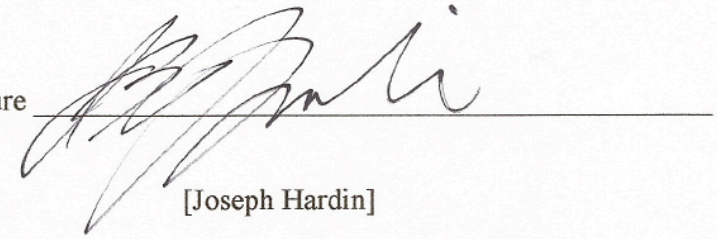
Signature 

[Joseph Hardin]

Abstract

As the delivery of educational content shifts from 'brick and mortar' classrooms to online delivery, two practices have emerged to support the needs of online learners: providing Open Educational Resources (OER), and applying Inclusive Educational Practices (IEP). OER permits the transformation and redistribution of material into other languages and formats. IEP aims to enable access for individuals of diverse capabilities, backgrounds, and ages.

Not much research has been done on how OER and IEP mutually reinforce each other. For example, text-based OER materials have an open copyright, which allows for their revision and conversion into formats that are compatible with assistive technologies, such as a screen reader, whereas non-open copyrighted materials would prohibit similar conversions and their distribution. Likewise, IEP provides guidance on how open materials should be presented to students, such as encouraging early and complete availability of full course materials to students; this would help differently-abled students find their own ways through the materials.

This Major Research Project examined these mutually reinforcing practices through two interrelated phases: a theoretical phase conceptualizing a set of dimensions that describe how these two practices share mutually reinforcing underlying themes; and a practical phase operationalizing these theoretical dimensions to design an online survey to further explore whether and how faculty value and make use of these practices along these dimensions. The survey can generate empirical data to further understand these mutually reinforcing dimensions and can also inform advocacy for open and inclusive practices.

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Dedication

To my wife, Susan, without whom this would not have been possible

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Introduction - Open Resources and Inclusive Education

The educational world is experiencing an explosion of activity on-line, as colleges and universities provide on-line course materials and engage in distance learning initiatives and experiments (Barczyk, Buckenmeyer & Feldman, 2010; Diaz, 2010). Hybrid learning experiences, where materials are on-line and interactions are either fully or partly face-to-face, have become commonplace. As more learning takes place on-line (Mayadas, Bourne, & Bacsich, 2009; Moore, 2013), and typical learning situations come to rely on on-line content, the presentation of that content becomes more important. The need for on-line materials to be available to everyone in forms that are maximally usable therefore becomes increasingly important.

"Open" approaches to content have emerged as important components that support this growing on-line repertoire of educational material (Hockings, Brett, & Terentjevs, 2012; Simpson, 2013). Content is considered open when the licenses that accompany the material include permissions to translate and transform it into other languages and forms, and to redistribute it. Two examples of open content, or Open Educational Resources (OER), are Open CourseWare (OCW)[1] and Open Access (OA) literature. Open CourseWare is college and university course content that anyone is allowed to revise, reuse and redistribute (Carson, 2009; Caudil, 2013; Hylén, Damme, & Mulder, 2012). Open Access

[1] The term "Open CourseWare" will be used here to refer to the materials that are provided as open content, as opposed to the "OpenCourseWare" project of MIT (Koohang & Harman, 2007; Johnstone, 2005).

literature includes the journal articles and other publications that many teachers and researchers make available for anyone to view and read. The result of OCW and OA is an expanding set of useful open educational materials from leading schools and teachers. Producing such open materials becomes increasingly important as teaching shifts from physical classrooms to on-line delivery and as open efforts themselves grow as more higher education institutions embrace them. Understanding how faculty members think about such open practices is crucial to understanding the current influence and future impact of open initiatives, because it is faculty members who produce the educational material and decide how the material will be presented. The choices they make can make the materials more or less available to a growing world of learners.

As teaching has increasingly moved toward online delivery, the number of people with recognized disabilities who are attending advanced educational institutions has also increased. This has drawn attention to Inclusive Educational Practices (IEP). For these learners, their on-line experience is enhanced, and sometimes made possible, by accessible forms of content and its presentation in ways that give them entry to it (Black, 2012; Treviranus, 2000). Additionally, expanding notions of who might be classified as disabled has sensitized educators to the needs of a large segment of the student population identified as having learning-related disabilities or is acquiring them due to e.g., work related disability or age. Indeed, social models of disability have shown that everyone is relatively

disadvantaged when their capabilities are viewed within the social context in which they are applied (Buntinx, & Schalock, 2010; Oliver, 2009). The study of IEP has focused on these contexts, the needs of user communities, and the perceptions of the faculty who teach within these communities. IEP has contributed to our understanding of what strategies can make materials accessible in order to improve the pedagogy of their on-line use for growing numbers of students.

The interactions and potentially mutually reinforcing benefits that exist between open and inclusive educational practices need to be better understood if a firm foundation for effective on-line materials that meets the growing needs of all students is to be provided. Introducing and educating the OER community to the benefits that learners derive from educators' use of inclusive pedagogical methods can make open materials much more useful. In the long term, the expanded use of content that is both inclusive and open could enable learners to have greater access to higher education material than ever before, as they will be able to access it at their own pace, at any time, and from anywhere in the world (Scott, Tomadaki & Quick, 2007). The rapid expansion of Open Educational Resources and Inclusive Educational Practices, together with their intersecting priorities, therefore, provides an opportunity for improving and expanding education universally.

Questions

Question 1: What are the intersecting areas of Open Educational Resources (OER) and Inclusive Educational Practices (IEP) investigations, particularly investigations in attitudinal research among faculty of institutions of higher education?

Question 2: What survey questions and scales can be developed to investigate the beliefs, attitudes, intentions and actions of faculty in Open Educational Resources (OER) — specifically Open CourseWare (OCW) and Open Access (OA) — and in Inclusive Educational Practices (IEP), in the overlapping areas of interest identified in answering Question 1?

Purpose

The purpose of this project is to develop a well vetted Core Survey and Question Bank that can help researchers and advocates at higher education institutions develop and deploy largely on-line surveys that reveal how faculty at their institutions perceive open scholarship and inclusive educational practices. It is expected that the results of the surveys will increase our knowledge of how the faculty members think about open and inclusive practices and what actually contributes to the development of their ideas about participation in these areas. In addition, advocates at higher education institutions will be better able to advocate for open and inclusive practices if they have a better understanding of both the

mutually reinforcing aspects of open and inclusive approaches to teaching and learning, and the beliefs, attitudes, and intentions around issues of open scholarship and inclusive practices that faculty at their home institutions hold.

Rationale

This investigation is expected to increase our understanding of open and inclusive teaching practices among faculty members of higher education institutions at a time when adopting or rejecting these practices can profoundly affect the current generation of learners and the future of education. By seeking to understand the underlying concepts of these educational approaches and then using those understandings to develop tools to investigate the relevant beliefs and actions of faculty in higher education institutions, this work can facilitate growth in this area of investigation. Consequently, it can also increase our collective understanding of the people at the center of these educational innovations. If on-line educational content and experiences for everyone are to be improved, there needs to be a clear understanding of how the people who provide that content and contribute to those experiences think and act. This research seeks to investigate conceptual and practical tools to investigate the beliefs, attitudes, intentions and actions of faculty members in institutions of higher education.

Scope and Limitations

This study comprises a theoretical phase followed by an operationalization phase. The scope of the theoretical phase includes a survey and analysis of the Open Educational Resources (OER) and Inclusive Educational Practices (IEP) literature to reveal commonalities in approaches to teaching and uses of teaching materials. For OER, it focuses on Open CourseWare and Open Access literature and, for IEP, it focuses on accommodation and Universal Design. This phase includes investigating existing scales from studies completed in the last 10-15 years, generating new questions, and selecting relevant question sets to tap the areas of interest and overlap identified in the literature review. It includes review and analysis of the appropriateness of the questions, including reliability measures, where possible.

The scope of the operationalizing phase includes developing a well-founded, efficient and easily applied survey, in English, for investigating OER and IEP, which addresses potentially mutually reinforcing points of overlap. The survey tools developed include a core survey, which covers the central areas of overlap identified in the theoretical phase, and a question bank, which has sets of questions that cover several areas in OER and IEP in greater detail than the core survey. Researchers and advocates can add to the core survey from the open question bank to customize and localize surveys for their school or organization.

A limitation of the study is that a survey using the combined question sets has not yet been applied to a relevant population. Although they were pilot tested during development, many of the questions collected here have been applied in the past to investigate OER or IEP but not the two together (Hardin, 2012a, 2012b; Lombardi, 2011, 2013b). Data from such a survey would be needed to analyze the underlying constructs that the questions strive to capture and the overall hypotheses of relationships between OER and IEP beliefs, attitudes, intentions and actions. While the survey question sets have been constructed, reviewed and evaluated in this study, and the core survey has been pretested — making it ready for use — much will be learned from its first application to an appropriate population of significant size.

Report outline

This chapter introduced the research questions and provided an overview of the purpose, rationale, scope and limitations of the study. The following chapter, Theoretical Foundations, provides a review of the theoretical background in relevant areas of Open Educational Resources (OER) and Inclusive Educational Practices (IEP). The next chapter, Phase 1, conceptualizes dimensions of transparency, transformability and universality that are posited as shared between OER and IEP, and discusses student interests in these dimensions. The following chapter, Phase 2, describes the operationalization of these dimensions in a survey instrument, and a larger library of questions that can be used to supplement the

survey and customize it for local application. Finally, the Conclusion synopsizes the research and discusses further work in this area.

Theoretical Foundations

The work of social psychologists Fishbein and Azjen is useful for discriminating between and investigating actors' beliefs, attitudes, intentions and actions (Azjen, 2011; Fishbein & Azjen, 2011). Their theory of reasoned action describes relationships between these concepts and shows that beliefs, attitudes and intentions can be used to predict actions. Beliefs are considered to be perceptions of states of affairs that a person holds. Perceptions are, as much as possible, independent of evaluations of those beliefs, while evaluations of states of affairs — for instance as good or bad, useful or not useful — define attitudes. In this view, if someone thinks that placing their course materials on a local website is a good idea, then they have a positive attitude toward that. Intentions are orientations to actions that could be taken in the future by an actor. If an actor states that they will do something, or intends to do it, they have that intention. Actions are the results of intentions that an actor realizes. While not all actions may be the results of intentions, following the theory of reasoned action behavioral intentions are investigated to predict actions (Fishbein & Azjen, 1975).

Fishbein and Azjen's (2011) approach can be used as a guide to develop questions and surveys that investigate how faculty think about OCW, OA and IEP, and how their beliefs and attitudes affect their intentions to act and, ultimately, their actions themselves. This approach provides a framework for investigating the areas of

overlapping and mutually reinforcing ideas and practices that this report identifies in the areas of OCW/OA and IEP.

The History and Conceptual Foundations of Notions of Open Content

The notion of Open Educational Resources (OER), and more specifically Open CourseWare (OCW) has multiple beginnings, but grew largely out of Open Source Software (OSS), Open Content and Open CourseWare initiatives (Carson, 2009; Terrell & Caudill, 2012). The term "open content" grew out of early efforts to develop a working concept of materials that would be open, similar to open source software and its documentation. David Wiley referenced these efforts when he coined the term "open content," in the Open Content License of 1998 (Caswell, Henson, Jensen, & Wiley, 2008; Hilton, Wiley, Stein, & Johnson, 2010). This was followed by the Gnu Free Documentation License (GFDL) first released in draft form in 1999 (Stallman & Gay, 2009). Indeed, Wiley and Stallman, the originator of the family of Gnu Public License licenses, including the GFDL, discussed their ideas concerning open content together early on (Wiley, 2003).

At about the same time, the Massachusetts Institute of Technology was having internal discussions about the future of its Internet educational efforts: should they enter into agreements with some of the then rapidly growing commercial ventures predicting the end of "brick and mortar" educational institutions, start their own

web company to realize the value of their faculty's intellectual property contained in teaching and classroom materials, or chart a different path (Abelson, 2008; Lerman & Miyagawa, 2002)? Throughout the year 2000, the discussion continued among a faculty task force appointed by the MIT Provost, while studies and market analyses were undertaken to determine the likely results of various options. The result was somewhat unexpected, as MIT decided to release the entirety of its classroom material corpus as open content, free for use by anyone under the conditions of the newly created Creative Commons (CC) licensing framework, which emerged as a defining feature of much open content (Creative Commons- History).

Creative Commons licenses specify the conditions under which material covered by the licenses may be reused, revised or transformed, remixed or combined with other content, and/or redistributed by anyone desiring to do so (Creative Commons- About the Licenses). In contrast to all rights reserved (ARR) copyright licenses, CC licenses are often referred to as "some rights reserved" and put explicit, but limited, often easily met conditions on users for the reuse of the covered material (Caswell, Henson, Jensen, & Wiley, 2008; Hilton, Wiley, Stein, & Johnson, 2010). The simplest forms of CC licensing may require attribution of the materials (CC-BY) (Heuffel, 2007; Hurta, 2006), may restrict commercial use of the materials (CC-NC), or may require that derivative products be redistributed under the same conditions (CC-SA), or some combination of these terms, such as

the BY-NC-SA license adopted by the MIT OpenCourseWare Project (Abelson, 2008). Hence CC licenses serve the purpose of telling users explicitly, and without any need to contact the creator, how the materials may be reused, transformed, remixed with other materials, and redistributed.

As David Wiley (2010) put it, the “open” in “open content” is really a function of these four abilities on the part of users:

> Put simply, the fewer copyright restrictions are placed on the user of a piece of content, the more open the content is. The primary permissions or usage rights open content is concerned with are expressed in the "4Rs Framework:"
>
> Reuse - the right to reuse the content in its unaltered / verbatim form (e.g., make a backup copy of the content)
>
> Revise - the right to adapt, adjust, modify, or alter the content itself (e.g., translate the content into another language)
>
> Remix - the right to combine the original or revised content with other content to create something new (e.g., incorporate the content into a mashup)

Redistribute - the right to share copies of the original content, your revisions, or your remixes with others (e.g., give a copy of the content to a friend)

Content is open to the extent that its license allows users to engage in the 4R activities (Wiley, 2010, p. 9).

Open CourseWare and Open Educational Resources

The definitions of the underlying priorities of open content — reuse, revise, remix, redistribute — grew out of the projects that first developed open materials and made them available to the public (Carson, 2009), including the MIT OpenCourseWare project. The MIT OCW project rapidly grew and became one of the cores of a global effort to develop, distribute and integrate open content into teaching and learning materials across the educational spectrum, from developed to under-developed countries and from kindergarten to higher education. The definitions of open content used in the MIT Open Courseware project were adopted and refined for use in other, similar projects (Wiley & Gurrell, 2009).

The larger area of Open Educational Resources (OER) now includes open content and Open CourseWare (OCW), as well as Open Access (OA) journal publishing, open textbooks and open educational objects of various sorts, which are often referred to as learning objects (Windle, Wharrad, McCormick, Laverty, & Taylor, 2010), and are not contained within the framework of a course as OCW materials

are. In addition, OER includes open data and research efforts, open source software, and open teaching projects and experiments, among other open initiatives (Atkins, Brown, & Hammond, 2007; D'Antoni, 2009). Across these efforts, open content has retained its fundamental features of reusability, revision, remixing and redistribution.

OCW adds the framework of a course to the idea of open content, as the definition put forth by the OCW Consortium (OCWC) (2013) reflects. The term OER was coined by UNESCO and refers "to the open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes." (UNESCO, 2002, p. 1)

OER was later refined by UNESCO as:

> teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions (Unesco, 2012, p. 1).

OCW is a subset of OER and describes educational materials organized with the structure and components of a course. As the OpenCourseWare[2] Consortium puts it:

> OpenCourseWare is the name given to open educational resources that are presented in course format, often including course planning materials, such as syllabi and course calendars, along with thematic content, such as textbooks, lectures, presentations, notes and simulations. Open Educational Resources are materials developed by experienced educators that are available for use, repurposing, and modification (including translation), in whole or in part, by everyone, everywhere in the world (Open Courseware Consortium).

Both OER and OCW embrace the priority of the "transformability" of the available content, meaning that it can be revised, reformatted, translated, remixed, and reused as the user sees fit.

The course framework component of OCW adds another priority, that of "transparency," of presenting the complete set of materials for the session in a structured form, that of a course. Smith and Casserly (2006) point out that full sets of course materials, which are the essence of OCW, are part of the larger set of OER, which can be composed of "full courses, course materials, modules,

[2] The OCWC uses the form "OpenCourseWare" to refer to all OCW materials, not just the MIT project.

textbooks, streaming videos, tests, software, …" among other things (p. 8). The critical step that MIT took in establishing the OpenCourseWare project was to focus on courses, not just their components (Abelson, 2008) and, as the definition preferred by the OCW Consortium states, this is a distinguishing feature of OCW. The MIT OCW project brought together both the content—the course materials—and the structure of the course, with its sequential form and hierarchy of learning steps and goals, thereby providing a new level of transparency to MIT's course offerings.

In addition to the priorities OCW places on transformability and transparency of the course and its contents, is a third core theme, universality (Open Courseware Consortium). OCW materials, by being made available to everyone on the global net, are universally available.

Open Access.

Open Access (OA) materials form an interesting middle ground between non-open materials and OCW. OA materials are defined by Suber (2004) as literature that is "digital, online, free of charge, and free of most copyright and licensing restrictions" (p. 2). OA shares the universal access features of OCW as it is available, minimally for reading, at no cost to anyone who is able to get on-line, manipulate web tools and make use of the materials in the offered format. However, OA materials do not necessarily share the feature of transformability.

They may be made available with either open licenses that allow for transformation, or restrictive licenses that do not allow them to be reformatted, translated or otherwise manipulated to fit the needs of users. “Open Access” in its central sense simply means availability for reading, nothing else. Efforts to encourage the use of CC-like licenses by OA journals recognize this as an important limitation within OA publishing in (MacCallum, 2007; Suber, 2004). A number of OA initiatives, including the Budapest Open Access Initiative (2002), the Bethesda Statement on Open Access Publishing (2003) and the Berlin Declaration on Open Access to Knowledge (2003) have tried to extend the definition of OA to encompass various of the open requirements for remixing, revising and redistribution.

A comprehensive study of faculty perceptions and practices concerning OA was done by the Center for the Study of Higher Education (Harley, Acord, Earl-Novell, Lawrence, & King, 2010). This study found significant differences between disciplines. The questions on OA developed for the Core Survey recognize this and probe for discipline among respondents. Previous survey studies done by the author have explored the perspectives of researchers and research faculty on both OCW and OA (Hardin & Canero, 2010; Hardin, & Hodgkinson-Williams, 2011; Hardin, 2012). .

Faculty Perceptions of OER, OCW and OA

Reviews of the initiatives around Open Educational Resources (OER) have often focused on the institutional aspects of OER production and the development of models for OER adoption. The review by Schuwer, Lane, Counotte-Potman and Wilson (2011), for example, describes models of OER production. Kursun, Wilson, McAndrew and Cagiltay (2010) state, "we will examine these different initiatives in terms of content production, content type and revenue model" (p.2). Likewise, Downes (2007) delineates a range of models for sustainable educational resources. These efforts, valuable in their own right, often proceed without an investigation of the beliefs, attitudes and intentions of the faculty of the institutions under discussion who contribute the OER. Indeed, the analyses often proceed without asking questions about faculty support and how one model for sustainability might enhance that support or not. Some work, such as "Bootstrapping a Culture of Sharing to Facilitate Open Educational Resources" by Davis et al. (2010), has focused on the development of local communities of contribution, but often the work focuses on strategies, rather than the underlying understandings of the faculty involved.

Notions concerning what actually constitutes OER, and approaches to the development of educational efforts grounded in OER have proliferated since the beginning of open educational content efforts. While there is a large set of discussions concerning the various aspects of this phenomenon, the research of

interest for current purposes has focused on institutional efforts to establish OER projects and often on strategies for sustainability, as well as the use of OER materials (Atkins, Brown, & Hammond, 2007).

The first of these discussions, looking at how potential communities of contribution (Atkins, 2007) are established, focuses on arguments or tactics that might be useful in engaging their participation in OER efforts, but does not explore what current faculty members think about OER. The work is valuable; however, it might be enhanced if there were a clearer understanding, both globally and locally, of the thinking of faculty concerning their contribution of materials to local OER, and particularly to OCW and OA efforts. Recent research and development, such as the OU OportUnidad project (http://www.oportunidadproject.eu/es/proyecto.html) has recognized the value of starting out with a deeper understanding of the population of interest in OER efforts i.e., the members of the scholarly communities of higher educational institutions (HEI). These studies are integrating a survey of faculty at target institutions as a component of their efforts to "Raise awareness and widen HEI participation in open educational practices and resources" (http://www.oportunidadproject.eu/proyecto.html).

Some research has been done on faculty attitudes concerning OCW at institutions that have already engaged in OCW projects (Carson, 2009; Lee, Albright, O'Leary, Terkla, & Wilson, 2008; Bilges 2013). The research conducted at MIT

is very useful, and investigates a number of important dimensions of faculty and student beliefs and attitudes concerning their creation and use of OCW, including the impact that faculty perceived on their own standing within their particular scholarly community (MIT Survey: Internal Benefits, p. 1). It found, for instance, that 34% of the faculty who published on MIT's OCW site agreed the site had "increased their professional standing" among colleagues. As can be seen, this is a retrospective survey, where faculty were queried about the effects that OCW and their participation in it have had. Prospective questions, which asked faculty members about a hypothetical, and then new and emerging, local OCW site were asked in the University of Michigan studies that the author engaged in between 2007 and 2010, and in subsequent studies done in Europe, Africa, and Australia (Hardin & Canero, 2010; Hardin, 2012).

Significant work has been done around attitudes and beliefs toward Open Access journal publishing by the Center for Studies in Higher Education (CSHE), particularly the final report: Assessing the Future Landscape of Scholarly Communication: An Exploration of Faculty Values and Needs in Seven Disciplines (Harley, Acord, Earl-Novell, Lawrence, & King, 2010). The research on OA done by CSHE is an excellent example of looking at the beliefs and perceptions of faculty toward opening up the materials they produce and use. The study was founded on extensive interviews and analysis of survey research that delved deep into the beliefs and perceptions of faculty at institutions of higher

education. This research developed a number of valuable probe questions and is an effective example of surveys coupled with open-ended interviews of subjects, extensive segments of which were published in the final report. The study also highlighted the discipline-specific nature of faculty members' willingness to contribute to or use open access journals.

The History and Conceptual Foundations of Inclusive Education

Inclusive Education

Studies devoted to making educational resources available to a wider population, particularly people often referred to as having various forms of disability, have a long history (McCuen, 1997). The term "inclusive education," however has only come into use since the 1980s with the rise of discussions surrounding inclusion of people with various forms of learning disabilities in classrooms (Lipsky & Gartner, 1997). This follows the research and advocacy surrounding "mainstreaming" or "integration" of people with disabilities or "special educational needs," which is a partial form of inclusion. The inclusive approach often emphasizes the rights of students to participate in all the activities of the classroom, rather than approaching students with disabilities as qualitatively different than others and, for example, placing them in the mainstream classes for only part of the day (Peters, 2007). The rise of a "social model of disabilities," which recognizes that everyone has different abilities and that these are only

realized as advantages or disadvantages when seen in their social context, has reinforced ideas that education should recognize the variety of skills and needs of students, and be carried out accordingly (Barnes, 1998; Hughes & Paterson, 1997; Shakespeare & Watson, 1997). This leads to an approach that sees inclusive education methods as providing the necessary infrastructure for the participation of everyone in an optimized online learning environment. One feature of this infrastructure that is important in the literature are forms of transformability, in the sense of providing multiple formats or easy generation of the variety of formats assistive devices use, and the ability to translate the materials into forms more easily understood by students (Lombardi & Sala-Bars, 2013). Another important feature of inclusive environments is the transparency of the materials, that is, the timely provision of effective, easily viewable organization and sequential structure for those materials (Cook, 2009).

Universal Design

A number of studies that approach these issues from the direction of Universal Design (UD) provide an entry to the literature on inclusion in education. The growing need for inclusive methods is recognized in, for instance, the United States, where, "There is an increasing number of students with disabilities entering into higher education, 10.8% from 7.2% over two decades" (Black, 2012, p.v). And the response is to advocate for a more inclusive educational environment: "As this proportion increases, a more inclusive environment in

higher education is needed, and universal design for learning (UDL) can serve as a solution" (Black, 2012, p. v). This provides a valuable bridge for our thinking about open content and inclusive education in the context of traditional accessibility studies concerned with those with disabilities.

As Lombardi, Murray, and Gerdes (2011) synopsize:

> Several recent efforts have extended UD beyond physical features of environments to classroom teaching and learning (Edyburn, 2010; Orr & Hammig, 2009). These efforts are supported by corollary "frameworks" including Universal Design for Assessment (UDA; Thompson, Johnston, & Thurlow, 2002), Universal Design for Instruction (UDI; Scott et al., 2003), and Universal Design for Learning (UDL; Rose, Harbor, Johnston, Daley, & Abarbanell, 2006), and seek to promote maximum usability and accessibility in the planning, delivery, and evaluation stages of instruction. In a literature synthesis, Orr and Hammig (2009) articulated that the three major frameworks—UDA, UDI, and UDL—have...themes in common" (p. 2).

It is the focus on "seek[ing] to promote maximum usability and accessibility in the planning, delivery and evaluation" in instruction that is primarily of interest (Lombardi Murray & Gerdes, 2011, p.2). The organization of materials so that they provide clear entry points for users, and thus open up alternatives in how

they are navigated and used, lead to priorities involving the early and complete availability of detailed, complete online course materials. This approach also leads to recommendations for alternative formats by Lombardi, emphasizing transformability.

Examples of these priorities can be found, from the faculties' perspective, in the questions asked by Cook et al. (2009), in a study that investigated both the agreement of faculty with statements about inclusive education and faculties' ranking of the importance of those statements. This was from a study that surveyed faculty across eight college campuses in the mid-western United States (Cook, Rumrill, & Tankersley, 2009). Among the statements faculty were asked to evaluate were:

> Faculty members present course content in a well-organized, sequential manner that is paced to account for variations in students' learning styles and abilities.
>
> Faculty members provide lecture and course material in a wide variety of formats and media (Cook, Rumrill, & Tankersley, 2009, p. 91).

Faculty members ranked both these measures high in importance, though lower in their actual implementation. Transparency and transformability both appear to be important priorities in the area of inclusive educational materials, as they do in OCW educational materials.

Universality is equally important among professionals who provide services to people with disabilities, as Dukes (2006) showed in a survey study that included professionals in higher education who deliver such services. The study showed that the highest percentages of disability service professionals ranked online course delivery of materials, and the value of UD to reduce the need for accommodations and provide benefits for all, among the most important aspects of their work.

Phase 1: Theoretical Conceptualization of Dimensions Describing Shared, Potentially Mutually Reinforcing Themes of OER and IEP

Having reviewed the history and definitions of OER and IEP in the previous section, this chapter will now aim to discuss how aspects of OER and IEP are potentially mutually reinforcing. Mutual reinforcement will be demonstrated by showing how both OER and IEP include aspects that can be shown to correspond to three common themes: a) the availability of complete course materials to *transparently* show how a course is organized, b) the ability to *transform* course materials to meet the needs of individual learners, and c) the need to provide course materials to a *universal audience*. These common themes will serve as the foundation for the survey that is the focus of the second phase of the study.

The sections that follow will first discuss how OER, and specifically, OCW, present materials in a transparent way that aides the needs of diverse learners, and how transparency is consistent with IEP recommendations. Additionally, OER will be shown to support access or approachability to all materials, as IEP encourages, for diverse learners by enabling transformation into alternative formats. Finally, the shared concept of universality, which permeates both IEP and OER approaches, will be discussed.

Transparency in OER.

Let us first consider how OCW presents materials more 'transparently' by providing a comprehensive overview of what a course contains and what will be expected of students. Transparency can be demonstrated via the classic OCW example from the previous chapter: On the ocw.mit.edu site, courses minimally have a syllabus that provides an outline of lectures and readings. This syllabus is often supplemented with other materials, such as quizzes, recitations, and multimedia. Multimedia could include interactive simulations or videos, recordings of lectures, or problem sets (sometimes with solutions). In some instances, more specialized materials are also included, such as blueprints, chemical or mathematical formulas (along with tools to manipulate them), or portfolios of images. All of these 'learning objects' are organized within a structure that is intended to be recognizable to the majority of students (for example, as a sequential set of learning materials), as a course. Through transparency, OER aims to enable students to approach the materials *at their own* speed, *from a variety* of directions, and by utilizing *different learning styles*. Let us next discuss how the *transparency* of OCW supports the aims of IEP.

Transparency in IEP.

A central theme revealed via the previous chapter's review of IEP was the need to make course materials available to students with disabilities, often focusing on

students with learning as well as other disabilities, so that students can use the materials at their own pace and find their own routes through the material (Cook et. al, 2009). For example, Cook's work on attitudes among faculty toward accommodations for persons with disabilities showed that making materials available early and in a consistent framework throughout a course is thought to aid learners: This appears to be the same as, or akin to, the *transparency* exemplified through the organization and structure that accompanied materials in the MIT OCW example. In both cases it is the existence of a clearly articulated structure that encompasses the whole set of course materials, and is available to the students to see and use that provides what we are calling transparency.

Within the context of IEP, where the objective is to produce designs that meet the needs of individuals, e.g., with perceptual-motor capabilities that differ from the norm (such as those with vision, hearing, and/or motor disabilities), making materials available in multiple formats could facilitate *transparency* by enabling audiences to choose and use those most approachable by them (Cook et al., 2009). However, the range of possible individual differences is vast, and so customization could be facilitated when materials are made available in an open format that enables their *transformation*. This notion of transformability is yet another way that OER appears to serve the needs of IEP and is elaborated next.

Transformability in IEP and OER.

As discussed in the literature review, Lombardi et al.(2011) and Cook et al. (2009) show how IEP parallel the capabilities and inherent priorities of, specifically, OCW materials: OCW materials are always available for translation into alternative formats, allow modification to meet user requirements, and allow redistribution in modified forms. It therefore seems that some of the basic forms of IEP could be achieved by making materials available as OCW. OCW is online for use by students at any time, it can be organized and reorganized as faculty or students see fit, and it can be modified and translated into new formats at will.

In conclusion, the recommendations that support IEP (*transparency* so that learners can proceed at their own pace and *transformability* so that materials can be presented in alternative formats) seem to line up with (and are supported by) the inherent capabilities of OCW (*transparency* by exposing the structure of a course to a learner and a lack of copyright restrictions that enable *transformation*).

This foregoing discussion suggests that 'openness' is undermined unless a complete set of materials are made available early, and in a clearly structured way so that the organization of a course is *transparent* to a learner. Additionally, the foregoing discussion suggests that openness is undermined if there is no way for materials to be *transformed* into modally or culturally relevant versions.

Universality.

Let us now discuss a third potentially mutually reinforcing aspect shared by both OER and IEP: *Universality*. In the IEP literature, universality is expressed as a foundational need to reach everyone, regardless of his or her inherent abilities. IEP literature describes how presentation strategies that were originally targeted at those with disabilities can have benefits for everyone. In the OER domain, universality is expressed as the foundational desire to reach everyone, unencumbered by restrictions to access or use on-line materials. Both notions of universality strive to expand the reach of educational materials to diverse audiences.

Some theorists have described this notion of universality as a mutually reinforcing aspect of both IEP and OER. For example, the Universal Design literature points out how their approaches, as the name emphasizes, are targeted for use by all students, not only those with disabilities, when Lombardi (2011) identifies a set of reasons for how inclusive practices are important for audiences who are not explicitly described as disabled. The first reason is that:

> although such practices have the potential to benefit students with disabilities who may have difficulty learning through only one mode of instruction or processing information as quickly as other students during

> an exam, these practices can benefit *all* students and provide greater access to learning opportunities within postsecondary settings.

The second is that:

> if UD principles were systematically encouraged and adopted, instruction could potentially become more accessible and inclusive to a wide range of learners, including other historically underrepresented groups (e.g., first generation college students, English language learners, and students of color) who are at a heightened risk of performing poorly in higher education settings (Chen, 2005;Strayhorn, 2006). (Lombardi, 2011, p. 251)

These quotations emphasize the value of inclusive design "in instruction [as a means] to reduce [the] need for accommodations and [to] enhance learning for all," something that helps bring together the inclusive aspects of education under the rubric of universality (Dukes, 2006, p. 11). One possible implication is that faculty may value accommodative or inclusive materials because they may perceive a universal benefit for all. This is the topic of the next subsection.

Faculty Perceptions of Universality.

Whereas the foregoing subsection aimed to elucidate how theoretical descriptions of universality in both IEP and OER domains share common properties, this

subsection goes a step further, by employing an empirical lens to explore how faculty members and service providers perceive the previously described universality overlap.

In a survey that explored faculty attitudes toward issues surrounding accommodation for students with disabilities, insights about how faculty value universal design for instruction were revealed. Results suggested that the surveyed faculty tended to rate universal design for instruction as highly important because they were drawn to strategies that potentially benefit all students (Cook et al., 2009). These results demonstrate how many faculty members see the benefits of inclusive design for everyone — rather like understanding that curb cuts benefit more people than those who use wheelchairs. This appeal to the universality of the benefits of using inclusive educational practices aligns well with the universal benefits of OCW and OA, and OER in general, and is a point where faculty attitudes toward these common priorities can be investigated via surveys.

In addition to the above, empirical studies suggest that both service providers and educators who aim to meet the needs of individuals identified as disabled value universality. For example, Dukes' (2006, p. 11) study sought to understand "service components disability service professionals consider essential for ensuring equal educational access for postsecondary level students with disabilities". The study showed how online courses that reflect the ideals of

universal design scored very high. Indeed, these courses were perceived as providing a benefit for all, and were identified as one of the most important aspects of their work.

Along with transformability of materials and transparency of pedagogical structure, there is, therefore, a shared emphasis on the importance of the universal availability of the materials in both OER and IEP.

Student interest in transparency, transformability and universality.

Whereas the previous subsections aimed to describe mutually reinforcing aspects of IEP or OER by examining theoretical overlaps, this section will aim to examine how *students* perceive the intersection of IEP and OER.

Some research has suggested that students are often more concerned about whether or not the basic pedagogical methods and practices are inclusive than they are about instructors' approaches to accommodation (Madaus, Scott & McGuire, 2003; Zeff, 2007). This highlights the importance of reinforcing educational practices that have universal impact. Much of the research has addressed student perceptions of faculty members' willingness to provide requested accomodations (Barazandeh, 2005). However, when asked, students reported that a barrier to learning (and potentially retention) was more about the instructional practices of faculty members, and less about their willingness to accommodate (Madaus, Scott & McGuire, 2003)" Lombardi, 2010, p.8). Those

“instructional practices” are the pedagogical choices and commitments that have been identified in this study as inclusive practices, and, students feel, are possibly more important to a rewarding educational experience than instructors' willingness to provide accommodations.

In addition, other studies have concluded that the widespread implementation of UD has the potential to lessen the need for specific accommodations for differently abled students, including some of the most commonly requested ones (Ketterlin-Geller & Johnstone, 2006; Orr & Hammig, 2009). Inclusive practices, here captured under the rubric of universal design methods, are often as important to students, including those with disabilities, as special adaptations or accommodations that teachers might provide. This research provides us with the flexibility to move from a focus on accommodation for those with disabilities alone to a larger focus on inclusive instructional practices that affect, and hopefully benefit, everyone, and that reflect a priority of universality. While the students with documented disabilities questioned in these studies said accommodations are important, the use of instructional techniques that constitute inclusive educational practices, and which benefit all learners, is often more important.

The elements of universality, transparency and transformability occupy prominent places in the literature on UD and in the investigation of faculty stances toward the value and use of inclusive educational practices, as they did in the literature on

OCW and OA. This helps provide an answer to this study's first research question, identifying common dimensions between OER and IEP. The second research question can be approached in the process of developing a survey instrument that would allow us to probe faculty along these dimensions, in these areas of open and inclusive practices.

Phase 2: Survey Development — Operationalizing the Theoretical Dimensions

Methods

This research was undertaken within the overall framework of action research (McNiff, 2013; Dick, 2011), that is, research that seeks to engage members of an institution in understanding their beliefs and actions within that institution and bring about changes in those beliefs and actions. In some forms, this leads to a methodology of participation and investigation (Whyte, 1991), which leads to cyclical attempts at understanding, working to modify and then reevaluating the target beliefs and actions (Argyris & Shoen, 1999). In this study, the goal is to build a tool that can be used to engage faculty, first in an investigation and then in an evaluation of open and inclusive practices in their own work and activities.

The surveys that are one result of this effort are meant to be modified and applied by local actors in higher education, such as faculty, instructional staff, including educational material designers or library staff, or administrative staff at their own institutions. Although the surveys are focused on the faculty at the institutions, they can be initiated by other members of the academic community. The results of surveying the creators of course materials could lead to useful descriptions and self-understandings that can then be employed to further discussion in those institutions around the issues of open and inclusive practices.

This type of research employs elements of Argyris' action science (Argyris & Shoen, 1999), and Heron and Reason's ideas around “cooperative inquiry” (Heron & Reason, 2006; Reason, 2006). Both approaches emphasize participation by the research subjects and a progressive refinement of the tools and methods of that research. This refinement is based on the tools' effect of bringing about understanding and actions based on that understanding, in the area of interest. This work can be seen as the first steps in such a process, where tools are developed that can be taken up by participants and used to investigate their own contexts. The tools are then refined in the process of the participants’ reflecting on their effectiveness in unearthing knowledge about their environment and the beliefs held by colleagues in that environment, and in then bringing about actions that reflect their enhanced understandings.

In this way, this research mirrors several issues discussed in Kitchin's work on emancipatory and empowering research (Kitchin, 2001, 2002), where the roles of the researcher and the roles of the subjects of that research are sometimes problematized and even exchanged. Having identified commonalities between open and inclusive practices in education, in the first phase of this project, the work here seeks to provide tools to people within academia who are interested in investigating and changing current understandings within the academic community around these issues. As staff or faculty members use these tools and gain a deeper understanding of the beliefs and attitudes in their community, so

their roles can change from objects of investigation to active participants in the investigative process and later, perhaps to participants in the process of discourse and change around these issues.

In the process of this research, survey research methods were employed which described how to construct well-formed questions, sets of questions, surveys, and methods for pretesting the results. These methods were applied to generate well-formed questions and to provide direction in avoiding misleading or ambiguous survey questions (Fowler, 2009; Singleton, Straits, & Straits, 1993). Further, they were used to help determine the best order for placing survey questions and for creating an effective survey. These approaches helped maximize question reliability by making them clear, unambiguous and easily understood, and maximize survey response rates, by making the survey easy for respondents to traverse quickly, thereby improving the usefulness of the data collected (Bryman, 2012).

Statistical methods for testing the reliability of questions and question sets used data collected from respondents who had taken a survey. These methods were used to describe elements of the Core Survey for which the author has data, since some of the questions and scales have been used by the author previously in surveys of faculty, staff and students in the area of Open CourseWare. The statistical analyses focus on reliability of the questions, that is their internal

consistency, and their coherence in sets, that is whether or not they seem to be measuring closely related concepts or constructs when grouped together.

Pretesting the surveys was done, first by applying it on-line to small groups and then walking through it with respondents to identify and discuss issues they may have had with the form or placement of questions. This process was then repeated with a small population of relevant on-line users. A panel of experienced users was used to review the questions proposed for the question bank. Iterative passes over the questions were performed to uncover ambiguities, sharpen the focus, and progressively refine these questions.

Design of Survey Measures.

This section describes the design of the survey tools, using the results from the first phase of this study i.e., from the literature review and conceptual analysis of OER and IEP. It describes the process for the operationalization of the concepts transformability, transparency and universality for OER, focusing on OCW, and IEP. The selection of appropriate questions is described, followed by the evaluation of the question sets and core survey.

Starting Points for Survey and Library of Questions.

The author has conducted a number of surveys around faculty beliefs, attitudes and intentions regarding Open CourseWare (OCW), Open Access (OA)

publishing and other types of Open Educational Resources (OER) (Hardin, 2012). These were the starting points for questions for the core survey. The literature review described the work on Universal Design and accommodation, specifically that of Lombardi et al.(2011) and Cook et al. (2009), which provided the starting point for the Inclusive Educational Practices (IEP) questions for the survey and question bank.

Both starting points carry some advantages for developing a useful measure. The design of the tools for both sets of measures has previously been vetted and the tools have been applied to relevant populations. In the case of the author's previous work, data from surveys with considerable N's (from 900 to 1500) is available and can be retrospectively mined to determine the reliability of some of the measures used (see Appendix D). In the case of the work on accommodation using Lombardi's Inclusive Teaching Strategies Inventory (ITSI), there is a set of measures that can be used as a starting point for choosing appropriate and effective questions and question sets (see Appendix C). This is the case if using questions from Cook et al. (2009).

The Core Survey.

Open CourseWare: The first section of the core survey asks questions about OCW. It starts with a definition of OCW and asks respondents about their familiarity with OCW. It goes on to probe attitudes toward some features of

OCW. Next it asks about respondent intentions to publish their own materials and then inquires about beliefs about colleagues' behaviors and attitudes toward publishing OCW. Finally it has two open-ended questions that ask for general perceptions of advantages and disadvantages of posting materials to a local OCW site.

This set of questions develops information on respondents' beliefs, attitudes and intentions surrounding OCW and their participation in OCW production.

Information:

Open CourseWare (OCW) is a learning technology that allows teachers and instructors to voluntarily post their course materials (e.g., syllabi, reading lists, lecture notes, etc.) on a publicly available website for anyone, in or outside of their institution, to see, and to use with attribution.

Question 1

Please check all that apply:

I have never heard of OCW.

I have heard of OCW but have never been to an OCW website.

I have looked at an OCW website

I have used material from an OCW website in my teaching.

I have published OCW materials.

Question 2

Using the definition of OCW given above, please rate your agreement with the following statements:

Using an OCW website would...

#	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
1.	Increase the visibility of my courses.					

2. Be useful in preparing materials for an upcoming class.
3. Help me to see how other teachers in my area are approaching material.
4. Increase my awareness of faculty here or at other institutions in my area of teaching or research.
5. Be useful in developing or planning curriculum for my department.
6. Increase turnaround for course creation.
7. Reduce delivery time for courses.

Question 3

Please rate your agreement with the statements below:

#	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A

1. I would publish my course materials or other educational materials on a publicly available website hosted by my local institution.
2. I would use course materials or other educational resources from a publicly available website hosted by my local institution.
3. My colleagues would support me if I decided to publish my course materials on a publicly available website hosted by my local institution.
4. I would encourage my colleagues to publish their course materials or other educational resources on a publicly available website hosted by my local institution.
5. Some of my colleagues would publish their own course materials on a publicly available website hosted by my local institution.

Question 4

Do you feel there would be any advantages to placing your material on a publicly available website hosted by your institution, and if so, what would the advantages be?

[text response]

Question 5

Do you feel there would be any disadvantages to placing your material on a publicly available website hosted by your institution, and if so, what would the disadvantages be?

[text response]

Open Access: The next section asks a set of questions on Open Access publishing. It begins with a definition of OA publishing and then asks if the respondent has published in any OA journals and if they plan to in the future. It goes on to ask a set of questions about current actions regarding OA publishing, and importance and use of OA publishing by the respondent. It concludes with two general questions about perceived advantages and disadvantages of OA publishing to the respondent.

Information

Open Access (OA) publishing includes the practices of:

a) publishing in journals that make their contents freely available on the web to anyone.

b) authors providing free copies of their articles, either before or after peer review, on their own web site or an institutional web site (e.g., departmental or library site).

Question 6

I have published in an Open Access journal.

Yes/No

Question 7

I plan on publishing in an Open Access Journal in the future.

Yes/No

Question 8

Please rate your agreement with the following statements:

#	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
1. I often place pre-publication versions of my journal articles on personal or institutional open access sites.						
2. I often place copies of my published, peer reviewed articles on personal or institutional open access sites.						
3. Open access journals are important to my field.						
4. I use open access journals in my research.						

5. I think that open access publishing is becoming more important for the dissemination of knowledge.

Question 9

Do you feel there are any disadvantages in you engaging in Open Access publishing, and if so, what would those disadvantages be?

[text response]

Question 10

Do you feel there are any advantages in you engaging in Open Access publishing, and if so, what would those advantages be?

[text response]

IEP Section: This section of the survey asks questions about the respondents' attitudes toward some of the educational practices that go to make up the dimensions of transparency and transformability, asking about the perceived importance of providing various formatting options to students or providing complete course materials to students at the start of the session. The first section focuses on making the complete materials easily available.

Information

Now we would like to ask you some questions about your teaching practices.

Question 11

As an instructor I believe it is important to:

#	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
1. Use a course website.						
2. Provide a complete list of lesson materials and requirements for the whole course at the beginning of the session.						
3. Put my lecture notes or slides online for students.						

4. Put my course handouts online for students.
5. Allow students the choice in how they submit class assignments online (e.g., either as mail attachments, in drop boxes, or attched to a discussion list)
6. Provide lesson material at least a full week in advance of the lesson date.

The next set of questions focuses on the availability of various formats and the use by the instructor of a variety of media formats in instruction

Question 12

Please rate your agreement with the following statements.

I believe it is important to:

#	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
1. Make written course materials available in a variety of formats (e.g., as MSWord, PDF, or plain text documents).						
2. Provide audio recordings of lectures online.						
3. Provide video recordings of lectures online.						
4. Provide, or allow students to develop and share, text transcriptions of lectures.						
5. Use multiple media in the course (e.g., text, audio, video, graphics...						
6. Use online interactive tools to encourage communication among students (e.g., discussion boards, mail lists, chats...)						
7. Use online interactive tools to encourage student communication with me (e.g., discussion boards, mail lists, chats...)						
8. Provide captions for video materials.						

Demographic Questions: The final section of the survey asks demographic questions. These help place the respondent along dimensions of experience, teaching context, discipline and status.

Information

Now we would like to ask you some questions about your teaching experience.

Question 13

Into which subject grouping does your teaching or learner support best fit? (If none of these please specify in Other. If you work across several areas please specify the mix in Other.)

Arts, Language and History

Mathematics, Computing and Engineering

Sciences and Environmental Sciences (including Geography)

Health and Medicine

Social Sciences

Education

Business and Management

Other

Question 14

If "Other" please explain:

[text response]

Question 15

My typical class size is:

1-10 11-30 31-60 over 60

Question 16

What type of class do you typically teach?

Seminar Lecture Lab Other

Question 17

If "Other" please explain:

[text response]

Question 18

How long have you been teaching, regardless of institution?

1-3 years 4-6 years 7-10 years Over 10 years

Question 19

How long have you been teaching at your current institution?

1-3 years 4-6 years 7-10 years Over 10 years

Question 20

This past year my classes have been primarily taught:

Face to face only.

Face to face with online support (e.g., syllabus, readings, lessons, etc, online)

Online only.

Combination of above.

Question 21

If "Combination of above", please explain:

[text response]

Question 22

What is your title?

[text response]

Open-ended general questions close out the survey.

Information

And, two final questions:

Question 23

Do you have anything you would like to add concerning the questions or concepts covered in this survey?

[text response]

Question 24

Did you have any difficulty in understanding any of the questions in this survey?

[text response]

The surveys have the dual purpose of providing descriptive statistics for advocates of OER and IEP initiatives and of allowing researchers to start investigating the dimensions of commonality that may exist across the areas of OER and IEP. This reflects the action theory methodological approach. Therefore, in addition to providing measures that can be used to investigate the dimensions of overlap discussed in the review and analysis section, the survey also provides information on, for instance, levels of adoption and support, or lack of it, among different segments of the population (Hardin & Canero, 2010). This would be valuable to those interested in understanding local conditions around these issues, as well as providing information for research investigations.

The questions from the OCW and OA research probe familiarity with OCW, beliefs and attitudes surrounding OCW contribution and use by faculty, and their intentions to contribute their course materials to an OCW site in the future (see Appendix A). The OA questions look at similar issues, asking whether the respondent considers OA journals important to their field, whether they have published in OA journals and what they see as important aspects of OA publishing.

The responses to the OCW and OA questions identify respondents who are supportive of OCW and OA activities and give their attitudes toward some of the reasons why. At the end of each scale section of this part of the survey, two open-ended questions are asked to probe the areas of perceived advantages and

disadvantages of OCW contribution and OA publishing participation. These allow the respondents to generate their own responses in their own words and record what they see as the most important benefits and drawbacks of OCW and OA, thus potentially capturing dimensions not covered in the scale questions. Content analysis of these open-ended responses will be useful in determining respondent attitudes toward the three dimensions we are investigating.

All these responses, scales and open-ended questions can then be compared to the responses in the IEP sections of the survey, which ask about approaches to teaching that reflect perspectives on transparency and transformability. Here, activities are not identified as specifically inclusive, rather respondents are asked about activities that have inclusive dimensions, as identified in the analysis of the literature. The purpose is to learn the respondents' opinions about teaching practices that could be applied to the whole population not just those members of the population that could in one context or another be considered disabled. These responses will allow analysis to ascertain respondent opinions about the elements of transparency, transformability or universality. Content analysis of the advantages/disadvantages, open-ended text questions in the OCW and OA sections can provide data on the dimensions the respondents feel are particularly important. These analyses provide means for comparison with the scales developed for the IEP section of the survey, and for testing the existence of the

dimensions discussed above and the placement of the respondents on those dimensions.

As discussed, the OCW and OA sections of the survey is the section asking about opinions of teaching practices. Here two sets of questions have been developed that strive to tap opinions on transformability and transparency (see Appendix A). The questions include some of those asked on the Inclusive Teaching Strategies Inventory (ITSI) scale (Lombardi, 2011) with some from Cook et al's. (2009) questionnaire.

The ITSI was a scale was devised:

> "To investigate college faculty perceptions of students with disabilities and inclusive instruction based on Universal Design…The ITSI contains six subscales representing the following constructs: (a) multiple means of presentation, (b) inclusive lecture strategies, (c) accommodations, (d) campus resources, (e) inclusive assessment, and (f) accessible course materials. The ITSI includes two response categories that allow for an evaluation of both attitudes and actions in the six areas. (Lombardi, 2011, p. 250)

Through communication with Lombardi, a complete version of the ITSI scale was obtained, and is included in Appendix C. The instrument is directed at measuring attitudes toward a number of inclusive practices, from materials to presentations

(e.g., live lectures) to assessment. In order to compare attitudes, the ITSI scale approached questions both from the perspective of providing inclusive materials only for those needing accommodations, and for the class as a whole.

The interest in this report is to determine the use of inclusive practices by teachers, regardless of the presence in the class of people explicitly identified as being disabled. Whether teachers provide inclusive materials or use inclusive practices for accommodation is not the focus of this study. Rather, the interest is simply, whether or not the teacher uses inclusive methods for everyone. The Accommodations components of the scale are, therefore, not of immediate interest. Consequently, a subset of the questions from the scales, which ask about teacher practices with respect to all students, was chosen. This was based on the premise that if the instructor is practicing inclusive educational methods, if they are engaging in practices that make their materials available to the widest group of students, in a variety of ways, and they are meeting the structural, organizational suggestions of the Universal Design approach.. The ideas of transformability and transparency, introduced at the beginning of this paper, are encapsulated in these practices.

The questions from the ITSI scale that were initially considered include:

1) Accessible Course Materials

(I believe it is important to...)

a) use a course website (e.g. D2L, Sakai, Blackboard or faculty web page)

b) put my lecture notes online for all students (on D2L or another website)

c) post electronic versions of course handouts

d) allow students flexibility in submitting assignments electronically (e.g., email attachment, digital drop box, post to discussion list,...)

2) Inclusive lecture Strategies

(I believe it is important to...)

a) begin each class session with an outline/agenda of the topics that will be covered

b) summarize key points throughout each class session

c) connect key points with larger course objectives during class sessions

3) Inclusive Classroom

(I believe it is important to...)

a) Use technology so that my course material can be available in a variety of formats (e.g. podcast of lecture available for downloading, course readings available as MP3 files)

b) Use interactive technology to facilitate class communication and participation (e.g. Discussion Board, mail lists, ...)

c) Present course information in multiple formats (eg, lecture, text, graphics, audio, video, hands-on exercises)

From these questions, it is apparent that the model used in the ITSI work is a live classroom, or perhaps a hybrid class, with part of it live and part of it online, probably asynchronously. The questions however, especially in sections 1 and 3,

can be used in most all situations, including exclusively online courses. The scale questions focus on some of those things that our analysis of overlapping priorities finds most important when thinking about inclusive educational practices and open educational resources and, therefore, provide an excellent starting point for the Inclusive Practices component of the survey.

An additional question or question set is needed to probe one aspect of transparency in the inclusive pedagogy more directly. The first phase of this study identified, as an important component of transparency, that it was important for course materials to be available early and as a full set, so that students of different abilities and learning strategies could spend time determining the best way to approach the materials. Cook (2009) discussed this element and the same format of questions in Lombardi (date) can be used. The questions then take the form:

> **I believe it is important to:**
>
> Provide a complete list of lesson materials and requirements for the whole course at the beginning of the session.
>
> Provide lesson material at least a full week in advance of the lesson date.
>
> Put my lecture notes or slides online for students.
>
> Put my course handouts online for students.
>
> Allow students the choice in how they submit class assignments online (e.g., either as mail attachments, in drop boxes, or attached to a discussion list)

A set of questions that focus on the transformability of materials and the availability of multiple formats and a variety of types of materials follows this section. It has the questions:

> Make written course materials available in a variety of formats (e.g., as MSWord, PDF, or plain text documents).
>
> Provide audio recordings of lectures online.
>
> Provide video recordings of lectures online.
>
> Provide, or allow students to develop and share, text transcriptions of lectures.
>
> Use multiple media in the course (e.g., text, audio, video, graphics...)
>
> Use online interactive tools to encourage communication among students (e.g., discussion boards, mail lists, chats...)
>
> Use online interactive tools to encourage student communication with me (e.g., discussion boards, mail lists, chats...)
>
> Provide captions for video materials.

Methods of evaluating the questions and scales

Three approaches were taken to refining the questions for the core survey. Early in this process two versions of the survey were placed online and a group of 5-8 reviewers took an early version of the survey, then participated in a walk-though of their understandings of the survey. The author elicited their questions or suggestions concerning the survey content. The group included education technologists, user interaction specialists and software designers. Further

iterations by the review panel followed. The suggestions and questions of these groups were used to modify the survey.

Next, a cognitive walk-through of the survey was undertaken with four faculty members representative of the population the survey would be given to. Each faculty member was interviewed separately in sessions that ran from 30 to 55 minutes. They were presented with a consent form (see Appendix E) and then a copy of the survey. The respondents were then walked through the survey question by question, in order, and asked to make comments they saw fit. The focus was on the understandability of the questions, how the respondents interpreted them, whether they were appropriate given the research goals, and where they were placed in the survey. The revisions that resulted from this were then passed through the panel process developed for the Question Bank for revision.

An online pretest of the survey was then developed and a population of 25-30 teachers, instructors and educational technologists representative of the population the survey would be applied to were invited to take it. This version of the survey asked at the end if there were any questions that the respondent found difficult to understand. It also elicited general comments about the survey through an open-ended text response question. Six of the invitees responded. The responses were used to identify possible areas of confusion, or places where the survey intent was unclear. Signs of early dropout were looked for. General comments about the

survey, specifically the understandability of the questions, were reviewed. All respondents reported that they found the survey questions understandable. One respondent suggested that some questions did not require an answer, such as a question that asked for elucidation of an "Other" choice when the respondent had checked one of the specific responses and, thus "Other" did not apply to them. These questions should not have initiated an "incomplete responses" warning at the end of the survey, this respondent suggested. This will be addressed in future surveys.

Reliability measures were also calculated for the elements of the OCW sections that the author has previously used and their results are reported in Appendix D. There, Chronbach's alphas—a commonly used method for determining one form of question set reliability (Ritter, 2010)—for the sets of questions and for the sets with individual questions deleted are reported. For the OCW questions that were investigated in this way, the Cronbach's alphas indicated high levels of internal consistency, suggesting reliability was good (see Appendix D).

The Question Bank (QB)

The questions that make up the Question Bank are intended to provide a set of probes that can be used to enhance the survey. They are intended to enable researchers or local advocates to supplement the core survey and thereby delve deeper into specific areas of interest or to localize the survey. The questions for

the QB were taken from a number of previous surveys and research papers that covered the areas of OER, OCW, OA, and IEP. The QB is designed to be supplemented by future users. The current set of questions comprising the QB is extensive and can be found in their entirety in Appendix B.

A panel of reviewers composed of the author, two employees of a company developing educational software and a university faculty member examined the questions for clarity and comprehensibility. The questions were refined through a number of iterations. Those questions that appeared both in the Question Bank (a superset of all questions) and on the survey also benefited from feedback resulting from the survey pretesting.

Results and Discussion

The results of the first phase of this project included a set of dimensions that can be used to investigate faculty beliefs, attitudes, intentions and actions toward Open CourseWare (OCW), Open Access (OA) and Inclusive Educational Practices (IEP). These were the dimensions of transformability, transparency and universality. The dimensions are proposed as both useful ways to demonstrate the sometimes overlooked commonalities of these areas, and to investigate how faculty think about and develop orientations to action and participation in these areas.

In the next step in this research project, a vetted and pre-tested survey (see Appendix A) that can be used to investigate OER, specifically OCW and OA, and IEP was developed. This is ready to be applied in investigations to answer questions about how the ways faculty think about OCW, OA and IEP overlap, and to see if they align with the dimensions of overlap uncovered in our conceptual analysis. In addition, the Open Question Bank (see Appendix B) contains questions about a number of further dimensions of OER and IEP that researchers and advocates can use to customize, expand and localize the initial survey.

The intersection of ideas and goals that have been found to characterize the domains of inclusive education and open courseware open up a rich area for further investigation. Understanding how faculty think about these issues can be a

useful tool in discovering whether or not these understandings can be leveraged for the mutual advancement of both the goals of inclusivity and openness in education in the future. It is not surprising that these two areas have much in common. It is surprising that recognition of this is not more universally shared and research that combines an overview of both these traditions is not more available.

The process of analyzing the related areas of OER and IEP and developing tools for their investigation has provided an opportunity to delve deeper into both areas and uncover some of their relations. Looking at the process that the project followed in developing the Core Survey and Question Bank it is clear there are areas of improvement for the future.

The core survey taps the existence of the three dimensions in the areas of OCW and OA, through comparison of the levels of interest in OCW or OA activities and the qualitative analysis of the responses to the open ended questions of perceived advantages and disadvantages in the two areas. Comparing the attitudes and intentions of respondents surrounding OCW and OA along the dimensions of transparency, transformability and universality with the explicit probes concerning inclusive teaching practices may well lead to distinctions among respondents in these two areas of OER.

One of the pretest walk-through participants suggested more focus in the IEP section on questions specifically probing areas related to disability support. For example, in addition to asking about support for video captioning, have questions about the use of 'alt-text' for description of images on HTML pages, or the regular practice of providing text or verbal descriptions of images in other printed or spoken contexts. While this was not the focus of this study, these would add to the breadth of the view obtained concerning teaching practices. There are questions in the Question Bank that could be used to provide insight in these areas. In addition, Lombardi's full ITSI scale (2013), which asks much more directly and deeply about specific accommodative practices, would be valuable to use and compare with the scales in the core survey. In developing a larger survey, these would be central considerations.

The process of investigating, choosing, analyzing and vetting a set of questions that try to cover all these areas and provide a plausible starting point for investigations of them together is also a first step in a larger research program that seeks to encourage such investigations. In the process, other tools, such as effective metadata for classifying the questions and question sets developed in the survey and questions need to be developed, which could make them more searchable and annotatable. Such metadata would make it much easier for researchers and other users to find questions and scales that fit their precise needs, and could provide critical information and history on items contributed to the

question bank. Data on question or question set authorship, content, measures of their reliability, and contexts of use would all be helpful to researchers and practitioners seeking to use such a question bank to construct surveys that effectively probe their populations of interest. Such data would also allow the questions and scales to be enhanced, vetted and refined on a distributed basis much more easily.

Efforts to develop some such metadata standards have been undertaken, as in the Metadata for Learning Resources ISO 19788, metadata schema (ISO 2011). It would however, need to be expanded to capture the attributional history and development of such questions, and the research, not just the learning, context of their use.

Conclusion

The two research questions that motivated this study were:

What are the intersecting areas of Open Educational Resources (OER) and Inclusive Educational Practices (IEP) investigations, particularly investigations in attitudinal research among faculty of institutions of higher education?

What survey questions and scales can be developed to investigate the beliefs, attitudes, intentions and actions of faculty in Open Educational Resources (OER), specifically in Open CourseWare (OCW) and Open Access (OA), and Inclusive Educational Practices (IEP) in the overlapping areas of interest identified in answering Question 1, above?

The answer to the first question is found in the description of the three dimensions of transparency, transformability and universality. These are proposed as shared themes within OER and IEP that translate into attributes of the materials that go to make up Open CourseWare and to some extent OA, and those materials used in Inclusive Educational Practices. Transparency refers to the explicit organization of the materials that allows for students to see the sequential structure of the course materials from the beginning of the course to its end, as well as the relations of the individual items, and find their own best path to approach them. Transformability refers to the ability to take the materials and reformat them into forms that are more accessible, or to have them translated into languages or onto

media that are more accessible and useful to the students. Universality refers to the importance of providing unrestricted access to the materials by anyone, regardless of individual abilities, or position in society.

The answer to the second question is the survey that was developed and tested to both provide descriptive statistics that would be useful in understanding the current state of any particular faculty cohort's orientation to OCW, OA or IEP practices, and answer specific research questions such as "Do faculty that support OCW or OA activities also show interest in or commitment to inclusive educational practices embracing transparency, transformability and/or universality?"

The process of analyzing OCW, OA and IEP by looking at their definitions and the existing research, focused on investigations of how teachers think and what practices they adopt, providing us with a possible set of priorities for educational practices shared by these three areas. Whether or not faculty who adopt all or some of the practices that OCW, OA or IEP advocates suggest also share underlying orientations to the notions of transparency, transformability and universality cannot be answered without survey research. The survey that was developed here may be helpful in such research but that can only be determined once it is used and the results it generates are analyzed.

The author hopes that researchers and practitioners will find the question bank and core survey useful in developing data that describes current perceptions among faculty, staff and students concerning IEP and OER. This can help in expanding understanding of relations between the two, perhaps providing mutually supportive approaches to their application. If successful, these efforts could provide knowledge that could lead to a deeper understanding of the dynamics of adoption of IEP and OER practices.

A central goal of the project was to make it easy for advocates to use the questions to build surveys, so they can better understand their communities' understandings of these issues. Our hope is that the results of such surveys could be used to show ways to combine education and advocacy around the areas of IEP and OER to their mutual advantage. The author also hopes that the results of such surveys would be published and shared, as publishing would increase the general understanding of the potentially reinforcing strengths of activities that touch on both areas. It would also provide information and data on the effectiveness of the questions themselves, allowing researchers and advocates to refine the questions for future surveys.

The author intends to continue this work and to apply the results of this project in surveys of populations of higher education faculty staff and students, and to encourage and support others in similar efforts.

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Appendix A – Core Survey

Core Survey

This is a survey of your opinions regarding some teaching and learning practices.

It will only take about 10-20 minutes.

By continuing to the survey you will be giving your consent to participate

If you would like more information on the survey or the consent process before proceeding please go to consent details.

Thank you for supporting this research.

Information

Open CourseWare (OCW) is a learning technology that allows teachers and instructors to voluntarily post their course materials (e.g., syllabi, reading lists, lecture notes, etc.) on a publicly available website for anyone, in or outside of their institution, to see, and to use with attribution.

Question 1

Please check all that apply:

I have never heard of OCW.

I have heard of OCW but have never been to an OCW website.

I have looked at an OCW website

I have used material from an OCW website in my teaching.

I have published OCW materials.

Question 2

Using the definition of OCW given above, please rate your agreement with the following statements:

Using an OCW website would...

#	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
8.	Increase the visibility of my courses.					
9.	Be useful in preparing materials for an upcoming class.					
10.	Help me to see how other teachers in my area are approaching material.					
11.	Increase my awareness of faculty here or at other institutions in my area of teaching or research.					
12.	Be useful in developing or planning curriculum for my department.					
13.	Increase turnaround for course creation.					

14. Reduce delivery time for courses.

Question 3

Please rate your agreement with the statements below:

#	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
6.	I would publish my course materials or other educational materials on a publicly available website hosted by my local institution.					
7.	I would use course materials or other educational resources from a publicly available website hosted by my local institution.					
8.	My colleagues would support me if I decided to publish my course materials on a publicly available website hosted by my local institution.					
9.	I would encourage my colleagues to publish their course materials or other educational resources on a publicly available website hosted by my local institution.					
10.	Some of my colleagues would publish their own course materials on a publicly available website hosted by my local institution.					

Question 4

Do you feel there would be any advantages to placing your material on a publicly available website hosted by your institution, and if so, what would the advantages be?

[text response]

Question 5

Do you feel there would be any disadvantages to placing your material on a publicly available website hosted by your institution, and if so, what would the disadvantages be?

[text response]

Information

Open Access (OA) publishing includes the practices of:

a) publishing in journals that make their contents freely available on the web to anyone.

b) authors providing free copies of their articles, either before or after peer review, on their own web site or an institutional web site (e.g., departmental or library site).

Question 6

I have published in an Open Access journal.

Yes/No

Question 7

I plan on publishing in an Open Access Journal in the future.

Yes/No

Question 8

Please rate your agreement with the following statements:

#	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
6.	I often place pre-publication versions of my journal articles on personal or institutional open access sites.					
7.	I often place copies of my published, peer reviewed articles on personal or institutional open access sites.					
8.	Open access journals are important to my field.					
9.	I use open access journals in my research.					
10.	I think that open access publishing is becoming more important for the dissemination of knowledge.					

Question 9

Do you feel there are any disadvantages in you engaging in Open Access publishing, and if so, what would those disadvantages be?

[text response]

Question 10

Do you feel there are any advantages in you engaging in Open Access publishing, and if so, what would those advantages be?

[text response]

Information

Now we would like to ask you some questions about your teaching practices.

Question 11

As an instructor I believe it is important to:

#	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A
7.	Use a course website.					
8.	Provide a complete list of lesson materials and requirements for the whole course at the beginning of the session.					
9.	Put my lecture notes or slides online for students.					
10.	Put my course handouts online for students.					
11.	Allow students the choice in how they submit class assignments online (e.g., either as					

mail attachments, in drop boxes, or attched to a discussion list)

12. Provide lesson material at least a full week in advance of the lesson date.

Question 12

Please rate your agreement with the following statements.

I believe it is important to:

#	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	N/A

9. Make written course materials available in a variety of formats (e.g., as MSWord, PDF, or plain text documents).
10. Provide audio recordings of lectures online.
11. Provide video recordings of lectures online.
12. Provide, or allow students to develop and share, text transcriptions of lectures.
13. Use multiple media in the course (e.g., text, audio, video, graphics...
14. Use online interactive tools to encourage communication among students (e.g., discussion boards, mail lists, chats...)
15. Use online interactive tools to encourage student communication with me (e.g., discussion boards, mail lists, chats...)
16. Provide captions for video materials.

Information

Now we would like to ask you some questions about your teaching experience.

Question 13

Into which subject grouping does your teaching or learner support best fit? (If none of these please specify in Other. If you work across several areas please specify the mix in Other.)

Arts, Language and History

Mathematics, Computing and Engineering

Sciences and Environmental Sciences (including Geography)

Health and Medicine

Social Sciences

Education

Business and Management

Other

Question 14

If "Other" please explain:

[text response]

Question 15

My typical class size is:

1-10 11-30 31-60 over 60

Question 16

What type of class do you typically teach?

Seminar Lecture Lab Other

Question 17

If "Other" please explain:

[text response]

Question 18

How long have you been teaching, regardless of institution?

1-3 years 4-6 years 7-10 years Over 10 years

Question 19

How long have you been teaching at your current institution?

1-3 years 4-6 years 7-10 years Over 10 years

Question 20

This past year my classes have been primarily taught:

Face to face only.

Face to face with online support (e.g., syllabus, readings, lessons, etc, online)

Online only.

Combination of above.

Question 21

If "Combination of above", please explain:

[text response]

Question 22

What is your title?

[text response]

Information

And, two final questions:

Question 23

Do you have anything you would like to add concerning the questions or concepts covered in this survey?

[text response]

Question 24

Did you have any difficulty in understanding any of the questions in this survey?

[text response]

Appendix B – Question Bank

Open Educational Resources and Open CourseWare Questions

Instructor Survey Items

Open CourseWare (OCW)

Open CourseWare (OCW) is a learning technology that allows teachers and instructors to voluntarily post their course materials (e.g. syllabus, reading lists, lecture notes, etc.) on a publicly available website for anyone,in or outside of your institution, to see and use.

1. **What is your familiarity with Open CourseWare (OCW) websites?**
   Please check all that apply.
   a. I have never heard of OCW
   b. I have heard of OCW but have never been to an OCW website
   c. I have looked at an OCW site
   d. I have used material from an OCW site in my teaching
   e. I have published OCW materials

2. **Using the definition of OCW given above, please rate your agreement with the statements below:**
   In my opinion, Using an OCW website is valuable for...

   Strongly Disagree - Disagree - Neutral - Agree - Strongly Agree
   a. Increasing the visibility of my courses
   b. Preparing materials for an upcoming class
   c. Viewing how others in my area are approaching material
   d. Increasing awareness of faculty here or at other institutions in my area of teaching or research
   e. Developing or planning curriculum for my department
   f. Increasing turnaround for course creation
   g. Reducing delivery time for courses

3. [Could have statement describing publicly available web site or project to develop publicly available website - Example - see below]

An OCW website is a publicly available website for materials that anyone, in or outside of your institution, can see and use.

Please rate your agreement with the statements below:

Strongly Disagree - Disagree - Neutral - Agree - Strongly Agree

a. I would publish my course materials or other educational materials on a publicly available website hosted by my local institution
b. I would use course materials or other educational resources from a publicly available website hosted by my local institution

c. I would encourage my colleagues to publish their course materials or other educational resources on a publicly available website hosted by my local institution
d. My colleagues would support me if I decided to publish my course materials on a publicly available website hosted by my local institution.
e. I would encourage my colleagues to publish their course materials or other educational resources on a publicly available website hosted by my local institution.
f. Some of my colleagues would publish their own course materials on a publicly available website hosted by my local institution.

4. What do you feel would be the main advantages [to you/to your institution]to placing your materials on a publicly available website hosted by your institution?

5. What do you feel would be the main disadvantages [to you/to your institution] to placing your materials on a publicly available website hosted by your local institution?

6. What support or resources would you need in order to be willing to contribute to producing OCW learning or teaching materials? (Check all that apply.)

a. Paid compensation or stipend
b. Release time for development
c. Training
d. Software
e. Equipment
f. Guidelines and/or templates
g. Expert content reviewers
h. Copyright checking and clearance services
i. Established criteria for identification and selection of materials
j. A development team to work with
k. Workshop on copyright or intellectual property issues
l. Workshop on the nature, availability, and accessibility of public domain materials
m. A district/college website repository of public domain materials
n. Training in conjunction with district/college course management system
o. Support in handling articulation concerns and related issues
p. Broadband, high-speed internet connection to my home.
q. Server space for file storage
r. Software for multimedia and/or web design

6b. Other, please specify

7. Please indicate your level of agreement with the following statements: [use OER and/or OCW]

Strongly Disagree - Disagree - Neutral - Agree - Strongly Agree

a. Open Educational Resources (OER) only help other institutions copy our best ideas
b. Open Educational Resources (OER) can help build fruitful partnerships with colleagues in similar faculties worldwide

c. Open Educational Resources (OER) can help build fruitful partnerships with institutions worldwide
d. Open educational resources (OER) on the University repository will help enhance the reputation of the University, attracting better students.
e. Open educational resources (OER) on the University repository will help enhance the reputation of the University, attracting better staff.
f. Publishing Open Educational Resources (OER) in the University repository will enhance my promotion prospects.
g. Publishing Open Educational Resources could damage the university's reputation (via association with inaccurate or poor quality materials).
h. Reusing Open Educational Resources (OER) is a useful way of developing new courses
i. Reusing Open Educational Resources (OER) is a useful way to enhance existing courses.
j. Exploring the available Open Educational Resources (OER) worldwide will enhance my teaching and raise standards across the university.
k. Publishing Open Educational Resources (OER) will mean students will stop attending lectures in person.
l. I would use Open Educational Resources (OER) in my teaching if I am able to edit and personalize the materials for use with my students.
m. I would be more willing to share my teaching resources openly if I was able to control who is able to use or see them.
n. I am concerned how my Open Educational Resources will be reused by others.
o. Students benefit from the range of approaches to the subject available through the use of Open Educational Resources (OER) in my teaching.
p. The University's Open Educational Resources (OER) project has enhanced my awareness of the benefits of OER.[only include in survey if local school has OER project underway]
q. Publishing Open Educational Resources (OER) is an easy process.
r. I understand copyright and its implications on the materials used in my teaching

8. [Attitudes and beliefs]

Please indicate your agreement or disagreement with the following statements about open content [OER or OCW]:

a. I fully support the idea of open content and open education resources
b. With so much open content available, there is no excuse not to use this
c. It worries me that once 'out there' you have no control over your resources
d. There are no real incentives for individuals to get involved in open content
e. Content that is available for use free of charge is rarely of good quality
f. OER could prove detrimental to the quality of teaching in the long term
g. Open content initiatives lack a coherent supporting business case
h. We don't know where open content is headed or what it is really is about
i. With finances tight, there will be less willingness to share resources openly.
j. Much of the 'sharing' is simply showing off or marketing
k. This does not currently have much relevance to me or my students

l. In putting resources 'out there' unanticipated and exciting things can happen.
m. Teaching practices must change so that sharing and reuse becomes a habit
n. This could be the most important development in academic practice for a long time.

9. [Sharing other than learning resources/Online Technologies Usage]

This question specifically asks about sharing resources OTHER THAN learning resources for students. The resources shared could relate to research or teaching. Do you:

Yes/ No/ NA

a. Publish papers in open journals?
b. Link to online content when writing reports, papers, etc.?
c. Use social bookmarking or similar to share links?
d. Deposit resources into an institutional open repository?
e. Publish research or teaching presentations publicly online?
f. Publish podcasts or other audio/video online?
g. Use Twitter or other social networking sites to share information?
h. Maintain a personal blog or wiki?
i. Present outcomes from your work at research/teaching events?
j. Share in response to requests for help via mailing lists or email?
k. Present outcomes from your work at staff development events?
l. Publish books or study guides with a commercial publisher?
m. If you share resources in ways different to those listed above, please specify

[Your intentions to Submit and Use OER [OCW]]

10. I have submitted teaching and learning resources for publication as OER

Y/N / NA

11. I will submit teaching and learning resources for publication as OER in the future

Y/N / NA

12. I would consider submitting teaching and learning resources for publication as OER.

Y/N / DK/NA

13. I have used OER from other academics in my teaching.

Y/N / DK/NA

14. I will use OER from other academics in my teaching in the future.

Y/N / DK/NA

15. I would consider using OER from other academics in my teaching in the future.

Y/N / DK/NA

16. Please indicate your agreement or disagreement that the following would be barriers to your publishing [use] of OER/OCW: [publishing and using asked separately]

Strongly Disagree - Disagree - Neutral - Agree - Strongly Agree

a. My awareness of the university OER repository
b. My awareness of other OER resources
c. Fear over copyright infringement
d. Fear over ownership and legal barriers (other than copyright)
e. Availability of my time
f. Skepticism over usefulness
g. lack of reward and recognition
h. possible negative impact on reputation
i. lack of support for me
j. school/institution policy regarding OER
k. criticism from colleagues
l. criticism from students
m. impact on career progression
n. relevancy of materials available
o. lack of feedback from users

17. Please indicate your agreement or disagreement that the following would be benefits to your publishing [use] of OER: [publishing and using asked separately]

Strongly Disagree - Disagree - Neutral - Agree - Strongly Agree

a. It would enhance the university's reputation
b. It would enhance my personal reputation
c. It would enhance the users knowledge of a subject
d. It would support students without formal access to HE
e. It would share best practice
f. It would reduce development costs/time
g. It would develop communities and build connections
h. It would enhance current practice
i. It would support developing nations

18. What types of open resources would you be most willing to publish or use? [publishing and using asked separately]

Please check all that apply.

a. lecture notes
b. recorded lectures
c. podcasts (other than lectures)
d. interactive learning objects
e. PowerPoint slides
f. module handbooks
g. assessment questions(formative)
h. assessment questions (summative)
i. reading lists
j. timetables
k. images
l. animations
m. video

19. I would be happy to make teaching materials available openly to learners and academics:

Strongly Disagree - Disagree - Neutral - Agree - Strongly Agree

Instruction to users - *make sure it's clear when you're setting up the survey that this is the start of a new section*

[Creating and Using Learning Resources]

The next questions ask you about your work in creating or using online teaching and learning resources (e.g. presentations, worksheets, forum posts).

Where we use the term 'learning resources' this refers to teaching and learning resources

20. [Motivation to share]

Please indicate if the following would encourage you to share your learning resources with others.

For options which you feel would not occur in your context, choose No effect/Not Applicable.

a. Rare or unusual resource
b. My project, department, institution requires this
c. Possibility of reward
d. My reputation is improved

e. The reputation of my team, department or institution is enhanced
f. Develops my research activity or interests
g. Opens my work to comment, review etc.
h. Increases my audience
i. Increases use of resources
j. Reuse is a good thing to do
k. Good for my professional development
l. This will save me time
m. This saves money
n. Student learning quality is improved
o. I would obtain extra resources or support to create it
p. Quality of the resource is improved by sharing it

20b. Are there other reasons you might share resources you have created? (If so, please specify)

21. [Concerns using resources]

Please indicate if the following are concerns you would have about using resources created by someone else.

Strongly Disagree - Disagree - Neutral - Agree - Strongly Agree

a. I'm more familiar with resources I have developed myself
b. I would miss the creative buzz
c. It would be a lost chance to learn new skills
d. It would be less relevant to how I teach
e. I might lose time in searching for a resource without finding one
f. It might not be of high enough quality
g. I would need to make changes anyway before use
h. The different style may confuse my students
i. I don't like to alter someone else's work
j. Authors might have infringed copyright
k. It might be inaccurate
l. It might be out-of-date
m. The time taken to evaluate it may be wasted
n. The web address (URL) might change
o. Others will be using it – it's not exclusive

21b. Do you have other concerns? (If so, please specify)

22. Do you design or create learning resources (other than reusing commercially published ones)?

a. For students? Yes/ No / Not applicable
b. For colleagues? Yes/ No / Not applicable
c. For instructional designers? Yes/No/Not applicable
d. For others? Yes/ No / Not applicable

23. Do you select, adapt or use/reuse learning resources (other than commercially published ones)?

a. For students? Yes/ No / Not applicable
b. For colleagues? Yes/ No / Not applicable
c. For instructional designers? Yes/No/Not applicable
d. For others? Yes/ No / Not applicable

24. [Motivation for resources reuse]

Please indicate if the following would encourage you to adapt or reuse existing learning resources, rather than create new ones.

Strongly agree...For options which you feel would not occur in your context, choose Not Applicable(N/A).

a. My project, department, institution requires this
b. Possibility of reward
c. Rare or unusual resource
d. My reputation is improved
e. The reputation of my team, department or institution is enhanced
f. Develops my research activity or interests
g. Better looking than anything I could make myself
h. More technically complex than I could create
i. Opens my work to comment, review etc.
j. Online, so increases my audience k Increases use of resources
k. Reuse is a good thing to do
n. Good for my professional development
o. This will save me time
p. I would need extra resources or support to create it
q. This is more efficient, it saves money
r. Student learning quality is improved

24b. Are there other reasons you might use or adapt rather than create? (If so, please specify)

[Text answer]

25. [Maximizing resources reuse]

Do you feel that you currently use and adapt existing learning resources as much as you can?

Yes/ No/ NA

26. [Resources discovered online]

Approximately what percentage of learning resources do you use that were discovered by you simply searching online?

None / less than 33% / 33-66% / 66%-99% /100%

27. [Resources available online]

Approximately what percentage of the learning resources you make accessible to students/learners are made available to them online?'

None / less than 33% / 33-66% / 66%-99% /100%

28. [Resources suitable for sharing]

How do you make learning resources suitable for sharing?

Never/Rarely/Occasionally/Regularly/Always/NA

a. Remove contextual information (e.g. remove any personally identifying information)
b. Add open license
c. Check for third party rights
d. Improve appearance
e. Check accuracy
f. Check currency
g. Add references
h. Add acknowledgements
i. Check grammar
j. Re-size so that it can be used as stand-alone
k. Make available in other file formats
l. Publish publicly online, e.g. Slideshare
m. Upload to a repository
n. Disseminate information about availability
o. Are there any other things you do? (If so, please specify)

29. [Support for processes]

Do you have support for these processes e.g. someone else carrying out some or all of the work?

Yes / No /

29b. Other, please specify

30. [Learning resource types]

Each question below identifies a learning resource type. If you require one of these learning resources, please indicate what you are MOST LIKELY to do:

Create from scratch/Adapt ones I created earlier/Adapt ones created by others/Link to existing resources/Not used/Undecided

a. Assessment (formative), e.g. worksheets or quizzes
b. Assessment (summative), e.g. assignments
c. Audio recordings (e.g. podcasts)
d. Blogs
e. Discussion forum messages
f. Case studies
g. Data sets
h. FAQs or glossaries
i. Photos, diagrams, illustrations, etc.
j. Interactive multimedia resources
k. Lecture notes or handouts
l. Video lectures (20)
m. Video (other than recorded lectures)
n. Lesson plans
o. Study guides or handbooks
p. Presentations (e.g. PowerPoint)
q. Questionnaires or surveys
r. Reading or resource lists
s. Simulations or games (incl. Second Life)
t. Webpages (21)
u. Wikis (22)
v. Do you create or use other types of learning resource? (If so, please specify) [text response]

31. [Open content definitions]

What does the term Open Content mean to you?

Strongly Disagree - Disagree - Neutral - Agree - Strongly Agree

a. Resources which are free-of-charge to use for institutions
b. Resources which are free-of-charge to use for students
c. Resources which have an open license (e.g. creative commons)
d. Resources that learners (including informal learners) can access themselves e. Resources that are available on the web f. Resources that are offered for reuse, repurposing or versioning by others for new contexts
e. Resources which can be accessed by users without the need to log in or register h. None of these

32. [Open Educational Resources (OER), Open CourseWare (OCW) and 'open content']

Would you use the term Open Educational Resources (OER) in the same way as you would use the term 'open content'?

Yes/No

33. [Open Educational Resources (OER)/open content difference]

If 'No' what would you say is the difference between these two terms?

[text response]

34. Would you use the term Open CourseWare (OCW) in the same way as you would use the term 'open content'?

Yes/No

(34b) [Open CourseWare (OCW)/open content difference]

If 'No' what would you say is the difference between these two terms?

[text response]

Some of the questions in this question bank were taken from and sometimes modified from Bilges (2013)

Inclusive Practices Questions

(Rao & Gartin, 2003) WPA - Willingness to Provide Accommodation scale

[multiple select question]

1. If a student has a documented disability, I would

a. Allow student to tape record classroom lectures.
b. Provide copies of instructor's lecture notes after they attend lectures.
c. Extend deadlines for completion of class projects, papers etc.
d. Allow student to complete alternative assignments.
e. Allow student to do extra credit assignments when this option is not available to others.
f. Allow student to take alternative form of examination (example computer scored answer sheets or multiple-choice tests instead of essay tests or vice versa).
g. None Apply(NA)

(Lombardi, ITSI - Inclusive Teaching Strategies Inventory)

Attitudes Response

2. [Accommodations]

I believe it's important to...(select all of the following that apply)

a. allow students with documented disabilities to use technology (e.g. laptop, calculator, spell checker) to complete tests even when such technologies are not permitted for use by students without disabilities
b. provide copies of my lecture notes or outlines to students with documented disabilities
c. provide copies of my overhead and/or PowerPoint presentations to students with documented disabilities
d. allow flexible response options on exams (e.g. change from written to oral) for students with documented disabilities
e. allow students with documented disabilities to digitally record (audio or visual) class sessions
f. make individual accommodations for students who have disclosed their disability to me
g. arrange extended time on exams for students who have documented disabilities
h. extend the due dates of assignments to accommodate the needs of students with documented disabilities
i. None Apply(NA)

3. [Accessible Course Materials]

I believe it's important to… (select all of the following that apply)

a. use a course website (e.g. LMS or other website)
b. present course content in a well-organized, sequential manner
c. present course content in a manner that is paced to account for variations in students' learning styles and abilities
d. put my lecture notes or slides online for ALL students (on an LMS or other website)
e. post electronic versions of course handouts
f. allow students choices in submitting an assignment electronically (e.g. email, drop box, or discussion group attachment)

g. Present lesson material well in advance of the lesson date.
h. Provide a complete list of lesson materials and requirements for the whole course at or before the beginning of the session.
i. None Apply(NA)

4. [Course Modifications]

I believe it's important to...(select all of the following that apply)

a. allow a student with a documented disability to complete extra credit assignments
b. reduce the overall course reading load for a student with a documented disability even when I would not allow a reduced reading load for another student
c. reduce the course reading load for ANY student who expresses a need
d. allow ANY student to complete extra credit assignments in my course(s)
e. None Apply(NA)

[Inclusive Classroom]

5. I believe it's important to...(select all of the following that apply)

a. Make written course materials available in a variety of formats (eg as MSWord, PDF, RTF or plain text documents)
b. Use online interactive tools to encourage communication among students (e.g. discussion board, or email list, or chats)
c. Use online interactive tools to encourage student communication with me (e.g. discussion board, or email list, or chats)
d. Use multiple media in the course (eg, text, audio, video, graphics...)
e. Provide captions for video material
f. Provide audio recordings of lecture for download
g. Provide video recordings of lectures for download
h. Provide text transcriptions of lectures
i. Allow students to develop and share text transcriptions of lectures
j. Survey my classroom site in advance to anticipate any physical barriers
k. Survey my website in advance to anticipate any barriers to use
l. Include a statement in my syllabus inviting students with disabilities to discuss their needs with me
m. Make a verbal statement in class inviting students with disabilities to discuss their needs with me
n. Use a variety of instructional modes in addition to lecture, such as small groups, peer assisted learning, and hands on activities
o. None Apply(NA)

6. [Inclusive Assessment]

I believe it's important to...(select all of the following that apply)

a. allow students to demonstrate the knowledge and skills in ways other than traditional tests and exams (e.g. written essays, portfolios, journals)
b. allow students to express comprehension in multiple ways
c. be flexible with assignment deadlines in my course(s) for ANY student who expresses a need
d. allow flexible response options on exams (e.g., change from written to oral) for ANY student who expresses a need
e. None Apply(NA)

Actions

7. [Accommodations]

I do...(select all of the following that apply)

a. allow students with documented disabilities to use technology (e.g. laptop, calculator, spell checker) to complete tests even when such technologies are not permitted for use by students without disabilities
b. provide copies of my lecture notes or outlines to students with documented disabilities
c. provide copies of my overhead and/or PowerPoint presentations to students with documented disabilities
d. allow flexible response options on exams (e.g. change from written to oral) for students with documented disabilities
e. allow students with documented disabilities to digitally record (audio or visual) class sessions
f. make individual accommodations for students who have disclosed their disability to me
g. arrange extended time on exams for students who have documented disabilities
h. extend the due dates of assignments to accommodate the needs of students with documented disabilities
i. None Apply(NA)

8. [Accessible Course Materials]

I do...(select all of the following that apply)

a. use a course website (e.g. LMS or other website)
b. present course content in a well-organized, sequential manner
c. present course content in a manner that is paced to account for variations in students' learning styles and abilities
d. put my lecture notes or slides online for ALL students (on an LMS or other website)
e. post electronic versions of course handouts
f. allow students choices in submitting an assignment electronically (e.g. email, drop box, or discussion group attachment)
g. Present lesson material well in advance of the lesson date.
h. Provide a complete list of lesson materials and requirements for the whole course at or before the beginning of the session.

i. None Apply(NA)

9. [Course Modifications]

I do...(select all of the following that apply)

a. allow a student with a documented disability to complete extra credit assignments
b. reduce the overall course reading load for a student with a documented disability even when I would not allow a reduced reading load for another student
c. reduce the course reading load for ANY student who expresses a need
d. allow ANY student to complete extra credit assignments in my course(s)
e. None Apply(NA)

10. [Inclusive Classroom]

I do...(select all of the following that apply)

a. Make written course materials available in a variety of formats (eg as MSWord, PDF, RTF or plain text documents)
b. use online interactive tools to encourage communication among students (e.g. discussion board, or email list, or chats)
c. use online interactive tools to encourage student communication with me (e.g. discussion board, or email list, or chats)
d. Use multiple media in the course (eg, text, audio, video, graphics...)
e. provide captions for video material
f. provide audio recordings of lecture for download
g. provide video recordings of lectures for download
h. Provide text transcriptions of lectures
i. Allow students to develop and share text transcriptions of lectures
j. Survey my classroom site in advance to anticipate any physical barriers
k. Survey my website in advance to anticipate any barriers to use
l. include a statement in my syllabus inviting students with disabilities to discuss their needs with me
m. make a verbal statement in class inviting students with disabilities to discuss their needs with me
n. use a variety of instructional modes in addition to lecture, such as small groups, peer assisted learning, and hands on activities
o. None Apply(NA)

11. [Inclusive Assessment]

I do...(select all of the following that apply)

a. allow students to demonstrate the knowledge and skills in ways other than traditional tests and exams (e.g. written essays, portfolios, journals)

b. allow students to express comprehension in multiple ways
c. be flexible with assignment deadlines in my course(s) for ANY student who expresses a need
d. allow flexible response options on exams (e.g., change from written to oral) for ANY student who expresses a need
e. None Apply(NA)

12. [Disability Law & Concepts]

I am confident in...

select all of the following that apply

a. my understanding of relevant federal law
b. my responsibilities as an instructor to provide or facilitate disability related accommodations
c. my knowledge to make adequate accommodations for students with disabilities in my course(s)
d. my understanding of relevant provincial law
e. my understanding of Universal Design principles in education.
f. my understanding of the legal definition of disability
g. None Apply(NA)

13. Campus Resources

I know...(select all of the following that apply)

a. I know a Disability Services office exists on this campus
b. I know what type of services are provided by the Disability Services office on this campus
c. I know students with documented disabilities on this campus can receive support services from the Disability Services Office
d. I know students with documented disabilities on this campus receive adequate services from the Disability Services Office
e. I know where I can find additional support at this university when students with disabilities are having difficulties in my course
f. None Apply(NA)

<u>Open Access Publishing Questions</u>

Open Access (OA) publishing includes the practices of:

a) publishing in journals that make their contents freely available on the web to anyone

b) authors providing free copies of their articles, either before or after peer review, on their own web

site or an institutional web site (e.g., departmental or library site).

1. Have you ever published in an OA journal?

Yes / No

2. I plan on publishing in an OA journal.

Yes / No

3. Please rate your agreement with the statements below:

Strongly Disagree - Disagree - Neutral - Agree - Strongly Agree

a. I am familiar with open access publishing
b. I often place pre-print versions of my journal articles on personal or institutional open sites
c. I often place copies of my published, peer reviewed articles on personal or institutional open sites
d. I think that open access publishing is becoming more important for disseminating knowledge
e. Open access journals are important to my field
f. I use open access journals in my research

<u>Demographics and Teaching Context Questions</u>

Discipline area

1. Into which subject grouping(s) does your teaching or learner support activity best fit?

(If none of these please specify in Other. If you work across several areas please specify the mix in Other)

Arts, Languages and History

Mathematics, Computing and Engineering

Sciences and Environmental Sciences (including Geography)

Health and Medicine

Social Sciences

Education

Business and Management

Other (please specify) _____

Learner types

2. What type(s) of learners do you teach/support?

Frequently (1) Sometimes (2) Rarely (3) Never (4) Not Applicable (5)

Students on degree programmes (Undergraduates)

Students on degree programmes (Postgraduates)

Registered Access/Foundation course students

Informal learners (e.g. 'open' learners not requiring registration)

Online or distance learners

Work-based students

Other

3. My typical class size is:

1-10 11-30 31-60 0ver 60

4. This past year my classes have been typically taught:

Face to face only

Face to face with online support (eg, syllabus, lessons or reading lists, etc. on a website)

Online only

Combination of above (please explain)

5. How long have you been teaching?

6. What is your title?

7. What type of class do you typically teach?

Seminar Lecture Lab Other (please describe)

8. How long have you been teaching, regardless of institution?

1-3 years 4-6 years 7-10 years Over 10 years

8. How long have you been teaching at your current institution?

1-3 years 4-6 years 7-10 years Over 10 years

Appendix C– ITSI Questions

Inclusive Teaching Strategies Inventory (ITSI)
Subscales, items, and response stems

Contact:
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Attitudes

Response Stem	Attitudes: *I believe it's important to...*
	Actions: *I do...*
Subscale	Item
Accommodations	allow students with documented disabilities to use technology (e.g. laptop, calculator, spell checker) to complete tests even when such technologies are not permitted for use by students without disabilities
	provide copies of my lecture notes or outlines to students with documented disabilities
	provide copies of my overhead and/or PowerPoint presentations to students with documented disabilities
	allow flexible response options on exams (e.g. change from written to oral) for students with documented disabilities
	allow students with documented disabilities to digitally record (audio or visual) class sessions
	make individual accommodations for students who have disclosed their disability to me
	arrange extended time on exams for students who have documented disabilities
	extend the due dates of assignments to accommodate the needs of students with documented disabilities
Accessible Course Materials	use a course website (e.g. Blackboard or faculty web page)
	put my lecture notes online for ALL students (on Blackboard or another website)
	post electronic versions of course handouts
	allow students flexibility in submitting assignments electronically (e.g. mail attachment, digital drop box)
Course Modifications	allow a student with a documented disability to complete extra credit assignments
	reduce the overall course reading load for a student with

	a documented disability even when I would not allow a reduced reading load for another student
	reduce the course reading load for ANY student who expresses a need
	allow ANY student to complete extra credit assignments in my course(s)
Inclusive Lecture Strategies	repeat the question back to the class before answering when a question is asked during a class session
	begin each class session with an outline/agenda of the topics that will be covered
	summarize key points throughout each class session
	connect key points with larger course objectives during class sessions
Inclusive Classroom	use technology so that my course material can be available in a variety of formats (e.g. podcast of lecture available for download, course readings available as mp3 files) (I believe it's importa
	use interactive technology to facilitate class communication and participation (e.g. Discussion Board)
	present course information in multiple formats (e.g. lecture, text, graphics, audio, video, hands-on exercises)
	create multiple opportunities for engagement
	survey my classroom in advance to anticipate any physical barriers
	include a statement in my syllabus inviting students with disabilities to discuss their needs with me
	make a verbal statement in class inviting students with disabilities to discuss their needs with me
	use a variety of instructional formats in addition to lecture, such as small groups, peer assisted learning, and hands on activities
	supplement class sessions and reading assignments with visual aids (e.g. photographs, videos, diagrams, interactive simulations)
Inclusive Assessment	allow students to demonstrate the knowledge and skills in ways other than traditional tests and exams (e.g. written essays, portfolios, journals)
	allow students to express comprehension in multiple ways
	be flexible with assignment deadlines in my course(s) for ANY student who expresses a need
	allow flexible response options on exams (e.g., change from written to oral) for ANY student who expresses a

	need
Response stem	*I am confident in…*
Disability Law & Concepts	my understanding of the Americans with Disabilities Act (1990)
	my responsibilities as an instructor to provide or facilitate disability related accommodations
	my knowledge to make adequate accommodations for students with disabilities in my course(s)
	my understanding of section 504 of the Rehabilitation Act of 1973
	my understanding of Universal Design
	my understanding of the legal definition of disability
Response stem	*I know…*
Campus Resources	I know a Disability Services office exists on this campus
	I know what type of services are provided by the Disability Services office on this campus
	I know students with documented disabilities on this campus receive adequate services from the Disability Services Office
	I know where I can find additional support at this university when students with disabilities are having difficulties in my course

Appendix D – Reliability/Internal Consistency of Selected Measures

Asking questions about how someone would rate or agree with statements as measures of their underlying beliefs and attitudes needs to be approached carefully. Measures that seem intuitively related and useful in tapping an underlying belief or attitude toward an action or object can turn out to be measuring different aspects of those beliefs or attitudes and be unreliable in developing well grounded interpretations and models of respondents' understandings and behaviors. They may vary considerably in the way respondents are answering them which could suggest that the questions themselves are not stable measures. One way to look at the kinds of questions developed in this report for the Core Survey and the Question Bank is to investigate their reliability through using established statistical methods. Here we will use Cronbach's alpha to check the internal consistency of scales we have used in past surveys and that have been incorporated in the Core Survey. Cronbach's alpha is an estimate of the internal consistency or 'reliability' in this sense of rating scores (Ritter, 2010).

There are a number of questions about probes that are used in questionnaires such as these. For instance, many argue that using individual measures of a variable often lead to high levels of measurement error (Gliem & Gliem, 2003; Shaughnessy & Byers, 2013). and thus multi-item scales are more valuable in such research. While this is not always the case (Gardner, Cummings, Dunham,

& Pierce, 1998; Bergkvist & Rossiter, 2007) and there is a vibrant literature on emerging ways to approach scale and question development in this area (Alonso, Laenen, Molenberghs, Geys, & Vangeneugden, 2010) here we will take a conservative approach initially in the development of questions for the Core Survey and Question Bank and look for multiple item measures that show internal consistency. Here internal consistency means that a respondent who answers one way on question A would tend to answer the same way on a related question B of the measure. Such multiple probing can lead to more robust and stable measures and hence could be of more value when used in various forms of analysis and modeling. As Adrian puts it: "A single observation may be misleading and lacking in context thus multi-item measurement scales help overcome these distortions." (Adrian, 2011, p. 138). Further work would be necessary to determine if individual items from these multi-item constructs would show the robustness needed for use in models.

The inter-correlation of questions used to tap underlying constructs were measured in an area of OCW that we have data for from previous surveys. This can contribute to our understanding of the behavior of these measures and provide some support for their inclusion in the Core Survey. If the individual related items are highly correlated, then they may well be measuring an underlying factor, and provide the robustness and stability that can come from multiple measures.

As stated, Cronbach's alpha was to measure the level of inter-correlation between individual questions in the relevant scales. It is a ratio of variances and takes on values from 0 to 1, higher values reflecting more correlation, or reliability in the sense defined above.

Accepted interpretations of Cronbach's alpha levels are:

Cronbach's alpha	**Internal consistency**
$\alpha \geq 0.9$	Excellent (High-Stakes testing)
$0.7 \leq \alpha < 0.9$	Good (Low-Stakes testing)
$0.6 \leq \alpha < 0.7$	Acceptable
$0.5 \leq \alpha < 0.6$	Poor
$\alpha < 0.5$	Unacceptable

(Kline, 1993).

One set of questions we can apply these methods to is the set of questions concerning OCW characteristics. These appear with a 5 point scale for agree/disagree in Question 3:

Using the definition of OCW given above, please rate your agreement with the following statements:

Using an OCW website would...

Increase the visibility of my courses.

Be useful in preparing materials for an upcoming class.

Help me to see how other teachers in my area are approaching material.

Increase my awareness of faculty here or at other institutions in my area of teaching or research.

Be useful in developing or planning curriculum for my department.

In a survey done at a large public university, these questions were asked, and the results of calculating Cronbach's alpha for these items is shown below. The open source Gnu PSPP program (Gnu PSPP URL) was used for the calculations.

Case Processing Summary

		N	%
Cases	**Valid**	979	81.45
	Excluded	223	18.55
	Total	1202	100.00

Reliability Statistics

Cronbach's Alpha	**N of Items**
.89	5

Item-Total Statistics

	Scale Mean if Item Deleted	**Scale Variance if Item Deleted**	**Corrected Item-Total Correlation**	**Cronbach's Alpha if Item Deleted**
OCW - Increasing visibility of courses	13.13	7.68	.67	.88
OCW - Preparing materials for upcoming class	13.22	7.54	.68	.88
OCW - View how other fac approach material	12.87	7.06	.77	.86
OCW - Connect w other fac in my area	13.12	7.32	.78	.86

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OCW - Develop or plan curriculum 4 dept	13.13	7.27	.79	.86

As can be seen for the relatively high alpha, in the .86 to .89 range, these questions display internal consistency and are good candidates for use as a scale probing respondent attitudes toward OCW in the Core Survey or future questionnaires.

Another survey done at a large public university contained these questions also.

Case Processing Summary

		N	%
Cases	**Valid**	1327	88.23
	Excluded	177	11.77
	Total	1504	100.00

Reliability Statistics

Cronbach's Alpha	N of Items
.87	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OCW - Increasing visibility of courses	14.13	7.83	.64	.85
OCW - Preparing materials for upcoming class	14.31	7.60	.62	.86
OCW - View how other fac approach material	13.78	7.60	.72	.83

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OCW - Connect w other fac in my area	14.03	7.42	.74	.83
OCW - Develop or plan curriculum 4 dept	14.13	7.30	.75	.83

The analysis of its results shows a similarly though slightly lower alpha in the .83 to .87 range.

In both cases the results also point to the relative stability of the scales in the face of loss of individual measures, as the removal on any one does not affect the level of alpha considerably. And in both cases the relatively large N's, of 979 and 1327 help insulate the findings from small sample errors (Yurdugul, 2008; Bonett, 2002).

Appendix E – Information/Consent Letter and Invitation to Participate

Information/Consent Letter

Date:
Project Title: Open Scholarship & Inclusivity Surveys

INVITATION

You are invited to participate in a study that involves research. The purpose of this research project is to learn how familiar students, staff and/or faculty are with open educational materials and inclusive practices and to see what students, staff and/or faculty think of these practices. Open educational resources are materials, for instance from courses at educational institutions, that have been placed online and made available to anyone for viewing and re-use. Inclusive practices are those things that people do to make their materials accessible to the widest possible population, including those with limitations of sight, hearing and movement.

WHAT'S INVOLVED

As a participant, you will be asked by the researcher to look at a survey that asks a set of questions about beliefs and attitudes toward open educational materials and inclusive practices. You will be asked to go through the questions of the survey with an interviewer. You will then be asked about your understandings of the questions, and if you have any suggestions for their improvement. You will not be asked to answer the questions, rather to discuss their clarity and placement in the survey. You will also be asked to give your permission to record your discussion during the interview walk-through. If you do not want the session recorded, then we will proceed without recording, with the interviewer taking notes.
Participation will take approximately 30 minutes of your time if you choose to participate. You may stop at any time and withdraw from participating in the survey.

POTENTIAL BENEFITS AND RISKS

Possible benefits of participation include contribution to our understanding of student, staff and faculty attitudes toward open educational resources and inclusive practices. There are no known or anticipated risks associated with participation in this study.

CONFIDENTIALITY

All information you provide is considered confidential; your name will not be included or, in any other way, associated with the data collected in the study. You

will not be identified individually in any way in written reports of this research. Data collected during this study will be stored on a password protected hard drive of the Principal Student Investigator. Data from this pretest will be destroyed at the end of the project, Winter 2014. Access to these data will be restricted to the Principal Student Investigator Joseph Hardin *and* Faculty Advisor Peter Coppin.

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you wish, you may decline to answer any questions or participate in any component of the study. Further, you may decide to withdraw from this study at any time prior to publication of the data by contacting the Principal Student Investigator or Faculty Advisor and indicating your wish to withdraw, and you may do so without any penalty or loss of benefits to which you are entitled.

PUBLICATION OF RESULTS

Results of this study may be published in professional journals and presented at conferences. Feedback about this study will be available from Principal Student Investigator Joseph Hardin, available at Joseph.Hardin@gmail.com within two months of the completion of the survey.

REUSE OF DATA

The data from this pretest will not be used in any further studies and will be destroyed at the end of the project, this coming Winter, 2014.

SPONSORSHIP OF RESEARCH

This research is sponsored in part by a grant from [agency], a federal government agency encouraging student research and collaboration with Canadian industry, and the [organization], a provider of educational software and services.

BENEFITS TO RESEARCHERS

This research has the potential to lead to profit for the researchers or the research partners, if it is commercialized.

CONTACT INFORMATION AND ETHICS CLEARANCE

If you have any questions about this study or require further information, please contact the Principal Student Investigator Joseph Hardin *or* the Faculty Supervisor, using the contact information provided above. This study has been

reviewed and received ethics clearance through the Research Ethics Board at the Ontario College of Art & Design, approval # 2013-18.

If you have any comments or concerns, please contact the Research Ethics Office at http://www.ocad.ca/research.htm or email: research@ocad.ca.

CONSENT

Before going through the survey, you will be given a copy of this form. You will be asked to read this information then be asked to give your consent verbally before you continue to the survey itself. You may ask the researcher/interviewer doing the walkthrough any questions you have about the survey or its purposes, or this walkthrough/interview and its purposes. You may withdraw your consent at any time up to December 31, 2013, by contacting the Principal Student Investigator and any data that you may have provided up to that point will be destroyed.

I agree to participate in this study described above. I have made this decision based on the information I have read in the Information-Consent Letter. I have had the opportunity to receive additional details about the study and understand that I may ask questions in the future. I understand that I may withdraw this consent during the study.

Name: _____

Signature: _____ Date: _____

Thank you for your assistance in this project. Please keep a copy of this form for your records.

Invitation to Participate in Pretest

Date:

Title of Study: Open Educational Resources and Inclusive Practices Survey

Hello,

I am Joseph Hardin, a graduate student from the Masters in Inclusive Design Program, Ontario College of Art & Design University. **I would like to invite you to participate in a research project** entitled "Open Educational Resources and Inclusive Practices Survey."

The purpose of this research project is to learn how familiar instructional staff and faculty are with some open educational materials and inclusive practices and to see what instructional staff and faculty think of these practices. Open educational resources are materials, for instance from courses at educational institutions, that have been placed on-line and made available to anyone for viewing and re-use. Inclusive practices are those things that people do to make their materials accessible to the widest possible population, including those with limitations of sight, hearing and movement.

The expected duration of your participation is 15-25 minutes. The survey will be open from November 19 to November 25, 2013. All responses you provide are considered strictly confidential.

This research should benefit anyone interested in an understanding of staff and faculty attitudes toward open educational resources and inclusive practices.

This survey has been supported by [organization], which has suggested participants at a number of institutions, and has been funded by a grant from the [agency].

This study has been reviewed and received ethics clearance through OCAD University Research Ethics Board file # 2013-18. If you have any pertinent questions about your rights as a research participant, please contact them at 416-977-6000 ext 474 or research@ocad.ca). If you have any questions, please feel free to contact me.

You can go to the on-line survey at [URL] **and log in as** [username] **with password** [password] **[Instructions on how to access the survey]**

Thank you,

Joseph Hardin

Graduate Student and Principal Investigator
OCAD University, Faculty of Design

Masters Research Project: Investigating the Intersections of Open Educational Resources and Inclusive Educational Practices

Joseph Hardin
Masters Degree in Inclusive Design

January 7, 2014

The use of the term "tools" in this MRP document, in relation to the survey and related questions from the question bank, refers to the "methods and practices" that were developed to ascertain the beliefs, attitudes, intentions and/or actions of subjects.

Part of the work reported on in this MRP document, "Investigating the Intersections of Open Educational Resources and Inclusive Educational Practices," was done under a MITACs intellectual property (IP) agreement with Desire2Learn Incorporated. The materials contained in the Appendices A, titled "Core Survey", beginning on page 79 and ending on page 84; Appendix B, titled "Question Bank," beginning on page 85 and ending on page 103; and Appendix E, titled "Information/Consent Letter and Invitation to Participate," beginning on page 113 and ending on page 116, are copyrighted by Desire2Learn Incorporated. All rights associated with these materials are reserved by Desire2Learn Incorporated. As such, the use of these materials by Desire2Learn Incorporated does not require attribution to this MRP document. Desire2Learn Incorporated's commercial and/or non-commercial use, or derivative works of the survey questions (e.g., the out-of-the-box survey, any questions from the question bank, or the request for client participation, and/or the like) likewise require no attribution to this MRP document. To the extent that the Desire2Learn Incorporated Internal Report prepared by the author is similar to this MRP in relation to the contents respectively therein, the Desire2Learn Incorporated Internal Report will take precedence, and in those cases Desire2Learn is not required to make attribution for such use because use of those contents is permitted by the MITACs IP assignment agreement.

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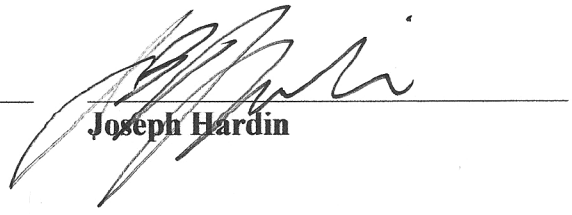
January 7, 2014
Date



Joseph Hardin