

# **Open CourseWare (OCW) Contributions: Recent Results from Romanian and American Teaching Staff and Student Surveys**

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## **Abstract**

Teaching staff and students at a Romanian university and an American university were recently surveyed about their familiarity with OCW sites and their interest in contributing course materials to a local institutional OCW site. In addition teaching staff and students were asked about their use of OCW materials and their willingness to encourage others to use and contribute to the local site. Uses of online ICT of various types were also surveyed. The results of the surveys, focusing on the OCW results, are compared and discussed. At both universities teaching staff and students, while currently having little experience with OCW materials, expressed considerable interest in participating in OCW initiatives, with the Romanian university showing higher interest in a number of categories. These investigations are part of an expanding international research effort of OCW contribution and use at institutions of higher education, research that has the dual goals of providing useful information to local OCW efforts and expanding the data and analysis of open scholarship activities available to web science.

## **Keywords**

Opencourseware, open courseware, OCW, open educational resources, OER, open access, open data, survey research, Sakai, Danubius Online, web science, open scholarship

## **1. Introduction**

Shadbolt, in his overview of the research tasks for Web Science, “Research Roadmap, Fundamental Research Questions and Perspectives in Web Science” (<http://webscience.org/research/roadmap.html>) attempts to lay out some of the issues before us in understanding the theory and practice of the web. He places questions of “openness” at the center of the web, both with respect to the necessity of open standards as foundations for the web itself as a socio/technical artifact, a result of engineering, and also with respect to one of the main purposes of the web, to facilitate innovation. “The Web, as it exists today, is a complex mixture of open, public areas and closed, private zones. There are prominent advocates of both positions: those that maintain that the Web must be based on open platforms; those that argue that property rights provide the strongest incentive for innovation in the Web. There has been little systematic and coherent research to resolve these positions. That research must be interdisciplinary.”

He goes on to observe that: “Sociology can develop an understanding of the two-way process by which individuals and technologies shape each other.” And he asks “How and why do people use newly emergent forms of the Web in the way that they do? What kinds of sociological and psychological concepts do we need to understand this?”

The example of Open Content in higher education provides us with a rich field of research to approach some of these questions. In the case, specifically, of Open Courseware, we have an emerging response in higher education to some of the novel possibilities of the web: the ability to publish to the world with marginal costs approaching zero, the ability to have immediate updating of materials on the web, the ability for distributed development of materials, the ability to develop global online communities of creation and use, and the emergence of online referent authority in areas of academic expertise. These have had impacts on the way teaching and learning is carried on in higher education. And the demands of teaching, and research, as the history of the web show, have had significant impacts on the design of the underlying systems that comprise the web itself. But while faculty have come to place materials in online systems, as students now naturally expect them to do, and students have access around the clock to updated syllabi, readings, class notes and presentations, the possibilities of the web are not realized if these are maintained in only closed systems.

So some of the materials from these courses have been placed in open, not institutionally bounded, repositories for the use and development of the global educational community. And in some cases this seems to be changing the way the creators of that material view their own work, the routes to impact for that work, and how they see others using their work. “How and why do people use newly emergent forms of the Web in the way they do?” Shadbolt asks, and the research

presented and discussed here focuses on this question in the realm of Open Courseware in tertiary education by asking “What do faculty currently know about Open Courseware,” “Do they use it,” “Do they create it,” “Would they contribute their course materials to local Open Courseware sites if asked to do so.” In addition, we investigate how students view Open Courseware, what value they see in it and if they would be willing to contribute to its creation.

Established sociological methods, here in the form of empirical survey research, are increasingly being applied over the web at universities around the world to answer these questions. This paper discusses recent work done at the University of Michigan and Danubius University of Galati, where a common set of core questions were asked of faculty and students about their beliefs, attitudes and intentions regarding Open Courseware and their possible contributions to it.

## **2. Contribution vs User Studies**

The studies described here are focused on faculty intentions to contribute their materials to OCW, and also student intentions about support of such contributions. These are thus more “contributor studies” than “user studies.” While the surveys do ask questions about how faculty and students would use OCW, and if they currently do, we focus here on the responses concerning contribution of materials to a local OCW site. The studies here are not focused, then, as some studies, such as the MIT and Tufts University site pop-up surveys (MIT, 2010; Lee, 2010), on *users* of the OCW. Nor are they directed as other studies, like some Carnegie Mellon University (Lovett, 2008) or Open University-UK studies (Lane, 2008), on the *pedagogical value* or effectiveness of OCW materials. They do resemble the MIT faculty and student surveys (Carson, 2009)), which, like the Danubius University and University of Michigan (UM) studies described here, ask about elements that the faculty and students find valuable about the OCW site, such as, for faculty whether or not they see such sites increasing their public exposure or being useful for creating courses, or, for students whether or not they find them useful in previewing courses or reviewing concepts from courses they have already taken.

But the studies here also differ from the MIT studies in another significant way. The MIT surveys were largely retrospective in the sense that there had already been a well established OCW effort, well publicized and centrally advocated, on their campus, and a developed, well populated site on their campus which respondents had had experience with. In addition, in the more recent studies,

most faculty had already made the contribution decision; around 80% of the MIT faculty had contributed materials. The Sakai OCW surveys were started, in contrast, before there was an open content site at either Danubius University or the University of Michigan, and asked questions that are largely prospective in nature, like “Would you contribute your course materials to a [local] OCW site?” These studies are meant to both increase our understanding about faculty and student beliefs and attitudes toward open scholarly activities, and be part of an ongoing effort to develop the OCW community at our universities.

The studies described here, then, are focused on the beliefs, attitudes and intentions of faculty and students who may or may not be *users* of OCW (as ‘familiarity’ measures reveal) but are overwhelmingly not currently *creators*, or *contributors*, of OCW, and their institutions do not have comprehensive OCW efforts or repositories in place, though the University of Michigan has since begun development of an open educational resources site that includes OCW (see <http://open.umich.edu>), and Danubius University has begun an effort to encourage faculty to employ online tools and also to contribute to a local OCW site (see below). These are studies focused on finding out who is interested in contributing OCW materials to a local OCW site, identifying clusters of such potential contributors, and understanding why they feel as they do. This knowledge can be useful in the service of developing a community of active OCW contributors, users and supporters.

We would argue this kind of study has been under-represented in our overall community efforts as we have moved to study effects, and not creation strategies, of OCW and as funders have moved away from funding seed and larger OCW efforts at established schools. These developments, while understandable, have left a partial vacuum of knowledge that could be useful in informing successful approaches to OCW project initiation, and the subsequent development and continuation of such projects at one of the key sources of quality OCW, our Higher Education institutions. Studies such as the ones we report on here can help fill that vacuum and provide both information for OCW effort development and methods for moving the discussion forward on those campuses seeking to develop a “culture of sharing” (Atkins, 2007) among their faculty and students.

### **3. OCW Surveys**

An initial report on the University of Michigan surveys for the years 2008-2009 can be found in Hardin (2010). Since that time, another round of the survey has been completed at the University of Michigan, and a survey has been done at Danubius University, Romania. We discuss the Danubius work first, then the Michigan work and in the process venture some comparisons.

As the result of a continuous effort directed at improving the capability of teaching and learning, Danubius University established in 2008 a two step strategy: first, build a comprehensive database of online courses and then migrate to open courseware as quickly as the academic community would adapt. To accomplish the first goal, in academic year 2009-2010 a portal called Danubius Online, an open source platform for learning and collaboration based on the Sakai Project was put into operation in pilot phase. The portal operated a relatively small number of sites. The main objective was the accumulation of experience in using it in actual operating conditions.

Using Danubius Online portal requires the training of trainers for teaching staff and providing use information to students. For training of trainers (teaching staff and assistants), Danubius University held from 22 to 29 September 2009 a series of practical courses. It also created a website project called Danubius Online Guide, which contains a user guide, a forum for participants and a chat room. For information on how university students could use the portal, they were provided with the project site "student guide" which contains instructions on how to conduct their online activities on various sites, including instructor-initiated class sites and student-initiated project sites. Faculty and students were instructed on how to share audio, video and text files, to chat and post messages or announcements, to take continuous evaluation tests and quizzes or to keep track of grades, all of this in the same platform.

As the first year of the pilot phase completes, the results are evident. After training sessions, meetings, workshops and a lot of team work, a significant number of faculty and students (although not so many as expected) are now connected to a continuously growing database of online courses.

To help document the developments of this first year, in the April-May 2010 period of time Danubius University conducted the MISI Survey 2010 (Sakai Multi-Institutional Survey Initiative). The purpose of the poll was to find out the views of faculty and students of Danubius University on the use of information technology in their activities, in general, to obtain an objective assessment of

how the introduction of Danubius Online portal was received by teachers and students, and to enable us to compare with other universities using Sakai, and engaging in OCW initiatives.

MISI is a multi-institutional survey, currently involving 29 universities in several countries. All these universities use systems based on the [Sakai](#) education and collaboration software. The survey is an endeavor among Sakai institutions to ask similar questions of instructors and students across Sakai implementations, with the goal to compare and contrast similarities and differences between institutions, as well as to provide feedback to improve Sakai development in the future (more information on the MISI Project, a table of participants and their positions on the map can be found [here](#)).

In order to accurately compare institutions, the participating universities were advised to use the same survey questions as much as possible. To that end, those organizations have been working collaboratively to arrive at a set of shared "core" survey items that will be used across institutions. The 2010 effort was built upon the survey items for the 2009 survey. This year, for the first time, a set of questions concerning OCW were available for institutions to use. A number of schools, including Danubius and Michigan, used these questions in addition to the core educational technology questions.

At the University of Michigan, there has been an effort for the last several years to understand faculty and student beliefs, attitudes and intentions toward OCW creation and use as well as technology use in general. The questions for the MISI community were taken from those developed for the Michigan surveys. Hence, the Danubius and Michigan surveys contained identical questions about instructor and student familiarity with OCW, and the willingness of instructors to contribute their course materials to a local OCW site, use such materials from the local site, and encourage colleagues to contribute to the site, as well as the desire of students to volunteer to help prepare the faculty materials for that local OCW site, use materials and encourage fellow students to use them.

#### **4. Analysis of Results**

The survey contained questions about both the respondents' attitude towards the use of ICT in higher education generally, their feedback on the experience gained using the Danubius Online

portal or the Michigan CTools system, both Sakai-based, and their understandings toward OCW. We will briefly mention the results of the core educational technology questions and then move on to the OCW related questions, which we will treat in a bit more depth.

For the Danubius survey 1953 students and 98 faculty were invited to respond. The student response rate was 9,06% (177 students responded) and instructor response rate was 24,49% (24 faculty responded). On questions about their view of higher education use of ICT tools such as: online collaboration tools for sharing documents (eg. Google Docs), online group calendars, instant messaging systems and chat, online streaming of audio / video, using blogs and personal Web sites, support for testing and review, online plagiarism prevention systems (eg. Ephorus), online surveys and other online tools, the vast majority of Danubius teachers agreed that they found them useful. Only about 5% of the teachers and 3% of students expressed disagreement and 12% of teachers and 11% of students declared themselves neutral. The results show that for both students and teachers the most important benefits are to be able to access materials anytime, anywhere and to improve methods of sharing information. Students appreciate the possibility of better management of working time. Also it was noticed that none of the respondents considered the use of ICT as bringing no benefit. So we see a general adoption of online methods for teaching and learning among this population, some tools or methods being found more useful than others. More complete results of the Danubius survey are available at <http://sites.google.com/a/univ-danubius.ro/elearning/>.

Similar results for the educational technology portion of the survey were found at the University of Michigan. For the 2010 survey all instructional faculty were invited to respond (n=7,626). There was a 13% response rate to the survey (n=1,017). A random sample of 25% of the student body, stratified by college/department, was invited to respond (n=9,095). There was a 16% response rate to the survey (n=1,415). A report of the 2010 survey, and earlier surveys, at Michigan can be found at <https://ctools.umich.edu/access/content/public/surveys/portal.html>. (Lonn, 2010) The relationship between early adopters or more frequent users of online educational tools like the Sakai tools, and interest in contribution to OCW has not been investigated yet. There may well be some differences since decisions to use new technologies, and having an interest in providing materials, initially online or not, to an OCW site are different decisions, involving different commitments and perceptions of value. The data that are being gathered through these surveys will allow us to contribute to answering such questions.

## 5. The OCW Questions

The data developed in the OCW portions of the Danubius and Michigan surveys are portrayed in graphical form below, see Figures 1-4. The first question asked about familiarity with open courseware sites. The teaching staff at Danubius University reported more awareness of OCW sites in general, saying that over 90% of them were aware of such sites. That compares to only 50% of the University of Michigan Instructors who said they had heard of OCW. Students at Danubius also reported higher awareness of OCW sites, 58% of them having heard of OCW sites, than students at Michigan, of whom only 25% had heard of OCW sites. In both institutions, however, teaching staff were much more likely to have heard of OCW than students.

This differential in teaching staff familiarity was reproduced in teaching staff viewing, using and contributing to OCW sites, with the Danubius instructors more likely to have done each of these than the Michigan instructors. Likewise, students at Danubius were more likely to have viewed or used OCW materials, 30%, versus Michigan students, 15%. Students at Michigan, however, were more likely to have helped publish materials on the OCW site, likely due to the University of Michigan "dScribe Project" which has encouraged participation of students in the OCW publication process. ( see [https://open.umich.edu/wiki/D\\_Scribe](https://open.umich.edu/wiki/D_Scribe))

While the number who had not yet heard of, viewed or used OCW sites was considerable, at both schools a large number of teaching staff say they are ready to contribute their course materials to a local open courseware site. At Danubius fully 75% of the teaching staff who responded to the survey said they either agreed (46%) or strongly agreed (29%) when asked if they would put up their course materials on a local OCW site. For Michigan the numbers are 37% agreeing and 8% strongly agreeing. The Danubius teaching staff seem to be considerably more prepared to contribute their materials, but in both institutions the survey finds a large proportion of the teaching staff ready to support an institutional OCW site with the products of their own intellectual work.

In addition corresponding numbers of instructors at the two schools said they would use material from such sites in their own teaching, with totals for agreeing and strongly agreeing being 75% for Danubius, 55% for Michigan. Instructors also said they would encourage colleagues to publish

materials from the local OCW site, 71% for Danubius respondents and 38% for Michigan respondents.

Students also portrayed themselves as being willing to volunteer to help faculty in the preparation of materials for the OCW site, where class materials often have to be cleaned up and their copyright status checked before they can be placed on an open site. 45% of the students interviewed at Danubius said they would volunteer to help, compared to 24% at Michigan. In both cases, there is a large pool of potential workers in the OCW preparation process, if these students can be productively channeled into such efforts. Such activities on the part of students could benefit both them, with more exposure and collaboration with their teachers, and the institution, through helping to lower OCW production costs. Such models have been proposed and experiments such as the dScribe Project are underway, but no demonstrated, reproduced models of success have appeared to date.

## **5. Conclusion and Future Work**

At both the University of Michigan and Danubius University the recent surveys of teaching staff and students have exposed considerable interest in both contributing to and using materials from a local, i.e., institutional, OCW site. This is the case even though significant proportions of the community are either not aware of OCW sites or have had very little exposure to them. When confronted with the possibility of placing their teaching materials online in an open repository managed by their schools, many are ready to participate now. This bodes well for projects such as the Danubius two-stage Sakai/OCW effort and the more distributed Michigan effort. In both cases, the results of empirical studies such as these surveys can be employed in the development of community self-understanding and support for open courseware initiatives.

Both of the schools in this study intend to continue their investigations of instructor and student understandings and intentions toward OCW and other open scholarship practices. At the same time, this work is part of a growing international effort to survey faculty and students around OCW beliefs, attitudes and intentions, the better to understand the scholarly community's evolving perspectives on, and participation in, open educational activities; and the better to support such activities with quality, useful research. The survey described here has now been implemented in schools around the world, and new participants are welcome. For information and support in

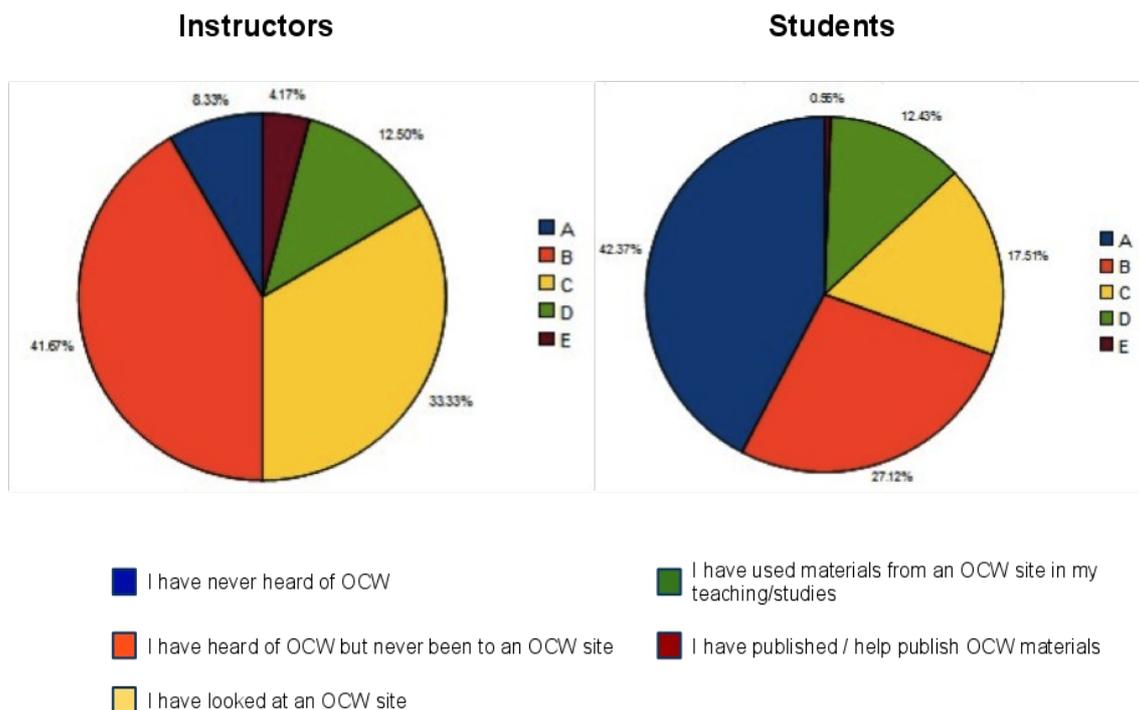
providing your colleagues or institution with the information that such research can provide, and to contribute to the growing database of OCW research, please contact one of the authors.

We feel that research such as this, carried out on an increasing scale, can contribute both to local efforts and to the emerging development of web science. We agree with Shadbolt that “Sociology can develop an understanding of the two-way process by which individuals and technologies shape each other,” and that the example of emerging OCW practices provides a valuable research area. When he asks “How and why do people use newly emergent forms of the Web in the way that they do?” we see our contributions and those of others in this research on the development of beliefs and practices around open courseware as helping to provide answers.

## 6. Appendix - 2009 Danubius University and Michigan University Survey Results

### Open CourseWare (OCW) Familiarity

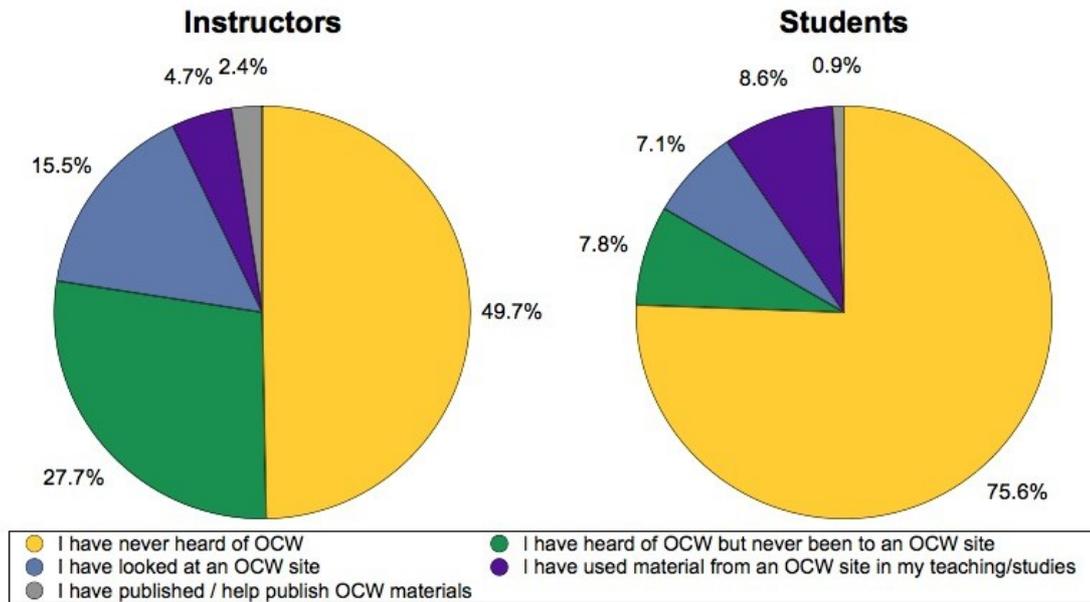
Q: What is your familiarity with OCW websites?



**Figure 1: Danubius University 2009 Survey Results - Familiarity with OCW**

# Open CourseWare (OCW) Familiarity

Q: What is your familiarity with OCW websites?



Usability, Support & Evaluation Lab, Digital Media Commons, University of Michigan

Figure 2: University of Michigan 2010 Survey Results - Familiarity with OCW

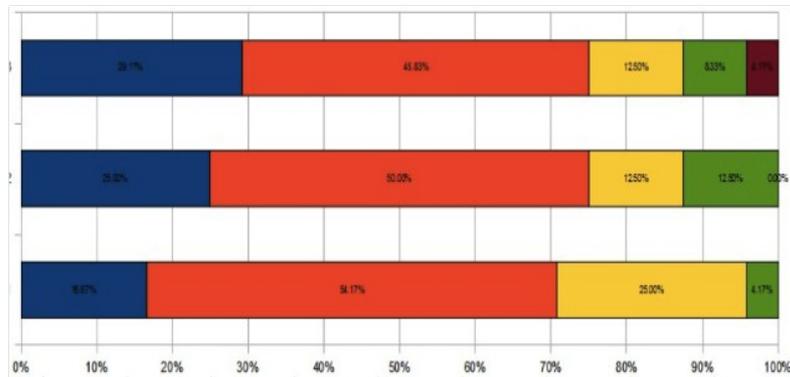
## OCW - Materials on Danubius Online

### Instructors:

Q: I would publish my course / other materials on Danubius Online

Q: I would use course / other materials from Danubius Online

Q: I would encourage my colleagues to publish materials on Danubius Online

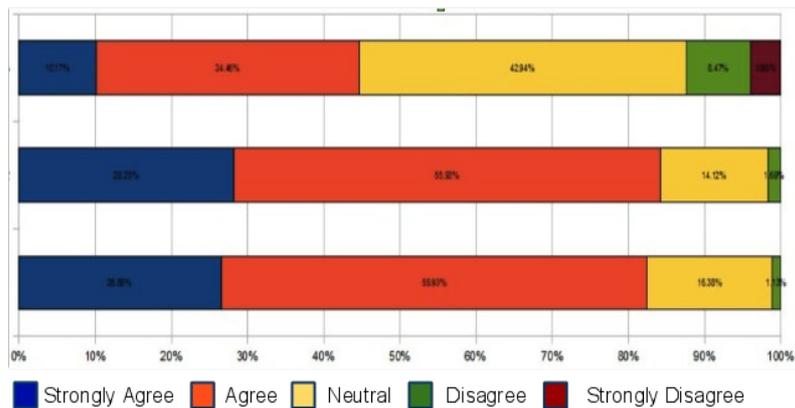


### Students:

Q: I would volunteer to help faculty publish course / other materials on Danubius Online

Q: I would use course / other materials from Danubius Online

Q: I would encourage other students to use materials from Danubius Online



*Figure 3: Danubius University 2009 Survey Results - OCW Contribute, Use, Encourage*

# OCW - Materials on Open.Michigan

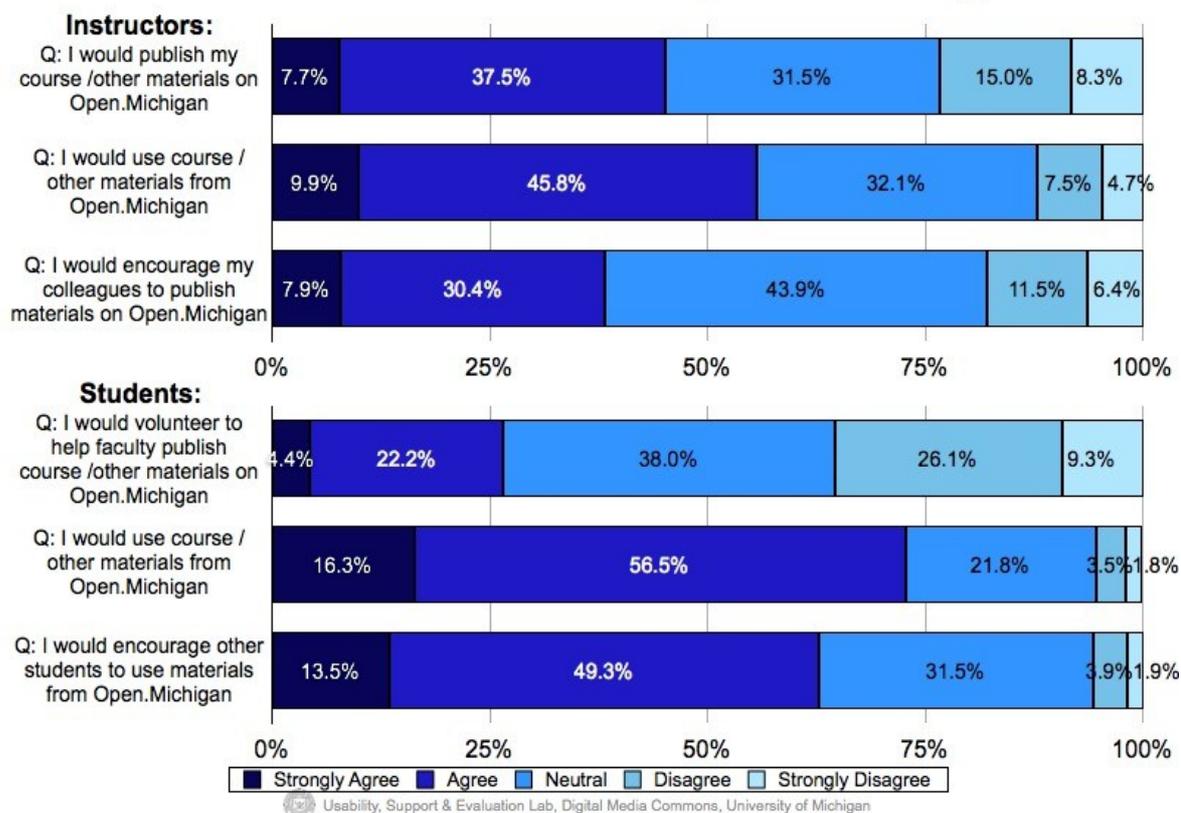


Figure 4: University of Michigan 2010 Survey Results - OCW Contribute, Use, Encourage

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