Faculty Adoption of Open Educational Resources

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Introduction

Open educational resources, or OERs, are becoming increasingly prominent in higher education (Armellini & Nie, 2013). The term originally came from a spring 2002 meeting held at UNESCO, and was defined as: "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). Since 2002, open educational resources have evolved to include a variety of technologies, content, and resources. Examples include opencourseware, such as MIT's OpenCourseWare, which provides access to content from complete courses at MIT; learning objects and modules, such as the ones available in the MERLOT repository (http://www.merlot.org/merlot/index.htm); openly licensed textbooks, such as OpenStax College, openly available classes, and Massively Open Online Courses (MOOCs) (Bliss, Robinson, Hilton, & Wiley, 2013).

There are several reasons for using OERs in a higher education context. One reason is that OERs can provide opportunities for customization of content (Hilton III, Wiley, Stein, & Johnson, 2010). Some openly licensed textbooks and open learning modules allow instructors to adapt, rewrite, or reuse existing content to suit their course and maintain easy access for students. For example, at The University of Georgia, through a University System of Georgia (USG) Incubator Grant, a faculty member piloting an openly licensed textbook in a large biology course wrote an additional chapter that she deemed necessary for her course and added it to the open textbook.

Openly licensed textbooks can also provide a significant cost savings to students who may normally pay hundreds of dollars for a single course textbook. For example, in the same

grant, the openly licensed textbook used in a large biology course provided an estimated $200,000 savings collectively to UGA students during the 2013-14 academic year.

The Center for Teaching and Learning (CTL) at UGA has been doing research in the area of OERs for several years. This research addresses the goals of the USG's Complete College Georgia Initiative, a program focused on increasing the number of students who complete degrees in the USG. Complete College Georgia has eight major goals, and this research specifically addresses Goal 1: Increase in the number of undergraduate degrees awarded by USG institutions; and Goal 8: Restructure instructional delivery to support educational excellence and student success.

UGA CTL has previously received two Incubator Grants through the USG to facilitate this research. The first Incubator Grant focused on the impact of cost savings by identifying a large enrollment course to pilot the open textbook. The second Incubator Grant focuses on the use of OERs in conjunction with flipped pedagogical models for the course.

Most recently, UGA CTL has received a Gates Foundation grant to continue research on OERs. This large grant project continues the focus on the Complete College Georgia initiative through potential savings to students, and introduces an additional courseware that is designed to personalize and improve a student's individual learning experience. The Gates Foundation grant project will develop and implement courseware using OERs in at least three of four areas: Accounting, Management, American Government, and Microbiology.

The courseware—called OpenStax Courseware—includes two components: OpenStax College, and OpenTutor. OpenStax College, currently being used at 875 institutions, provides free, open educational resources that are used in lieu of traditional textbooks that students purchase, and were used previously in the USG Incubator Grants. The second component is

OpenTutor, currently being beta tested at twelve institutions, which is an adaptive learning technology that students will use in conjunction with OpenStax College. The goal of the Gates Foundation grant project is to develop and implement resources that will help move students towards success in their courses, thereby improving retention and graduation rates.

This research study will be conducted in conjunction with the OpenStax Courseware grant project. Faculty members who are selected to participate in the OpenStax Courseware grant project will also be asked to participate in this research study.

Purpose of the Study

The purpose of this study is to learn about faculty perceptions and experiences when adopting OERs. Specifically, the study will look at faculty perceptions of adopting the OpenStax Courseware, and the challenges and benefits that faculty perceive when adopting this OER and adaptive learning technology in a course. The study will examine the faculty's experience during their initial course design, and during the teaching of their course.

Research Questions

The research questions for this project are:

- What is a faculty member's experience when adopting OERs?

- What are the barriers to faculty adoption of OERs?

- What can support a faculty member's adoption of OERs?

- How does adoption of OERs impact a faculty member's instructional decisions?

Significance of the study

While the OER movement is growing, it is still considered a fairly new movement in teaching and learning. Further research is needed to determine how to best adopt OERs for use in higher education. By gaining a better understanding of the faculty experience, faculty development professionals may be able to use these findings to better facilitate the adoption of OERs and their successful use by faculty and students.

Methods

Research Design and Methods

This study will use a qualitative research design to collect data from participants who are grant-funded faculty members from the four target disciplines—Accounting, Management, American Government, and Microbiology. The participants will be piloting and evaluating OpenStax Courseware. Faculty members who are funded by the grant will be invited to participate in the study. Faculty will participate in four interviews: one interview at the beginning of their course design and development process, one interview at the end of their course design and development process, one interview at the beginning of their semester teaching with the OpenStax Courseware, and one interview at the end of their semester teaching with the OpenStax Courseware.

Participants will be interviewed at the beginning of their course design process to ask about their perceptions of OERs, their past experiences with OERs, and their expectations of using OERs. Participants will be interviewed at the end of their course design process to see if their

perceptions of OER have changed, their current experience using the OER during course design, and how the OER use impacted their instructional decisions. Participants will be interviewed again at the beginning of their first semester teaching with the OER ask about their perceptions of OERs, and their expectations of teaching with OERs. Participants will be interviewed again at the end of the teaching semester to see if their perceptions of OER have changed, current experience using the OER for the semester, how the OER use impacted their instructional decisions, and perceived challenges and benefits during the semester.

Study Timelines

Faculty will be involved during the course of the semester(s) that they are using OpenStax Courseware. This includes any semesters of course design and development prior to teaching, and semesters when faculty are teaching using OpenStax Courseware. Faculty will participate in four interviews: one interview at the beginning of their course design and development process, one interview at the end of their course design and development process, one interview at the beginning of their semester teaching with the OpenStax technology, and one interview at the end of their semester teaching with the OpenStax technology. The researcher may follow up with faculty after interviews. Follow up will be for clarification purposes only. Primary analyses of interviews are expected to begin immediately after each round of interviews is completed. The estimated duration of the study is two years.

Procedures Involved

Faculty who are participating in the Gates Foundation grant project will be invited to participate in this research study. All participation in the study is voluntary. Participants will be asked to volunteer for a series of in-person interviews. These interviews will last no longer than 90 minutes, and will be audio recorded and transcribed. Faculty who participate in interviews may be contacted by phone or email for follow-up questions. The follow-up contact is for clarification purposes only. All procedures are for research purposes.

Data and Specimen Banking

Data will be secured on password-protected computers that only the principal researcher will have access to. Identifying information of participants will be removed from any reports that are seen by anyone other than the principal researcher. All data will be reported using pseudonyms or a number such as "participant 1."

Data Analysis

Interviews will be analyzed using content analysis/qualitative data analysis – coding for content and looking for themes.

References

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UNESCO. (2002). *Forum on the Impact of Open Courseware for Higher Education in Developing Countries.* Final Report. Retrieved November 25, 2014, from http://unesdoc.unesco.org/images/0012/001285/128515e.pdf

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Appendix

Interview Protocol
End of Teaching Semester

Open-ended Interview Protocol
Note: these questions will serve as a guide, but the protocol is open-ended by design in order to allow for further prompts and exploration based on participants' responses.

Open textbook
- What were your expectations about using an open textbook for your course?
  - Perceptions of quality? Have they changed?

- What has been most challenging?

- What has been most rewarding?

- What would you change about the design or implementation of the textbook?

- Would you use an open textbook again? Why or why not?

Courseware
- What were your expectations about using OpenTutor for your course?

- What has been most challenging?

- What has been most rewarding?

- Can you talk to us about your impressions of the courseware in terms of student learning?
  - Usefulness, impact on learning, was it enjoyable?

- Can you talk to us about your impressions of the courseware from an instructional perspective?
  - Usefulness, impact on instructional decisions, was it enjoyable?

Is there anything else you would like to add about your experience with the OpenStax Courseware?