

Using Open Educational Resources To Help Students Understand The Sub-Prime Lending Crisis

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ABSTRACT

In this paper, I describe an assignment designed to give students an intermediate level of understanding of the causes of the crisis using online educational resources widely available on the internet. I implemented the assignment in an undergraduate intermediate accounting course. Feedback from students indicate the assignment enhanced their learning of basic financial literacy concepts, encouraged them to make links between significant economic events and accounting concepts, and increased their confidence in their ability to learn difficult concepts on their own.

Keywords: Open Courseware, Open Educational Resources, Online Instruction, Teaching methods, Sub-prime Lending, Economic Crisis

INTRODUCTION

The Internet, important for its ability to provide access to information, is being used to deliver coursework, including video-taped lectures, lecture material, and syllabi. Increasingly, more and more institutions and individuals are sharing digital learning resources over the Internet openly and without charge. Called “open content”, also known as “open courseware (OCW)”, “or open educational resources (OER)”, anyone with access to the web can download teaching materials from many universities and educators worldwide. These universities include Yale, Harvard, UC Berkley, Stanford, and MIT. However, despite the great potential of the wide dissemination of knowledge, a major criticism of OER/OCW is that knowledge of their existence is sparse, and without integration into degree programs, they miss an opportunity to increase its relevance to users (Arendt & Shelton, 2009).

Conole and Weller (2008) believe that part of the lack of integration of OERs is because teachers lack the necessary design skills to be able to take and adapt the materials. Cantoni (2008) noted that only 26% of the MIT OCW users were teachers willing to use and adapt the materials. The majority of the users of the MIT OERs are either self-directed learners or students, enrolled in a formal course, using the materials as a complement to their recommended course materials (Cantoni, 2008). This paper describes an assignment that incorporates OER into an undergraduate accounting course from a degree-granting institution to help students understand the underlying causes of the sub-prime credit crisis.

BACKGROUND

Open Educational Resources (OER) represents the combined international effort to help equalize the access to knowledge and educational opportunities throughout the world (Bissell, 2007). OER is teaching, learning, and research resources that are in the public domain or have been released under an intellectual-property license that permits their free use or customization by others. The OER leaders at the Willam and Flora Hewlett Foundation said it this way: “At the heart of the open educational resources movement is the simple and powerful idea that the world’s knowledge is a public good” (Smith & Casserly, 2006).

The benefits of OER are several. Initially, they can expand access to learning for everyone, including nontraditional groups of students and those from disadvantaged backgrounds, resulting in the widening of participation in higher education. OER can be an efficient way of promoting lifelong learning, bridging the divides between non-formal, informal and formal learning. Additionally, they can be an asset for expanding education in developing countries. In short, they offer a dramatically new approach to the sharing of knowledge which can lead to economic success of individuals, communities, companies, and, ultimately, entire countries (Hylén & Schuller, 2007).

One of the barriers to significant expansion of OER/OCW is the possible loss of intelligence property rights and copyrights. To ease the concern of maintaining copyrights to the material posted on the web, institutions and individuals have turned to Creative Commons and the OpenCourseWare Consortium. Creative Commons, a nonprofit organization set up in 2001, provides an intellectual and legal framework to share or remix creative work found online. As a result, developers of online educational resources can control the rights they give others using their product. The OpenCourseWare Consortium is a collaboration of higher education institutions and associated organizations from around the world, creating a wide variety of open educational content based on a shared model (OCW Consortium). The mission of the OpenCourseWare Consortium is to advance formal and informal learning through the worldwide sharing and use of free, open, high-quality education materials organized as courses.

Benefits Of OER/OCW In The Classroom

OER/OCW can be a valuable resource to students and instructors for many reasons. Arendt and Shelton (2009) found OCW had the following advantages, from the student's perspective: 1) free materials; 2) continuous access to resources; 3) the ability to pursue a topic thoroughly; 4) the ability to learn for personal knowledge or enjoyment; and 5) easy access to materials. Another advantage for students is the direct access to experts in the topic area. Many of the authors of OER materials are very familiar with the topic and have spent many years teaching. Furthermore, with OERs, students can control their pace of learning. Video and audio lectures can be stopped, replayed, or fast forwarded at the will of the student.

Using OERs in the classroom provides many advantages for the instructor. As with the students, instructors can rely on the expertise and knowledge of someone who is most likely an expert in the area. The subject of OER materials can be very timely and can be a valuable, real-time resource for current, often complicated issues. Furthermore, much of the supplemental material for OERs includes syllabi, worksheets, and lecture materials, all of which can be freely used by the instructor. This allows the instructor to devote more time to designing the assignment, assessing learning progress, and providing supplemental information.

The Credit Crisis And Its Importance

The sub-prime mortgage crisis, caused by a rise in mortgage delinquencies and foreclosures in the United States, had significant adverse consequences for financial markets and banks around the world. The crisis became apparent in 2007 and has exposed extensive weaknesses in financial industry regulation and the global financial system. The sub-prime mortgage crisis is an ongoing economic problem manifesting itself through liquidity issues and rampant unemployment, which accelerated in the United States in late 2006 and triggered a global financial crisis during 2007 and 2008 (Masood, Aktan, & Pariente 2010). The crisis led to massive bank failures, including the near collapse of American International Group (AIG), one of the world's largest insurance companies which resulting in an infusion of \$85 billion from the Federal Reserve Bank.

DESCRIPTION OF THE ASSIGNMENT

The assignment involves students viewing instructional videos, available on the web, over a three week period. The assignment has the following major learning objectives:

1. To introduce students to valuable, free resources on the web and to encourage self-learning as a life-long endeavor.
2. To help the student gain an understanding of the credit crisis and its causes.

3. To help the students reach a higher level of financial literacy by describing the purposes of mortgages and related financial investment products and how they impact the economy.
4. To help the student understand the importance of management and accounting disclosures and their impact upon investment decisions.
5. To help the student relate accounting principles and assumptions, such as the going concern assumption and the full disclosure principle, to current events.

For the assignment, I used OERs from the Kahn Academy. The Kahn Academy is an online collection of over 1400 videos which were developed by one individual, Salman Khan. According to his website (Kahn Academy), he received his MBA from Harvard Business School. He also holds a Masters in electrical engineering and computer science, a BS in electrical engineering and computer science, and a BS in mathematics from the Massachusetts Institute of Technology. He also worked as an investment banker. The Khan Academy is a not-for-profit organization with the mission of “providing a high quality education to anyone, anywhere” (Kahn Academy). The videos are 10-20 minutes long and are especially designed for viewing on the computer as opposed to being a longer video of a conventional "physical" lecture. His videos on the credit crisis were featured on CNN as a resource to viewers who wanted to understand the origins of the crisis in simpler terms.

The assignment contained a brief introduction which included the above objectives. The document also contained hyperlinks to Kahn Academy and to each video. The assignment was broken into three parts. A set of summary, reflective-type questions followed each section. The student responses to the questions enable the instructor to assess learning. The assignment was posted on the University's course management system in word format to allow students to append the document as they completed each part.

Sample instructions for the assignment are included in Appendix A.

STUDENT EVALUATION OF THEIR LEARNING EXPERIENCE

Methodology

This assignment was introduced in two sections of an undergraduate intermediate accounting course at a medium-sized private American university. Each class met three hours per week for a 12 week-term. Fifty-four students (approximately 27 students in each class section) were enrolled in the course. To limit variation in teaching style and enforcement of course policies and assessment, the same instructor taught both sections of the course. After viewing the videos and answering the summary questions, students provided feedback by completing a questionnaire. Respondents used a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) to answer most of the assignment-related questions. Students' participation was entirely voluntary and anonymous. In addition, students were given an open space to make comments about the assignment.

Description of the Sample

Forty-six of the 54 students registered in the course completed the questionnaire, resulting in a response rate of approximately 85 percent. The students were juniors and were enrolled full-time. None of the students reported that they had ever been assigned a project using online video.

RESULTS

The survey questions are grouped into three main categories, representing the key types of feedback collected. Specifically, I collected feedback concerning student satisfaction with the assignment, their perceived degree of learning/knowledge gained after completing the assignment, and the students' perception of the critical thinking, integration of concepts, and independent learning motivated by the assignment.

Student Satisfaction with the Assignment

There were several questions related to student satisfaction with the assignment. Students were asked if the videos were helpful (mean =4.78, Std. Dev.=.52), if the assignment was relevant to the course (mean =4.52, Std. Dev.=.73), and if the assignment was worthwhile (mean =4.78, Std. Dev.=.42). Four of the 46 respondents indicated in the open comments that they were happy with the assignment because they could explain the financial crisis to other students, friends, and family. Overall, the students appeared very satisfied with the assignment.

I asked students to estimate the number of hours they spent in preparing the assignment. The mean score on this measure was 6.3 hours (minimum=3 hours, maximum=12 hours Std. Dev. = 1.71).

Perceived Degree of Learning/Knowledge Gained

The perceived degree of learning was generally positive. Students were asked if they felt they understood the financial crisis. Eighty-six percent felt they understood (responded with 4 or 5), with 75% responding with a “5” (overall mean=4.70, Std. Dev.=.56). A few of the videos gave general investment advice and explained the basics of purchasing a home. When asked if the respondents better understood mortgage lending and personal financing, they answered positive (mean=4.48, Std. Dev.. =.73; and mean=4.09, Std. Dev.=.85, respectively).

Critical Thinking, Integration of Concepts, and Independent Learning

I measured students’ perceived ability to integrate the concepts learned and to create different points of view, using the knowledge gained from this assignment. The responses were mixed, which was expected given the complicated nature of the crisis. Specifically relating to accounting concepts, respondents were asked if the assignment helped them better understand the going concern assumption and the full disclosure principle; respondents answered more favorably than neutral (mean=3.87, Std. Dev.. =1.01 and mean=4.22, Std. Dev.=.80, respectively).

The students were asked to connect what they learned about the crisis to accounting as a whole (mean =4.39, Std. Dev.=.72), to current outcomes (ex. drop in housing values and loss of jobs) (mean=4.41, Std. Dev.=.67), and to recent political actions (mean=3.68, Std. Dev.=.89). Consequently, it appears the assignment did not help the respondents make connections to political actions. Overall, the respondents seemed to be able to make the other connections requested in the assignment.

One of the objectives of this assignment was to help students gain the confidence of using available resources to learn difficult material independently. Seventy-four percent were positive about their ability to achieve this learning objective. None of the respondents rated their ability negative (1 or 2).

Some students noted in the open comment section of the survey that the prompt questions helped them to comprehend the material. Therefore, when planning to use online educational resources, the instructor should consider developing and providing summary questions if they are not provided with the resources.

CONCLUSION

This paper describes the design, use, and evaluation of the effectiveness of online educational resources used in an undergraduate accounting classroom. Using OERs in the classroom can be an effective way to help students understand important, difficult topics, make connections to accounting, and expose them to the vast resources available on the web. OERs add advantages for the instructor, including the ability to pursue topics outside of the classroom and allowing the instructor to devote more time to designing the assignments, assessing learning progresses, and providing supplemental information.

Based upon my experiences in implementing this assignment, including the data collected from my students, this type of assignment can enhance the learning experience and assist with the comprehension of a difficult subject. Students appeared satisfied with the assignment, perceived they learned the material, and

perceived they were able to think critically about the crisis. This type of assignment will serve them well in the constantly changing accounting profession and the business environment.

Interesting Links

Kahn Academy	http://www.khanacademy.org/
Open Learning Initiative	http://oli.web.cmu.edu/openlearning/forstudents/freecourses
MIT OpenCourseWare	http://ocw.mit.edu/courses/audio-video-courses/
Open Courseware Consortium	http://www.ocwconsortium.org/courses/ocwsites
Princeton UC Channel	http://uc.princeton.edu
Carnegie Mellon University's Open Learning Initiative	http://www.cmu.edu/oli/

AUTHOR INFORMATION

Evelyn McDowell is an assistant professor at Rider University. She is also a certified public accountant and has a MAcc and a Ph.D. in Accounting from Case Western Reserve University (Cleveland, Ohio). She obtained a bachelor of arts in business administration from Baldwin-Wallace College, in Berea Ohio. She teaches Accounting Principles, Intermediate Accounting, Managerial Accounting, and Governmental and Nonprofit Accounting. Prior to becoming an accounting professor, she owned and operated an accounting practice for over 15 years. In her practice, she specialized in small business and individual tax services; she also provided consulting services to nonprofit organizations. Dr. McDowell is a member of the AICPA, American Accounting Association, Institute of Internal Auditors, and Institute of Management Accountants.

REFERENCES

1. Arendt, A. M., & Shelton, B. E. (2009). Incentives and Disincentives for the Use of Open Course Ware. *International Review of Research in Open & Distance Learning*, 10(5), 1-25.
2. Bissell, A. (2007). Some Guiding Principles for Legal and Technical Interoperability in OER. Paper presented at the In Proceedings of Open Education 2007: Localizing and Learning, Logan, UT.
3. Cantoni, L. (2008). 'OER – Open Educational Resources: problems, opportunities and challenges, Keynote presentation, 11th Annual ELC-NET Conference, E-Learning Campus Zurich, University of Zurich, 25th January 2008.
4. Conole, G., Brasher, A., Cross, S., Weller, M., Clark, P., & Culver, J. (2008). Visualizing learning design to foster and support good practice and creativity. *Educational Media International*, 45(3), 177-194.
5. Conole, G., & Weller, M. (2008). Using learning design as a framework for supporting the design and reuse of OER. *Journal of Interactive Media in Education*, 1-13.
6. Hylén, J., & Schuller, T. (2007). Giving knowledge for free. *OECD Observer*, (263), 21-22.
7. Khan Academy. (n.d.). Retrieved August 18, 2010, from <http://www.khanacademy.org/>.
8. Masood, O., Aktan, B., & Pariente, G. (2010). A Discussion of Financial Regulations' Impact on the Subprime Crisis: Implications for Financial Markets. *International Journal of Business*, 15(1), 51-69.
9. OCW Consortium. (n.d.). Retrieved August 18, 2010, from <http://www.ocwconsortium.org/>
10. Smith, M., & Casserly, C. (2006). The Promise of Open Educational Resources. *Change*, 38(5), 8-17. Retrieved from Academic Search Premier database.

APPENDIX A: THE ASSIGNMENT

I. Control-click on the following links to the videos to answer the following questions:

Introduction to Balance Sheets

More on Balance Sheets and Equity

1. What is equity?
2. Why do traditional banks want the borrowers to pay a large down-payment?
3. What are the benefits of leverage?

II. Control-click on the following links to the videos to answer the following questions:

The Housing Price Conundrum

Housing Price Conundrum (part 2)

Housing Price Conundrum (part 3)

Housing Price Conundrum (part 4)

1. What is the role of supply and demand in explaining the housing crisis?
2. Why do people rent vs. buy?
3. Describe the traditional mortgage loan process. Who bears the risk of non-payment by the borrower?
4. Describe the intermediary mortgage loan process. Who bears the risk of non-payment by the borrower?
5. Describe the role of the rating agencies. Do you think they acted responsibly? Why or why not?
6. How does what you learned, by watching these videos, help you make investment decisions in the future?

III. Control-click on the following links to the videos to answer the following questions:

Mortgage-Backed Securities I

Mortgage-Backed securities II

Mortgage-Backed securities III

1. In your own words, what is a mortgage-backed security (MBS)?
2. What is the role of a special purpose entity? How do they make money?
3. What types of factors are considered by hedge fund owners to determine the risk related to MBS?
4. What do MBSs allow investors and borrowers to do? In other words, what are the advantages for both?

IV. Control-click on the following links to the videos to answer the following questions:

Collateralized Debt Obligation (CDO)

1. What is a derivative? What are tranches? Why would anyone want to be an equity investor?
2. Which tranche(s) would you buy and why?

Credit Default Swaps

Credit Default Swaps 2

1. In your own words, what are credit default swaps?
 2. How do insurance companies like AIG make money insuring against loan defaults?
 3. Why would a pension fund buy a CDS? Why would they have to “unwind” their investment?
 4. How did hedge funds make money using CDSs?
 5. What would happen if an insurance company could not pay the insurance claim for credit default swaps? How would it affect pension funds, its intended retirees, hedge fund investors, and other investors?
 6. What was the danger in allowing insurance companies to insure loan defaults?
 7. Do CDSs add real value to our economy? In other words, does a dollar invested in CDSs result in an investment in something that adds tangible value to the economy?
 8. What type of regulations would you recommend to prevent future financial collapses as a result from CDSs?
- V. To date, the government has given AIG over \$150 billion in TARP/bailout money, and experts predict that more money will be needed. I want you to think about these questions: Why did investors invest in AIG? Were there distress signals? Were the disclosures useful and relevant?

Obtain the AIG’s 10K, annual financial statements, for December 31, 2005 and 2008 (see Blackboard under “Assignments” tab) and answer the following questions:

1. What is the full disclosure principle?
2. Read, to best of your ability, the disclosure about AIG’s credit rating risk, especially the bullet points on page 65, in the 2005 annual report (p.64-65 of the PDF file posted on Blackboard). Given the benefit of hindsight, was that disclosure accurate? If you read this in 2006, do you think you would have purchased the stock, which was selling for around \$68.70 (close to its 52 week high), at the time? Why or why not?
3. What happened to the credit rating of AIG (see page 3-4 of the 2008 annual report)?
4. What is the going concern assumption? Does AIG expect to be a going concern? Read over “Continuing AIG’s Ability as a Going Concern” (on page 39 of the 2008 annual report).
5. The Financial Services Division of AIG (AIGFP) is responsible for selling CDS products. Read the “Financial Services Operations” disclosure starting on page 115 and continue to page 116 of the 2008 AIG annual report. Answer these questions:
 - a. Do you think the average investor can understand this disclosure? Why or why not?
 - b. For 2008, 2007 and 2006, how much did AIG earn/lose in revenues and operating income for the capital market sector? How does this compare with earnings from 2003, 2004, and 2006 (see AIG 2005 report in the “Assignment” section of Blackboard for this assignment).
 - c. What was net income for AIG for December 31, 2008?
 - d. What was AIG’s net cash from operations for December 31, 2008?
 - e. How would you explain the difference between AIG’s net income (d) and AIG’s net cash from operations?
6. Based upon what you have learned in this assignment, do you think we should continue to bail out AIG? Why or why not?

NOTES