BEST PRACTICES FOR ONLINE LEARNING

Andrew Carrothers

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Andrew Carrothers

Faculty of Business

University of Prince Edward Island

Abstract

Online courses present a uniquely challenging environment for both students and professors. Sharing best practices with respect to student engagement, course development, and use of technology in blended and online environments enriches the capabilities of educational institutions and enhances student learning. By focusing on easily implemented, high-impact teaching practices, this paper demonstrates how to foster a sense of community, address assessment challenges, and maintain academic integrity through the appropriate use of discussion forums, experiential learning, synchronous and asynchronous lectures, online assignments, and exams.

Keywords

online learning; synchronous content; asynchronous content; Blackboard Collaborate; best practices; student-centered; experiential learning; academic integrity

Introduction

There are many levels to learning. Effective learning occurs when students engage with the subject in such a manner that what they learn meets their needs and objectives. Effective teaching requires the instructor to balance the demands of the curriculum with the needs and abilities of the students. People learn in different ways—good teachers use different techniques to respond to

different student needs (e.g., Brandes & Ginnis, 1996). This is especially true in an online learning environment. Shephard (2008) addresses the nature of learning outcomes in a student-centered learning environment. Learning outcomes should be student-centered, incorporate specific actions, provide a framework for developing meaningful assessments, and address multiple levels of learning.

I identify and describe the following easily-implemented, high-impact teaching practices for online learning:

a. Foster a sense of community by extending traditional discussion forums to include video uploads.

b. Balance the learning environment by using both synchronous and asynchronous lectures.

c. Incorporate experiential learning in the online environment.

d. Address assessment challenges and maintain academic integrity by sharing approaches to online assignments and exams.

e. Make expectations explicit.

f. Take advantage of your institution's experts.

This paper provides practical guidance on how to create and use "Google Forms," how to convert PowerPoint presentations to video, how to upload videos to YouTube, how to embed experiential learning into online courses, and how to structure online exams and assignments to avoid inappropriate student collaboration.

I have taught twelve online classes since the summer of 2015. My reflections on best practices are inspired by direct feedback from students, appropriation of good ideas and techniques from my colleagues, collaboration with the eLearning experts at my university, and the research and literature on teaching pedagogies. All of the best practices identified herein recognize and are consistent with the benefits of student-centred teaching and learning (e.g., Shepard, 2008).

Chickering and Reisser (1993) model the developmental changes common during a student's undergraduate years. Effective student development is further complicated by the needs and expectations of the current generation of undergraduates (e.g., Howe and Strauss, 2000). In recognition of the importance of motivation on success (e.g., Ford, 1992 and Ames, 1990), instructors should balance online course elements to include traditional lectures (asynchronous), problem solving activities (synchronous or real-time), and experiential learning. Given the inherent physical separation between participants in online courses, research by Boettcher and Conrad (2010) emphasizes the importance of establishing expectations for instructors and students as to how much time per week students should commit to course work and how communications will occur.

Moving Courses Online

Fostering a Sense of Community

Figure 1 shows a screenshot of a portion of a typical course web page. The layout and content of the page is important in making the online course easily accessible to students.

In addition to traditional elements such as the course syllabus and a forum for announcements, be sure to include an introductory forum to initiate class bonding. With online courses, it is harder for both students and professors to get a sense of who is in the class—an "Introductory Forum" provides an opportunity for the class to interact early in the semester by posting brief notes. One observation is that students prefer a visual introduction to their professor over a written introductory note. It is time well spent for the instructor to record and post a short video describing her or his background and teaching strategies. Discussion forums provide a structure for evaluation of class participation or for students to help each other.

Balance the Learning Environment by using both Synchronous and Asynchronous Lectures

Online classrooms need to walk a fine line between asynchronous and synchronous content. Video conferencing tools (e.g., "Blackboard Collaborate," n.d.) enable instructors to hold real-time (i.e., synchronous) lectures in virtual classrooms. One challenge faced when moving courses from a traditional classroom setting to an online environment is to keep the course atmosphere interactive.

Figure 1. Sample introductory section of a typical course webpage

Video conferencing enhances student experience in web courses by offering synchronous classroom lectures in which students can interact with the professor in real time. In my courses, I have many asynchronous elements that students can access at any time (such as online assignments and pre-recorded lectures assignments) but have received overwhelmingly positive student feedback about the benefits of including some real-time content (see Figure 2).

Asynchronous Lectures

Some students specifically seek out online classes so that they have complete control over when they access the content. Figure 2 presents typical website accessibility to asynchronous lectures. Consider the following tips for making asynchronous more effective:

a. Have many shorter videos rather than one long lecture— target ten minutes as the sweet spot.
b. Be specific in naming the lectures so that students can find content quickly.
c. Use a mix of embedded video and presentation slides with audio.
d. Convert your lectures to video format and upload to YouTube and paste the links to the lectures in the course website. This avoids consuming lots of memory space in the university's servers.
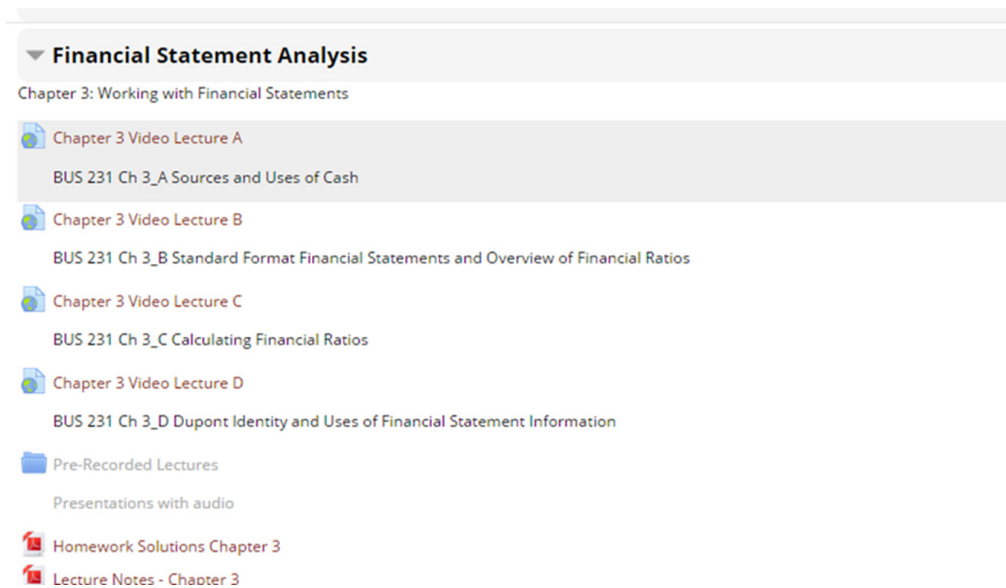

Financial Statement Analysis
Chapter 3: Working with Financial Statements

Chapter 3 Video Lecture A
BUS 231 Ch 3_A Sources and Uses of Cash

Chapter 3 Video Lecture B
BUS 231 Ch 3_B Standard Format Financial Statements and Overview of Financial Ratios

Chapter 3 Video Lecture C
BUS 231 Ch 3_C Calculating Financial Ratios

Chapter 3 Video Lecture D
BUS 231 Ch 3_D Dupont Identity and Uses of Financial Statement Information

Pre-Recorded Lectures
Presentations with audio

Homework Solutions Chapter 3
Lecture Notes - Chapter 3

Figure 2. Asynchronous content. This figure shows a portion of the course webpage where students can access links to pre-recorded video lectures.

Instructions on how to convert pre-recorded PowerPoint lectures to video and upload to YouTube

Figures 3 to 6 document the steps required to convert a pre-recorded lecture with embedded video from PowerPoint format to a video file that the instructor can easily post to YouTube. By making the upload "Unlisted" the lecture content is restricted to those who have the web link. Figure 3 shows an example of a PowerPoint lecture with embedded video (i.e., slide 2) and slides with audio tracks (e.g., slides 3 and 4). Most instructors prefer to protect their intellectual property by not posting the actual PowerPoint file to their course site, and most university information technology departments prefer that instructors post links to videos rather than consume university server space by posting the actual videos.

Figure 4 shows how the instructor can easily accommodate both of these preferences. To convert a PowerPoint file to video, go to the "File" tab and select "Save and Send" and "Create Video." Note that the conversion process takes a significant amount of time—one strategy is to start the conversion process for multiple lectures and let the computer complete the task overnight.

The upload symbol in YouTube is the underlined up arrow in the top right-hand corner. Figure 5 shows the upload in process and Figure 6 shows the completed upload. YouTube provides a web link to the video. Complete written and video instructions are available at the website (i.e., "Upload Videos," n.d.).
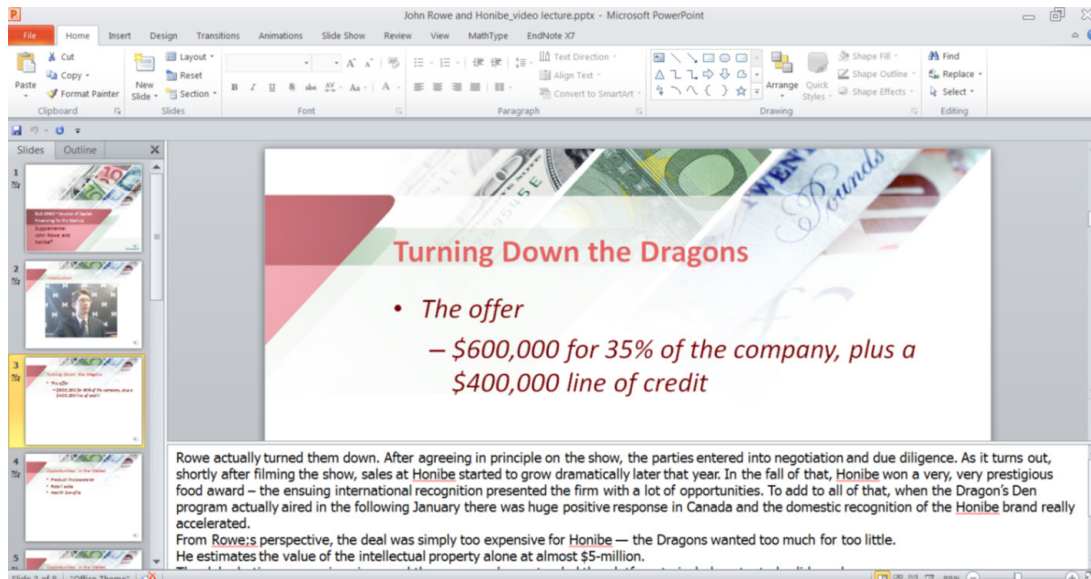

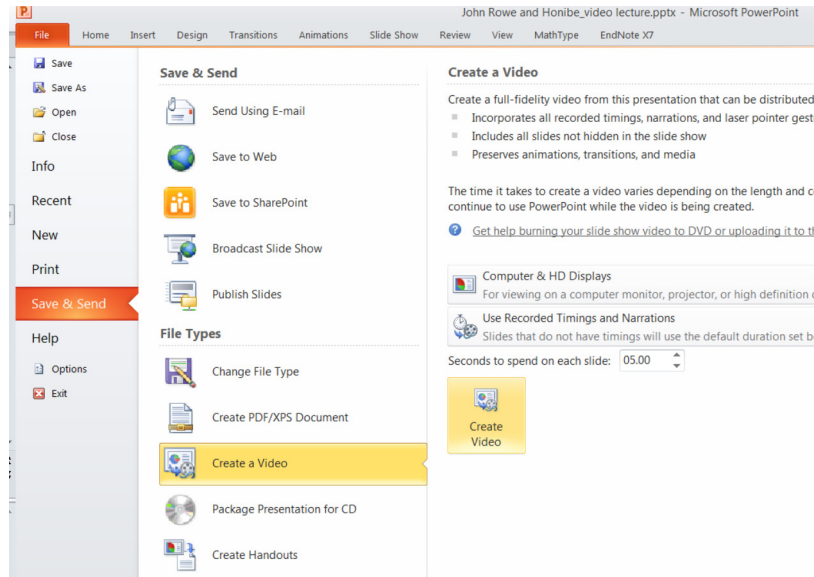*Figure 3.* Example of a PowerPoint lecture with pre-recorded audio and embedded video.

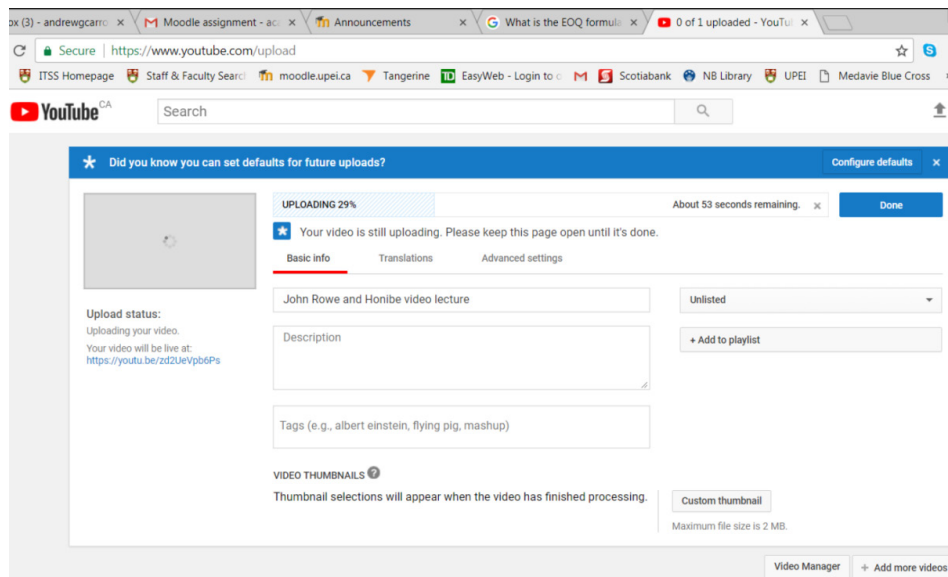*Figure 4.* Saving a PowerPoint file in video format
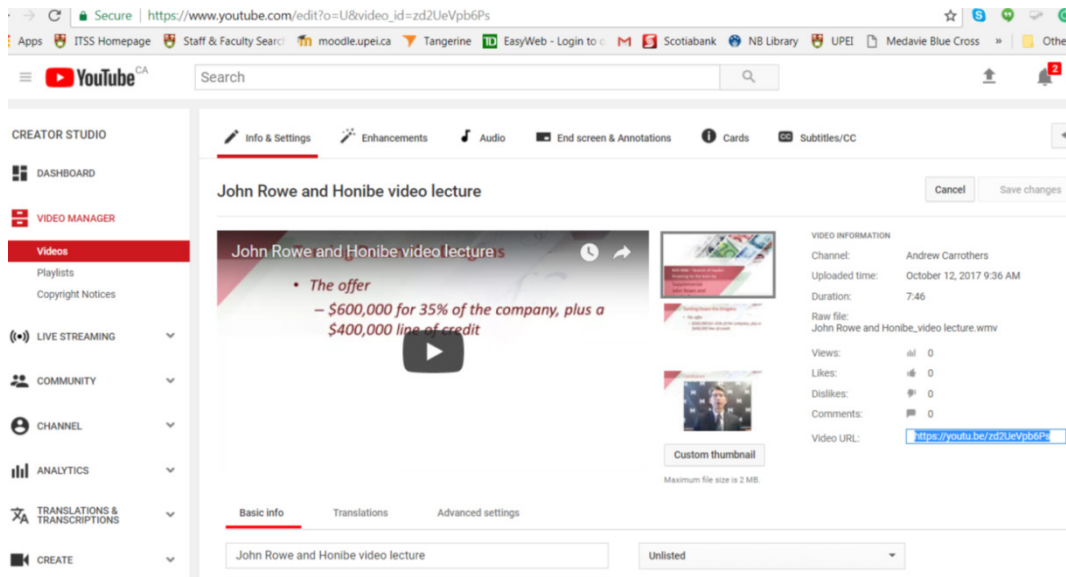

Figure 5. YouTube video upload in progress.

Figure 6. Completed YouTube video upload.

Synchronous Lectures

Online classes are becoming increasingly popular with students, professors, and university administrators. A commonly cited disadvantage of online courses is the loss of classroom interaction amongst participants. One solution is to integrate synchronous (live) content into the online course structure. For example, Blackboard Collaborate provides a web-based online classroom that offers a flexible environment in which to engage students. Students can use laptops, tablets, or smartphones to join the online classroom. The Blackboard Collaborate environment (see Figure 7) is interactive, so that when students login to the live session they can ask clarifying questions, and the instructor can use features such as polling to assess student understanding.

The synchronous environment is also ideal for problem-solving tutorials (see Figure 8). Most online classrooms have a feature allowing the instructor to record live sessions so that students who are unable to attend the scheduled event can watch it later. By covering traditional course content using asynchronous video lectures, the instructor can provide benefit to students with different learning styles by introducing flipped classroom tutorial problem solving and discussion (e.g., Phillips & Trainor, 2014) in the synchronous sessions.
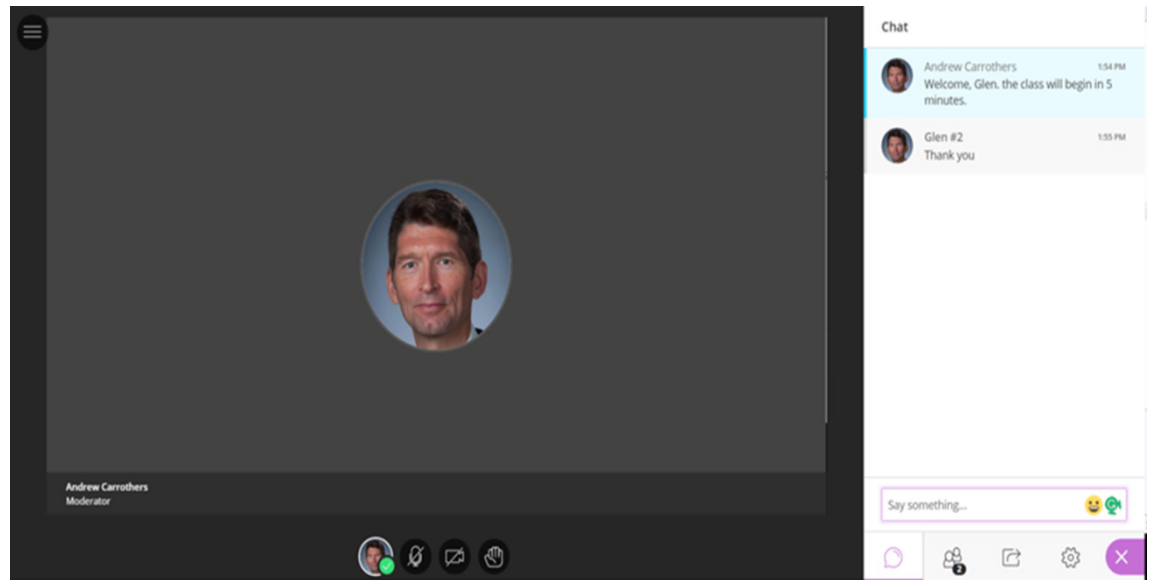
Figure 7. Online synchronous (real-time) classroom. Features include shared audio and video, polling, chat feature, and breakout groups.

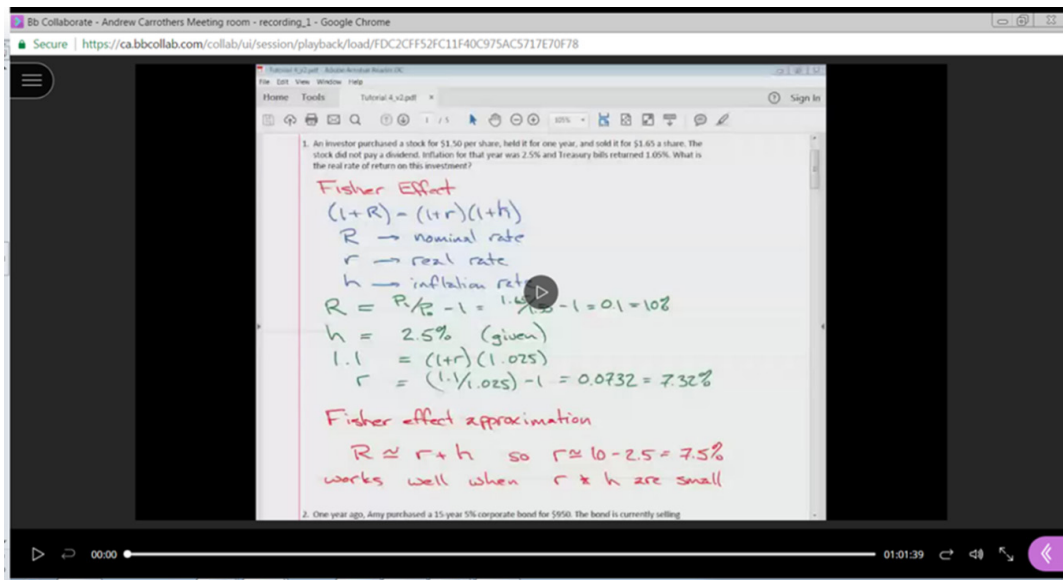*Figure 8.* Sample of a recorded online synchronous lecture focused on developing problem-solving skills.

Experiential Learning

Hawtrey (2007) shows a clear student preference for learning activities that are experiential. The Stock Option Trading Simulation (in partnership with the MX Montreal Exchange) is an example of my use of experiential learning. Teams of up to four students register with the Montreal Exchange. With a virtual cash account of $100,000, teams build stock option portfolios over a ten-week trading period with the objectives of completing mandatory trading strategies and increasing portfolio value. Team members receive up to 6% of their overall grade by executing mandatory trades and up to 4% based on the quartile of their trading activity compared to other teams in the course (i.e., teams get higher marks by being more engaged). In recognition of the importance of motivation on success (e.g., Ford, 1992), there are generous bonus marks of 4% for the team that has the highest cash balance at the end of the competition, and 2% for other teams that have an ending cash balance in the top 25%. Figure 9 shows the simulator trading environment. Figure 10 shows an assessment tool that gives students immediate feedback on their success by completing mandatory strategies.
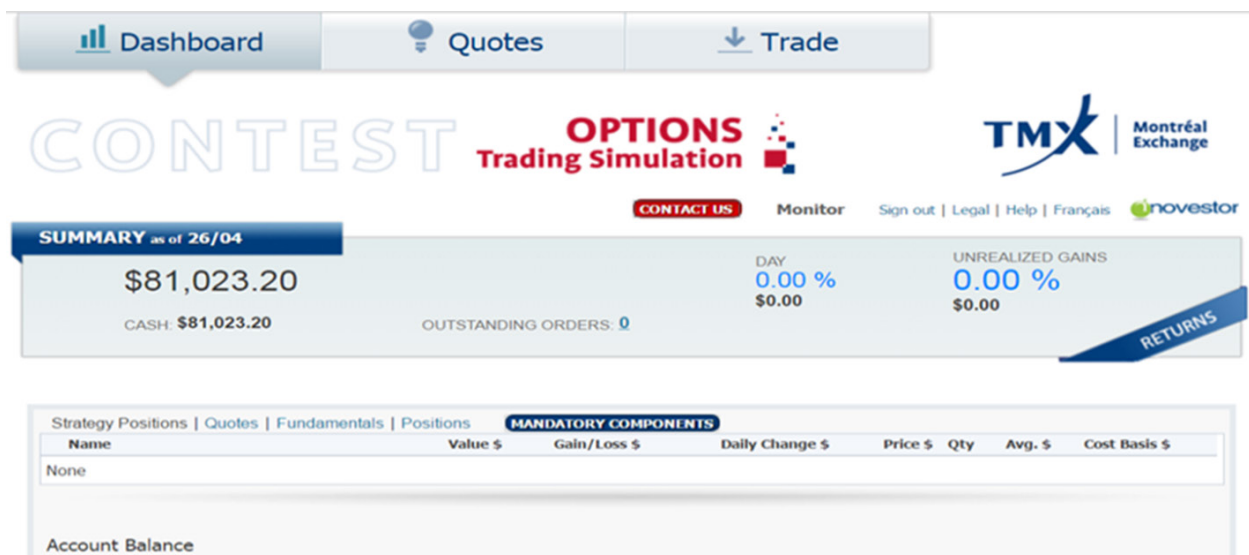

Figure 9. Dashboard screen of the simulated stock options trading environment.
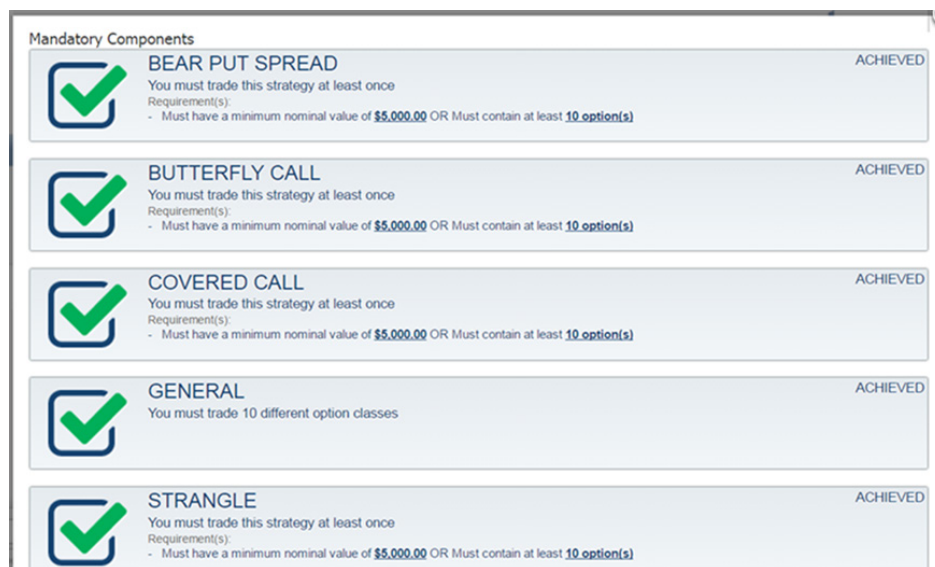
Figure 10. Immediate assessment feedback for mandatory components

Class Participation

In recognition that students have better learning retention when they have to explain or teach a particular concept to someone else, I use YouTube video uploads as a proxy for documenting and measuring class participation in online courses. For a meaningfully large portion (20%) of the overall course grade, students upload five short (2 to 3 minute) class participation videos in which they describe a given topic. This task encourages them to apply core concepts. The evaluation criteria are organization, content, time, clarity, and presentation style. Students can use instructor feedback to improve performance on subsequent videos. The use of videos helps address two limitations of online courses. First, the instructor forms a stronger connection with each student which leads to better interaction in other environments such as discussion forums, emails, and in-person meetings. Second, it limits the opportunity for academic dishonesty—there is no question as to who appears in the videos. I get them to post links to their YouTube uploads so I avoid conflict with the IT department about consuming too much server space. Anecdotally, students like these types of assignments. They get to be creative. They enhance their skill set—there is nothing quite like watching oneself on a screen to improve presentation style.

Maintaining Integrity

Caplan and Graham (2004) provide a good overview of the best practices for overcoming the challenges of distance learning. It is very important to ensure the integrity of online courses by creating a structure that minimizes the opportunity for academic dishonesty. In addition to applying a high weight to deliverables such as class participation videos, consider the following strategies. People are less likely to act dishonestly if they specifically state that they will not. To get access to assignments and exams in my online courses, students must complete separate online student identity confirmation forms (see Figure 11 for an abbreviated example). Google Forms is an excellent free resource to accomplish this—the software automatically tabulates the responses in a spreadsheet. Students are less likely to commit academic dishonesty since they have "digitally signed" indicating that they will not.

Moreover, my exams and assignments draw randomly from a pool of questions so that no two are the same. Students complete the exams online at a location of their choosing, but at a designated time. Each exam question is one of many possible alternatives of similar difficulty, and I randomize the order of questions for each test (see Figure 12). I have found this structure is very effective in removing incentive for students to try to collaborate when they should not—overall student grades are very similar in my in-class and online versions of the same courses.

Figure 11. Sample of an abbreviated student identity confirmation form created using Google Forms.
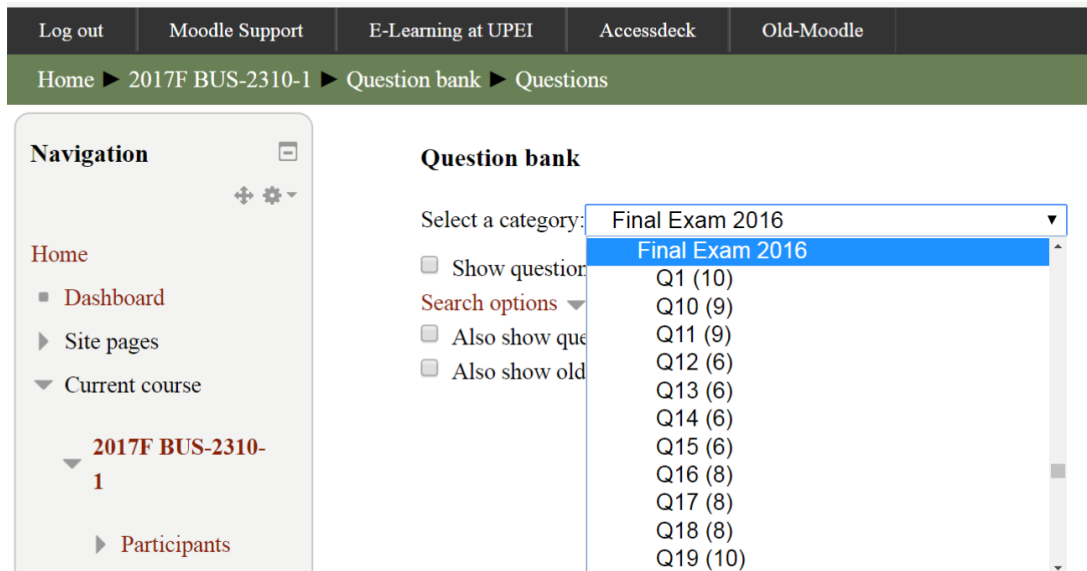
Figure 12. Unique exams for each student. By randomizing question selection and order, it is very time inefficient for students to collaborate on online exams.

Adding Interactive Content to a Course Web Page

It is important to recognize that most universities have (often untapped) talent who have expertise in web development and interactive content. Do not be afraid to solicit help from your institution's eLearning resources. Most university course web pages permit instructors to add interactive resources and activities using, for example, SCORM packages. SCORM (Sharable Content Object Reference Model) defines how content may be packaged into a transferable ZIP file. Software such as "Articulate" provides the ability to turn traditional lectures into interactive course elements that track student engagement and learning in a "low risk" environment (e.g., students receive marks for completion only). Figures 13 and 14 show the look and feel of an interactive SCORM package created in Articulate from a PowerPoint lecture.
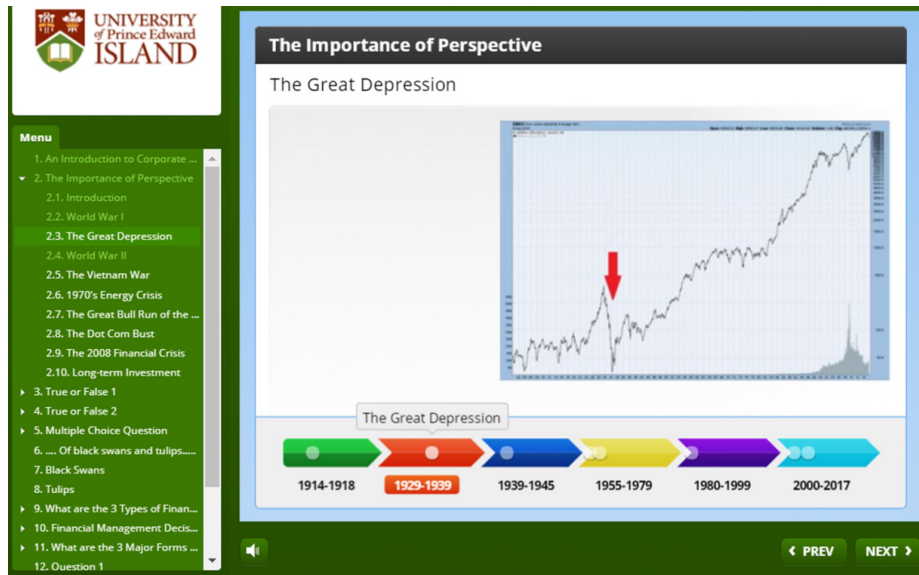
Figure 13. Sample of SCORM interactive content. Students get additional information by highlighting active areas of the screen.
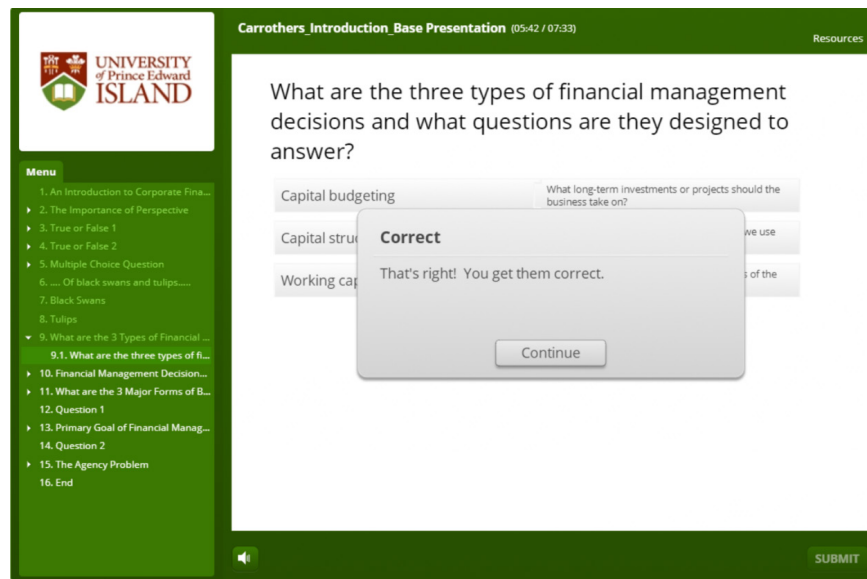

Figure 14. Sample of SCORM interactive content. Students receive immediate feedback on their mastery of the material.

Conclusion

Online courses present a uniquely challenging environment for both students and professors. Sharing best practices with respect to student engagement, course development, and use of technology in online environments enriches the capabilities of educational institutions and enhances student learning.

This paper describes easily-implemented, high-impact teaching practices for online learning: foster a sense of community by extending traditional discussion forums to include video uploads; balance the learning environment by using both synchronous and asynchronous lectures; incorporate experiential learning in the online environment; address assessment challenges and maintain academic integrity by sharing approaches to online assignments and exams; make expectations explicit; and take advantage of your institution's experts.

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Author

Andrew Carrothers. Andrew received his PhD from McMaster University and currently teaches in the areas of corporate, international, personal, and entrepreneurial finance at UPEI. His primary research interest is corporate governance and financial literacy education. Prior to joining UPEI, Andrew gained extensive work experience as a senior manager at an S&P 500 company. He holds CFA and PEng professional designations. acarrothers@upei.ca