Lessons from Teaching Undergraduate Finance Online

By

Martina Schmidt, Ph.D.

University of South Florida St. Petersburg
College of Business
140 Seventh Avenue South
St. Petersburg, FL 33701
Schmidtm@usfsp.edu

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Abstract

With the continuing growth of student enrollment in online courses, teaching classes in an online format is becoming part of life for many educators. Teaching courses online is a challenging task and educators can benefit from the experiences of other educators when preparing for this challenge. The purpose of this paper is twofold: first, it lists some important observations that can help an educator create effective online courses. Second, it describes some insights from teaching online finance courses, specifically. As most academic leaders feel that student learning in online classes is inferior to face-to-face classes, the author also investigates the performance difference between students of online and face-to-face finance classes she has taught. In summary, online classes can be very time consuming to prepare, teachers have to be very well organized and should familiarize themselves with popular "best practices" methods. In addition, the use of appropriate technology and the ability to use the technology effectively is a very important aspect of online course creation. The use of an online homework program, a financial calculator emulator, and a screen capturing software are particularly crucial for online finance courses. The evaluation of the performance results for the author's finance courses suggests that her online students do not significantly underperform face to face students.

Introduction

One of the most important trends in the US education system in recent years has been the increase in the offerings of online classes. The Babson Survey Research Group, for example, found in their 2011 report that in the fall 2010 term, 6.1 million college students were taking at least one online course in the US, which was about 500,000 students more than in the prior year, or a 9% increase. The report also indicates that for the past eight years, online enrollments have been growing substantially faster than overall higher education enrollments in the US. Between 2009-2010, online enrollments grew 10%, whereas overall enrollments only grew less than 1% (Allen and Seaman, 2011). In fact, educators have argued that online learning is the first real change in teaching styles in over two thousand years (Orlando, 2010).

The early times of online education were in the nineties, after the invention of the internet. Since then, online education has come a long way in overcoming barriers of space and time (Orlando, 2010). While online classes have many advantages, they also present many challenges. Anyone with a long commute to the campus (students and teachers alike) will benefit from online classes due to their convenience of overcoming the barrier of space. Online classes are also ideal for students with variable or long work hours or who have families as they provide flexibility and overcome the barrier of time. While other advantages exit, however, one of the main disadvantages of online classes is lack of human personal interaction. Time will tell what the consequences eventually will be for our society, in which people increasingly interact only via cyberspace.

Online education will continue to grow in almost all areas of the academic curriculum. While face to face classes will always continue to exist, more and more classes are likely to be offered in either 100% online or partially online (i.e. in hybrid) formats. For example, the Florida legislature voted in May of 2011 to expand virtual schools and to require all incoming high school students to take at least one online course before graduation (The St. Petersburg Times, 2011). Based on the growth trend in online education, academic institutions in the US are motivated to grow their online programs. Academic institution can benefit financially from offering online classes. While they incurs initial setup costs for online programs, financial benefits can be multifold: the reduced need for classroom space reduces fixed overhead costs, more students can be reached and take online classes, creating a larger income stream for the institution, and additional fees can be collected from online students.

In other parts of the world, academic institutions also focus their attention on online education. In China, for example, where online learning may have a far greater importance and urgency than in the West, the growth of online learning is an important accelerator for China's overall economic development (Levy, 2011). Here, computer learning severely lagged the rest of the world until 1999. After 1999, however, the trend was reversed and investment in digital resources improved significantly (Education Market Research, 2011). Since then, the Chinese Government invested $1.8 billion in 2003 and 2004 alone in the "Modern Distance Education

Project", which covers 60% of all rural primary and secondary schools. The number of higher education distance colleges also increased from 4 in 1999 to 69 by the end of 2006, and over 3 million students were enrolled in online colleges at the end of 2006 (Chen, 2009).

As online education can be seen as important accelerator of a country's economic growth, teaching online classes will become part of life for many educators. Teaching an online class is a very challenging task and some educators shy away from the challenge. However, once the fundamental knowledge is acquired by an educator on how to teach effective online classes, the rewards can be high, they reach from less time spend on mundane tasks, such as driving to the classroom and lecturing the same material over and over to perhaps receiving an online education grant.

Understanding some important aspects of teaching an online class is imperative for the success of the endeavor. The purpose of this paper is to present some helpful insights that the author has gained from teaching online classes in general and more specifically in the field of finance that can guide other teachers who are going through the process of creating an online class. The remainder of the paper is organized as follows: The first part of the paper discusses the observations of how to teach classes effectively online, the second part of the paper focuses on how to teach effectively online in the field of finance and offers some interesting insight into the performance difference between the online and hybrid classes taught by the author over two semesters. The paper finishes with a summary and conclusion section.

1. Teaching Online Classes Effectively

Teaching an online course is a very different task from teaching a face to face course. Preparing an online class for the first time can be a very daunting task, especially when no or little instruction is given to the instructor. Despite the recent growth in online education, some academic institutions are struggling to catch up with the trend and with the creation of resources that help instructors with the creation of online classes. In this section, the author recounts some insights she obtained from converting a face to face class to an online class.

Time Requirement

The first lesson learned from teaching online classes is that it takes longer to prepare an online class than a face to face class. For an online class, the instructor has to have most materials ready and prepared before the first day of class. During the semester, the instructor communicates regularly with the online students either through e-mails or forum discussions or deals with technical issues and will not have as much time for preparing the course materials. In addition, recording a lecture may take a lot of time, more so than a life presentation, as the

material may have to be scripted out and re-recorded or edited. For example, the author spent about 400 hours preparing for her first online finance class. The hours spent on different tasks during the author's first preparation of the online class are summarized in appendix 1. This list is meant to give the reader an idea for the time requirements. The author started to prepare for her first online class one semester ahead. At the beginning of the first week of the online class, the author had all lectures prepared for the first 4 weeks. By the last week of the semester, the author was barely one week ahead of the students in providing the class lectures. Needless to say, adequate preparation ahead of time can reduce unnecessary stress and pressure for the teacher. The author suggests that an educator only commits to teaching an online class if ample time for the preparation is available. The instructor may want to get started with the preparations at least one to two semesters ahead of time.

Creating a step-by-step process

As the time commitment for the first-time preparation of an online class is very extensive, breaking the preparation process into several steps can be beneficial. Some steps can be completed several semesters ahead of the online class. For example, the series of steps could look as follows:

1. create a class outline/schedule and learning objectives for each section (or chapter)

2. develop online assignments and exams (these can be tested on a face to face class in a prior semester)

3. create online lectures and other class content, such as creating links to articles and develop forum questions

4. continuously update and improve the class. For example, create a "frequently asked question" list (this list may be developed after the completion of the first online course and can be updated as future online courses are completed)

As an example, the instructor could introduce online assignments in a face to face class one semester before the online class starts. This can help the teacher to set up and debug the assignments online in advance and help to save time during the limited time frame the author has to prepare the online materials. Teaching an online class is an ongoing process of constant changes and upgrades. Once a class has been taught, for example, past student questions (and answers) could all be summarized in a document under the heading "frequently asked questions". This document would be updated each semester as additional questions from past semesters are incorporated. As a suggestion, questions that occur in the current semester should be posted by students in a forum. If the questions are posted in a forum, student interaction is encouraged as other students can comment on the forum. The instructor needs to monitor the forum to ensure

accuracy of the answers posted. These questions and answers will then become part of the frequently asked questions document for the next semester. The reason a frequently asked questions document has to be created is because forums cannot be copied across courses on learning management systems (LMS).

Organization

Good organization of the class is one of the key success factors that will not only benefit the teacher but also the students taking the online class. For the instructor it is extremely important to be well organized, as it is not easy to change any specifics related to an online class on the go once the class starts. Any changes can easily confuse students and may required multiple e-mail announcements.

The use of "chunking" also improves organization and navigation through the course. Chunking the layout means that the class is split up into subsections, or modules. Under each module, several sub-items are listed, such as learning objective, lectures, assignments, quizzes, and communication. This feature is important as it makes it easier for students to navigate through the class website without getting lost in a labyrinth. Another advantage of chunking is that less main buttons will be needed. The number of buttons should generally be restricted to the number of buttons that can fit on the main page. This will eliminate the need to scroll down on the page to see additional buttons and reduces the risk of a student not seeing some important content. Without chunking, more buttons are needed and scrolling will be necessary. For example, without chunking, each chapter lecture may be listed under a "course content" button and homework assignments may be assigned under a separate "assignments" button. With chunking, course content might be the only button needed, under which the student can find the different modules (each representing for example a different chapter), which in turn lists the chapter lecture and the assignments.

Technology

Technology is the basis for an online class, as that is the medium of delivery. Without technology, an online class is not feasible. Understanding and using the appropriate technology is therefore imperative for a successful online class. Course technology appears as one of the characteristics listed under the Quality Matters rubrics, a popular online education assessment method, which can be accessed at www.qualitymatters.org (see appendix 2). Software has many different functions in online education. Software is used to make students access the materials, for recording lectures, for testing and grading, for demonstrating calculations, and for virtual communication and office hours, for synchronous lectures, etc. The choice of the software will have important implications on the time commitment by the instructor and the way the material

is delivered to the student. For example, lectures can be recorded by a more sophisticated screen capturing software system like Camtasia, which can be difficult to learn but provides more flexibility. Learning how to use Camtasia can be very time consuming (depending on prior experience). The technical support website for Camtasia (www.techsmith.com) offers an abundance of educational videos on how to use Camtasia. Camtasia interacts with PowerPoint and can create narrated PowerPoints in form of a video. One very useful feature of Camtasia is that it can produce videos with a table of contents. The table of contents breaks down the video presentation into parts. Each part of the video is referenced in the table to contents so that the students can refer back and listen to specific parts within the videos by simply clicking on the heading in the table of contents. The table of contents is an extremely beneficial and time saving feature for students, who may want to review specific materials. If a table of contents is not used, a video presentation should be fairly short (not more than 20 minutes) as students may not be able to watch long videos in one session due to time constraints or concentration difficulties. As a note, the output files of a Camtasia production with a table of contents are large and complex. As multiple files are produced, it is important to zip the files and then post and extract these large files in the LMS. Other screen capturing software programs include Jing and Captivate.

On the other spectrum, a class lecture can be recorded with Powerpoint and an embedded voice file. This type of file is much easier to produce but only shows the class Powerpoints with the recorded sound and does not record the screen. The use of the advanced custom animation feature within Powerpoint helps to create Powerpoint presentation that is easier to understand as certain areas of the presentation can be highlighted or pointed at as the teacher is speaking.

Software such as Elluminate Live can be used for either virtual office hours, synchronous class lectures, and/or online student presentations. Elluminate is fairly easy to learn, and the instructor can set up practice Elluminate sessions to familiarize himself with the software. Another important type of software is the one used to provide online testing. Oftentimes, publishers of the book used in class provide assessment software and content. The instructor's initial choice of this software is very important. As creating effective error free online assessment is very time consuming, the instructor will not want to make a switch to a different method or service once a good system is set up. For math-oriented classes a calculator emulator software may be used. Emulators can be used in conjunction with a screen capturing software to demonstrate the series of keystrokes on the calculator for complex calculations.

Finally, Acrobat Reader X has a feature that helps in the grading of essays in an online class. The feature is a voice recording that is added to a .pdf file containing the student's essay. This feature can save the instructor time over the conventional way of commenting in a written format. In addition, the voice recoded comments can add a dimension to the comments that cannot be captured in a written format.

Online Communication

One of the main differences between a face to face class and an online class is the use of tools with which the teacher and the students communicate with each other. The teacher does not see the student but rather gets to know the students by what and how they write in a discussion board, in e-mails, and perhaps what they have to say in an Elluminate Live session.

Learner engagement is therefore extremely important in online education and appears as one of the characteristics listed under the Quality Matters rubrics (see appendix 2). For example, the rubric states that "Learning activities foster instructor-student, content-student, and if appropriate to the course, student-student interaction," and "the requirements for student interaction are clearly articulated". Student-student or student-teacher interaction or communication is possible through either video conferencing software like Elluminate Life, Webex or Skype. This software can be used for virtual office hours and synchronous class lectures. Virtual discussions can be made possible through social media websites like Facebook and Twitter, and forums and blogging functions that are available within a learning management system (LMS) like Blackboard. These tools create a virtual place where students and faculty get to know one another and help a geographically dispersed group of students and teacher to become a single learning community. "Communicating regularly with students" (at least weekly or daily, if possible), is a characteristic that is found under many best practices list by online educators (see appendix 4, best practice # 1).

Certain advantages and disadvantages exist for social media websites such as Facebook, when used in the classroom. An important advantage of Facebook and Twitter besides the fact that they are free is their ease of use and accessibility for students and the ability of teachers to link articles and videos directly from webpages to the class account. All it takes, for example, is for the instructor to go on a particular news website, access an article and then click the Facebook or Twitter button. Attaching pictures and articles through an LMS website is more challenging. It may for example require the help of the school's library personnel to identify and create a link to a specific article. However, a communication medium like Twitter and Facebook exists outside of the LMS and therefore lacks integration with the LMS and its grading system. In addition, websites like Facebook and Twitter may present some privacy challenges as information may be accessible to people outside of the student group if privacy settings are not appropriate. Another issue associated with Facebook is that spam messages and viruses can occur on this website, therefore threatening the online learning environment.

In any case, the requirements for student communication should be clearly articulated. If the instructor chooses to grade the participation of online communication, he or she can use a rubric, such as the one given in appendix 3, to assess student performance.

Resources

As online education is in its growth phase, any institution's online teaching environment falls on a continuum that ranges from one end where no or little help and support is available to teachers to the other end where extensive help and support is available. Ideally, the instructor finds him or herself in an environment where the organization is supportive and has already spent or is willing to spend resources to facilitate the creation of online classes. Resources that institutions can offer to their educators are financial grants, online course designers, student assistants, and classes on how to teach online classes (such as Magnacouse.com). These typically list "best practices", such as listed in appendix 4. A very popular online class evaluation system is "Quality Matters" (www.qualitymatters.org), which organizations can subscribe to if they want access to the most recent evaluation criteria and want to get rated based on these criteria (see appendix 2).

One very important practice for any online class is the adherence to the American with Disabilities Act (ADA) standards, which require that institutions make reasonable accommodations for students with disabilities. For example, in a Camtasia recording, the instructor could use close captions, which is an option during the recording of a Camtasia file. Another example where ADA compliance is an issue includes the instructor's selection of buttons in the LMS. In Blackboard, for example, some button shapes are ADA compliant, while others are not. Online course designers are familiar with ADA compliance issues and should be consulted in regards to this issue, if they are available.

The discussion above focused on the author's observations related to general issues in online education. The following section describes the observations that are specific to the teaching of an online undergraduate corporate finance course.

2. Teaching Undergraduate Corporate Finance Online

As explained in the above discussion, teaching an online class can present many challenges. However, teaching the topic of corporate finance has its own set of unique challenges. Corporate finance is one of the most difficult classes for students in the College of Business, partly due to its basis on mathematical and algebraic models and formulas. Compared to other courses, certain aspects within finance can make the development of an online class in this field both more or less challenging. This section is divided into the following parts: first, how to deal effectively with different student backgrounds is discussed, second student knowledge assessment that is specific to finance students is evaluated, third, the presentation format of materials specific to finance is discussed, and finally, an evaluation of the difference in

performance is presented between the students of online vs. face to face classes which author has taught during two semesters.

Dealing with the Challenge of Teaching a Difficult Class with Diverse Student Backgrounds

The field of finance relies heavily on complex and theoretical concepts and applications. Conveying these effectively to students can be very difficult. One challenge that finance teachers face is that students have various levels of knowledge and understanding of mathematical concepts that are needed to successfully complete a finance course. Teachers can use several methods that help with this issue. One way to handle this challenge is to offer an optional tutorial on mathematical concepts needed for the class. These are available online from other instructors as well as offered by the publishers of the textbooks. Some publishers are also developing online student assessment software geared towards different levels of student knowledge and experiences within one class. For example, McGraw Hill is developing the LearnSmart program, which presents different level questions to students depending on their past performance of other questions within the assignment as well as their own rating of the difficulty of past questions.

Another way to improve the learning experience in such a difficult class as finance when students have different backgrounds is to get regular feedback after each lesson (Garrison, 1999). The instructor can then focus on a particular student who needs more help and has particular questions. Finally, a discussion board can be very helpful in handling this challenge. In discussion boards, students can give guidance and clarification to each other (Mariola, 2002). However, to avoid any misinformation, teachers should be regularly monitoring forums on the discussion boards. In surveys, students have indicated that they feel finance is a collection of models, decision-making and rules that often lack the interlinks between the models and theories. An online discussion among students and teaching staff can help students to spend more time on thinking about the links between financial models and theories and better understand the nature of the course (Pimpa, 2010).

Online Student Knowledge Assessment

As the finance class is very math oriented and many formulas have to be applied, online self-assessment and testing can be very effective. Research has shown that students in Finance courses feel that online homework is preferable to traditional homework assignments. In addition, many students feel that online assignments increased their understanding of the material and the time they spent in preparing for the course (Smolira, 2008). Online homework can also benefit students because they receive immediate feedback, which increases student performance (Kulik, 1986). Online homework frees faculty and teaching assistant resources by

reducing time spent in manually grading homework assignments (Smolira, 2008) and leaves more time for other instructor activities, such as an online forum discussion. The following discussion summarizes the author's observations regarding student online assessments.

The first task is to find an effective student knowledge assessment program. This program needs to include explanations of the answers to the questions which the student can study after submitting the assignment. The answers and explanations need to be 100% accurate and clear and correspond to the way the concepts are taught in class. The author has been using the online assignment program Connect by McGraw Hill. Students have to pay a fee at the beginning of the semester to register for Connect. The advantages of Connect are that it interfaces with the finance book used in the class as well as the education management system Blackboard and offers much flexibility with the way assignments are structured. The question bank for the book used in class is available in Connect, which eliminates the need for the instructor to create his/her own set of questions and saves time. However, several challenges exist with Connect. Besides somewhat frequent technical issues, issues often exist whit the way students enter their answers into Connect. For example, under the topic of portfolio theory, students have to calculate and enter variances and standard deviations. While the answers for variance calculations in Connect are not converted into a % format and must be left in decimal format, the answers for standard deviation calculations have to be converted into % format. This confuses and then angers many students as although they might have calculated the correct answer, they will not be receiving full credit. It is therefore very important to point out the nuances to students on how to enter the answers. As another suggestion, I recommend that only multiple-choice problems are used as opposed to fill-in-the-blanks, in order to circumvent this problem.

Another issue the author found with the assignment program Connect is related to the topic time value of money (TVM). TVM can be taught with the use of formulas, tables, or the financial calculator, or a combination of those. While a combination of formulas and the financial calculator is used in the class presentations by the author, the students are encouraged to use the financial calculator in their calculations. This method is emphasized in the PP lectures but the explanations in Connect are only using the formula method. This represents a disconnect between what is being taught and how the student learns from the assignment reports that Connect offers after a student has submitted the assignment, which lists the correct answers and explanations on how to get to the answers. Unfortunately, the technical support staff for Connect has not been very helpful with this problem. The technical support staff knows how to address problems with the software and the technology but has little help to offer when problems occur with the content. As a consequence, the author had to manually correct and adjust all the explanations for the TVM questions, which was extremely time consuming.

Another observation in regards to online homework assignments is that many students miss deadlines and then contact the teacher in order to get extensions. Giving each student an extension can be very time consuming. As a compromise, the author suggests to add a certain

percentage to the homework grade instead of giving extensions. It is also recommended to post a schedule of the due dates and due times for each assignment which students can refer to. If the instructor finds that students in general lack effort in the online assignments, he or she can increase the weight given to the online assignments in the calculation of the final grade. The author currently has assigned a weight of 25% to the online assignments. To evaluate whether students who do well on the Connect homework assignments also do well on the exams, the author calculated correlation coefficients between the homework grades and the average exam grades during two semesters for both online and face to face classes. As can be seen in Appendix 6, the overall correlation between the students' homework assignment grades and the average grades in the exams is 0.43. This indicates that students who are doing well on the homework assignments are also likely to do well on the exams.

Presentation of the Material

In an effective online class, the focus is much less on the instructor who gives lectures and much more on the student (Orlando, 2010). In line with this approach, it is imperative to offer students access to online sources of information.

Sources of financial information online are websites by financial institutions or media companies, research companies, or the government. While countless financial websites exist, some are more popular than others. Appendix 6 lists some of the websites that are used in the author's class. Using these online resources present an excellent way to show students how the material learned in class is applied in the "real world". Hsu (2010), for example, summarizes in her teaching note how she used the MSN Money website in a class assignment, during which students were supposed to do a financial ratio analysis from the data found on the website. She reports that the student feedback from the assignment was very positive. An instructor can use a screen capturing program such as Camtasia to demonstrate how to retrieve content from financial websites. For example it can capture how to access the EDGAR files (EDGAR.gov) to retrieve financial statement information, or financial websites to find bond quotes online (for example on www.nasdbondinfo.com) or stock quotes and fundamental and technical analysis (such as www.Clearstation.com).

Another excellent website for online resources is Merlot.org. "Merlot is a free and open online community of resources designed primarily for faculty, staff and students of higher education from around the world to share their learning materials and pedagogy." (Merlot.gov). This site offers a collection of peer reviewed higher education online learning materials. The site has 11 different material types, from those specific to online classes to cases, assignments, video tutorials, etc. For example, under the topic of "business", one can find the area of "finance", which as of June 2011 had 11 sub-areas, such as personal finance, real estate, derivatives, and corporate finance. A total of 372 materials were listed under "finance" on that date. For

example, one can find a narrated, animated and interactive presentation on corporate finance published by the publisher McGraw Hill or a narrated PowerPoint file with embedded video on Time Value of Money by a finance professor, or a link to an "affordability analyzer" on the Relator.com website that lets students calculate the price of an affordable house, given certain input variables. A link to these sources can be posted on the LMS course website.

Finally, an instructor might find the following suggestions helpful on how to facilitate the presentation of calculations and financial modeling in an online finance class. In the author's classes, the use of the financial calculator is emphasized, specifically, the use of the Texas Instrument (TI) BA II Plus. The manufacturer TI makes emulators available to instructors, which can be ordered online. Using the emulator to demonstrate the time value of money (TVM) calculations and other complicated calculations is very helpful to students, as they see the necessary keystrokes to derive the answer. The calculator emulator can be captured in a Camtasia video and posted on the class website. Appendix 7 shows a screen capture of a Camtasia project while the calculator emulator is displayed. For more information on how to obtain the calculator emulator from Texas Instruments, an educator can send an e-mail to ti-cares@ti.com or access the website http://education.ti.com/support. The author also uses Excel in class to demonstrated TVM calculations and some basic financial modeling for capital budgeting analysis. With Camtasia each step in the use of Excel can be captured and saved which offers an excellent visual learning experience for students.

Performance difference between the online and face to face class

Whether online classes create the same level of learning outcomes as face to face classes has been a widely debated topic. The Babson Research Report (Allen and Seaman, 2010, p. 10) notes that one-third of all academic leaders polled continue to believe that the learning outcomes for online courses are inferior to those for face-to-face instruction. Interestingly enough this number was even higher in 2003, when 47% of leaders polled believed that to be true. To shed more light on this debate, the author used student performance data from two semesters in this final section of the paper. She tested the differences in outcomes between the face-to-face and online students taught by her during these semesters. The measurement of learning outcome was the final grade, which is comprised of the homework grade and the average grade from three exams given throughout the semester. Both class types, face to face and online, were administered the exact same exams and homework assignments during the two semesters tested, and the weights used to calculate were also the same across the different classes. The results are presented in appendix 8.

The results show that during the fall 2010 semester, the face to face class significantly outperformed the online class. The average grade was 77 for the face to face class, as opposed to only 72 for the online class. This result was significant at the 95% confidence level. After the

completion of the fall 2010 semester, the author added the "frequently asked questions" document (which were derived from the student questions during the fall 2010 semester) to the spring 2011 online class. This may have been the reason that the spring 2011 semester online class performed better. In fact, during the spring 2011 semester, the online class outperformed the face-to-face class (the average grade was 75 for the online class vs. only 73 for the face-to-face class). Over the two semesters, the difference in performance between the online and face-to-face students was not significantly different. This result has two implications: first, it offers some evidence that the opinion of about one third of academic leaders who believe that the learning outcomes for online classes are inferior to face-to-face classes is incorrect. And second, it may also be indicating that the addition of the "frequently asked questions", and therefore the continued improvement of the online content, is very important and can contribute to the improvement of student learning. The author recognizes that the sample size in this comparison was small as only the data from two semesters was available. As more data becomes available to the author over time, she will continue to monitor the difference in student performance between online and face-to-face classes.

3. Summary & Conclusion

The growth of online education is evident not only in the US but other parts of the world. Some experts have stated that the future of a country's economic development may be in part depended on the future development of online learning. As the importance of online education is clear, the long-term effects of this type of instruction on the students is less obvious. Only time will tell if perhaps a lack of personal interaction will change the way people behave and think. Teachers will have to adapt to this change in education and be prepared to "jump on the online bandwagon". No doubt, more research will become available on the topic of "teaching online successfully" in the coming years. This paper served the main purposed of describing in some detail the experiences the author had when transforming a face to face finance class into an online class. These experiences serve as a guide for other teachers, who are faced with this challenge. The author hopes that some of the information is this article will help to save time and facilitate the process of creating an online class for an instructor. The main observations are as follows: the preparation for online classes can be quite time consuming and giving oneself ample time can reduce the stress experienced during the process, knowledge of the technology is very important as it is what the class is based on, and finally, different approaches are needed for the presentation of an effective online class, which are listed in many "best practices" lists. In terms of teaching the topic of finance, the adoption of an effective online assignment program is instrumental. The author has found that there is an over 43% correlation between the performance of students in the homework assignments and the exam grades. In addition, the way the mathematical material is presented and the technology used are important to student success. Many different websites with financial information exist and are an excellent source of

material for an online class. Further, the author finds that when comparing the final grades of face-to-face classes and online classes during two semesters, the online students do not significantly underperform the face-to-face students. This shows some evidence that those academic leaders who believe that learning outcomes of online classes are inferior to face-to-face classes may be incorrect.

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Appendix 1

Estimated time spent on Principles of Finance online class preparation:	
Participating in Blackboard classes	2 classes @ 3 hours = 6 hours
Watching Camtasia instructional videos & talking to Camtasia tech support	50 hours
Preparing of script and accompanying Powerpoint files	10 x 13 weeks = 130 hours
Recording, editing and production of Camtasia produced videos	3 x 13 = 39 hours
Learning Iluminate Live:	5 hours
Obtaining and learning the Texas Instrument calculator emulator:	1 hour
Participating in a 3-week online class "online courses: step-by-step:	30 hours
Participating in a 2-day workshop on online classes in finance with Mc Graw Hil:	16 hours
Participating in a webinar by McGraw Hill on Connect:	3 hours
Learning Connect homework assignment program:	30 hours
Preparing assignments (and editing) each week in Connect:	9 x 13 weeks:117 hours
Total estimated time	**400 hours**

Appendix 2

Quality Matters Rubric Standards 2008-2010 edition with Assigned Point Values

	Standard	Points
Course Overview and Introduction	1.1 Instructions make clear how to get started and where to find various course components.	3
	1.2 A statement introduces the student to the purpose of the course and to its components; in the case of a hybrid course, the statement clarifies the relationship between the face-to-face and online components.	3
	1.3 Etiquette expectations (sometimes called "netiquette" for online discussions, email, and other forms of communication are stated clearly.	1
	1.4 The self-introduction by the instructor is appropriate and available online.	1
	1.5 Students are asked to introduce themselves to the class.	1
	1.6 Minimum student preparation, and, if applicable, prerequisite knowledge in the discipline are clearly stated.	1
	1.7 Minimum technical skills expected of the student are clearly stated.	1
Learning Objectives	2.1 The course learning objectives describe outcomes that are measurable.	3
	2.2 The module/unit learning objectives describe outcomes that are measurable and consistent with the course-level objectives.	3
	2.3 All learning objectives are stated clearly and written from the students' perspective.	3
	2.4 Instructions to students on how to meet the learning objectives are adequate and stated clearly.	3
	2.5 The learning objectives are appropriately designed for the level of the course.	2
Assessment and Measurement	3.1 The types of assessments selected measure the stated learning objectives and are consistent with course activities and resources.	3
	3.2 The course grading policy is stated clearly.	3
	3.3 Specific and descriptive criteria are provided for the evaluation of students' work and participation.	3
	3.4 The assessment instruments selected are sequenced, varied, and appropriate to the content being assessed.	2
	3.5 "Self-check" or practice assignments are provided, with timely feedback to students.	2
Resources and Materials	4.1 The instructional materials contribute to the achievement of the stated course and module/unit learning objectives.	3
	4.2 The relationship between the instructional materials and the learning activities is clearly explained to the student.	3
	4.3 The instructional materials have sufficient breadth, depth, and currency for the student to learn the subject.	2
	4.4. All resources and materials used in the course are appropriately cited.	1
Learner Engagement	5.1 The learning activities promote the achievement of the stated learning objectives.	3
	5.2 Learning activities foster instructor-student, content-student, and if appropriate to the course, student-student interaction.	3
	5.3 Clear standards are set for instructor responsiveness and availability (turn-around time for email, grade posting, etc.)	2
	5.4 The requirements for student interaction are clearly articulated.	2
Course Technology	6.1 The tools and media support the learning objectives, and are appropriately chosen to deliver the content of the course.	3
	6.2 The tools and media support student engagement and guide the student to become an active learner.	3
	6.3 Navigation throughout the online components of the course is logical, consistent, and efficient.	3
	6.4 Students have ready access to the technologies required in the course.	2
	6.5 The course components are compatible with current standards for delivery modes.	1
	6.6 Instructions on how to access resources at a distance are sufficient and easy to understand.	1
	6.7 The course design takes full advantage of available tools and media.	1
Learner Support	7.1 The course instructions articulate or link to clear description of the technical support offered.	2
	7.2 Course instructions articulate or link to an explanation of how the institution's academic support system can assist the student in effectively using the resources provided.	2
	7.3 Course instructions articulate or link to an explanation of how the institution's student support services can help students reach their educational goals.	1
	7.4 Course instructions answer basic questions related to research, writing, technology, etc., or link to tutorials or other resources that provide the information.	1

Accessibility	8.1 The course incorporates ADA standards and reflect conformance with institutional policy regarding accessibility in online and hybrid courses.	3
	8.2 Course pages and course materials provide equivalent alternatives to auditory and visual content.	2
	8.3 Course pages have links that are self-describing and meaningful.	2
	8.4 The course ensures screen readability.	1

(www.qualitymatters.org)

Appendix 3

Discussion Forum Grading Rubric

Points	Discussion Forum Grading Rubric
10	Posting is thoughtful and considers and responds to the question using sound logic. No grammatical errors or typos. Ideally, it fosters further discussion on the topic, perhaps exploring new lines of argument or different perspectives.
5	Posting shows less-than-adequate engagement with the subject or demonstrates a lack of understanding. It does little to advance the discussion underway.
0	No posting or late posting.

Appendix 4

Example best practices list:

Design for Learning by Judith V. Boettcher

Best Practice 1: "Be Present at the Course Site"
The "best online" faculty, according to students, are faculty who show their presence multiple times a week, and at best daily.
Best Practice 2: Create a supportive online course community.
A good strategy for developing a supportive online course community is to design a course with a balanced set of dialogues. This means designing a course so that the three dialogues of faculty to student, student to student and student to resource are about equal.
Best Practice 3: Share a set of very clear expectations for your students and for yourself as to (1) how you will communicate and (2) how much time students should be working on the course each week.
This best practice cannot be overemphasized. Include on your course site a set of expectations for how students communicate and dialogue online and how they communicate with you.
Best Practice 4: Use a variety of large group, small group, and individual work experiences
A community works well when there are a variety of activities and experiences.
Best Practice 5: Use both synchronous and asynchronous activities
The variety of activities that are now possible online makes it possible to create many types of effective learning environments.
Best Practice 6: Early in the term -- about week 3, ask for informal feedback on "How is the course going?" and "Do you have any suggestions?"
Best Practice 7: Prepare Discussion Posts that Invite Questions, Discussions, Reflections and Responses
Best Practice 8: Focus on content resources and applications and links to current events and examples that are easily accessed from learner's computers.
If content is not digital, it is as if it does not exist for students. Students want to be learning anywhere, anytime and often while they are doing other things, such as driving, exercising, etc. Carrying around large, heavy textbooks feels like an anachronism.
Best Practice 9: Combine core concept learning with customized and personalized learning
This means that faculty identify the core concepts to be learned in a course -- the performance goals -- and then mentor learners through a set of increasingly complex and even customized projects applying these core concepts.
Best Practice 10: Plan a good closing and wrap activity for the course.
End-of-course experiences often include student presentations, summaries and analyses. These reports and presentations provide insights into just what useful knowledge students are taking away from a course and a final opportunity for faculty to remind students of core concepts and fundamental principles.

By Judith V. Boettcher, 2010,
http://www.designingforlearning.info/services/writing/ecoach/tenbest.html

Appendix 5

Correlation Coefficient between Connect Homework Grades and Average Exam Grades

	Fall 10	Spring 11
Face to Face	0.64	0.47
Hybrid	0.29	0.47
For All Data	**0.43**	

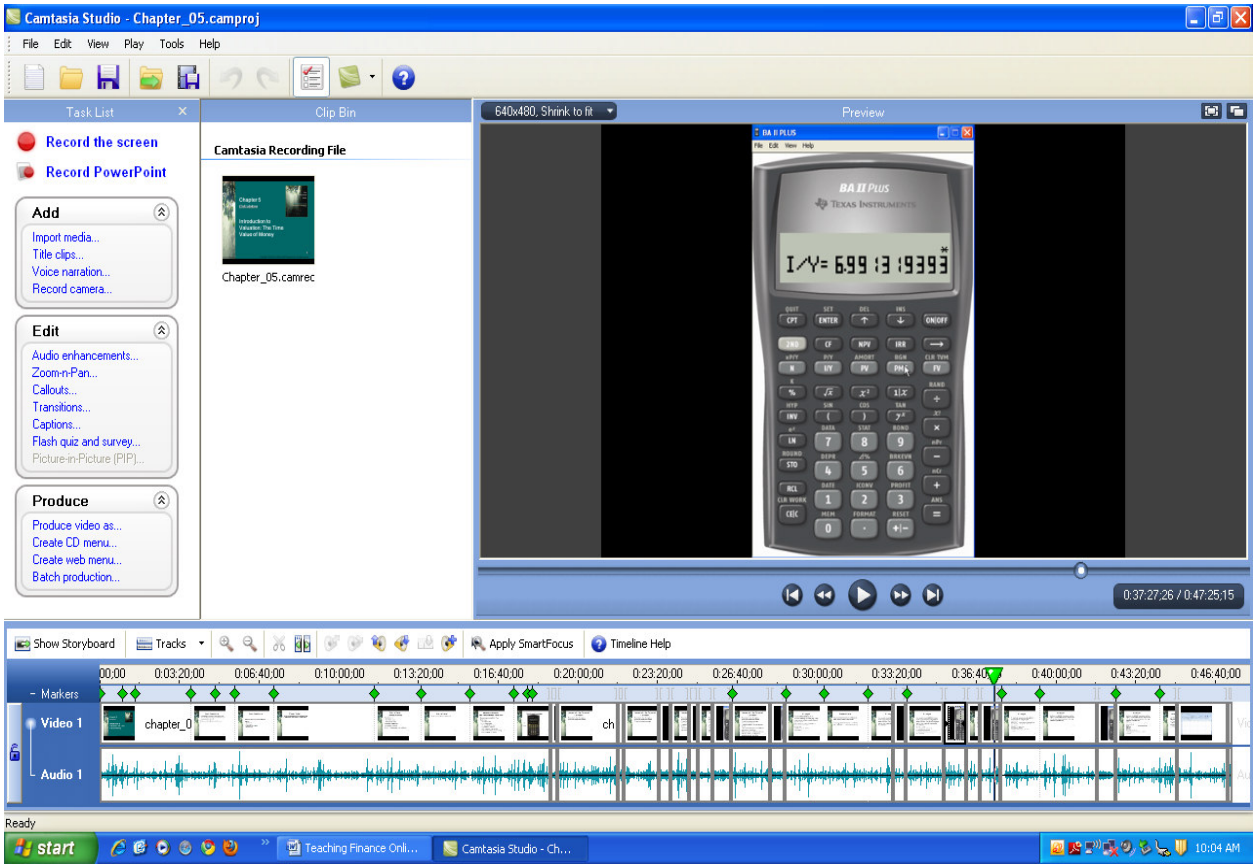
Appendix 6

List of Popular Financial Websites

Bloomberg (financial news)	**www.bloomberg.com**
Bondsonline.com (bond quotes)	**www.bondsonline.com**
Briefing.com (financial market analysis)	**www.briefing.com**
Business Week (for business news)	**www.businessweek.com**
Clearstation (fundamental and technical analysis)	**www.clearstation.com**
Careers in Business (career website)	**www.careers-in-business.com**
CNBC (financial news)	**www.cnbc.com**
CNN (financial news)	**http://money.cnn.com**
Dow Jones (financial news)	**www.dowjones.com**
Dr. Calculator (financial calculations)	**www.drcalculator.com**
EDGAR (financial statements)	**www.sec.gov/cgi-bin/srch-edgar**
FINRA (for stock and bond market data)	**www.finra.org**
Fins.com (WSJ finance career website)	**www.fins.com/finance**
Forbes (for business news)	**www.forbes.com**
Fortune (for business news)	**www.fortune.com**
Google Finance (financial news)	**www.google.com/finance**
Investopedia (for definitions of financial terms)	**www.investopedia.com**
Legal Website (legal organizations)	**www.nolo.com**
Microsoft Money (financial news)	**http://moneycentral.msn.com**
Morningstar (mutual fund information)	**www.morningstar.com**
Nasdbondinfo.com (bond listings)	**www.nasdbondinfo.com**
Reuters (news)	**www.reuters.com**
Realtor.com (real estate listings)	**www.Realtor.com**
Standard and Poors (for financial information)	**http://mhhe.com/edumarketinstight.com**
The Economist (for economic news)	**www.economist.com**
Valuepro (valuation and WACC information)	**www.valuepro.net**
Wall Street Journal (news)	**www.wsj.com**
Yahoo Finance (financial news)	**http://finance.yahoo.com**
Zacks (investment research)	**http://my.zacks.com**
Zillow (housing values)	**www.zillow.com**

Appendix 7

The Use of a Calculator Emulator within Camtasia



Appendix 8

Statistics for Difference in Student Grades in Principles of Finance during the Fall 2010 and Spring 2011 Semesters

	Fall 10			Spring 11			Both Semesters		
	Avg	St dev	# of obs	Avg	St dev	# of obs	Avg	St dev	# of obs
Face to face	77.18321	11.89116	31	73.66014	8.295668	41	75.17702	10.07984	72
Online	71.88624	10.68342	61	75.17083	10.84225	51	73.3819	10.83268	112

P values for t-test: difference in performance between face to face and online - Fall 10	0.020694**
p-value for t-test: difference in performance between face to face and online- Spring 11	0.225542
t-test for difference across both semesters	**0.127008**

* = significant at the 90% level of confidence
** = significant at the 95% level of confidence
*** = significant at the 99% level of confidence

t-tests are one tailed test of two samples with unequal variance (heteroscedastic).