Lessons from Teaching Undergraduate Finance Online – Presentation Notes

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By Martina Schmidt, Ph.D.
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<u>Outline:</u>

▸ <u>I. Introduction & Purpose of Paper</u>

Introduce myself .
My background in online teaching: what was my goal in mind while writing this paper.

▸ <u>II. Growth of Online Education</u>

Some statistics of where online education is going in this country.

<u>III. General Lessons Learned</u>

Lessons that I learned that are applicable to most classes.

<u>IV. Lessons Learned from Finance Classes</u>

Lessons that are specific to a finance class.

▸ <u>V. Performance in online classes</u>

Evaluate the performance difference in my online vs. face to face classes.

▸ <u>VI.Summary and Conclusion</u>

Summarize the findings and give my thoughts on future

research in this area.

►I. Introduction:

I have been a full time faculty member at USFSP since 2002.

Most of my classes are Principles of Finance classes, I teach multiple sections of this class each semester.

In the fall of 2010, I started to teach my Principles of Finance class online.

50-60 students per class (this semester 3 sessions of FIN 3403, 2 are online) 8-10 classes per year.

I have about 200 students per semester.

Motivation:

I was motivated to teach online classes for several reasons: I live far away, teaching online cuts down on time spent driving. I teach many sections and many students, mostly the same sections and realized the potential efficiencies from teaching online.

But I also saw that there is continuing growth of student enrollment in online courses. Online classes are not a "fad" but the future.

Online format is becoming part of life for most teachers.

My goal is multifold:

1. I wanted to capture the lessons I learned in general so that they can benefit other teachers

2. Summarize the insights from teaching online *FINANCE*

3. record the performance difference between students of online and face-to-face finance classes

►II. Growth of Online Education

I recognized the online classes are not a fad but the future.

Babson Survey Research Group 2010 report:

During 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 (2009: 5.6 to 2010: 6.1mil = 9% increase. From 2008 to 2009, this increase was 22%)

For the past eight years, online enrollments have been growing substantially faster than overall higher education enrollments in the US (Allen and Seaman, 2011).   From 2009-2010: 9% increase for online growth vs. <1% overall enrollment growth.

75% of institutions report that the *economic downturn* has increased demand for online courses and programs.

But it can also be legislative: Locally, in FL we have seen important changes in the legislature relating to online education: 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.

►III. General Lessons Learned:

1. Time Requirements

-Recording lecture takes more time than preparing for a live presentation as the material may have to be scripted out and re-recorded or edited.

For example, I spent about 400 hours preparing for her first online finance class. List of different tasks is summarized in my paper. (scripting, recording, editing)

-Give yourself ample time to reduce stress.

Do not underestimate the time requirement for the prep of an online class.

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.

2. Step-By Step Process

Putting a class online is very complicated process, so breaking it down into steps simplifies things:

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. Constantly improve and update your class (learn from the past, what worked what did not work, and take student comments to heart) 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)

3. Be Organized

Be organized in terms of the material that you present. The more organized you are the less changes you will have to make later. It is difficult to make changes once the class starts. Any changes can

easily confuse students and may require 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, sub-items are listed

(learning objective, lectures, assignments, quizzes, and communication)

Improves navigation

Have fewer buttons so that there is no need to scroll down on the page to see additional buttons and reduces the risk of a student not seeing some important content.

The next two slides (8 & 9) show how I was able to condense the buttons "lectures", "assignments", and "formula sheets", into only the one button "content". Under content the class material is "chunked" into the different modules which represent weekly content.

4.Technology

It is the basis for an online class - medium of delivery. Therefore it is very important.

Course technology appears as one of the characteristics listed under the Quality Matters rubrics - a popular online education assessment method (discussed next)

Function: 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 and their learning experience.

I use Camtasia for recording lectures (difficult at first to learn)

www.techsmith.com or narrated PPs with embedded audio files.

Camtasia is a screen capturing software so you can for example record the creation of an Excel model or show how to pull up real estate listings on the internet.

If you use Camtasia, use a table of contents (time saving feature for students, who may want to review specific materials).

Note: Break down the recordings into small pieces. It will be easier to update material later. You may just re-record sections as opposed to whole chapter.

(Jing and Captivate are other screen capturing software products).

Elluminate Live: 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

Online testing. Important for math related classes. 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 recorded comments can add a dimension to the comments that cannot be captured in a written format.

5. Online Communication

Main differences between a FTF and online class: how the teacher and the students communicate with each other.

The teacher never sees the student in person but rather gets to know the students by: what and how they write in a discussion board, in e-mails, and the say in an Elluminate Live session.

Learner engagement is one of the characteristics listed under the *Quality Matters* rubrics.

Instructor-student, content-student, and student-student interaction are all important.

Requirements should be clearly articulated. Use rubrics or evaluation criteria.

Visual interaction is possible through either video conferencing software like Elluminate Life, Webex or Skype.

Communicating regularly with students (at least weekly or daily)

Requirements for student communication should be clearly articulated. If participation is required and graded, use a rubric, to assess student performance.

Virtual discussions made possible through social media websites like Facebook and Twitter, and forum discussions and blogging functions that are available within a learning management system (LMS) like Blackboard.

Advantages of social media websites:

They are free, establish a learning community.

They are easy to use and accessible to students!

Good tool for linking to articles and videos.

Disadvantages: social media communication exists outside of the LMS and therefore lacks integration with the LMS and its grading system.

There may be some privacy issues.

Spam messages and viruses can occur on these websites which threaten the learning environment.

They present so much information that it can lead to information overload.

I think as the social media websites are fairly new and constantly emerging, their role in education are very much evolving. This topic definitely warrant more research.

6. Resources

Growth has occurred at different pace in different institutions. Just by talking to different teachers, we can see a wide variety of support at learning institutions.

Examples of resources that are supportive are:

-financial (grants), apply to these if they are available

-classes and workshops on how to teach online classes (such as Magnacouse.com).

"Best practices" lists, online class evaluation systems like "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

Online content designers (these are experts that can help with such issues as technology and ADA compliance. Institutions have to make reasonable accommodations for students with disabilities. For example, in Camtasia use the close captions feature, in Blackboard, for example, some button shapes are ADA compliant, while others are not).

So far I discussed observations and lessons learned in a general context but now want to discuss the more specific issues relating to teaching principals of finance.

►IV. Lessons Learned from Finance Classes

    1. Diverse student backgrounds in a difficult class

Teaching corporate finance has its unique set of challenges. Corporate finance is a very difficult, math and tools oriented class.

This makes the development of an online class in this field both more and less challenging.

One issue: students have very diverse backgrounds in Finance and the math knowledge needed to succeed.

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.

In a difficult class: get regular feedback after each lesson through e-mail or discussion board or virtual office hours.

(I get surprisingly few questions. I find that students generally do not use discussion board voluntarily)

Be available to answer questions and then add the questions to a database of "frequently asked questions".

2. Assessment of Student Knowledge

One benefit of teaching a math oriented class is that assessment can be done with online automated testing programs that have multiple choice questions. This saves time as grading does not have to be manual.

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).

I correlated the connect and average exam score and found that for all classes there was a 43% correlation. I tell my students this to motivate them to spend more time with and focus on Connect.

Benefit: Students receive immediate feedback which increases student performance (Kulik, 1986).

Import test bank into the LMS or use proprietary programs such as McGraw Hill's Connect.

Once selected, the *feedback and solutions* given are crucial. If incorrect or incomplete, you will get a lot of student questions. I spent a lot of time correcting and updating the Connect solutions. I found a

lot of errors and had to add the explanations with the financial calculator.

Use multiple choice, do not use fill in the blanks:

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.

Similar problem occurs with TVM of money calculations.

I require students to use their financial calculator to compute TVM answers. The cash flows the calculator have opposite signs, PV positive, FV negative. When the student enters the answer for the FV often they enter it as a negative, which is marked wrong. Students do that even if I add a note to the question.

Students oftentimes miss assignments. First semester, I spent most of my time re-opening assignments. Now I just add 5% to everyone's grade and drop the lowest grade. For example, if a student gets 80% in the average Connect grade, I add 5% to that grade and give the student 85% on the final Connect grade.

3. Presentation of Material

In online class, focus is more on student-material not on teacher-material. The teacher's purpose is to guide the student to online sources of information (maybe show the steps with Camtasia).

In finance many websites exist that connect the information learned with the real world:

- MSN Money website for a financial ratio analysis.

-Access the EDGAR files (EDGAR.gov) to retrieve financial statement information.

- www.nasdbondinfo.com to find bond quotes online

- www.Clearstation.com for stock quotes and fundamental and technical analysis

- another online resources is Merlot.org.

 "Merlot is a free and open online community of resources designed primarily for higher education. This site offers a collection of peer reviewed higher education online learning materials.

The site has 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 has sub-areas, such as personal finance, real estate, derivatives, and corporate finance. (Examples: 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.

Use a calculator emulator (such as the one shown here for the Texas Instrument (TI) BA II Plus)

e-mail to ti-cares@ti.com or access the website http://education.ti.com/support to get the emulator software from TI.

Very helpful for (TVM) calculations and other complicated calculations. The calculator emulator can be captured in a Camtasia video. I also use 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. This offers an excellent visual learning experience for students.

►V.Performance Difference between FTF and Online Classes

Widely debated topic: do online classes create the same level of learning outcomes as face to face classes?

The Babson Research Report (Allen and Seaman, 2010, p. 10) shows: one-third of all academic leaders polled believe that the learning outcomes for online courses are inferior to those for face-to-face instruction (in 2003, 47% of leaders polled believed that).

I collected student performance data from two semesters and tested the differences in outcomes between the face-to-face and online students.

The measurement of learning outcome was the final exam grade (a weighted average of the Connect grade and the average grade from three exams).

Note: 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 the final grade were also the same.

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.

During the spring 2011 semester, the online class performance improved. 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:

1. For my class based on data from 2 semesters, it is a misconception that that learning outcomes for online classes are inferior to face-to-face classes.

2. 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.

As more data becomes available I will continue to monitor the difference in student performance between online and face-to-face classes. I will also adjust for other variables such as major, sex, and year the student is in.

►VI. Summary and Conclusion:

Online education is here to stay. I think this trend will continue. If you have not already been exposed to it, you probably will.

Teaching online is very time consuming to prepare. Make sure you have ample time, or you will be very stressed.

Be well organized

Take advantage of any resource that are offered at your institution, such as grants. Consult with "best practices".

Use technology effectively (online assignments, emulator, screen capturing software). If you use the wrong technology, you make your life more difficult.

In my class, online students do not underperform face to face students.

I am currently experimenting with social media websites in my class and want to do some research on that topic.

I am currently preparing for an online MBA class, there is a big difference between online undergraduate and graduate classes. Topic for another paper.

Very important: HAVE FUN with online classes!