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Stimulating Discussion In On-Line Graduate Courses: Successes And Failures

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Abstract

Teaching a quantitative course on-line has challenges, including the asynchronous nature of the course, students with a wide variety of experiences, and quantitative content. This teaching note presents several techniques, some successful, one a failure, that were used to address these challenges. One successful technique was the use of two-part discussions. These discussions helped the student feel they were part of a community. A second successful technique was the use of an interactive simulation. This gave the students a common base of experience to use in the course discussions. The unsuccessful technique was the use of cases to encourage course discussion. The complex cases apparently required a depth of understanding that the students were not able to reach without the give-and-take of classroom discussion. The asynchronous nature of the course coupled with the complexity of the cases created an environment where the students could not succeed in the time available.

Keywords: on-line education; simulation; case studies; failure

Introduction

Teaching an asynchronous on-line course can be challenging, especially one that is primarily quantitative in nature. The very asynchronous nature of the course means the students are not communicating in real-time. Students need to feel they are not alone, but rather are part of a community of learners. How can we prevent the course from feeling like 25 courses of 1 student each rather than 1 course of 25 students? This social climate, or group identity, is an important component of the learning environment (Oren, Mioduser and Nachmias, 2002). On the other hand, an advantage of teaching a course asynchronously is you are able to draw together students that are dispersed geographically as well as having a variety of work-world experiences. Students may also have a variety of time constraints (such as working night shifts or frequent travel) that would limit them from attending a traditional course or participating in a synchronous course.

A challenge in teaching such an on-line class is providing meaningful assignments that require interaction with other students. Since the students described in this note are all master's level students, most working full-time, they enter the course with a wide range of experiences and previous knowledge.—how do you persuade them to share these experiences? A peculiarity to this challenge is the asynchronous nature of the course; students are not necessarily performing their work at common times. A second challenge in teaching on-line is fostering discussion in a course that is primarily quantitative in nature (although this challenge is also present in face-to-face teaching as well). What do students discuss in a course that is primarily number-crunching? How can the discussion be expanded beyond the numbers or the correct solution? This teaching note will discuss several approaches, some successful, one not, that have been used in addressing these challenges as they relate to teaching on-line, graduate level accounting courses. These courses are short duration, one-credit elective courses to support an MBA program that is offered to four geographically dispersed campuses in the University of Wisconsin System.

The Learning Environment And Courses

The courses are part of a pool of on-line elective courses for a Masters of Business Administration (MBA) offered through a consortium of four business schools within the University of Wisconsin System (UW-Eau Claire, UW-La Crosse, UW-Oshkosh and UW-Parkside). Some of the students are "pure" on-line students, taking all of their coursework over the Internet. Other students have been taking a mix of on-campus classes and on-line classes. A majority of the students work full-time and are taking classes part-time.

Course #1: The Balanced Scorecard (BSC):

This one-credit course deals with performance measurement. Although the course is entitled "Re-engineering Financial Performance Measurement," the course covers both financial and non-financial performance measures, with an emphasis on an approach known as the balanced scorecard (Kaplan and Norton 1996, 2001, 2004). This course has been offered over a three week period, either between semesters or during the summer. Class sizes have ranged from a low of 11 to a high of 24.

There are four major components of the course: reading a 322 page text and a variety of articles along with commentaries posted online for each unit; participating in on-line discussions; running a CD-ROM based interactive simulation and discussing the results; and preparing a paper, reflecting on what the student has learned from the simulation. Grades are based 50% on the paper, 30% on the simulation, and 20% on the discussions. Both the on-line discussions and the simulation activities are used to face the challenge of encouraging student interaction.

Course #2: Strategic Cost Management (SCM):

This one-credit course deals with strategic uses of cost information. Three broad topics are covered in the course: value chain analysis, cost driver analysis, and strategic positioning. This course has normally been offered over four weeks. On-line class sizes have ranged from a low of 16 to a high of 36 during a recent offering.

There are three major components of this course: reading a 357 page book and several articles along with related commentaries posted online for each unit; participating in three on-line discussions; and analyzing cases. Grades are based 25% on discussions and 75% on three individual cases. As was the case with the BSC course, the on-line discussions and the case activities are designed to face the challenge of encouraging student interaction.

The Successes—What Worked

Discussion Activities

Discussion activities were created for two purposes. First, the responses to the questions were used to assess the students' understanding of the course concepts. Second, the activities were structured such that the students need to reflect on the comments of the other students. The activities were often multiple-part; an initial comment is followed at a later time with a response to other students. This multiple-part discussion is used to replace the "give-and-take" of a classroom discussion and to foster a group identity. An important component of these discussions is the public and visible nature of the discussion—the students can feel they are part of a group of learners rather than taking the course in isolation. In addition, the students are not limited in the number of postings they can make.

BSC course:

Since the first course (BSC) is offered over a shorter period of time (three weeks rather than four), only two discussion questions are used. Discussions are either single-part, requiring only one response, or two-part, with an initial comment followed several days later with responses to other comments.

Discussion #1:

Discussion #1 is a single-part discussion. The students are required to respond to the following with a single posting to the discussion forum:

You have been asked to make a short presentation to your local Chamber of Commerce monthly meeting. The Chamber has asked you to talk about the management concept called the "balanced

scorecard." Prepare a three (3) paragraph explanation, using an everyday analogy that everyone present will understand.

Discussion #2:

Discussion #2 is a two-part discussion. The following statement is posed to the students:

"Activity-based cost systems permit companies to measure individual and aggregate customer profitability. Companies should want more than satisfied and happy customers; they should want profitable customers. A financial measure, like customer profitability, helps keep customer-focused organizations from becoming customer-obsessed. Not all customer demands can be satisfied in ways that are profitable to an organization." Do you agree or disagree with this statement? Support your reasoning with concrete examples.

The student is to make a first posting of their agreement or disagreement to the statement. After all of the students have made their first postings, the student is required to revisit the forum, choosing 2 or 3 of their "classmates" postings, and respond to their comments.

The purpose of discussion #1 is to help the student "get their feet wet" in the course. Many of the postings are rehashes of the text reading, although the everyday analogies are often interesting. Discussion #2 requires much more interaction amongst the students. Very often a lively debate will ensue due to one student playing the "devil's advocate" and espousing a contrary view.

SCM course:

In the second course, the three discussions are all two-part discussions. The first discussion requires the student to read a short article and to comment on the ideas presented. Discussions two and three are responses to quotes from the primary book used in the course. As is the case in the BSC course, the first posting is an initial comment; the second posting follows several days later in response to the initial postings.

Discussion #1:

Read the article "Claiming Space on the Value Chain." Describe how the Internet is impacting the value chain for the retailing industry and give two examples.

Discussion #2:

Comment on this quotation (and provide illustrations if you can): "Understanding the nature of demand for work from that department, which requires 5, 7, or 13 people to perform, will lead to the articulation of activities performed by that resource, as well as the basis (cost driver) for assigning the costs of the resources in that department to the activities and cost objects that are creating a demand for that work. So an ABC analysis should not be concerned with assigning the cost of a single resource unit. But once a department has multiple units of a resource (several people, several pieces of equipment), clearly analysis will reveal the nature of the activities and cost effects that are creating demands for work by this department and the basis for assigning its costs." Kaplan & Cooper, p. 183.

Discussion #3:

Comment on this quotation (and provide illustrations if you can): "Companies with a differentiation strategy require an activity-based cost system to measure accurately the costs of increased variety and customization. They will then be able to see whether customers are willing to pay higher prices to compensate the business unit for its higher costs. Of course, if the company is able to differentiate its products and services without incurring a cost penalty, this capability

will be identified by the ABC system, and the company does not have to seek price premiums for its unique features and services." Kaplan & Cooper, p. 170.

Results:

The discussions have been a major success in both of these courses. The students "connect" very strongly with each other and contribute significantly more than the minimum level required. Two recent offerings of the BSC course had 21 and 24 students enrolled; the discussion forum for the multi-part question contained 96 and 134 posts (the minimum required would have been 42 and 48 postings). Table One presents the distribution of postings for discussion question 2. The minimum number of postings required of a student is two. Only 2 students (4.4% of the total) were at or below the minimum number. The average number of postings was 4.6 postings per student (with a median of 5) in offering 1 and 5.6 postings in the second offering (also with a median of 5 postings).

Table One
Distribution of Postings for Discussion Question 2
Balanced Scorecard Course

	Class 1	Class 2
1	1	
2		1
3	4	3
4	5	7
5	5	4
6	4	3
7	2	1
8		2
9		1
10		1
11		
12		
13		
14		1
Students	21	24
Postings	96	134

A recent offering of the SCM course had 36 students enrolled; the discussion forums contained between 159 and 175 posts for each discussion (the minimum would have been 72 postings). Table Two presents a breakdown of the discussions from this offering. The left column of Table Two presents the distribution of postings for each of the discussion questions. The minimum number of postings required is two. Out of the 108 possible (36 students x 3 questions), only 4 (4% of the total) were at or below the minimum number. The right column of Table Two presents the distribution of the total number of postings by a student combined for the three questions. Here the minimum number of postings required would be 2 x 3 questions = 6 postings. None of the 36 students made the bare minimum of postings.

Students also appreciate the opportunity to learn from each other. As one student in the BSC course commented: *"I found the content of the class interesting and useful. I was impressed with the coursework of my classmates and found their perspectives and thoughts interesting."*

Simulation Activities

As stated earlier, a challenge in teaching on-line is to provide meaningful assignments that require interaction with other students. The students are all master's level students that are working full-time; they enter the course with a wide range of experiences and previous knowledge. Using a simulation provides a common setting in which the students can discuss the course concepts.

The BSC course uses an interactive simulation entitled ***Balancing the Corporate Scorecard 2.0: An Interactive Simulation for Windows***. This simulation is commercially available and is based on the required reading for the course, ***The Balanced Scorecard: Translating Strategy Into Action*** (Kaplan and Norton, 1996). The simulation is provided on a CD-ROM and makes extensive use of video and sound. The simulation includes a video of a consultant presentation, descriptions of the balanced scorecard, and the simulated company's market condition and finances.

In the simulation, the student assumes the role of the newly hired president of a software company. Decisions are made regarding 1) hiring and firing customer service representatives, 2) hiring and firing consultants, 3) product pricing, 4) spending on information technology, 5) spending on training, and 6) allocating product development

Table Two
Distribution of Postings for Discussion Questions
Strategic Cost Management Course

	Postings by Discussion Question					Postings by Student
	Unit 2	Unit 3	Unit 4	Total		Total
1		1		1	**8**	2
2		2	1	3	**9**	1
3	8	6	10	24	**10**	2
4	12	14	12	38	**11**	9
5	5	5	7	17	**12**	4
6	4	2	4	10	**13**	6
7	4	2		6	**14**	3
8	1	2		3	**15**	
9	2		1	3	**16**	1
10		1		1	**17**	1
11			1	1	**18**	1
12					**19**	1
13					**20**	
14					**21**	
15		1		1	**22**	1
					23	2
Students	36	36	36	108	**24**	
					25	
Postings	175	171	159	505	**26**	1
					27	
					28	
					29	1

effort between power features and ease-of-use features. The simulation lasts for four years (16 quarters). To guide their decisions, the students must construct a performance scorecard from 20 possible metrics. If the quarterly results are not satisfactory, the president (the student) will more than likely be fired and be prevented from progressing further in the simulation.

The basic idea of the simulation is to guide the company through an effort to change the product mix and to manage the transition into a new product market. The strategy evolves through three phases; the metrics the student chooses must reflect these strategies. The first phase is to harvest the existing market segment. The second phase is to transition from the existing product and existing market to the new product and market. The third phase is to add services to the product mix. The metrics used must also evolve; the metrics chosen for the first phase will not provide adequate information in the latter phases.

The interactive nature of the simulator provides for a wide variety of results. As the facilitator's guide (Facilitator's Guide, 1999) states, "one of the important lessons to be taken away from the simulation experience is that 'timing is everything.' Knowing what to do is simply not enough. It's essential to know when and how much of it to do, based on feedback from carefully chosen strategic indicators."

Students are required to run the simulation a minimum of four separate times. A single simulation run takes approximately one to three hours. After each run, the student is to post responses to several debriefing questions regarding their actions and the results. Students are also to address questions regarding the strategies necessary and the metrics they chose to monitor. This provides an opportunity for double-loop learning: learn, apply, feedback, and reapply (Rungtusanatham, Ellram & Siferd 2004). The added bonus here is the feedback is via the fellow students' postings.

Results:

Students post their responses in a public forum (rather than in a private forum between student and instructor or in a dropbox) in the course management environment. This provides each student with a chance to observe and discuss what others have done, learning what worked and what did not. The public forum also enables the students to enter a dialogue, to post queries, and to offer suggestions. In essence, the student learns both from the experience of running the simulation and from fellow students. As with the discussions, the students start to feel part of a group or cohort rather than a solitary student performing their work in isolation, thus increasing their social identity with the group.

Table Three
Distribution of Discussion Postings for Simulation Runs

Postings by Simulation Run

	Run 1	Run 2	Run 3	Run 4	Total
1	7	10	14	7	38
2	9	8	5	9	31
3	4	3	4	7	18
4	4	2	1		7
5		1			1
6				1	1
Students	24	24	24	24	96
Postings	53	48	40	52	193

Postings by Student

	Total
4	1
5	4
6	3
7	2
8	3
9	6
10	
11	3
12	1
13	
14	1
Total	24

Table Three presents a breakdown of the discussions from a recent offering of this course to 24 students. The left column of Table Three presents the distribution of postings for each of the four simulation runs. The minimum number of postings required is one. Out of the possible, only 38 (40% of the total) were a single posting. Over 60% of the students posted two or more times. The right column of Table Three presents the distribution of the total number of postings by a student combined for the four simulation runs. Here the minimum number of postings required would be 1 x 4 simulation runs = 4 postings. Only one of the 24 students made the bare minimum of postings for all of the simulation runs. The vast majority of the students posted more than the minimum at least some of the time.

Using the interactive simulation to create an environment where the students need to interact can be considered a success. Furthermore, the "game" nature of the simulation captured the students' attention. Following are selected comments by students about the simulation:

Comment A:
I really liked this game. If any of you are taking marketing, you play a similar game, but this one is much better. I like that you have the chance to mess up and try out new things without repercussions. I felt like I was able to learn a lot more. I would always end up playing with the simulation much longer than I expected because I was determined to beat it. It was much more fun than I originally thought it would be.

Comment B:
I must admit I too was addicted to the simulation and I would get more frustrated as it got later in the night and I was not succeeding. In the end, I had to look at other postings to survive the simulation. I was being too conservative on my changes. It was a great learning experience.

Comment C:
I also had a blast running this software! I also do not take failure lightly! Made me go back and kill a couple of trees to view my results and see what I needed to do to improve!

Comment D:
I really liked the simulation. My original mind set was that the concept was common sense, and that is probably still true, but this simulation really helped me to understand the details that I had missed. The scorecard helped me to understand the concept of "forecasting metrics" i.e. saturation & backlog.

Comment E:
I too 'enjoyed' the simulation experience and although frustrating at times found myself challenged to reach the end goal. I haven't had any professional experience with this in-depth of an approach so it was nice to be able to 'practice' with someone else's employees, customers, and bottom lines, so when I encounter this approach in the future I'm sure I will be more comfortable and confident in jumping right in!

The Failures—What Did Not Work

Cases

Another approach that was used to create a common setting for the basis of discussion was the use of cases. In the Strategic Cost Management course, a major portion of a student's course grade is based on their analysis of cases. The first few times the course was offered only two cases were used. A third case was added for several years, but was designed as a group case. The most recent offering of the course used three cases, all prepared individually.

The cases used were all prepared by John Shank (Bridgewater Castings, Inc., DairyPak—A "Value Chain" Perspective on Product Line Strategy, and Montclair Paper Mill—The "Deep-Color" Grades) and have been prepared specifically for courses dealing with strategic uses of cost information. All of the cases present a complex business setting, are self-contained, and require the student to make numerous assumptions and calculations. Students have had a difficult time with the cases due to their length, complexity, and intense nature. Several students made the following comments during the course assessment:

> **Comment 1:**
> *Really have to get away from trying to teach basic understanding of a concept (in a 1 credit online class) through 3 major case studies, all of which required more time to try and decipher the questions than actual learning of the concepts. More needs to be done on the theory behind this, which easily could be done through book reports than full case studies.*

> **Comment 2:**
> *I was disappointed in what I learned, mainly due to the limitations created in trying to teach concepts through the case studies and the inordinate amount of time spent in them. I am sure I will take something away from this class, unfortunately it will not be from the exercises that took up 95% of my time in this class - it will be from re-reading the book myself long after this class is complete. I would have learned much more by studying a completed ABC analysis or value chains to first understand the fundamental thought process and mechanics of a completed case study, then applying those ideas to a similar case study. I believe case studies in online classes are extremely limited in value due to the almost non-existent access to professors and classmates.*

In addition to requiring individual submission of cases analyses, attempts have been made to create discussions of the cases in the course design. There is an open forum entitled "Ask the Professor" where students can pose questions on material they wish to have clarified or do not understand. Responses to these queries are promised within thirty-six hours. Only a handful of students utilized this forum during any offering of the course. In the recent offering of the course described earlier, six students (out of 36) asked questions in seven discussion threads. In only two of the discussion threads were there follow-up questions.

A second approach that has been attempted is to devote specific discussion forums to each case. Students are told: *"This is a spot where you can discuss the cases amongst yourselves. I will NOT be monitoring this area closely. If you have questions for me, ask them in the "Ask the Professor" section."* Students did not take advantage of this approach—there were zero postings. There are several possible reasons why this may have occurred. First, no guidance was provided the students as to what is and what is not acceptable to discuss. Perhaps the students were wary of falling on the wrong side of an academic integrity issue. Second, this may have been due to the complexity of the cases chosen—the students were not able to break the context into small enough chunks to be able to discuss meaningfully. Third, this may also have been due to the limited duration of the course coupled with the asynchronous nature of the discussion—was there sufficient time to both understand the cases and to generate meaningful dialogue? Using cases did not succeed in fostering dialogue between students and should be considered a failure. Future offerings of the course will experiment with the use of shorter, less complex contexts coupled with the use of more directed discussion questions.

Although the students did not respond favorably to the cases, comments on the course as a whole were quite positive. Following are selected student comments:

> **Comment 3:**
> *The relevant nature of the material in the course helped me to have an impact on my projects at work.*

Comment 4:
I liked the see the strategic use of costing. Many times people forget how important costing is.

Comment 5:
Positive: The premise of managing costs by looking at them in a strategic fashion. Book was useful.

Analysis

Why did the discussion questions and the use of a simulation succeed in fostering discussion while using case analyses fail? Zigurs and Buckland's task/technology fit theory (Zigurs and Buckland (1998), Zigurs, Buckland, Connolly and Wilson (1999)) can be used to analyze why this might be.

A group's task can be classified along four dimensions. These dimensions are: a) outcome multiplicity: is there more than one desired outcome, b) solution scheme multiplicity: is there more than one possible course of action, c) conflicting interdependence: does adopting one solution scheme conflict with the adoption of another, and d) solution scheme-outcome uncertainty: is there uncertainty about whether a given scheme will lead to a desired outcome. Using these four dimensions tasks can be categorized as 1) simple tasks, 2) problem tasks, 3) decision tasks, 4) judgment tasks and 5) fuzzy tasks.

Group support technology consists of communication support, process structuring, and information processing. Zigurs and Buckland (1998) propose there is a preferred configuration of the technology to support each of the different tasks. For example, simple tasks will be supported best by technology that emphasizes communication support while fuzzy tasks will be supported best by communication support and information processing along with some process structuring.

The discussion of questions in the SCM and BSC courses can be considered a simple task. The focus is on an exchange of ideas rather than the solving of a problem. In this case, the technology will emphasize communication support. Basic elements will include simultaneous input, input feedback, and group display. This was observed in the postings made by the students. The emphasis was on communicating thoughts, so there were numerous postings per student. Each posting contained little information that needed to be processed. Most of the posts were rather short, with only one or two concepts being discussed.

The discussion of the results of the simulation runs can be most appropriately classified as a problem task. The goal was to find the best mix of performance metrics (the solution scheme) from among many possible metrics. In this case, the technology will emphasize information processing (gathering, aggregating, and evaluating information) with less emphasis on communications. This was observed in the postings made by the students. The amount of communication was less (as measured by postings per student) but the content was denser (more information was presented in each posting).

The case analysis can be classified as a fuzzy task. A fuzzy task has very little focus and much of the students' time and effort is on understanding and structuring the problem. Zigurs and Buckland's theory proposes the optimal technology will emphasize communication support and information processing along with some process structuring. This was not observed in the SCM course. As reported above, there were very few postings by students regarding the cases. The few postings that did exist had very little content.

Murthy and Kerr (2004) found that discussion boards were an effective means of sifting and organizing complex information. What was different in the SCM course that caused the opposite result? Perhaps the answer lies in the manner that information was presented to the students. As reflected in comments 1 and 2 above, students felt

frustrated in trying to apply concepts they felt were inadequately explained to a complex case situation. The students also commented on the amount of time it took to understand the cases. Perhaps there was insufficient time available in such a short course (4 weeks) to both understand the context and to communicate with each other. Murthy and Kerr reported that the discussion boards were the most time consuming of the communication methods analyzed.

Why did the discussion boards work for the discussion questions and simulations and not for the case analyses? Perhaps the availability of feedback from other students (and the professor) or the lack of feedback may explain this partially. The course discussion boards are a means of providing and receiving feedback. Students desire feedback in order to assess their opinions relative to others, and they can find safety in numbers when there is no clear correct answer to a dilemma or situation (Kerr and Tindale, 2004). The simulation discussions also provided feedback to the students. However, the cases offered no feedback when the students did not participate in the discussion boards. This may have contributed to their overall unhappiness with the assignment.

Lessons to be Learned

Based on the experiences in these two short courses, the following "lessons to be learned" are proposed:

Lesson #1:
Multiple-part discussions (initial response to a question followed by an analysis/critique of other responses) can be used to help the students feel they are part of a group of learners rather than taking the course in isolation. Social identity is aroused when the students feel they are jointly participating rather than experiencing the course as individuals (Bouas & Komorita, 1996). To encourage a higher rate of participation, the discussion questions should be a) short, b) focus on a single concept and c) be well defined.

Lesson #2:
A common activity such as a simulation can be used to generate a group discussion of individual results. To make this work, the activities should a) be well defined, b) have distinct beginning and ending points, c) instructions should be clear and d) the activities should be required rather than optional.

Lesson #3:
An assignment to discuss a case analysis will not yield satisfactory results if a) the assignment is not well defined, b) is without clear instructions, c) the discussions are optional and d) there is insufficient time allowed for the activity.

Are these lessons specific to the courses discussed here, or are they more general lessons that can be applied elsewhere? A review of descriptions of best practices in teaching online yields the following comments:

Lesson #1:

- Simply posting a professor's lecture notes is not sufficient; asynchronous discussion boards must be utilized to facilitate learning. (Grandzol & Grandzol 2006)
- Critical reflection and discourse are encouraged. (Grandzol & Grandzol 2006)
- The students should feel a personal and emotional connection to the subject matter, the professor, and their peers. (Grandzol & Grandzol 2006)
- When students feel that they belong to a cohort of individuals who share the same experience and can interact with one another and with the faculty, they tend to evaluate teaching online to be more effective (Rungtusanatham, Ellram & Siferd 2004)
- Students who feel connected placed a higher priority on the class and allot their time accordingly, desire to get to know others and learn from them, and participate frequently in a timely fashion. (Wickersham, Espinoza & Davis 2007)

Lesson #2:

- There must be clear goals and frequent opportunities for active learning (Grandzol & Grandzol 2006)
- A learner-centered teaching style is more appropriate than a teaching-centered style (Grandzol & Grandzol 2006)
- The professor should use active learning methods and students should be challenged using problem-based learning, projects, and simulations. (Grandzol & Grandzol 2006)
- The students' participation must be paced to maintain the same schedule for completing assignments and evaluation activities. If a common schedule is not used, meaningful interactions will not be possible. (Rungtusanatham, Ellram & Siferd 2004)

Lesson #3:

- The professor should create and ensure the continuing functioning of the community of inquiry. (Grandzol & Grandzol 2006)
- Goals must be clearly laid out (Grandzol & Grandzol 2006)
- Using a bulletin-board tool takes significantly more time to compete a task than using either a chat tool or interacting face-to-face. (Murthy & Kerr 2004)

Concluding Remarks

Two design features that were successful were the discussion topics and the simulation. Discussions required students to a) post comments on a topic or quote and b) to visit the posted comments of other students and respond to them. This provides a vehicle for students to share what they have learned with each other and, probably more important, to share their work experiences with each other and feel part of a community.

The goals of using the interactive simulation were a) to provide a rich learning environment that would cause the student to broaden their knowledge by applying the principles in the course to a complex setting and b) to learn from each other's experiences, both prior experience and common experiences with the simulation. Based on student reactions both during and after the course, the simulation assignment accomplished everything that was intended and more. Several students were captivated by the 'game' nature of the simulation and continued to experiment with different metrics even after the course ended. Students also commented that the interactions with their fellow students greatly exceeded their expectations.

The use of case analyses was a failure. The cases apparently required a depth of understanding that the students were not able to reach without the give-and-take of classroom discussion. The asynchronous nature of the course coupled with the complexity of the cases created an environment where the students could not succeed in the time available. As one student commented:

> *The problem with this class, was that unless you are/or have experience in accounting, it was a very difficult class to take online. It would have been better to take in a classroom setting. It was often too hard to write out the questions that I had. In many cases the answers that I received only prompted more questions. This meant that it took forever to complete the cases. Unless someone already had a good understanding of cost accounting, I wouldn't recommend them to take it online.*

Why did some activities succeed while others failed? The discussion questions were very short, focused on a single concept, and well defined. The simulation activities, although time consuming and lacking in brevity, were well defined. The tasks had distinct beginning and ending points. The students in both the discussions and the simulation understood what was expected of them. In addition, the activities were required for grading purposes. The case analyses, however, were neither brief nor well defined. The cases were long and complex. The discussions of the

cases were optional, and no direction was given for the case discussions. Future offerings of the course will experiment in alternatives to the case assignments.

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