SIMULATIONS FOR STRATEGY COURSES:
COMPARING ONLINE AND ON-CAMPUS COURSES

Larry Chasteen
University of Texas at Dallas
chasteen@utdallas.edu

ABSTRACT

Simulations are an important part of capstone strategy course - they facilitate transfer of learning by providing "learning-by-doing" opportunities to the students. Simulations also allow instructors to provide authentic activities that enable students to go beyond just studying "textbook" cases. Simulations have become an accepted part of most strategy classes at both the undergraduate and graduate levels. One area that has not been fully explored is how well the typical simulation used in on-campus strategy courses translates to strategy courses taught online. The purpose of this paper is to compare executive MBA on-campus strategy courses with identical online executive MBA courses to determine how effective the simulations were in both settings.

INTRODUCTION

Simulations are an important part of capstone strategy course. Edgar Dale (1969) illustrated this with his research when he developed the "Cone of Learning". This concept states that after two weeks we remember only 10% of what we read, but we remember 90% of what we do.

Simulation-based training puts learning objectives into the context of a scenario which allow the learner to experience training as it relates to a life-like situation. One of the key reasons that simulation are used is the need for people to learn skills faster and more completely than in the past. Simulations enable this.

ONLINE INSTRUCTION

Universities across the world are now offering online courses. With the ever increasing competition for attracting and retaining students, online education has become a high priority for many institutions. According to the National Center for Education Statistics, enrollment in distance education courses has almost doubled in less than ten years. In fact, at the time of this report, more than half of the educational institutions were offering distance education courses.

Gladieux (2000) discusses the prediction from well-known management guru Peter Drucker that within 30 years, the residential university campus as we know it will be a thing of the past. While this prediction may be somewhat extreme, there is no doubt that significant changes in higher education are occurring. Gladieux (2000) went on to say it is impossible to know exactly what these changes will be because of the rapid change in computer and related technologies. Now with the push from administration and students for e-learning, a new set of challenges and opportunities arise for business instructors.

SIMULATIONS

These strategy courses use the Capsim Foundation Simulation. Capsim is the best-selling business simulation in the world. This simulation is used at over 500 universities and colleges (Anderson & Coffey, 2004). The Capsim business simulation engages participants in a dynamic competition to turn struggling companies into successful, profitable businesses.

The classes are divided into teams to compete in a computer simulation by managing an imaginary firm that manufactured electronic sensors. The teams have to make research and development, production, marketing, and financial decisions concerning the product. The teams enter their decisions into the simulation and then analyze the results once all the other team decisions were entered and processed. The simulation lasts for eight rounds representing eight years.

The on-campus teams have to arrange team meeting times to make team decisions and analyze results. The online teams were virtual teams and used several methods to discuss and analyze decisions which included e-mail, telephone calls, instant messenger, and/or chat rooms.

PURPOSE AND RESEARCH QUESTIONS

The purpose of this study was to compare the student success in the simulation part of an on-campus executive MBA strategy course with an almost identical online executive MBA course (using three years of data) and to see how effective the simulation was in both settings.

Previous results (Chasteen and Jennings, 2008) have indicated that the overall student success was similar for strategy classes for both on-campus and online classes. However, a detailed look has not been made for possible differences in student success in the various parts of courses.

This study used executive MBA strategy courses

taught both on-campus and online. The topics covered in the courses were traditional class lectures, exams, case discussions, and a business simulation. The simulation exercise was implemented with a web based simulation game for both methods of delivery. The simulation lasted eight rounds (or eight years) and was scored by using the Balanced Scorecard (BSC). The main research question was whether the delivery method would have an impact on student BSC scores and on student satisfaction for the simulation.

The following two research questions were addressed:

1. Is there a difference in the performance by students who take the course on-campus and those who take it online?
2. Is there a difference in the overall satisfaction of students who take the course on-campus and those who take it online?

PROCEDURES

For this study, executive MBA on-campus and online strategy courses were compared over a 3 year period. The course was composed of three areas: a lecture part covering the traditional topics in a strategy class, case analysis and discussion, and a simulation exercise. The course was structured to make the on-campus class as much like the online class as possible. A total of 95 students (45 on-campus and 40 online) over a 3 year period were included in this study.

The Balanced Scorecard scoring from the simulation was used to compare student success in the classes. The Balanced Scorecard allows companies to gauge their performance by assessing measures in four categories:

- Financial – includes profitability, leverage, and stock price
- Internal Business Process – ranks CM, plant utilization, and days of working capital
- Customer – examines company's product line, including satisfying their buying criteria
- Learning and Growth – evaluates employee productivity

The Balanced Scorecard allocates points in each of these four areas for each of the rounds and a final recap score. The team with the highest BSC is considered to be the winner of the simulation rather than just the team with the highest stock price or highest profits. Since the Balanced Scorecard allocates points in four major sections, it is considered a more representative measure of success.

FINDINGS

The research questions were addressed based on the data gathered from the six class sections as follows:

EXHIBIT 1
BSC COMPARISON FOR ON-CAMPUS AND ONLINE TEAMS

On-campus teams

Round	1	2	3	4	5	6	7	8	Recap	Total
Possible Pts	82	89	89	100	100	100	100	100	240	1000
Andrews	35	44	55	84	82	77	78	76	176	708
Baldwin	44	61	48	52	49	56	60	58	101	530
Chester	41	38	39	53	63	70	71	57	81	513
Digby	48	46	44	47	65	71	66	60	174	621
Erie	49	60	46	52	66	69	72	72	92	578
Ferris	47	52	53	58	63	67	70	71	108	589

Online teams

Round	1	2	3	4	5	6	7	8	Recap	Total
Possible Pts	82	89	89	100	100	100	100	100	240	1000
Andrews	37	49	47	57	58	59	58	74	162	600
Baldwin	45	48	58	56	50	51	71	70	157	606
Chester	39	51	65	69	77	69	75	77	157	680
Digby	48	57	63	67	68	67	66	67	150	653
Erie	44	51	51	55	61	59	61	62	103	546
Ferris	49	56	58	68	69	72	70	73	151	667

1. Performance: The BSC ranking of both the on-campus and online teams. Exhibit 1 shows the BSC ranking of the on-campus and online teams for one year. As can be seen, the online students scored about as well as the on-campus students. Similar results were obtained in the other 2 years. Therefore, there seems to be no difference in BSC results based on the delivery method.
2. Satisfaction: The end of course evaluations asked the on-campus and online students about their overall satisfaction of the simulation. Exhibit 2 shows the evaluation questions and results. Both the on-campus and the online students rated their satisfaction approximately the same.

The end of course evaluations also asked the on-campus and online students for comments regarding the simulation. Both the on-campus and online students felt the simulation was the most useful part of the strategy course, and in some cases, was the highlight of the entire Executive MBA program. However, the online students did feel that the simulation took more time, especially since they had to use virtual teams.

DISCUSSION

1. Performance: An important component of a strategy course is the team exercises. One of the most used team exercise is the Capsim simulation game (Anderson & Coffey, 2004). Could online teams (virtual teams) perform as well as face-to-face teams? In today's business environment, virtual teams are quite common (deLisser, 1999). The Capsim simulation has developed a totally web-based version, which allows online courses to also use this simulation game. Although many recent users of the Capsim simulation are from online courses (approximately 5%, Hansen 2004), no reporting of online results was found

in the review of literature. However, the results of this study showed that the performance of the online classes were very similar to the on-campus classes even though the on-campus classes used the more convenient face-to-face team meetings.

The simulation results need deeper investigation via the end of class evaluations. In general virtual teams scored as well as or better than the on-campus teams, but some virtual teams had problems. Team success seemed to depend on how the virtual team approached the team decision process. One team used the chat room for two hours each week and made good team decisions, while one team depended on e-mail which sometimes led to ineffective communication and caused confusion in making their decisions. The other teams used a variety of methods for team decisions with varying results. In future online classes, more direction will be given on the best methods for virtual team decision making.

Another key point for virtual teams is the simulation introduction at the start of the course. For the online class, the first class meeting was via a web-conference. This gave the instructor the opportunity to review the syllabus, set up teams, and go over the simulation procedures. However, the teams had worked together in previous classes and had met each other during previous on-campus work sessions. This gave the teams the opportunity to know their team members. It was reported that even though later team meetings were via chat rooms or e-mail, the team members still felt that they "knew" their team. Businesses have also found that a face-to-face kick-off meeting for virtual teams is well worth the expense of the meeting (Townsend et al, 1998; Kelley, 2001; Furst, Reeves, Rosen, & Blackburn, 2004).

2. Satisfaction: The online students' satisfaction with teams was somewhat mixed – some teams were very happy and successful while some teams struggled. Similar mixed results occur during on-campus classes;

EXHIBIT 2
COMPARISON OF SATISFACTION FOR ON-CAMPUS AND ONLINE STUDENTS

End of Course Evaluation for BPS6310.12F - Strategic Management – on-campus

	SD	D	N	A	SA
The simulation objectives were clearly defined.				X	
The simulation was well organized.				X	
The simulation demonstrated course objectives.					X

End of Course Evaluation for BPS6310.13S - Strategic Management – online

	SD	D	N	A	SA
The simulation objectives were clearly defined.				X	
The simulation was well organized.				X	
The simulation demonstrated course objectives.				X	

but for this study, the level of satisfaction and team success tended to be related to the team's decision-making process. Teams that used all the available online techniques (i.e., chat room, instant messaging, e-mail) had more satisfaction and better performance. Teams that tried to make decisions using only e-mail or the telephone tended to be less satisfied and had lower performance.

Businesses have found similar results with virtual teams – teams that meet via software such as NetMeeting have better performance (Duarte & Snyder, 1999; Hinds & Bailey, 2000; Lam & Shaubroeck, 2000; Kirkman et al, 2002; Martins et al, 2004). For faculty developing online classes with virtual teams, more direction should be given on the various methods for team decision making.

IMPLICATIONS FOR EDUCATORS

University and government reports support the fact that distance education is continuing to grow at a rapid rate. As the demand for online education increases, more and more business faculty will face the challenge of redesigning their traditional courses for an online venue.

In addition to the course content students are receiving in the course taken in an online environment, there are also other valuable skills being developed that are vital for business managers. Working as part of a virtual team allows students to gain experience that may well be a very important part of their future career in business. However, from the comments of students in this course, it did not appear clear that they understood the value of learning to work as a virtual team. Instead, they were looking for ways to work in the traditional team setting. This is an opportunity for educators to stress to the students how technology is going to be important in the workplace and encourage, if not require, that all teamwork in the online course be completed virtually.

The results of this study indicate that the simulation in an online strategic management course was equally as effective as in a traditional on-campus course. It is important, however, that these results not be generalized to include every subject taught by every instructor. As Wiley (2002) pointed out, if sections of online and traditional classes begin with similar students and similar instructors, you should expect similar results. Obviously, the online environment is different than the on-campus environment. Although the overall student performance was virtually the same, the satisfaction with class was different. Adjustments in teaching style and teaching aids may be necessary for successful administration of an online course.

Colleges and universities should recognize the need to prepare their faculty to teach online courses – just as the students need technical support, so do the faculty. In this study, the instructor had received over 30 hours of training in online course development through his university and had developed previous online courses.

Development of an online course is a major task. It is suggested that the university provide additional compensation as an incentive for online course development. Delivering an online course also requires additional time and effort. Therefore, it is also suggested that the university provide additional compensation each time the online course is delivered.

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