ASSESSING ONLINE LEARNING AND CLOSING THE LOOP IN AN MBA PROGRAM

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ABSTRACT

Assurance of Learning is an important activity for any institution of higher learning. This research incorporates the 5-step AACSB Assurance of Learning process to assess an MBA Program and improve online learning. An initial comparison of online versus face-to-face classes found that students in online course sections did about as well as students in face-to-face class sections in describing and applying course concepts to a company situation. But, online students did not do as well in analyzing the company situation in depth for decision making. For continuous improvement purposes and 'closing the loop' in assessment, online section assignment descriptions were enhanced, assignment expectations were explained more fully, and discussion board exercises concerning situation analysis were added along with synchronous Breeze Meeting sessions. The result was a significant improvement in online student performance, especially in the area of in-depth analysis for decision making.

INTRODUCTION

Assurance of Learning (AoL) is an important part of any educational program. One way to assure learning is through continuous assessment and confirmation that graduates are achieving program learning goals (AACSB, 2007a). Currently, an area that needs enhanced assessment in higher education programs is online learning powered by the Internet. Research shows that while total college enrollments have remained relatively stable over the past few years, online education enrollments are increasing as much as 30 percent annually (Eastman, Swift, Bocchi, Jordan & McCabe, 2003). Furthermore, a significant portion of this growth is based on

attracting a new and different base of students, rather than cannibalizing current on-campus programs. It is estimated that five out of six online students are employed and would be unable to attend traditional classes (Eastman et al., 2003). Online and distance-learning MBAs are one of the fastest growing segments in education. Generation X (ages 25-39) and Millennials (24 and under) are groups made up of young professionals who see an MBA degree as a necessity to remain competitive in the job market and to attain future career aspirations. These potential student groups are target growth market segments for MBA programs (Hochberg, 2006).

Given this relatively new mode of course delivery, are students achieving the predetermined program learning goals? How can online courses be assessed? How can schools continuously improve the quality of online education by 'closing the loop' (Redle & Calderon, 2005) of the assessment process? A widely recognized approach recommended by major accreditation agencies is measurement by key benchmarks. This paper reports the use of the 5-step Association to Advance Collegiate Schools of Business (AACSB) assessment process to measure student performance in both online and face-to-face sections of an MBA program, with a focus on the comparative results from a Management Information Systems core course.

THE ASSESSMENT PROCESS

The education assessment process is the procedure of determining whether students are actually learning what they are expected to learn in a program and enhancing the program to improve student performance (Martell, 2005). AACSB has defined a five-step process model (AACSB Resource Center, 2007b) for assessment as follows:

        Step 1 – Define learning goals and objectives.
        Step 2 – Align curriculum with goals.
        Step 3 – Identify instruments and measures.
        Step 4 – Collect, analyze and disseminate assessment data.
        Step 5 – Use assessment data for continuous improvement.

As a regional university in the Southwest, we use the AACSB assessment process model to determine whether MBA students meet the expectations of the School's program goals both in online and face-to-face courses. This research covers the portion of our 2006-07 MBA assessment program that encompasses the core MIS course.

In the initial assessment step, we developed a number of learning goals for the MBA program, with the first learning goal being that "MBA students will be able to analyze business operations and processes." AACSB Standard 18 requires, at a minimum, that Master's level business programs be at a 'capacity to apply' learning level (AACSB 2007c), which is Bloom's Taxonomy (Bloom, 1956) Level 3 category learning. In Step 2, our MBA program considers Management Information Systems (Information Technology) one of four business operation and process functions in the Program (with the other three business operation and process functions for the Program being accounting, finance, and production operations). The MIS core course content was developed to meet the needs of the Information Technology portion of the School's MBA Learning Goal #1.

For Step 3, the School chose to use embedded measures in core courses such as the MIS course to assess student performance for the business operations and processes learning goal. A rubric with four traits defining learning expectations was developed, as shown in Table 1, for the IT portion of MBA Learning Goal #1. As part of the MIS course, students were given an assignment to prepare a paper that addressed the four assessment traits. In Step 4, we collected data from both MIS face-to-face and online sections at the end of the Fall 2006 semester. In early Spring 2007, a team comprised of faculty teaching the MIS course and the School's Director of Program Assessment met to assess student performance. Student papers in the online section were compiled separately from those in the face-to-face section for comparison purposes (Terry, 2007). All student names were removed from the papers for assessment by a staff member beforehand to assure fairness. Since this was the first time the MBA program was assessed using the 5-step AACSB process, an overall goal was set that at least 75% of students meet or exceed expectations for each trait.

TRAIT	Below Expectations	Meets Expectations	Exceeds Expectations	Score
Describe firm-based value chain model and decision making levels.	Failure to identify the most important features.	Description of most important features.	Complete and accurate description of the value chain model and decision making levels.	
Apply the value-chain model and decision making level identification to the specific firm's situation.	Failure to describe the value chain activities and decision making levels in the firm.	Brief description of the value chain activities and decision making levels in the firm.	Complete and accurate description of the value chain activities and decision making levels in the firm.	
Analyze the opportunities in terms of functional areas, business process(es), and decision levels for IS/IT implementation in the firm.	Failure to analyze the functional area(s), business process(es), and decision levels in need of IS/IT implementation.	Brief analysis of the functional area(s), business process(es), and decision levels in need of IS/IT implementation.	Comprehensive and logical analysis of the functional area(s), business process(es), and decision levels in need of IS/IT implementation.	
Analyze the matching functionality of the IS/IT product(s).	Failure to analyze the matching functionality of the IS/IT product(s).	Brief analysis of the matching functionality of the IS/IT product(s).	Comprehensive and logical analysis of the matching functionality of the IS/IT product(s).	

Table 1: Assessment Rubric with Four Traits for IT Portion of MBA Learning Goal #1

DATA ANALYSIS AND RESULTS

To verify whether our students met the overall program goal, we first calculated the percentage of students whose performances were below expectations, met expectations or exceeded expectations on each of the four assessment traits for both the face-to-face and the online class

sections for Fall 2006. The results of the assessment are shown in Table 2. In summary, the percentage of students meeting or exceeding expectations was 100% in the face-to-face section for all four assessment traits. Online students did achieve the overall goal of at least 75% of students meeting or exceeding traits 1 and 2, but fell short on traits 3 and 4. Online students could describe and basically apply course concepts but did not do as well when analyzing the situation to set up the decision making process. A summary comparison of the raw scores between the face-to-face class and the online class showed that all students who were below expectations on the four traits were in the online class.

We tested the significance in student performance differences between the online and face-to-face sections by using two-sample T tests assuming unequal variances on the student raw scores on each trait. The raw scores were recorded using a 3-point scale with 1 for being below expectations, 2 for meeting expectations, and 3 for exceeding expectation. The T test shows no statistically significant difference between the two sections in student mean scores on trait 1 (p =0.350) and trait 2 (p=0.146). However, T tests reveal a statistically significant difference between the two sections in student mean scores on trait 3 (p < 0.03) and trait 4 (p < 0.000). Students in the face-to-face class were able to perform significantly better than the students in the online class on both trait 3 and trait 4.

In reviewing the results, it was felt that one reason for this difference might lie in the amount of instructions given to the online students concerning the assessment assignment. A one page assignment description with no further discussion or examples may not have given online students enough information to fully grasp what the assignment entailed, especially for higher Bloom's level tasks.

Trait	Bloom's Learning Level	F2F Section Below Expectations	Online Section Below Expectations	F2F Section Meets Expectations	Online Section Meets Expectations	F2F Section Exceeds Expectations	Online Section Exceeds Expectations
1. Describe firm-based value chain model and decision making levels.	2	0	4 (13.3%)	11 (78.6%)	20 (66.7%)	3 (21.4%)	6 (20%)
2. Apply value-chain model and decision making level identification to the specific firm's situation.	3	0	7 (23.3%)	11 (78.6%)	17 (56.7%)	3 (21.4%)	6 (20%)
3. Analyze the opportunities in terms of functional area(s), business process(es), and decision levels for IS/IT implementation.	4	0	10 (33.3%)	11 (78.6%)	15 (50%)	3 (21.4%)	5 (16.7%)
4. Analyze the matching functionality of the IS/IT product(s).	4	0	17 (56.7%)	11 (78.6%)	10 (33.3%)	3 (21.4%)	3 (10%)

Table 2: Student Learning Performance Frequency (Percentage) in Fall 2006
Face-to-Face (N=14)/ Online (N=30)

CLOSING THE LOOP

Continuously improving by 'closing the loop' is an essential part of assurance of learning. To improve online student performance in MIS, in Spring 2007, online students were given assignment instructions that were enhanced to better explain what students were to do. Students were informed what type of performance met assignment expectations and what type did not meet expectations. Vonderwell, Liang and Alderman (2007) found that online students value online discussions. A session was opened on the online discussion board in WebCT for students to post their assignment questions and comments. And, an example textbook case was discussed online with instructor feedback on how well students handled each portion of the case analysis and discussion.

Recent research studies have found that an online distance education delivery model blended with both asynchronous and synchronous communication tools can be very effective for online students who pursue MBA degrees (Hochberg, 2006). To increase learning effectiveness and move toward a more blended model, we modified our asynchronous MIS online learning environment to incorporate the Breeze Meeting program, an instructional system with synchronous components. The Breeze Meeting program allows the instructor and online students to enter a virtual meeting room, using their headsets to talk and listen to each other and using computer cameras to see each other simultaneously. Virtual meeting participants can use the provided chat room to conduct a text-based conversation as well. The instructor can also share the computer desktop with the students, so that everyone at the meeting can clearly see how the instructor explains the focus of certain assignments and demonstrates real-time, hands-on skills. We scheduled several Breeze Meeting sessions with the MBA students taking the MIS online course section during Spring 2007. The meeting sessions were conducted mostly on weekends to accommodate students who also work full-time. Student feedback on adding this meeting tool was positive. Students found the addition of a real-time communication tool very helpful with online learning. Some students openly expressed their willingness to join again in the next session and to see more adoption of Breeze Meeting in the online classes.

In late Spring 2007, we collected student papers and assessed them in Summer 2007, to compare student performance on the predetermined assessment traits between the more recent MIS online section and the section in Fall 2006. The descriptive results of this assessment are in Table 3. Online students improved their performance in every assessment trait and over 75% of online students met or exceeded expectations on all four traits. This is more in line with the performance of face-to-face course students. Four T tests were performed on the student trait raw scores between the online section in Fall 2006 and the counterpart section in Spring 2007. The T tests show that the mean scores of the online MBA students in Spring 2007 were statistically significantly higher than those from Fall 2006 on all four traits ($p_1 < 0.01$, $p_2 < 0.05$, $p_3 < .05$, $p_4 < 0.000$). We believe that the additional assignment instructions, discussion board sessions, and real-time meetings helped to bring about significant improvement in student performances.

Trait	Bloom's Learning Level	Online 2006 Below Expectations	Online 2006 Meets Expectations	Online 2006 Exceeds Expectations	Online 2007 Below Expectations	Online 2007 Meets Expectations	Online 2007 Exceeds Expectations
1. Describe firm-based value chain model and decision making levels.	2	4 (13.3%)	20 (66.7%)	6 (20%)	2 (5%)	19 (47.5%)	19 (47.5%)
2. Apply value-chain model and decision making level identification to the specific firm's situation.	3	7 (23.3%)	17 (56.7%)	6 (20%)	3 (7.5%)	23 (57.5%)	14 (35%)
3. Analyze the opportunities in terms of functional area(s), business process(es), and decision levels for IS/IT implementation.	4	10 (33.3%)	15 (50%)	5 (16.7%)	7 (17.5%)	21 (52.5%)	12 (30%)
4. Analyze the matching functionality of the IS/IT product(s).	4	17 (56.7%)	10 (33.3%)	3 (10%)	3 (7.5%)	20 (50%)	17 (42.5%)

Table 3: Student Learning Performance Frequency (Percentage)
Fall 2006 (N=30)/Spring 2007 (N=40)

IMPLICATIONS

Program assessment is a critical component of educational practices. In the academic year of 2006-2007, we conducted an MBA program assessment by following AACSB's 5-step process model in a regional university in Texas, with a focus on assuring quality learning in online sections of the program. The assessment was undertaken from two perspectives: accountability and continuous improvement. From the case of the MIS classes we draw the following implications.

The goal of assessment for online MBA classes is basically identical to traditional face-to-face classes. Student performance data should be collected from both formats, analyzed, and compared, if possible. With such information in hand, both face-to-face and online sections of an MBA program can be improved, with the outcomes effectively reported to other audiences.

Through experience in the face-to-face classroom setting, instructors are well able to convey to students what is expected in course assignments. But, online instruction may need to be reviewed to ensure that adequate instruction, discussion, and examples are given so that students understand what the assignment entails. Review of many online courses reveals that instructions for assignments are often very brief and may not give students an adequate understanding of the task they are to accomplish. For MBA programs that are delivered entirely online whereby all teaching, content, and interactions occur virtually, great care should be taken to make sure that instructions are conducted in a way to facilitate student comprehension of the learning objectives and specific task expectations.

Researchers have found learning very effective in a combined environment of synchronous and asynchronous communications. Instructors should be encouraged and trained to use a variety of instructional technologies, including Web-based courseware, Web conferencing software, and audio and video tools. Thus, students who live around the globe are able to meet, at times, synchronously in the virtual learning environment while enjoying the flexibility of a mainly asynchronous mode of online learning. As an added benefit, for an MIS online class, implementing a variety of virtual learning tools gives students first-hand experience in using a number of IT products and helps them to see more clearly how IS is changing and benefiting our workplaces and lives.

It is important for a school to focus on those aspects of continuous improvement over which it has control and to choose the actions that seem most promising for real change. It is highly recommended that the assessment process and remedy efforts be instituted at regular intervals to achieve steady improvement in MBA programs.

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