Online SCM 200

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**Design: Fall 2013 through Summer 2014**

**Implementation: Summer 2014**

**Introduction:**

**SCM 200, Statistics:** Introduction to Statistics for Businessis a four-credit course designed primarily for students entering into the Business Program and other majors that require statistics in their curriculum. SCM 200 at times can be substituted for Stat 200 where appropriate. It also fulfills a general education (GQ) requirement. SCM 200 typically encompasses basic introduction to statistics, descriptive statistics, probability distributions, statistical inference, regression, correlation, and forecasting. Students learn about the usefulness of statistics and its business applications using data from various sources. Use of excel complements statistical theory with practice which is core part of SCM 200. Excel usage was recommended by the Advisory Council Board for the Business Program at Penn State Berks. Competency in Excel, Access and Microsoft Office is expected of business students and SCM 200 seems to be a perfect fit. Students are encouraged to actively participate and get to know the learning methods which are carefully tailored to deliver the course on a online format. It is a challenge for delivering the necessary content without compromising the quality or integrity of the material, keeping in mind the varied student body that we encounter. The Grades are primarily determined by homework, quizzes, big-exams, and a final exam.
 **Analysis and Final Report: Spring 2015 Purpose**

The objective for this Teaching, Learning, and Innovation (TLI) grant was to use new technological tools to develop new approaches for teaching courses on an online format and evaluating student performance. The online course was to cater to students faced with two main constraints: graduating on time and location bound.

The SCM 200 TLI Grant project was sought for essentially three different components:

1. Supplemental compensation to the instructor for time spent to learn new technology to develop all the tools necessary for creating a series of class lecture videos and other ancillary materials to help student learn statistics at a non-campus location.

 II) To supplement partially the purchase of a Microsoft Surface Tablet Pro2.

III) To procure licensing fee for Adobe Presenter Video Express, a software program which allows to capture streaming instructional videos and post it online (Steaming Videos at PSU.edu) for students to watch.

The idea for this project was providing a visual depiction of the steps necessary to solve statistical problems and to empower their learning experience. Students have had the opportunity to watch the videos repeatedly, and practice the steps correctly if they choose to do so. The videos were beneficial to students with different learning styles.

## Project Design

The Instructional Designer Mary Ann Mengel talked about synchronous versus asynchronous online class format. Additionally, she showed a handful of tablets and programs with writing capabilities and recording features that were available at the time. Mary Ann also introduced me to Adobe Presenter Video Express, a software program that allows to record video images of the presentation on the computer screen for lengths at a time. Mary Ann was always very patient with me as I was naïve to new technology and its usage. However, I was unwavering in my commitment to learn and implement as time was of essence for me. Looking at the pros and cons of a handful of tablets I decided to go with the Microsoft Surface Pro 2 because of its versatility. Dr. Rungun Nathan was instrumental in the tablet selection process. It took a little while to acclimatize to the basics of the Adobe Presenter program, I developed a plan to create a series of video-based instructional resources for students to peruse for the next six weeks. Amy Roche, the instructional designer, did a fantastic job in outlining learnings objectives, weekly goals and student activities at the very onset. Amy also included a detailed technical requirement needs for the students to take the course with minimum computer glitch. Student activities included watching instructional videos on streaming@psu.edu followed by answering homework, quiz, and extra credit video quiz posted on the publisher course management website (mystatlab provided by Pearson). The course also included 3 exams including a semi-cululative final.

**Outcomes**

To assess student learning a mid-semester anonymous survey was designed by Amy Roche and administered during the third week of the course. The students were asked to complete 22 Likert scale questions regarding their use of the new technologies, prior experiences with hybrid and complete online courses as well as student characteristics. Some of the Likert questions were not applicable and hence either completely ignored or had very few responses.

The sample had 10 observations (90.91% response rate) which are summarized below:

Table 1: Descriptive data of student responses to survey on technology use.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Introduction**  | Mean | S.E. |
| 1. | How many online courses you have taken previously? | 3.0 | 2.608 |
|  | **Assignments** |  |  |
| 2. | Weekly Folder Schedules are Valuable | 5.7 | .458 |
| 3. | Learning Objectives are Valuable | 5.0 | .775 |
| 4 | Reading Textbooks are valuable | 5.3 | .781 |
|  | How helpful did you find the video lectures? | 4.4 | 1.685 |
| 6. | Optional Extra Credit Video Quizzes | 5.8 | .400 |
| 7. | Usefulness of Homework? | 5.6 | .49 |
| 8. | Usefulness of Quizzes? | 5.7 | .458 |
| 9. | Usefulness of Exams? | 5.6 | .49 |
|  | **Learning and Organization** |  |  |
| 10 | Understanding of the subject matter  | 5.1 | .539 |
| 11 | The organization of the course Material and explanation | 4.9 | 1.136 |
| 12 | Instructor’s explanation | 4.8 | 1.077 |
|  | **Course & Student Characteristics** |  |  |
| 12 | Student Engagement  | 2.5 | 1.025 |
| 13. | Course Workload | 3.9 | .7 |
| 15. | Difficulty? | 3.3 | - |
| 16. | Time spent | 2.4 | 1.428 |
| 17 | Reason for taking SCM 200 | 1.3 | 0.64 |
| 18 | Year in School | 2.2 | 1.077 |

The survey result revealed that students found value in nearly all of the assignment related activities. The average for this category was 5.38 with the exception of video lectures at 4.4. The data showed that most students were sophomore and they had to spend about roughly four hours per week to finish all the assigned tasks. The mean for organization of the course was at 4.9 with some variability.

As a first time instructor, teaching a one-hundred percent online format was quite challenging. Additionally, trying to learn different facets of online teaching in a relatively short time span made the task quite daunting. Furthermore, trying to find the right balance in terms of what to record and what to ignore was not easy but I learned as the semester progresses. I definitely see room for improvement in terms of organization of the material and recording of instructional videos. I also acknowledge more student engagement in new ways to make it a worthwhile for students to take the online course. Also I would like to incorporate more step-by-step excel spread sheet problems to give students a hands on experience with statistics which I hope will enhance their spread-sheet abilities.

**Implementation**

After familiarizing myself with Adobe Presenter, I created a series of lecture on a weekly basis which students had to watch before answering questions on the Pearson website. Detailed instructions about weekly assignments were posted on the Angel website along with links to the instructional videos. I mostly communicated with my students using the Angel platform.

Before the first week of class students received syllabus and detailed instructions about the course and what is required of them to succeed. Students received instructions about how to register on Pearson website. On my end, I started creating and uploading instructional videos on steamingvideos@psu.edu. At first, the process was bit cumbersome but eventually I became used to it. Then students were urged to watch series of video lectures every week where important concepts were introduced and detailed problem solving methods were shown. Once everyone had access to the online program, students were given the weekly assignment comprising of a home assignment, a quiz, and a video quiz to ensure that they were keeping up with the content. It was evident that students who spent time on home assignment and studied for quizzes did well in the exams. Since most problems were algorithmic and questions and choices were randomized, the chances of academic dishonesty were remote in my opinion. Besides students were located at different campuses which made it difficult to collaborate. Depending on the effort, I saw a clear trait about student success with very few exceptions. I realized that being a six-week summer course and very quantitative did not provide students much of a downtime. Because of that at times I made certain exceptions as warranted. The format of the course gave students ample opportunities to work and succeed, I believe a majority of them just did that.

**Conclusion**

I conclude by saying that, learning how to design, record, upload, and implement a series of instructional videos with all its enhanced capabilities is personally very fulfilling. This brings forth more ideas about usage of online instructional materials such as no loss of class time during weather related class cancellations or when someone is off to a conference or invited as a guest speaker. This benefits both instructors and students. To make the process seamless one has to be willing and able to incorporate new technology for this thing to happen. In my mind, online teaching is still a continuum and I hope to learn from my mistakes and try better myself every time I am given the opportunity. But video editing is still a challenge as of now which I hope to learn anytime soon. The online teaching experience is clearly invaluable and you are often reminded that life is not scripted and be ready for any kinks that come your way.