

## **Project RITE grant final report**

### **Exploring the impact of online study sessions on student academic performance**

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#### **Overview**

This research study was designed to examine the degree to which online review sessions helped students perform better on an exam. Thirteen lectures were videotaped and uploaded into the Blackboard course management system for the class. The lectures were posted to Blackboard one week prior to the exam, and were available 24-hours a day. The quantitative results indicated that the students who participated in the study (i.e. watched the online review sessions) scored 13 percentage points higher on the first exam than students who did not watch the online review sessions. The qualitative results indicated that the online review sessions allowed the students to fine-tune their study efforts. The students also used multiple study methods, which included taking notes while watching the sessions, as well as reviewing their class notes, and looking up terms in the text. Each of the participants found the online review sessions helpful, and would like to have this option available to them in all of their classes for all of their exams.

#### **The challenge**

College students rarely have the time to synthesize the knowledge presented in class lectures, assigned readings, and the text prior to an exam, because of their course load and the pace of instruction. Additionally, the culture of academe coupled with the academic calendar results in students taking exams and writing major papers for several courses at the same time. Review sessions help students use their study time more efficiently, so they can increase their performance on exams. Unfortunately, faculty typically have little time outside of class or office hours to conduct these additional sessions. Today's technology can remedy this challenge, by providing faculty the opportunity to offer these review sessions outside of class, without a significant time investment.

#### **The technology**

Course management systems like Blackboard provide teaching and learning tools that enhance the student learning experience (Lowry & Flohr, 2004). These systems provide faculty and students access to course information 24-hours a day, 7-days a week, from any computer. Faculty can leverage this technology to provide students additional exam preparation assistance in the form of a review session. Unfortunately, many college faculty do not have the technical skills necessary to use the available technology (Gibson, et. al., 2003), which can lead to discomfort and an unwillingness to use educational technology. Course management systems were designed to be turn key and

relatively easy for faculty to use. Thus, it is imperative that the benefits of this technology be measured.

This study was designed to answer the following research questions:

1. Are students interested in participating in an online review session?
2. Does participation in an online review session improve student performance on an in-class exam?
3. Is there a difference between the academic performance of students who participate in an online review session and those who do not?
4. Does an online review session help students prepare for an in-class exam?
5. How does an online review session help students prepare for an in-class exam?

## **Methods**

I video-recorded thirteen review session lectures during winter break 2007 with Information Technology Engineering Services (ITES). The review session lectures matched the topics outlined on an Exam Review Sheet, which was posted in the Course Materials section of the course Blackboard site. I decided to implement the study on the first exam of the semester, because students would have the least amount of information about what to expect on the exam. This approach would also allow me to truly measure differences in performance.

Each lecture was recorded separately, and uploaded to a web site. The web site contained separate links to each of the lectures, which meant that students could watch whichever lecture they needed, instead of one long lecture. Next, a link to the lectures' website was uploaded to Blackboard using the Adaptive Release feature. This feature is designed to limit access to content, which allowed me to document which students were participating in the study. In order to get access to the online review sessions, students had to send me a message via Blackboard indicating they would like to participate in the study. Once I received this request, I sent them the password, which supplied them the link to the lectures. The link was active one full week prior to the exam. Blackboard's tracking feature was also activated, so I could record when and how frequently the participants accessed the session.

After the exam was administered, I calculated the average grade for the participants and compared it the average of the rest of the class. I also conducted face-to-face, semi-structured interviews (Appendix A) with each of the participants to gain an understanding of their overall experience with the online review sessions. The interviews, which lasted 10-15 minutes, were conducted in my office, behind closed doors. The interviews were tape recorded and transcribed by a professional transcriber. The interviews were then coded using QDA Miner qualitative data analysis software.

The initial codes or categories were generated from the interview schedule. For example, I created categories labeled “better academic performance” and “more time studying” based upon the interview questions. The overwhelming majority of the codes however, emerged from the data. For example, the categories “provided examples”, “multiple study methods”, and “focused/direct lectures” were created from actual student comments. These codes or categories were generated from sentence coding. This process involved me reading each sentence, while looking for a common theme or idea that was presented in the sentence. There were a total of 61 categories discovered during the coding process.

### *Participants*

The participants were students enrolled in HRT 311, a 300-level required human resources management course, in the Retail, Hospitality, and Tourism Management department. There were a total of 66 students enrolled in the course at the time of the study. Initially 57 of the students indicated they wanted to participate in the study, but only 36 requested the password. Of the 36, 18 students actually logged on and watched the videos. Each of these 18 participants agreed to be interviewed during the second phase of the study.

## **Results**

### *Quantitative findings*

One of the primary goals of this study was to measure to what degree providing an online exam review session would impact student academic performance. In order to determine if there were any differences in student performance on the first exam, I calculated the average grade for those who participated in the study and the average grade for the rest of the class. The exam was worth a total of 67 points. The overall class average was 39.26/67 or 58.5%. The eighteen students who participated in the study achieved an average grade of 45.56/67 or 68%. The remaining 48 students, who did **not** participate in the study, earned an average grade of 36.85/67 or 55%. This resulted in a difference of 8.71 points or 13 percentage points.

### *Qualitative findings*

As mentioned above, I used qualitative methods to gather a better understanding of the students’ experiences with the online review sessions. **ALL** of the student participants commented that the online review sessions helped them prepare for the exam. The categories or themes that yielded the most responses will be discussed below.

#### *Better academic performance*

This theme had the most comments from the participants. Fifteen of the eighteen participants commented that the online review sessions improved their academic performance on the exam. One student remarked, “I definitely did a lot better”, and

another commented that, “I made a lot higher grade, and the stuff on the test I recognized”. Some participants commented that they performed better on the exam because of the online review sessions, “I think I did a lot better than I would have done from class”. This student is implying that the online review sessions helped prepare for the exam more than class lectures. Others commented that they would have performed worst on the exam without the online review sessions, “Without it, I would have done a lot worse on the test”, and “I would have done a lot worse, if I had not done the review sessions”. Another participant compared her performance on the first exam (with the online review sessions) and the second exam (without the online review sessions), “Well, I did better on this exam than I did on the second one”. One participant explained how the online review sessions helped her, “I just feel like it clarified a few things that I was not previously prepared for”.

It is clear from both the quantitative and qualitative results that the online review sessions helped the student participants earn a higher grade on the first exam. One of the possible explanations for this higher performance is that the students actually spent more time studying as a result of reviewing the online review sessions.

#### *More time studying*

Twelve of the eighteen participants mentioned that they spent more time studying for the exam than they would have without the online review sessions. One participant commented, “...I would not have hardly read my notes as much as I rewatched those videos”. Another mentioned, “I watched all of them, and this time I only studied about an hour before the test”. One participant even remarked that the online review sessions actually encouraged her to study more, “Sometimes it kinda made me want to study more since I wasn’t like had to read the book, because you get burnt out on reading the book”. Another added, “It sorta forced me to go ahead and [start preparing for the exam], and that was very helpful in a very stressful week”. This comment addresses the concern that students have assessments in multiple classes at the same time during a semester. The online review sessions helped these participants start the exam preparation process earlier than they might have.

#### *Multiple study methods*

By far one of the most interesting qualitative findings was that the participants used multiple study methods as a result of having the online review sessions available to them. Many students created a study guide or took notes during the online review sessions: “...just to be able to listen, and type, and just make me a study guide by what you were saying”. Another commented, “I could go to my book or go to my class notes”, while yet another mentioned, “I would listen to what you had to say and look in the book and re-read that information”. One student explained how she incorporated the different information mediums available, “First of all, I did the online review session and made a complete study guide out of that, and then I went through the other study guide [exam review sheet] that we were given and did the definitions”. Some students mentioned that they watched the sessions multiple times, “I would stop it, start it, stop it and start it...”, or “I watched each of the videos twice”.

The online review sessions also seemed to help students understand that they had different learning styles. One student commented, “I just think it’s better for me to hear

things over and over again”. Another remarked, “I mean it is one thing to read it, but hear it and see it, I think that makes a big difference”. Yet another student indicated that she learned by watching, “I learned visually as well”.

Overall, the online review sessions prompted the participants to use multiple methods of learning the material. The students also took an active role in their learning by creating their own study guides and comparing the online review session material to the text. This process gave the students a more in-depth understanding of the course concepts, which most likely improved their performance on the essay sections of the exam, which were worth the most points.

### *Focused lectures*

The participants like the fact that the online review session lectures were direct and to the point versus the class lectures, “I think the information was covered more directly than in class”. Others remarked, “It was more straight to the point”; “...it was very straight-forward”; “...it was straight up what you wanted”. The participants also liked that the online review session lectures were very detailed: “It was more specific”; “You broke each thing that you were talking about down.” Other students commented on how clear the lectures were, “It was explained really clearly”, and “...it made it clear, that hey, you need to know this”. One student commented, “It was like a whole class lecture in like seven minutes”; another concurred, “It was like having the whole semester before the test in an hour, an hour and a half”.

It is likely that making the online review sessions very concise and detailed, made it easier for the students to watch the online review sessions multiple times. Students clearly felt that they were gaining additional knowledge in a very short amount of time.

### *Additional resource & information*

Several participants commented that they participated in the study, because the online review sessions were an additional resource for information about the exam. “I figured any extra help would be beneficial to the test”, and “It helped me by providing information that I needed for the exam”. Others remarked, “...the more resources you have for a test, the better you are going to do”, and “It was something else to add to what I was getting in class, and from the book. It was just another resource to help me try to learn and do good on the exam”. The participants clearly recognized that the online review sessions were another source of information that could help them perform well on the exam.

While these themes were the most prevalent, the participants also commented on the fact that they could watch the sessions whenever they wanted, from any computer. One participant mentioned, “I enjoyed it because you could do it when you wanted”; awhile another added, “I could watch them whenever I wanted”. Another remarked, “...if I’m up at 12:00 [midnight], I’m like, OK, I can study”. Another liked the easy access, “It is easy to access in the library or in-between class, just anytime that I want to learn something”. This unlimited access seemed to give the participants some freedom, “I like that you could access them on your own time”.

## **Implications**

The qualitative results seem to clearly indicate that there are significant benefits to be gained by using technology to provide additional resources to students prior to an exam. By recording the review lectures ahead of time (perhaps during winter or summer break), the faculty member does not invest additional time during the academic year. Once recorded, faculty members can post these lectures to the course Blackboard site at any time.

By creating short, detailed, and focused lectures, the faculty member saves time, and this process actually encourages students to use the additional resource. Many of the participants commented that they felt as though they were getting an entire class lecture in minutes.

Interestingly, the online review sessions seemed to inspire or encourage students to begin the exam preparation process earlier. Participants also used multiple study methods, in that they created study guides from the review sessions, and then reviewed their class notes and the text. Using the online review sessions also revealed that students learn in different ways. Many participants discussed the value of watching the review sessions (over and over again) versus merely re-reading the text book and their class notes. Participants clearly understood the added value of using all of their senses in the study process (watching & listening to the online review sessions, while taking notes).

## **Suggestions for future research**

Like all research studies, this project had some limitations. First, according to the participants, the instructor who taught the course and the researcher, who videotaped the online review sessions, had very different teaching styles. These differences might have accounted for some of the differences in academic performance. Additionally, the researcher has taught this course for the past three years, while it was the first time the instructor had taught this course. The researcher also has professional experience in the course topic (human resources), while the instructor did not. Thus, the additional information provided in the online review sessions (i.e. real world examples), might have explained some of the grade differences.

Future research should look at the differences in academic performance in a class that is taught by the researcher. It would also be interesting to see how many students would use the online review sessions in a course taught by the researcher. Some of the participants commented that they signed up for the online review sessions because they knew the researcher had written the exam, and wanted her perspective on the course concepts. Another area to explore would be the impact of having the online review sessions available from the beginning of the course, without requiring students to sign-up for access.

## References

- Gibson, J.W., Tesone, D.V., and Blackwell, C.W. (2003). Training faculty to shape knowledge for cyberspace: Preparing for online courses. *Professional Communications Conference Proceedings*, (September), 56-61.
- Lowry, L.L. and Flohr, J.K. (2004). Technology and change: A Longitudinal case study of students' perceptions of and receptiveness to technology enhanced teaching and learning. *Journal of Teaching in Travel & Tourism*, 4 (1), 15-39.

**Appendix A**  
**Exploring the impact of online study sessions on student academic performance**  
**INTERVIEW SCHEDULE**

1. Why did you sign up for the online review session?
2. Did you find the online review session helpful?  
*If yes:* What was helpful about the session?  
*If no:* Why not?
3. What did you like about the online review session?
4. What did you dislike about the online review session?
5. Do you think the online review session helped you prepare for the exam?  
*If yes:* How so?  
*If no:* Why not?
6. Do you think you performed better on the exam because of participating in the online review session?  
*If yes:* How so?  
*If no:* Why not?
7. Did you spend more time preparing for the exam because of the online review session?  
*If yes:* How much more time? What exactly did you do?
8. Would you like to have this option available to you before ALL of your in-class exams?  
*If yes:* Why?  
*If no:* Why not?
9. How would you improve the online review session process?
10. Would you encourage your classmates to participate in an online review session?  
*If yes:* Why?  
*If no:* Why not?
11. Is there anything else you'd like to share about your experience with the online review session?