Effect of Posting Lectures Online on Attendance and Student Performance

If I video record my lectures and put them online, will students stop coming to class? The answer seems to be that there is a relatively small decrease in attendance (9% in the experiment summarized in this article), but use of the online lecture videos makes up for the decrease in student performance on exams that one would normally expect from lower attendance.

This article focuses in detail on research conducted at University of Texas, Austin with 264 students in a Geology course (Traphagan et al., 2010). The findings are compared with other findings in the literature.

Salient Findings

Some of the study findings are presented below, along with related findings from the study's literature review, for comparison.

Attendance and Performance

	Traphagan et al. Findings	Comparison to Literature
1.	36% "often" or "always" watched online lecture video instead of attending class (self-reporting on survey).	One quarter of students reported accessing webcast lectures instead of attending lectures (Harley et al. 2003) (3% & 10% UNB Arts 1000, Bramble, 2008, 2009).
2.	71% said they skipped class because the lecture was also available online. 76% said they skipped because of other online content (PPT slides, handouts, notes)	One third of students "agreed" that lecture webcasting encourages students to skip (Brotherton and Abowd 2004)
3.	Actual attendance decrease of 9%, so obviously students did not skip often.	BUT no significant attendance differences between classes with & without webcast lectures (Brotherton and Abowd 2004, Harley et al. 2003, Maag 2006)
4.	73% of online video class felt online lecture was effective; 65% said F2F is effective; 55% still preferred getting content in class	Most students prefer attending lectures over viewing lecture webcasts because of classroom interactivity, in-person viewing of demonstrations, better concentration (Acharya 2003; Harley et al. 2003)
5.	Mean performance difference between sections insignificant (lecture video: $\bar{x}$=3.1, non: $\bar{x}$=3.3) when differences in GPA are controlled	Brotherton and Abowd, 2005 had the same result; Harley et al. 2003 found that students who said they used online lectures instead of attending lectured had lower performance.

Why and How Online Lectures Used

	Traphagan et al. Findings	Comparison to Literature (Harley et al. 2003)
1.	83% to make up for a missed class	66-72% (25% UNB Arts 1000 Bramble 2008,2009)

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	Traphagan et al. Findings	Comparison to Literature (Harley et al. 2003)
2.	70% to review for exam	41-63% (47-49% UNB Arts 1000 Bramble 2008,2009)
3.	46% to understand course content better	"Students in general" prefer using webcast lectures
4.	42% to add more information to their notes	mainly "supplementarily," not as a replacement for lectures (53-79% UNB Arts 1000 students found videos "useful" & "very useful" Bramble 2008,2009)
5.	69% having webcasts reduced anxiety about course	
6.	55% say webcasts can replace being in class	59-80+% said they would not want courses with lectures exclusively online

The UNB Arts 1000 references above are to student surveys of Arts 1000 students to gather their feedback on experiments the Arts Faculty and UNB's Centre for Enhanced Teaching and Learning were conducting on the effect on attendance of posting video recordings of the lectures approximately 1 week after the lecture was given in class. There was no appreciable effect on attendance, but as indicated in the table above, the videos were useful for review and in catching up on missed classes. The 2008 survey had 106 respondents and the 2009 survey 49. Arts 1000 at the time had approximately 350 students.

Traphagan et al. Research Details

The research questions explored in the study were:

1. How does webcasting affect students' actual class attendance, when other factors, such as GPA, gender, reason for taking course, and availability of other online resources, that could affect attendance, are taken into consideration?

2. How does webcasting affect students' performance when attendance is taken into account?

3. How effective do students perceive webcasts to be for learning?

4. Why do students use webcasts?

5. How do students use webcasts?

Experiment Setup:

The experiment was conducted in 2005 in a University of Texas Geology course with 264 students. There were 2 sections, one with access to lecture webcasts (153 students) and one without (211 students). Students picked sections, but without knowing they would be different. The sections were offered at the same time of day for 50 minutes, 2 days per week, on different days (lectures online: M-W 11 am; not: T-Th 11 am). The same 2 instructors co-taught both sections. Both sections had the same lectures and schedule. Both sections had the same PowerPoint slides, lecture content, quizzes and exams, and online materials (except lecture videos—only one section had those). The same online content was available for both, in the university Learning Management System (LMS), Blackboard, specifically PPT slides,

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handouts, lecture notes, and lecture summaries. There were no specific instructions on how to use the online materials. The only difference was that one section had lecture videos available online as well.

There was a roughly equivalent gender balance in each section, and similar cultural background (white European was largest demographic category). The largest bloc of students were liberal arts (video section 28% & not 29%). The course was a required one for roughly the same number of students in each section (videos 77% & not 72%).

Data Collected

Student attendance was tracked, as was performance on the 2 quizzes and final exam. Blackboard LMS access data was used to track lecture video access. There was an end-of-course survey for both sections. The online videos section had a 95-item survey and an 89% response rate; the non-video section had a 44-item survey (only video questions omitted) and an 80% response rate.

Implications

It seems, according to this experiment and the literature, that there is unlikely to be much of an impact on class attendance if lectures are video recorded and made available to students outside class. In fact, the availability of lecture videos for review, note taking, and study increases student performance on test and exams. The study does not indicate when the online videos were made available.

If all lectures were available online at the beginning of the term or before the classes that deals with the corresponding topic was scheduled, class time could be used to process rather than present the content. Students could be required to view the lectures outside of class time and class meetings could be used to answer questions, do problem sets, and engage in a variety of learning activities in which students apply course concepts in a safe-to-fail environment with expert coaching from the instructor.

References

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