

EVALUATION REPORT

**Class Lecture Webcasting,  
Fall 2004, Spring 2005, and Fall 2005:  
Summary of Three Case Studies**

May 31, 2006

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## Contents

	Page
<b>Executive Summary</b>	<b>3</b>
<b>Summary Report</b>	<b>4</b>
Program Description	4
Evaluation Description	7
Findings and Conclusions	9
1. <i>Student Demographics</i>	9
2. <i>Class Attendance</i>	9
3. <i>Student Performance/Learning</i>	11
4. <i>Effects on Students' Learning Experiences</i>	12
5. <i>Reasons for Using Webcasts</i>	12
6. <i>Students' Use of Webcasts</i>	13
7. <i>Students Who Do and Don't Benefit from Webcasts</i>	14
8. <i>Effects on Instructors</i>	15
9. <i>Change in Courses</i>	15
10. <i>Expectations that Webcasting Sets Up</i>	15
11. <i>Adverse Effects of Webcasts</i>	16
12. <i>Technical Issues/Problems</i>	16
13. <i>Webcast Interface</i>	17
14. <i>Comparison with the Classroom Experiences</i>	17
11. <i>Issues Related to Administration and IT support</i>	18
Recommendations	19
1. <i>Recommendations for DIIA Webcasting Program Staff</i>	19
2. <i>Recommendations for Instructors</i>	21
3. <i>Recommendations for Administration</i>	22
4. <i>Recommendations for Future Webcast Evaluation</i>	23

## Executive Summary

Webcasting is one technological enhancement that has recently been introduced to the UT Austin community under the initiative of the Division of Instructional Innovation and Assessment (DIIA). In fall 2004, spring 2005, and fall 2005, a total of seven courses, 11 instructors, and 1313 students were served with the DIIA webcasting program. The purpose of evaluating the webcast program was to explore holistically the merit and challenges of webcasting large lecture courses.

### Key Findings

- ◆ Attendance decreased due to webcasts, but the attendance decline could be effectively reduced by certain strategies.
- ◆ While students perceive webcasts as helpful for improving their performance, the actual effects of webcasts on performance are not clear.
- ◆ Webcasts served students as an effective study tool, both for learning benefits (e.g., for review and making up missed classes) and psychological benefits (e.g., reducing anxiety).
- ◆ A majority of students watched webcasts at least once, averaging 9 to 11 lectures, in particular before exams.
- ◆ Webcasts have proven to be a useful tool for instructors to review and demonstrate their teaching and make course materials available.
- ◆ Students and instructors were generally satisfied with webcasts' quality and IT support. Students most commonly reported audio problems.
- ◆ The degree to which students felt that webcasts were equally good or even better than face-to-face lectures and could replace classroom experiences varied.
- ◆ Many students expressed their wish for the expansion of webcasts.

### Key Recommendations

- ◆ DIIA webcasting program staff should a) pass on procedures to maintain quality, b) create a Web page on webcast troubleshooting, c) devise ways to facilitate students' involvement, d) explore ways to include new features, and e) improve ways to inform students of webcasts interface features.
- ◆ Instructors should a) be aware of the possibility of an attendance decline and take measure to prevent it, b) tell students about the benefits of webcasts, c) explore new pedagogical possibilities with webcasts, and d) remember to do four things (wear a microphone, repeat students' questions, tell students where the laser pointer is aimed, and use Doc Cam instead of chalkboard).
- ◆ Administrators should a) continue and expand webcasts, b) experiment with webcast-only courses, c) experiment with podcasting.
- ◆ Webcast program evaluator should a) reinvestigate the relationship between webcasts and students' performance, and b) compare the effectiveness of podcasting with webcasting.

## Summary Report

### Program Description

**Webcasting**—use of the Web to deliver video broadcasts—is one technological enhancement that has recently been introduced to the UT Austin community under the **Technology Enhanced Learning (TEL)** initiative of the **Division of Instructional Innovation and Assessment (DIIA)**. The course lecture webcast program began with three large, lecture-based geology courses as test cases in fall 2004 and continued with two lecture-based government courses in spring 2005. In fall 2005, the same three geology courses were webcast, and the evaluation study was replicated. Over the three semesters, a total of seven courses, 11 instructors, and 1313 students were served with the DIIA webcasting program (Table 1). This report summarizes the evaluation studies over the three semesters. For more detailed reports of the studies, see the full reports available at <http://www.utexas.edu/academic/diia/research/reports/> or Coco Kishi of TEL ([coco@uts.cc.utexas.edu](mailto:coco@uts.cc.utexas.edu)).

As designed presently, webcasts are not intended to replace in-class lectures but to serve as an additional source through which students can view lectures repeatedly or when they miss classes. Therefore, no existing instructional activities—such as in-class lectures, labs, office hours, or in-class quizzes and exams—are eliminated.

The DIIA webcasting program uses the Mediasite webcasting system, which captures a lecturing instructor in digital video while integrating and synchronizing any visual (e.g., PowerPoint slides and videos) and audio materials with the lecture video and uploading the webcasts onto the Internet instantly. The webcasts are delivered as streaming videos via Blackboard, through which students can access materials for only the courses in which they are enrolled. Students can view lecture videos integrated with visual and audio materials at any time (live or archived) and as many times as they want on the Internet during the semester. Students have several viewing options: they can change the pace at which they watch using stop, double speed, or slow speed, and they can go directly to the portion of the video they wish to view using a slide list or playhead. They can also enlarge the lecture video window or slide window.

TEL provides a camera operator to shoot the lecture video and a technical specialist to monitor the production process, making production of the webcast transparent for course instructors and students, except for the presence of the video camera, operator, and/or technical specialist in the classroom.

**Table 1 – Webcast Courses**

Course	Semester	Enrollment	Notes
GEO303 Introduction to Geology	Fall 2004	146	<ul style="list-style-type: none"> <li>For the purpose of the evaluation, only one of the two course sections was provided with the webcasts. The other section (n = 223) did not have access to webcasts.</li> <li>Students were required to attend the lab one hour per week; the lab hours were not webcast.</li> <li>The course was team taught by two professors.</li> </ul>
GEO302D Age of Dinosaurs		159	<ul style="list-style-type: none"> <li>Students were required to attend the lab one hour per week; the lab hours were not webcast.</li> </ul>
GEO302P Living with a Planet		247	<ul style="list-style-type: none"> <li>Students were required to attend the lab one hour per week; the lab hours were not webcast.</li> <li>The course was team taught by two professors.</li> </ul>
GOV310L American Government	Spring 2005	59	<ul style="list-style-type: none"> <li>These two GOV310L were different sections of the same course, taught by different professors.</li> </ul>
GOV310L American Government		112	
GEO303 Introduction to Geology	Fall 2005	153	<ul style="list-style-type: none"> <li>For the purpose of the evaluation, only one of the two course sections was provided with the webcasts. The TTH section (n = 211) did not have access to webcasts.</li> <li>Students were required to attend the lab one hour per week; the lab hours were not webcast.</li> <li>The course was team taught by two professors.</li> </ul>
GEO302D Age of Dinosaurs		181	<ul style="list-style-type: none"> <li>Students were required to attend the lab one hour per week; the lab hours were not webcast.</li> </ul>
GEO302P Living with a Planet		256	<ul style="list-style-type: none"> <li>Students were required to attend the lab one hour per week; the lab hours were not webcast.</li> <li>The course was team taught by two professors.</li> </ul>

Table 2 shows a summary of program costs and staffing. Compared to fall 2004, when new equipment purchases amounted to \$34,000 for the MediaSite system and other equipment, equipment costs were dramatically reduced in spring 2005 and fall 2005. Also, staff costs were significantly reduced. TEL staff hours decreased every semester, and student assistant were costs reduced because one student webcasting team now had

two students (the minimum necessary) in spring 2005 and fall 2005 instead of three (one extra member) in fall 2004.

**Table 2 - Webcast Program Cost**

<b>Initial Equipment Cost</b>		
MediaSite System	\$20,000	
Servers	Approximately \$5,000 x 2	
Cameras, microphones, mixers, and other equipment	\$4,000	
Total Initial Equipment Cost	\$34,000	
<b>Continuing Equipment Cost</b>		
MediaSite System	\$5,000 for yearly support and maintenance	
ITS Collocation and Server Administration	\$0 in the first year \$10,000 from the second year	
<b>Staff Cost</b>		
	<b>Hours or Cost</b>	<b>Nature of Work</b>
TEL Staff Hours**	Fall 2004: About 180 hours Spring 2005: about 150 hours Fall 2005: about 120-140 hours	hiring, training, setting up, managing students; server upgrades; coordinating, e-mails; some more hours for covering for students hours; attendance counts, surveys, meetings, and e-mail
ITS Staff Hours	About 1 hour/week	Server upgrades and maintenance
Student Hours	Fall 2004: \$3,696 (8 lecture hours/week x 14 weeks x 3 students x \$11/hour) Spring 2005: \$1,848 (6 lecture hours/week x 14 weeks x 2 students x \$11/hour) Fall 2005: \$2,464(8 lecture hours/week x 14 weeks x 2 students x \$11/hour)	video shooting, setting up, and training

## Evaluation Description

The **purpose of evaluating the webcast program** was to explore holistically the merit and challenges of webcasting large lecture courses, addressing **14 research questions**:

1. How does webcasting affect students' **class attendance**?
2. How does webcasting affect students' **performance**?
3. How does webcasting affect students' **learning experiences**?
4. **Why** do students use webcasts?
5. **How** do students use webcasts?
6. **What types of students benefit** from webcasts?
7. How does webcasting **affect instructors**?
8. How do instructors **transform their courses** when their courses are webcast?
9. What types of **expectations** does webcasting set up for students and instructors?
10. What are the **adverse effects** of webcasts for students and instructors?
11. What are the **technical issues/problems** for students and instructors?
12. What are the most important features of the webcast **interface**?
13. Can webcasting **recreate the large lecture-based classroom experiences**?
14. What are the implications for **administration and IT support**?

Questions 3, 7, 8 and 10 were investigated only in fall 2005.

Table 3 shows the instruments and methods used for data collection to address research questions using multiple data sources triangulated to yield less biased conclusions.

GEO 303 Introduction to Geology was set up for a quasi-experimental study, in both fall 2004 and fall 2005. One of the two sections (Monday and Wednesday lecture section) had access to webcasts and the other (Tuesday and Thursday lecture section) did not. The two sections were otherwise the same—same instructors, lectures, learning materials, course schedule, quizzes, and exams. Students were not randomly assigned to the two sections; they enrolled in the section of their choice without knowing that only one would feature access to webcasts. Because the quasi-experimental design for this course allowed comparisons between one webcast section and one no-webcast section, more rigorous data collection activities were conducted in this course.

**Table 3 – Research Questions and Data Sources**

Research Questions	Data Sources											
	Attendance Count	Performance Data	Mid-Semester Survey	End-of-Semester Survey	Access Data	Focus Group	Usability Testing	Student Interview	Instructor Interview	Course Observation	Support Observation	Audit Data
Semester/course	All	GEO303 only	Fall 2005 only	All	Fall 2005 only	Fall 2004 only	Fall 2005 only	Fall 2005 only	All	All	All	All
1. attendance	✓		✓	✓		✓		✓	✓			
2. performance		✓		✓	✓	✓		✓	✓			
3. learning experience			✓	✓		✓		✓				
4. why students use			✓	✓		✓		✓	✓			
5. how students use				✓	✓	✓						
6. which students benefit		✓		✓	✓	✓						
7. effects on instructors									✓			
8. how instructors transform courses									✓	✓		
9. expectation			✓	✓					✓			
10. adversary effects			✓	✓					✓			
11. technical problems			✓	✓		✓		✓	✓	✓	✓	
12. interface features			✓	✓		✓	✓	✓	✓			
13. recreating classroom experience				✓		✓		✓	✓			
14. implications for admin./ support			✓	✓		✓		✓	✓			✓

## Findings and Conclusions

### 1. Student Demographics

Students demographics had the following characteristics, in general, according to the end-of-semester surveys:

- More male than female students in Government courses and about equal numbers of male and female students in geology courses (only fall 2005)
- mostly white or European Americans
- mostly between 18 and 22 years old
- more freshmen and sophomores than Juniors and seniors
- Liberal arts students were most heavily represented.
- Students' GPAs were between, on average, 3.1 and 3.3.
- Most geology students lived within 20-minute commute to campus (only fall 2004)
- Most were taking the courses to meet an area requirement and a university requirement.
- Most reported being absent from lectures 7 times or fewer.
- Most students reported spending 1-10 hours weekly studying for the course (only spring 2005 and fall 2005), caring about their grade in the course (only spring 2005 and fall 2005), and expecting a final grade of *B*.
- Between 2% to 18% of students were non-native speakers of English.
- 5 to 6% had learning disabilities (fall 2004 only)
- Students generally used a PC platform and a majority used Internet Explorer as their Web browser (spring 2005 and fall 2005 only).

### 2. Class attendance

*Research Question 1: How does webcasting affect students' class attendance?*

- A decline in attendance was the biggest concern for instructors in introducing webcasts to their courses.
- **Attendance decreased because of webcasts**, according to multiple data sources (Table 4). However, students tended to agree or strongly agree that they preferred getting course content in class, even when it was available in other ways (spring 05 and fall 05). These results suggest that, while students report that learning course content in class is preferable, students wind up skipping lectures when they are available online.

**Table 4 - Evidences of attendance decrease due to webcasts**

<b>Findings</b>	<b>Data source</b>
Attendance was lower in the webcast section than in the no-webcast section in GEO303.*	attendance counts (fall 05)
The number of lectures students reported missing correlated significantly with the number of times that students watched webcasts.**	access tracking data (fall 05) end-of-semester survey (fall 05)
A substantial proportion of students (7-65% depending on the course) reported that they sometimes/half the time, often, or always used webcasts instead of attending class.	end-of-semester survey (all semesters, Appendix A)
21-85% (depending on the course) of students agreed that they skipped class because the lecture content was available via webcasts.	end-of-semester survey (all semesters, Appendix A)
Many students expressed concern about webcasts becoming a temptation for them to skip classes.	mid-semester survey (fall 05) end-of-semester survey (all semesters, Appendix A) student interview (fall 05)

\*Attendance rate did not differ significantly between the webcast section and no-webcast section in GEO303 in fall 2004. The attendance counts were increased to nearly twice as large in fall 2005 to increase the power. Hence the result in fall 2005 is based on more data and more credible. The attendance rates were higher on average in no-webcast section than in webcast section in both fall 2004 (by 4%) and fall 2005 (by 9%).

\*\* In fall 2004 and spring 2005 (based on end-of-semester survey only), the number of lectures students reported missing did not correlate significantly with the number of times that students watched webcasts. However, a comparison of absence frequencies between students who had never watched a webcast and those who had watched webcasts revealed that the former's absence frequency was significantly lower than the latter's in spring 2005, although this was not the case in fall 2004.

- While some students were tempted to skip class because of webcasts, there were **other factors that affected attendance as much as or more than webcasts did** (Table 5).

**Table – 5: Factors other than webcasts that affected attendance**

	Factors	Data source
Factors associated with attendance increase	<b>Instructors' strategies to motivate students to go to class</b> , such as <b>taking attendance</b> as a part of grade, giving pop quiz, and making lecture interesting	End-of-semester survey (all semesters, Appendix A) student interviews (fall 05)
	<b>Important information delivered in class</b>	end-of-semester survey (all semesters: Appendix A)
	Students' belief in attending class	end-of-semester survey (all semesters: Appendix A)
	The effect of attendance on grades	end-of-semester survey (all semesters: Appendix A)
	<b>Interactions and engagement</b>	student interview (fall 05)
	Self-discipline	student interview (fall 05)
	Students were more likely to attend class in the smaller section than the larger section.	Attendance counts (spring 05)
Factors associated with attendance decrease	Attendance decreased as <b>the semester proceeded</b> .	attendance counts (all semesters)
	<b>Learning resources other than webcasts</b> , such as online lecture notes and lecture summaries	end-of-semester survey (all semesters, Appendix A)
	<b>Busy schedule</b> (with study or other activities) and fatigue caused by it	end-of-semester survey (all semesters, Appendix A)
	Sickness/doctor's appointment	end-of-semester survey (all semesters: Appendix A)
	<b>Instructors' acknowledgement</b> of the use of webcasts as a substitute to coming to class as a reason for skipping class	Student interview (fall 05)

The attendance decline may have been effectively reduced by considering the factors listed in the table above.

### 3. Student Performance/Learning

#### *Research Question 2: How does webcasting affect students' performance?*

The findings were mixed.

- Test/quiz scores did not differ in a statistically significant way between the webcast and no-webcast sections in GEO303 (fall 2004 and fall 2005).
- Those who watched webcasts more frequently performed better in the lecture final exam in fall 2005 (based on access track records) and expected an A rather than other grades in spring 2004 (based on end-of-semester survey). But no other significant relationship was found between indicators of performance and webcast watching frequencies in any semester. The ways in which students watched

webcasts and their attitudes towards webcasts do not appear to be related to their performance.

- Student interviewees suggested that webcasts helped students improve their performance (fall 2005), while instructors' perceptions of the effects of webcasts on performance were mixed (all semesters).

These findings suggest that, while students perceive webcasts as helpful for improving their performance, the actual effects of webcasts on performance are still not clear.

#### 4. Effects on Students' Learning Experiences

##### *Research Question 3: How does webcasting affect students' learning experiences?*

Webcasts became an integral part of some students' study procedures and influenced their learning experiences in various positive ways.

- Students mentioned that webcasts served them as an effective study tool, both for reviewing after attending face-to-face lectures and for making up missed classes (all semesters).
- Students, in general, rated webcasts as more effective than going to an instructor's or TA's office hours, but as less effective than using other online course resources (PowerPoint slides, online lecture notes, lecture outline, etc.) (all semesters). Compared to attending face-to-face lectures, students, in general, rated webcasts as more effective in fall 2005 and as less effective in fall 2004 and spring 2005 than attending face-to-face lectures. (Appendix B)
- Student interviewees mentioned that webcasts helped relieve them from learning anxiety, helped them concentrate during face-to-face lectures by allowing opportunities to take notes later, and became a major part of test preparation (fall 2005).

#### 5. Reasons for Using Webcasts

##### *Research Question 4: Why do students (not) use webcasts?*

Students used webcasts for **learning benefits** and **psychological benefits**.

- Students watched webcasts
  - to make up for a missed class,
  - to review course contents especially before exams,
  - to learn better and efficiently and save time, especially with a large volume of information,
  - to control the pace and method of their learning,
  - to substitute for seeking assistance from professors or TAs, and
  - to reduce their learning anxiety and give sense of security,
 among other reasons (all semesters, Appendix C).

Major reasons for not using webcasts included

- not having time to do so, and
- going to the classes (fall 2005, Appendix C).

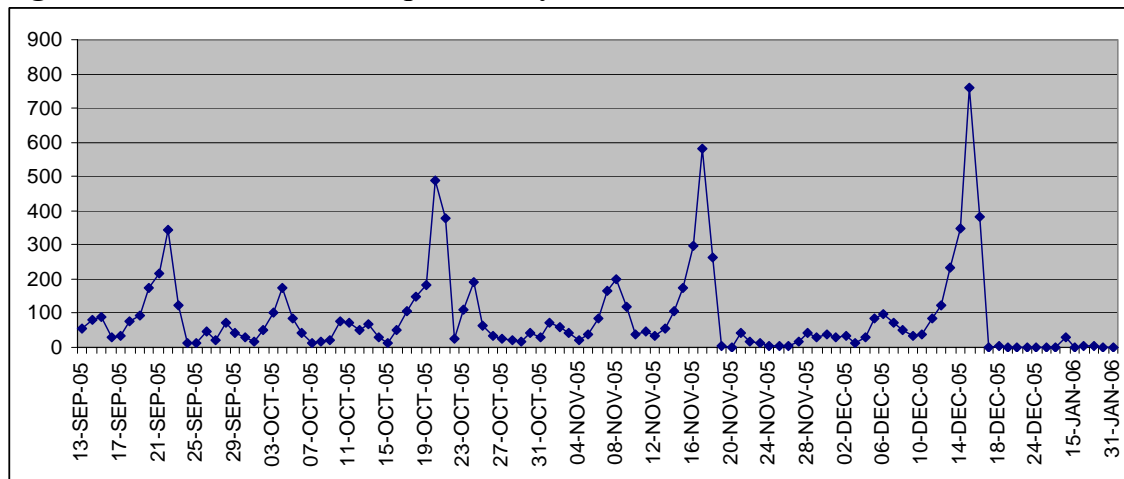
## 6. Students' Use of Webcasts

### *Research Question 5: How do students use webcasts?*

A picture has emerged of the typical ways students used webcasts:

- A majority of students watched webcasts at least once (all semesters. Appendix D), averaging 9 to 11 lectures<sup>1</sup> and 16 accesses during the semester (fall 2005, Appendix D).
- Typical access behaviors could be identified (all semesters, Appendix D):
  - before quizzes or exams (observe peaks in access frequency before test/quiz time in Figure 1)
  - from 5 pm to midnight
  - watching the entire webcasts lectures<sup>2</sup>
  - both listened and watched the video and slides
  - from home

**Figure 1--Overall Access Frequencies by Date in fall 2005**



- Most students accessed webcasts seven times or fewer, but those students who accessed webcasts frequently accounted for a large portion of webcast access activity, thereby raising average webcast access frequency (fall 2005).

<sup>1</sup> In fall 2005, students were asked to write down the number of lecture webcasts that they watched in the survey. In spring 2005 and fall 2005, students were asked to choose a range of numbers of watched webcasts in a multiple choice item. The most commonly chosen numbers of watched webcasts were 1-3 (38-49%) in fall 2004 and 4-7 (36-50%) in spring 2005.

<sup>2</sup> The focus group student participants in fall 2004 and student interviewees in fall 2005 suggested, however, that there were a great variety in the ways they watched webcasts: many also watched only a specific section or only listened without watching the monitor.

## 7. Students Who Do and Don't Benefit from Webcasts

### *Research Question 6: What types of students benefit from webcasts?*

Table 6 summarizes the statistically significant relationships between students characteristics and certain benefits.

**Table 6 – Summary of the Statistically Confirmed Relationships between Students' Characteristics and Benefits They Reported Receiving from Webcasts.**

Characteristics	Who benefited?	Description
<b>Gender</b>	Female students reported benefits more than male students.	Female students agreed more than male students that webcasts were important to their overall <b>satisfaction</b> in the course and webcasts reduced their <b>anxiety</b> . (spring 2005)
<b>Year in school</b>	Sophomores reported benefits more than freshmen and juniors.	Sophomores agreed that webcasts were important to their course <b>satisfaction</b> more than did freshmen and juniors. (fall 2004)
<b>G.P.A.</b>	Students with higher G.P.A. reported benefits less.	The higher the GPA was, the less students agreed that webcasts were important to their overall course satisfaction. (fall 2004)
	Students with lower GPA reported benefits more	The lower their GPA, the more frequently they agreed that they used webcasts to help control how they learned. (fall 2005)
<b>Probable Grade</b>	Students who were expecting to receive an A reported benefits more.	Those who expected an A reported watching more webcasts than those who expected a B. (spring 2005)
	Students who were expecting to receive higher grades reported benefits more.	Students who were expecting to receive a D in the course agreed less frequently that webcasts reduced their anxiety than did any other group in fall 2004. Also, students who expected higher grades for the course reported more frequently than those who expected lower grades that webcasts reduced their anxiety about the course in fall 2005.
<b>Caring about the grade</b>	Students who cared about their course grade reported benefits more.	Students who cared about their course grades agreed more frequently that webcasts were important to their overall course satisfaction and that webcasts reduced their anxiety about the course than did those who did not care about their course grades. (spring 2005)
<b>Reason for taking the course</b>	Students whose career goal was related to the course reported benefits more.	Students whose career goal was related to the course used webcasts more frequently than those who took the course because they had a personal interest or it met an area requirement. (fall 2005)
<b>Comprehension difficulty</b>	Students who always had difficulties understanding professor's speech reported benefits less.	Those who always had difficulties in understanding their professor's speech disagreed more than all other groups that webcasts reduced anxiety about the course. (fall 2004)
<b>Computers</b>	Mac users reported benefits less than PC users.	Mac users reported watching fewer webcasts than PC users. (fall 2004) Also, Mac users generally disagreed more frequently that webcasts helped them learn the course material better, gave them more control over their learning, were important to their course satisfaction, and reduced their anxiety. (fall 2004) This is perhaps because the webcasts could be watched only from PC platforms in fall 2004. Webcasts were available from both PC and Macintosh platforms from spring 2005, and no such disadvantages for Macintosh users were observed in the users' responses in spring 2005 and fall 2005.
<b>Web browsers</b>	Mozilla users reported benefits more than Firefox users.	Those who used Mozilla reported watching more webcasts than those who used Firefox. (spring 2005)

The data suggest that different groups of students benefit from webcasts in different ways. While we expected that those needing more assistance in learning—such as non-native speakers of English, students with learning disability, and freshmen—would more frequently use webcasts and report benefits of that use, we found no such relationship.

## 8. Effects on Instructors

### *Research Question 7: How does webcasting affect instructors?*

Webcasts have proven to be a useful **tool for instructors to review and demonstrate their teaching** (fall 2005). Instructors also suggested that webcasts may save time for them, by providing students information when they miss classes and by making all course materials (PowerPoint slides and lecture notes) available (spring 2005).

## 9. Change in Courses

### *Research Question 8: How do instructors transform their courses when their courses are webcast?*

Instructors made limited changes to their webcast courses, some requiring attendance or substituting a lecture by webcast in an unavoidable situation. Others did not change anything (fall 2005).

## 10. Expectations that Webcasting Sets Up

### *Research Question 9: What types of expectations does webcasting set up for students and instructors?*

- Students expected webcasts to serve them as an **effective study tool**
  - for reviewing and helping them understand material better in test preparation,
  - for learning better (Appendix E)
  - for improving their grades (Appendix E), and
  - as a **safety net** when they missed classes or missed some information in classes.
- Some students expected that webcasts would cause them **skip more classes** (Appendix E).
- Instructors expected that webcasts would:
  - **help students in their study** (fall 2005),
  - be **transparent** to them, not affecting their teaching activities (all semesters)
  - cause a decline in attendance (all semesters), and
  - technical problems (spring 2005).

The data suggest that all the above expectations were met.

- Instructors also expected that webcasts would:
  - improve students' exam scores (fall 2004)
  - open up new possibilities for class activities (spring 2005)
  - cause students to become hesitant to express their opinions freely (spring 2005).

Whether or not these expectations were actually met could not be confirmed in our data.

## 11. Adverse Effects of Webcasts

*Research Question 10: What are the adverse effects of webcasts for students and instructors?*

- About one-quarter to one-third of students reported that there were **no negative effects** of webcasts. Others mentioned as negative effects webcasts' making them **want to skip classes** and **technical problems** (fall 2005, Appendix F).
- Instructors mentioned as webcasts' negative effects **lack of opportunities to interact** with classmates and instructors and **to experience classroom activities** first hand. They were also concerned about attendance (fall 2005).

## 12. Technical Issues/Problems

*Research Question 11: What are the technical issues/problems for students and instructors?*

Students and instructors were generally **satisfied with webcasts' quality** and did not experience many technical problems. Students most commonly reported **problems with audio (quality and volume)**, and instructors often had difficulty remembering to repeat students' questions and telling where the laser pointer was aimed.

- Overall, students and instructors were satisfied with the quality of webcasts, with a small proportion of them reporting difficulties using webcasts (all semesters, appendix G).
- Major technical problems included (Appendix G):
  - volume (all semesters),
  - sound quality (all semesters),
  - video quality (fall 2005),
  - loading time (fall 2005),
  - video and audio synchronization (all semesters), and
  - incompatibility with other platforms or browsers (fall 2004) (In fall 2004, webcasts could be viewed only on PCs and with Internet Explorer, but from spring 2005, webcasts can be viewed on all major platforms and browsers.)
- A majority of students reported that they did not seek any help when they faced technical difficulties (fall 2005, Appendix G).
- When the IT staff members were aware of problems, they fixed them promptly (fall 2005).
- For instructors, wearing a microphone was not a problem, but remembering to repeat students' questions (because webcasts do not pick up students' voices) and tell where the laser pointer was aimed (because a laser point does not show in webcasts) was a challenge to them (all semesters).

### 13. Webcast Interface

**Research Question 12: What are the most important features of a webcast interface?**

While students reported generally that the currently available and future interface features were important<sup>3</sup>, they identified several as particularly desirable (Appendix H):

- Seeing the blackboard or slides clearly: several mentioned that writing on the chalkboard was hard to see. (current feature) (all semesters)
- Stop/rewind (current feature)
- Scanning through the video using the video play head (current feature)
- Hearing the other students when they asked questions (current/future feature)
- Index or search function to jump to a particular part. This feature has been repeatedly suggested by one instructor. (future feature)
- Being able to see the dot of the laser point on slides (future feature)
- Being able to manipulate the slide window or video window—separate, enlarge, reposition (future feature)
- Full screen animation/video (future feature)
- Being able to annotate (take notes, text search, make custom bookmarks) in the webcast interface (future feature)

Instructors expressed their wishes for additional features such as an index and additional windows (fall 2004 and fall 2005). Usability study participants could figure out most interface features on their own (fall 2005). However, they did not know how to use certain features, such as fast speed or slide lists, which they perceived as very helpful, and suggested that **an orientation or online help would help them learn useful features** they may not find by themselves (fall 2005).

### 14. Comparison with the Classroom Experiences

**Research Question 13: Can we recreate the large lecture based classroom experiences?**

The degree to which students felt that lecture webcasts were **equally good or even better than face-to-face lectures and could replace classroom experiences varied**. But all instructors believed that they **cannot completely replace classroom experiences**.

- In five out of eight webcast courses, students who “agreed” or “strongly agreed” that webcasts were as good as going to class outnumbered students who “disagreed” or “strongly disagreed.” (Appendix I)
- In two out of five courses in spring 2005 and fall 2005, students who “agreed” or “strongly agreed” that webcasts helped them learn the course material better than in-class lectures outnumbered students who “disagreed” or “strongly disagreed,” while it was vice versa in the other three courses. (Appendix I)

<sup>3</sup> However, those who disagreed or strongly disagreed that “seeing the professor closer (zoom)” outnumbered those who agreed or strongly agreed in fall 2004 and spring 2005.

- In two out of five courses in spring 2005 and fall 2005, students who “agreed” or “strongly agreed” that webcasts could replace being in class outnumbered students who “disagreed” or “strongly disagreed,” while it was vice versa in the other three courses. (Appendix I)
- Instructors’ responses suggest that webcasts cannot completely replace classroom experiences, because they lack interactions and the immediate experience of atmosphere. They felt that the best way to use webcasts was as a supplement to attending to lectures rather than as a substitute for it.

## 15. Issues Related to Administration and IT support

### *Research Question 14: What are the implications for administration and IT support?*

Many students expressed their wish for the expansion of webcasts to other courses, and a fairly large number of students were interested in taking webcast-only courses. Both instructors and students were generally satisfied with IT support.

- Students, in general, reported that webcasts were important to their overall course satisfaction (Appendix J), and many said that the service should be expanded to other courses.
- Students suggested as suitable candidate courses for webcasting introductory courses, courses that require much deliberate cognitive processing, large courses, long class sessions, and early morning classes.
- A fairly large number of students (31-59%) was interested in taking a class delivered entirely by webcasts, with no face-to-face meetings. Even a larger number of students (25-69%) was interested in such an option to resolve schedule conflicts. (Appendix K)
- About half of the students in fall 2005 said they would or might use podcasting/vodcasting, although they appeared to prefer webcasting.
- A quarter to one-half of the students (24% - 51%) was willing to pay an extra fee (up to \$20) for webcasts. (Appendix K)
- While students and instructors were generally satisfied with IT support, they suggested several service improvements, including ensuring the proper recording and delivery of webcasts, providing online IT help, and adding indexes to the contents (fall 2005).

## Recommendations

### 1. Recommendations for DIIA Webcasting Program Staff

Recommendation	Description	Communication with:
a. Inform instructors of the possibility of attendance decline and effective strategies for preventing it.	Instructors who webcast their courses for the first time may not be aware of the possibility of attendance decline. Therefore, DIIA webcast program staff should inform them of the possibility and suggest strategies to prevent it, such as taking attendance, active interactions, explicitly stating their expectation for students to attend lectures. (See Table 10 for a complete summary of factors other than webcasts that affect attendance.)	Instructors of webcast courses
b. Inform instructors of ways to take advantage of webcasts.	DIIA webcast program staff should inform instructors of ways to take advantage of webcasts, such as learning their own teaching styles and habits and showcasing their courses by using webcasts. Staff should also explore pedagogical possibilities for webcast lectures, including student-centered activities, in collaboration with instructors, in order to accommodate instructor's teaching style and philosophy.	Instructors of webcast courses
c. Pass on procedures to maintain quality.	A majority of students felt that the overall quality of webcasts was good. Therefore, the current procedures to produce webcasts should be passed on to the webcasting technical staff to whom the webcasting system is lent.	Webcasting technical staff
d. Create a Web page on webcast troubleshooting.	Students could have resolved by themselves some of the common problems they encountered (e.g., using a headphone can solve volume problem). Accumulate trouble-shooting information so students can resolve commonly-reported problems (e.g., volume, sound quality, video quality, synchronization), and make it available on the website. Because students are not likely to seek assistance from other people, making it available on a website may be the most effective way to offer troubleshooting assistance.	Develop the webpage within DIIA and give the URL to the webcasting technical staff and instructors of webcast courses
e. Inform and remind instructors to remember four things	Instructors must remember four things: wearing a microphone, repeating students' questions, telling students where the laser pointer is aimed, and using Doc Cam instead of the chalkboard. Failing to do so causes more serious difficulties for students than instructors realize, as indicated by the frequency of students' references to the need for these practices. Program staff should consider a systematic way to remind instructors of these practices, such as placing a quick reminder on the computer in the classroom.	Instructors of webcast courses

**Recommendations for DIIA Webcasting Program Staff (continued)**

Recommendation	Description	Communication with:
f. Provide training on camera composition.	<p>Camera operation impacts the effectiveness of webcasts substantially, such as whether the chalkboard is visible. Therefore, providing training on camera composition may be useful to ensure effective practices:</p> <ul style="list-style-type: none"> <li>• capturing writing on the chalkboard with close-ups of the board and focus on the instructors' hand</li> <li>• avoiding including down time (e.g., before/after the class)</li> <li>• capturing the slide screen when the instructor is using a laser pointer, helping students see where the instructor is pointing</li> </ul> <p>Besides these suggestions based on students' input, it is important that DIIA webcast program staff try out other methods to recommend to camera operators.</p>	Webcasting technical staff
g. Devise ways to facilitate students' involvement	<p>The failure to pick up students' voices well is a substantial drawback, because it limits the student involvement that students and instructors both view as important. DIIA webcast program staff may want to work with the webcasting system maker Sonic Foundry to devise ways to better record students' voices or other ways to enable students' participation in webcast lecture environments.</p>	Webcasting system maker
h. Retain current webcast interface features	<p>Because students generally rated all the current features as important, they should be retained.</p>	
i. Explore ways to include new features that were rated as highly desirable	<p>Features rated highly desirable by students included index and search functions, a visible laser point, annotating, more flexible window manipulation (separate, enlarge, and reposition), and seeing better quality or full screen animation/video. An index feature has been requested repeatedly by one instructor as well. Explore if any of these features can be realized.</p>	
j. Improve ways to inform students of webcast interface features	<p>Students were not aware of some interface features to facilitate their use of webcasts (e.g., a slide list and double speed). DIIA webcast program staff may want to consider adding webcast viewing tips online, so that students can refer to those tips as they are viewing webcasts. A brief orientation by instructors at the beginning of the semester may also be effective.</p>	Develop online viewing tips within DIIA. Recommend an orientation for instructors.
k. Develop a quality assurance procedure and pass it on to webcasting technical staff.	<p>While both students and instructors were generally very satisfied with IT support, they also contributed ideas for achieving steadier, better quality service:</p> <ul style="list-style-type: none"> <li>○ double-checking if video and audio of webcasts are recorded properly</li> <li>○ double-checking whether uploaded webcasts are working properly</li> <li>○ uploading webcasts as soon as possible</li> </ul> <p>A quality assurance procedure that includes these measures would be useful for webcasting technical staff to whom the webcasting system is lent.</p>	Webcasting technical staff

## 2. Recommendations for Instructors

### a. Be aware of the possibility of an attendance decline and take measures to prevent it.

Attendance may suffer when course lectures are webcast. If attendance is a concern in webcasting lectures, course instructors should employ strategies to encourage attendance, perhaps including

- randomly taking attendance as a part of the grade,
- randomly giving easy quizzes as a part of the grade,
- clearly telling students to use webcasts as supplemental study aids, rather than as a substitute to attending class,
- giving students engaging learning experiences that cannot be obtained watching webcasts, such as interactions and hands-on activities.

### b. Tell new webcast students about the benefits of webcasts

Students generally mentioned that webcasts were an effective study tool. It may be useful to tell students at the beginning of the semester about the benefits of webcasts reported by students in previous courses. If students know what to expect from webcasts, they can use them to their best advantage:

- for help in reviewing, taking good notes, and preparing for tests
- for help in learning efficiently, especially with a large volume of information
- to prevent lagging behind after missing a class
- to reduce anxiety about the course
- to gain better control of learning
- to increase overall satisfaction with the course

### c. Explore ways to take advantage of webcasts

Instructors have used webcasts for professional benefit:

- to observe their lecturing styles and habits
- to showcase their classes to others
- to substitute for face-to-face lectures when going out of town

Instructors should explore other ways to take advantage of webcasts and share with other instructors.

### d. Explore new pedagogical possibilities with webcasts

Webcasts can open pedagogical possibilities, such as creating opportunities for students to reflect on their learning behaviors by watching themselves in webcasts, as one instructor mentioned in an interview (spring 2005). Instructors and program staff should brain storm instructional possibilities for taking advantage of webcasts.

**e. Remember to do the four things during lectures**

Instructors must remember four tasks to facilitate webcast production: wear a microphone, repeat students' questions, tell students where the laser pointer is aimed, and use Doc Cam instead of the chalkboard for writing. Failing to do so causes more difficulties for students than instructors realize.

**f. Recommend webcasts as a supplement to attending lectures rather than as a substitute for it.**

Instructors and students generally agree that webcasts cannot replace being in class: their best use is as a supplement to, not a substitute for, attending lectures, a point that instructors should clearly mention at the beginning of the course.

**3. Recommendations for Administration****a. Continue and expand webcasts**

Many students favored continuing webcasts and expanding them to other courses, because of the perceived benefits for learning. While webcasts' impact on test scores and course grades was not clear, students' perceptions of webcasts' learning and psychological benefits were clear. Therefore, webcasts should be continued and expanded to other courses, especially those suggested by students: introductory courses, courses that require much processing, and large courses.

**b. Experiment with webcast-only courses**

A fairly large proportion of students was interested in taking a course only by webcasts, especially to resolve enrollment problems. Therefore, it would be worthwhile to experiment with webcast-only courses using approaches such as

- allowing students to take only a closed course by webcasts,
- allowing students to take a course via webcasts only when they must take multiple courses offered at the same time, or
- offering lectures only through webcasts and requiring students to go to lab classes.

**c. Experiment with podcasting**

Although a few students indicated that they preferred webcasting to podcasting because of the availability of slides, about a half of the students reported that they were likely to use lecture podcasting/vodcasting. Given the ease and lower production cost, it is desirable to experiment with podcasting to understand its effectiveness in enhancing teaching/learning environments and compare it with the effectiveness of webcasting.

**d. Collect more input on the webcasting fee**

A fairly large number of students expressed willingness to pay an extra fee (up to \$20) to have lectures webcast. Yet, the actual reaction to a fee for webcasting is not very clear. Therefore, continue collecting input, not only from students but also from various stakeholders.

**4. Recommendations for Future Webcast Evaluation**

**a. Reinvestigate the relationship between webcasts and the students' performance**

Findings concerning the relationship between webcasts and students' performances are inconclusive. Students generally viewed webcasts as a helpful learning tool for succeeding in class, but the actual impact of webcasts on their learning as reflected in test scores and grades was not clear. Therefore, it is desirable to investigate again the relationship between the webcasts and students' performance from various perspectives with a larger sample size.

**b. Compare the effectiveness of podcasting with webcasting**

A few students suggested that they preferred webcasting to podcasting, because of its capacity to include slides. However, podcasting is easier and less expensive to produce and more convenient for some students. For these reasons, podcasting and webcasting should be compared for a fuller term to determine the types of instructional situations that webcasting and podcasting are suited for.

**Class Lecture Webcasting Fall 2004, Spring 2005, and Fall  
2005:  
Summary of Three Case Studies  
Program Evaluation Report  
Appendices**

## Appendix A End-of-Semester Survey Results: Attendance

### Relationship between Webcasts and Attendance

#### I used webcasts instead of attending class.

	Fall 2004				Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P		GOV 310V 11am - 12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Never</b>	28% (13)	18% (17)	61% (72)	<b>Never</b>	52% (16)	15% (6)	11% (11)	19% (3)	25% (9)
<b>Seldom</b>	40% (19)	47% (44)	33% (39)	<b>Rarely</b>	29% (9)	40% (16)	24% (16)	19% (3)	17% (6)
<b>Half the time</b>	21% (10)	17% (16)	4% (5)	<b>Sometimes</b>	16% (5)	35% (14)	29% (30)	31% (5)	25% (9)
<b>Often</b>	11% (5)	13% (12)	2% (2)	<b>Often</b>	3% (1)	8% (3)	21% (22)	19% (3)	28% (10)
<b>Always</b>	0% (0)	4% (4)	1% (1)	<b>Always</b>	0% (0)	3% (1)	15% (16)	13% (2)	6% (2)

#### I did not attend lectures in this class because the lecture content was available via webcasts.

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	6% (7)	25% (28)	27% (9)	10% (5)	9% (11)	5% (1)	13% (4)
<b>Disagree</b>	33% (5)	9% (10)	15% (17)	21% (7)	16% (8)	7% (8)	5% (1)	17% (5)
<b>Neutral</b>	27% (4)	20% (22)	22% (25)	30% (10)	24% (12)	14% (17)	5% (1)	17% (5)
<b>Agree</b>	20% (3)	35% (39)	26% (30)	12% (4)	37% (19)	24% (29)	50% (10)	13% (4)
<b>Strongly agree</b>	20% (3)	30% (33)	12% (14)	9% (3)	14% (7)	47% (57)	35% (7)	40% (12)

## Reasons for Attending Class

I attend lectures in this class because ...

### Most highly rated reasons

Information (course content and administrative information) is presented that I need to know (fall 2004). Important information about the course and tests may be announced in class (spring and fall 2005).

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 No-webcast	GEO 302D	GE O 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	5% (1)	0% (0)	7% (9)	0% (0)	0% (0)	0% (0)	2% (3)	2% (4)	5% (1)	0% (0)
<b>Disagree</b>	0% (0)	4% (8)	6% (8)	3% (4)	2% (1)	5% (3)	6% (8)	8% (14)	5% (1)	0% (0)
<b>Neutral</b>	11% (2)	14% (26)	20% (25)	14% (21)	7% (3)	4% (2)	13% (18)	11% (19)	10% (2)	9% (4)
<b>Agree</b>	68% (13)	58% (104)	52% (65)	41% (64)	51% (21)	57% (32)	53% (72)	52% (88)	65% (13)	37% (16)
<b>Strongly agree</b>	16% (3)	23% (42)	14% (18)	43% (66)	39% (16)	34% (19)	25% (34)	26% (43)	15% (3)	54% (23)

### **I believe I should attend.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	2% (3)	2% (2)	1% (1)	0% (0)	2% (1)	2% (2)	4% (6)	5% (1)	2% (1)
<b>Disagree</b>	11% (2)	3% (5)	9% (11)	1% (1)	2% (1)	4% (2)	7% (9)	5% (8)	10% (2)	0% (0)
<b>Neutral</b>	11% (2)	11% (19)	14% (18)	6% (9)	10% (4)	12% (7)	20% (27)	14% (23)	10% (2)	7% (3)
<b>Agree</b>	53% (10)	56% (100)	46% (58)	40% (62)	34% (14)	56% (32)	42% (57)	47% (79)	70% (14)	33% (14)
<b>Strongly agree</b>	26% (5)	29% (53)	29% (37)	53% (82)	54% (22)	26% (15)	30% (40)	31% (52)	5% (1)	58% (25)

**Being in class helps me get better grades.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GE O 302 D	GE O 302P
<b>Strongly disagree</b>	0% (0)	2% (3)	6% (7)	1% (1)	0% (0)	0% (0)	3% (4)	3% (5)	5% (1)	0% (0)
<b>Disagree</b>	11% (2)	8% (15)	10% (13)	3% (4)	0% (0)	7% (4)	13% (17)	13% (21)	20% (4)	9% (4)
<b>Neutral</b>	11% (2)	17% (31)	21% (27)	6% (10)	7% (3)	18% (10)	16% (21)	16% (26)	25% (5)	12% (5)
<b>Agree</b>	47% (9)	43% (78)	42% (53)	37% (57)	27% (11)	51% (29)	39% (52)	41% (68)	40% (8)	33% (14)
<b>Strongly agree</b>	32% (6)	30% (55)	21% (26)	54% (83)	66% (27)	25% (14)	30% (41)	29% (48)	10% (2)	47% (20)

**Other reasons**

**I want to take my own notes.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	3% (5)	1% (1)	4% (6)	5% (2)	4% (2)	3% (4)	6% (10)	5% (1)	5% (2)
<b>Disagree</b>	0% (0)	13% (24)	7% (9)	16% (25)	7% (3)	5% (3)	14% (19)	14% (23)	15% (3)	12% (5)
<b>Neutral</b>	42% (8)	25% (45)	26% (32)	15% (23)	17% (7)	25% (14)	24% (32)	19% (32)	20% (4)	21% (9)
<b>Agree</b>	42% (8)	41% (75)	49% (61)	39% (60)	34% (14)	51% (29)	37% (49)	45% (75)	40% (8)	28% (12)
<b>Strongly agree</b>	16% (3)	18% (32)	18% (22)	26% (41)	37% (15)	16% (9)	22% (29)	16% (27)	20% (4)	35% (15)

**I like the professor's teaching style (spring and fall 2005 only).**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	N/A	N/A	N/A	N/A	2% (1)	13% (7)	5% (7)	5% (8)	15% (3)	5% (2)
<b>Disagree</b>	N/A	N/A	N/A	N/A	0% (0)	22% (12)	6% (8)	7% (12)	0% (0)	5% (2)
<b>Neutral</b>	N/A	N/A	N/A	N/A	5% (2)	27% (15)	34% (45)	18% (30)	20% (4)	9% (4)
<b>Agree</b>	N/A	N/A	N/A	N/A	32% (13)	31% (17)	36% (48)	46% (76)	40% (8)	30% (13)
<b>Strongly agree</b>	N/A	N/A	N/A	N/A	61% (25)	7% (4)	19% (26)	24% (40)	25% (5)	51% (22)

**Course content is available in other ways, but I prefer getting it in class (spring and fall 2005 only).**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	N/A	N/A	N/A	N/A	0% (0)	4% (2)	2% (3)	4% (7)	5% (1)	0% (0)
<b>Disagree</b>	N/A	N/A	N/A	N/A	0% (0)	7% (4)	13% (18)	14% (23)	15% (3)	14% (6)
<b>Neutral</b>	N/A	N/A	N/A	N/A	13% (5)	14% (8)	29% (39)	20% (34)	45% (9)	12% (5)
<b>Agree</b>	N/A	N/A	N/A	N/A	43% (17)	55% (31)	37% (50)	42% (71)	30% (6)	30% (13)
<b>Strongly agree</b>	N/A	N/A	N/A	N/A	45% (18)	20% (11)	18% (24)	20% (33)	5% (1)	44% (19)

**Hearing what is said in class helps me do my homework.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	N/A	N/A	N/A	N/A	3% (1)	4% (2)	4% (5)	3% (5)	10% (2)	0% (0)
<b>Disagree</b>	N/A	N/A	N/A	N/A	0% (0)	17% (9)	11% (14)	14% (23)	10% (2)	12% (5)
<b>Neutral</b>	N/A	N/A	N/A	N/A	33% (13)	13% (7)	33% (43)	31% (51)	35% (7)	16% (7)
<b>Agree</b>	N/A	N/A	N/A	N/A	40% (16)	56% (30)	37% (49)	35% (59)	35% (7)	30% (13)
<b>Strongly agree</b>	N/A	N/A	N/A	N/A	25% (10)	11% (6)	16% (21)	17% (29)	10% (2)	42% (18)

**I am interested in the course content.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	7% (13)	8% (10)	2% (3)	0% (0)	13% (7)	5% (7)	7% (11)	5% (1)	2% (1)
<b>Disagree</b>	11% (2)	20% (36)	14% (18)	3% (4)	10% (4)	18% (10)	13% (17)	13% (21)	10% (2)	2% (1)
<b>Neutral</b>	21% (4)	30% (54)	22% (28)	16% (25)	17% (7)	46% (26)	29% (39)	26% (44)	25% (5)	12% (5)
<b>Agree</b>	58% (11)	32% (58)	43% (54)	43% (67)	51% (21)	20% (11)	33% (44)	42% (71)	40% (8)	30% (13)
<b>Strongly agree</b>	11% (2)	12% (21)	13% (16)	36% (56)	22% (9)	4% (2)	21% (28)	13% (21)	20% (4)	54% (23)

**I would have to make up for the missed information.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	5% (1)	2% (4)	6% (7)	2% (3)	2% (1)	5% (3)	8% (11)	14% (24)	10% (2)	2% (1)
<b>Disagree</b>	16% (3)	16% (29)	15% (19)	8% (12)	27% (11)	14% (8)	20% (27)	25% (41)	20% (4)	26% (11)
<b>Neutral</b>	32% (6)	27% (49)	22% (28)	26% (40)	17% (7)	25% (14)	34% (45)	27% (45)	35% (7)	23% (10)
<b>Agree</b>	37% (7)	37% (67)	43% (54)	39% (60)	34% (14)	48% (27)	28% (37)	26% (44)	30% (6)	37% (16)
<b>Strongly agree</b>	11% (2)	18% (33)	14% (17)	25% (38)	20% (8)	7% (4)	10% (13)	8% (13)	5% (1)	12% (5)

**I like participating in class, asking questions, etc. (fall 2004 only).**

	Fall 2004			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	15% (28)	14% (17)	13% (20)
<b>Disagree</b>	47% (9)	30% (55)	28% (34)	26% (40)
<b>Neutral</b>	37% (7)	41% (74)	38% (47)	45% (69)
<b>Agree</b>	16% (3)	10% (19)	17% (21)	10% (16)
<b>Strongly agree</b>	0% (0)	3% (5)	3% (4)	5% (8)

**I like participating in class (spring and fall 2005 only).**

	Spring 2005		Fall 2005			
	GOV 310V 11-12	GOV 310V 3-4	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	12% (7)	5% (7)	5% (9)	20% (4)	7% (3)
<b>Disagree</b>	8% (3)	16% (9)	18% (24)	18% (30)	10% (2)	12% (5)
<b>Neutral</b>	38% (15)	39% (22)	49% (66)	43% (72)	35% (7)	26% (11)
<b>Agree</b>	38% (15)	26% (15)	20% (27)	27% (45)	20% (4)	28% (12)
<b>Strongly agree</b>	18% (7)	7% (4)	8% (11)	7% (11)	15% (3)	28% (12)

**I want to ask questions in class (spring and fall 2005 only).**

	Spring 2005		Fall 2005			
	GOV 310V 11-12	GOV 310V 3-4	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	7% (3)	11% (6)	7% (9)	12% (20)	15% (3)	0% (0)
<b>Disagree</b>	10% (4)	14% (8)	20% (27)	30% (50)	30% (6)	21% (9)
<b>Neutral</b>	29% (12)	33% (19)	49% (65)	41% (67)	40% (8)	47% (20)
<b>Agree</b>	37% (15)	32% (18)	19% (25)	15% (25)	10% (2)	23% (10)
<b>Strongly agree</b>	17% (7)	11% (6)	5% (7)	2% (3)	5% (1)	9% (4)

**Reasons for NOT Attending Class**

I did NOT attend lectures in this class because ...

Most highly rated reasons

Some lecture content is available online (figures, slides, handouts, lecture notes, lecture summaries, etc.).

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no- webcast	GEO 302D	GEO 302P	GOV 310V 11am- 12pm	GOV 310V 3pm- 4pm	GEO 303 webcast	GEO 303 no- webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	20% (28)	12% (13)	21% (24)	33% (11)	12% (6)	10% (12)	15% (21)	5% (1)	10% (3)
<b>Disagree</b>	27% (4)	14% (20)	5% (6)	14% (16)	24% (8)	14% (7)	6% (7)	7% (9)	5% (1)	17% (5)
<b>Neutral</b>	7% (1)	20% (28)	15% (17)	18% (21)	18% (6)	25% (13)	9% (11)	14% (20)	30% (6)	17% (5)
<b>Agree</b>	53% (8)	35% (49)	41% (46)	34% (39)	18% (6)	40% (21)	42% (51)	42% (58)	40% (8)	20% (6)
<b>Strongly agree</b>	13% (2)	12% (17)	27% (30)	12% (14)	6% (2)	10% (5)	34% (42)	22% (31)	20% (4)	37% (11)

**The lecture content is available via webcast.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	N/A	6% (7)	25% (28)	27% (9)	10% (5)	9% (11)	N/A	5% (1)	13% (4)
<b>Disagree</b>	33% (5)	N/A	9% (10)	15% (17)	21% (7)	16% (8)	7% (8)	N/A	5% (1)	17% (5)
<b>Neutral</b>	27% (4)	N/A	20% (22)	22% (25)	30% (10)	24% (12)	14% (17)	N/A	5% (1)	17% (5)
<b>Agree</b>	20% (3)	N/A	35% (39)	26% (30)	12% (4)	37% (19)	24% (29)	N/A	50% (10)	13% (4)
<b>Strongly agree</b>	20% (3)	N/A	30% (33)	12% (14)	9% (3)	14% (7)	47% (57)	N/A	35% (7)	40% (12)

**I did an assignment or studied for a test in another course.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	16% (23)	14% (15)	22% (25)	30% (10)	10% (5)	15% (21)	18% (22)	15% (3)	13% (4)
<b>Disagree</b>	13% (2)	8% (12)	6% (7)	16% (19)	15% (5)	12% (6)	11% (15)	5% (6)	5% (1)	7% (2)
<b>Neutral</b>	20% (3)	6% (9)	5% (5)	9% (10)	12% (4)	10% (5)	5% (7)	11% (13)	5% (1)	17% (5)
<b>Agree</b>	47% (7)	46% (65)	51% (57)	34% (39)	21% (7)	53% (27)	43% (59)	44% (55)	55% (11)	47% (14)
<b>Strongly agree</b>	20% (3)	23% (33)	24% (27)	20% (23)	21% (7)	16% (8)	26% (36)	23% (28)	20% (4)	17% (5)

**I felt tired or overslept because I did schoolwork the night before.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	22% (31)	15% (17)	23% (26)	38% (12)	17% (9)	20% (24)	22% (30)	10% (2)	27% (8)
<b>Disagree</b>	0% (0)	13% (19)	8% (9)	15% (17)	9% (3)	17% (9)	11% (14)	14% (19)	10% (2)	7% (2)
<b>Neutral</b>	13% (2)	8% (11)	6% (7)	10% (11)	3% (1)	14% (7)	12% (15)	7% (9)	20% (4)	20% (6)
<b>Agree</b>	73% (11)	38% (54)	46% (52)	35% (40)	25% (8)	44% (23)	42% (51)	39% (54)	50% (10)	37% (11)
<b>Strongly agree</b>	13% (2)	19% (27)	24% (27)	18% (21)	25% (8)	8% (4)	15% (19)	19% (26)	10% (2)	10% (3)

**Other reasons**

**Attendance is not taken or does not influence my grade (fall 2004). Attendance does not influence my grade (spring and fall 2005).**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	7% (1)	23% (32)	16% (18)	37% (42)	44% (15)	22% (11)	16% (20)	17% (23)	5% (1)	40% (12)
<b>Disagree</b>	27% (4)	13% (19)	12% (13)	31% (35)	29% (10)	29% (14)	15% (19)	20% (28)	15% (3)	23% (7)
<b>Neutral</b>	27% (4)	18% (25)	20% (22)	20% (23)	21% (7)	16% (8)	15% (18)	14% (19)	45% (9)	23% (7)
<b>Agree</b>	33% (5)	31% (44)	38% (42)	11% (13)	6% (2)	29% (14)	37% (46)	33% (46)	20% (4)	7% (2)
<b>Strongly agree</b>	7% (1)	15% (22)	15% (17)	1% (1)	0% (0)	4% (2)	17% (21)	17% (23)	15% (3)	7% (2)

**I was sick.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	20% (3)	22% (32)	24% (27)	24% (28)	24% (8)	15% (8)	27% (34)	23% (32)	40% (8)	37% (11)
<b>Disagree</b>	20% (3)	29% (41)	24% (27)	20% (24)	18% (6)	19% (10)	13% (16)	20% (28)	15% (3)	10% (3)
<b>Neutral</b>	20% (3)	9% (13)	10% (11)	4% (5)	9% (3)	21% (11)	11% (13)	10% (14)	20% (4)	7% (2)
<b>Agree</b>	40% (6)	24% (35)	32% (36)	36% (42)	33% (11)	36% (19)	33% (41)	33% (47)	15% (3)	27% (8)
<b>Strongly agree</b>	0% (0)	15% (22)	11% (12)	16% (19)	15% (5)	9% (5)	16% (20)	15% (21)	10% (2)	20% (6)

**I was out of town.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	27% (4)	35% (49)	31% (34)	26% (30)	36% (12)	16% (8)	25% (32)	38% (53)	20% (4)	27% (8)
<b>Disagree</b>	20% (3)	33% (47)	28% (31)	22% (25)	24% (8)	26% (13)	21% (27)	27% (37)	30% (6)	17% (5)
<b>Neutral</b>	27% (4)	8% (11)	8% (9)	5% (6)	12% (4)	12% (6)	17% (21)	11% (15)	30% (6)	17% (5)
<b>Agree</b>	27% (4)	18% (25)	29% (32)	29% (33)	15% (5)	36% (18)	21% (26)	17% (23)	20% (4)	17% (5)
<b>Strongly agree</b>	0% (0)	7% (10)	5% (5)	18% (21)	12% (4)	10% (5)	17% (21)	8% (11)	0% (0)	23% (7)

**The professor (either one or both) does not notice or care whether I am there (fall 2004).  
The professor does not notice whether I am there (spring and fall 2005).**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	7% (1)	21% (30)	21% (23)	36% (41)	41% (13)	18% (9)	29% (35)	23% (32)	30% (6)	33% (10)
<b>Disagree</b>	27% (4)	19% (27)	14% (16)	27% (31)	41% (13)	31% (16)	12% (15)	19% (26)	10% (2)	17% (5)
<b>Neutral</b>	33% (5)	24% (34)	35% (39)	23% (27)	19% (6)	26% (13)	26% (32)	19% (26)	40% (8)	27% (8)
<b>Agree</b>	27% (4)	30% (42)	22% (25)	10% (11)	0% (0)	20% (10)	27% (33)	27% (38)	5% (1)	17% (5)
<b>Strongly agree</b>	7% (1)	6% (9)	8% (9)	4% (5)	0% (0)	6% (3)	7% (8)	13% (18)	15% (3)	7% (2)

**I felt tired or overslept because I had fun the night before.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	7% (1)	30% (42)	23% (26)	34% (39)	24% (8)	25% (13)	29% (35)	31% (44)	25% (5)	27% (8)
<b>Disagree</b>	20% (3)	25% (35)	21% (24)	27% (31)	15% (5)	19% (10)	23% (28)	31% (44)	20% (4)	20% (6)
<b>Neutral</b>	20% (3)	13% (18)	15% (17)	10% (11)	18% (6)	17% (9)	16% (20)	9% (13)	25% (5)	20% (6)
<b>Agree</b>	53% (8)	27% (38)	26% (29)	21% (24)	18% (6)	31% (16)	19% (23)	19% (27)	20% (4)	23% (7)
<b>Strongly agree</b>	0% (0)	6% (9)	14% (16)	8% (9)	24% (8)	8% (4)	14% (17)	9% (12)	10% (2)	10% (3)

**The weather was bad.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	7% (1)	34% (48)	28% (31)	33% (38)	46% (15)	29% (15)	39% (48)	44% (61)	40% (8)	40% (12)
<b>Disagree</b>	33% (5)	35% (49)	21% (24)	35% (40)	24% (8)	35% (18)	29% (35)	32% (44)	30% (6)	30% (9)
<b>Neutral</b>	7% (1)	9% (13)	15% (17)	7% (8)	15% (5)	22% (11)	16% (20)	10% (14)	5% (1)	13% (4)
<b>Agree</b>	53% (8)	20% (29)	31% (35)	22% (25)	15% (5)	14% (7)	15% (18)	10% (14)	25% (5)	17% (5)
<b>Strongly agree</b>	0% (0)	2% (3)	4% (5)	3% (4)	0% (0)	0% (0)	2% (2)	4% (5)	0% (0)	0% (0)

**The course content is easy—I don't need to attend to know it.**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	7% (1)	30% (42)	48% (54)	36% (41)	36% (12)	20% (10)	25% (26)	25% (35)	20% (4)	40% (12)
<b>Disagree</b>	40% (6)	26% (36)	29% (33)	38% (44)	33% (11)	29% (15)	35% (37)	32% (44)	45% (9)	27% (8)
<b>Neutral</b>	27% (4)	26% (36)	14% (16)	16% (18)	24% (8)	31% (16)	24% (25)	27% (37)	30% (6)	17% (5)
<b>Agree</b>	20% (3)	15% (21)	8% (9)	10% (12)	6% (2)	16% (8)	10% (10)	11% (15)	5% (1)	7% (2)
<b>Strongly agree</b>	7% (1)	4% (5)	0% (0)	0% (0)	0% (0)	4% (2)	7% (7)	5% (7)	0% (0)	10% (3)

**The class meets at an inconvenient time and/or time (fall 2004 only).**

	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	20% (3)	43% (61)	31% (34)	43% (50)
<b>Disagree</b>	40% (6)	37% (53)	27% (30)	45% (52)
<b>Neutral</b>	27% (4)	14% (20)	19% (21)	8% (9)
<b>Agree</b>	13% (2)	6% (8)	18% (20)	3% (4)
<b>Strongly agree</b>	0% (0)	0% (0)	5% (6)	0% (0)

**The class meets at an inconvenient time (spring and fall 2005 only)**

	Spring 2005		Fall 2005			
	GOV 310V 11-12	GOV 310V 3-4	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	47% (15)	35% (18)	37% (45)	43% (60)	10% (2)	53% (16)
<b>Disagree</b>	38% (12)	46% (24)	35% (43)	45% (63)	50% (10)	30% (9)
<b>Neutral</b>	16% (5)	14% (7)	14% (17)	6% (8)	25% (5)	13% (4)
<b>Agree</b>	0% (0)	6% (3)	10% (12)	6% (8)	15% (3)	3% (1)
<b>Strongly agree</b>	0% (0)	0% (0)	5% (6)	1% (1)	0% (0)	0% (0)

**The class meets at an inconvenient location (spring and fall 2005 only).**

	Spring 2005		Fall 2005			
	GOV 310V 11-12	GOV 310V 3-4	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	46% (15)	35% (18)	38% (46)	43% (59)	20% (4)	53% (16)
<b>Disagree</b>	36% (12)	52% (27)	40% (49)	44% (60)	50% (10)	30% (9)
<b>Neutral</b>	12% (4)	12% (6)	17% (21)	7% (10)	30% (6)	10% (3)
<b>Agree</b>	3% (1)	2% (1)	3% (3)	4% (6)	0% (0)	3% (1)
<b>Strongly agree</b>	3% (1)	0% (0)	3% (3)	2% (2)	0% (0)	3% (1)

**I dislike the professor (either one or both) (fall 2004 only). I dislike the professor's teaching style (spring and fall 2005 only).**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	27% (4)	38% (54)	38% (43)	58% (67)	52% (17)	24% (12)	36% (44)	39% (55)	25% (5)	67% (20)
<b>Disagree</b>	47% (7)	33% (47)	31% (35)	30% (35)	36% (12)	29% (15)	35% (43)	34% (48)	40% (8)	23% (7)
<b>Neutral</b>	20% (3)	20% (28)	20% (22)	7% (8)	12% (4)	20% (10)	18% (22)	14% (19)	25% (5)	3% (1)
<b>Agree</b>	7% (1)	7% (10)	6% (7)	3% (4)	0% (0)	18% (9)	10% (12)	11% (15)	10% (2)	7% (2)
<b>Strongly agree</b>	0% (0)	2% (3)	4% (5)	1% (1)	0% (0)	10% (5)	1% (1)	2% (3)	0% (0)	0% (0)

**I didn't want to participate in class (spring and fall 2005 only).**

	Spring 2005		Fall 2005			
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	46% (15)	31% (16)	36% (44)	41% (57)	26% (5)	53% (16)
<b>Disagree</b>	39% (13)	31% (16)	35% (43)	39% (54)	53% (10)	30% (9)
<b>Neutral</b>	15% (5)	17% (9)	17% (21)	11% (15)	16% (3)	10% (3)
<b>Agree</b>	0% (0)	15% (8)	8% (10)	8% (11)	0% (0)	7% (2)
<b>Strongly agree</b>	0% (0)	6% (3)	4% (5)	1% (2)	5% (1)	0% (0)

**I dislike the subject matter (fall 2004 only). I have no interest in the course content (spring and fall 2005 only).**

	Fall 2004				Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 303 no- webcast	GEO 302D	GEO 302P	GOV 310V 11am- 12pm	GOV 310V 3pm- 4pm	GEO 303 webcast	GEO 303 no- webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	20% (3)	31% (44)	23% (26)	41% (47)	42% (14)	27% (14)	40% (49)	34% (48)	30% (6)	73% (22)
<b>Disagree</b>	33% (5)	29% (41)	32% (36)	40% (46)	46% (15)	27% (14)	32% (39)	36% (51)	30% (6)	17% (5)
<b>Neutral</b>	40% (6)	20% (28)	22% (25)	14% (16)	12% (4)	15% (8)	19% (24)	19% (27)	30% (6)	3% (1)
<b>Agree</b>	7% (1)	14% (20)	11% (12)	3% (4)	0% (0)	23% (12)	7% (8)	6% (8)	10% (2)	7% (2)
<b>Strongly agree</b>	0% (0)	6% (9)	12% (13)	2% (2)	0% (0)	8% (4)	3% (4)	4% (6)	0% (0)	0% (0)

## Appendix B

### End-of-Semester Survey Results: Effectiveness of Different Activities, Including Webcasts

Rate how effective the following have been in helping you succeed in this class.

**Other course resources (PowerPoint slides, on-line lecture notes, lecture outlines, etc.)**

	Fall 2004			Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Did not go/use</b>	5% (4)	2% (3)	3% (4)	10% (4)	4% (2)	2% (3)	2% (4)	10% (2)	2% (1)
<b>Very ineffective</b>	0% (0)	3% (4)	1% (1)	0% (0)	7% (4)	2% (3)	3% (5)	0% (0)	2% (1)
<b>Somewhat ineffective</b>	3% (2)	2% (2)	2% (3)	2% (1)	11% (6)	2% (2)	0% (0)	0% (0)	0% (0)
<b>Neutral</b>	8% (6)	7% (9)	4% (6)	17% (7)	25% (14)	8% (11)	8% (13)	20% (4)	19% (8)
<b>Somewhat effective</b>	29% (23)	28% (34)	28% (43)	44% (18)	35% (20)	28% (38)	32% (54)	30% (6)	40% (17)
<b>Very effective</b>	55% (43)	57% (70)	63% (98)	27% (11)	19% (11)	58% (79)	55% (92)	40% (8)	37% (16)

**Lecture webcasts**

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Did not go/use</b>	26% (20)	21% (26)	22% (34)	17% (7)	21% (12)	18% (24)	5% (1)	9% (4)
<b>Very ineffective</b>	1% (1)	3% (4)	1% (2)	2% (1)	2% (1)	3% (4)	0% (0)	2% (1)
<b>Somewhat ineffective</b>	5% (4)	7% (9)	1% (1)	0% (0)	4% (2)	1% (1)	10% (2)	2% (1)
<b>Neutral</b>	21% (16)	14% (17)	17% (26)	12% (5)	26% (15)	7% (9)	25% (5)	14% (6)
<b>Somewhat effective</b>	23% (18)	35% (44)	20% (31)	29% (12)	18% (10)	27% (36)	25% (5)	30% (13)
<b>Very effective</b>	24% (19)	20% (25)	39% (61)	39% (16)	30% (17)	46% (62)	35% (7)	42% (18)

**Attending face-to-face lectures**

	Fall 2004			Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Did not go/use</b>	1% (1)	3% (4)	1% (1)	0% (0)	2% (1)	12% (16)	6% (10)	30% (6)	2% (1)
<b>Very ineffective</b>	1% (1)	7% (9)	1% (1)	0% (0)	9% (5)	4% (5)	4% (7)	0% (0)	2% (1)
<b>Somewhat ineffective</b>	6% (5)	17% (21)	1% (1)	0% (0)	9% (5)	7% (9)	8% (13)	5% (1)	7% (3)
<b>Neutral</b>	12% (9)	13% (16)	8% (13)	5% (2)	16% (9)	13% (18)	13% (21)	45% (9)	7% (3)
<b>Somewhat effective</b>	38% (30)	43% (54)	22% (34)	10% (4)	40% (23)	36% (49)	42% (71)	10% (2)	23% (10)
<b>Very effective</b>	41% (32)	17% (22)	66% (105)	85% (35)	25% (14)	29% (39)	27% (46)	10% (2)	58% (25)

**Going to professor or TA office hours**

	Fall 2004			Spring 2005		Fall 2005			
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>Did not go/use</b>	38% (30)	55% (66)	49% (75)	49% (20)	55% (31)	49% (65)	47% (79)	50% (10)	40% (17)
<b>Very ineffective</b>	1% (1)	4% (5)	3% (4)	0% (0)	2% (1)	3% (4)	1% (2)	0% (0)	2% (1)
<b>Somewhat ineffective</b>	1% (1)	2% (3)	1% (2)	7% (3)	4% (2)	0% (0)	5% (8)	10% (2)	2% (1)
<b>Neutral</b>	33% (26)	18% (22)	33% (51)	7% (3)	23% (13)	16% (22)	23% (38)	25% (5)	19% (8)
<b>Somewhat effective</b>	14% (11)	9% (11)	8% (13)	17% (7)	11% (6)	16% (22)	11% (19)	5% (1)	28% (12)
<b>Very effective</b>	12% (9)	12% (14)	6% (9)	20% (8)	5% (3)	16% (21)	13% (21)	10% (2)	9% (4)

## Appendix C

### Survey Results: Reasons for Using Webcasts

Rank the following uses of webcasts in order of importance to you, where 1 = most important to you and 5 = least important to you (fall 2004 only).

	GEO303 webcast	GEO302D	GEO302P
<b>Using webcasts to review course material</b>	1: 61% (20) 2: 6% (2) 3: 0% (0) 4: 24% (8) 5: 9% (3) Mean: 2.15	1: 43% (32) 2: 7% (5) 3: 1% (1) 4: 47% (35) 5: 3% (2) Mean: 2.60	1: 66% (68) 2: 17% (17) 3: 8% (8) 4: 5% (5) 5: 5% (5) Mean: 1.66
<b>Using webcasts so I can miss class and not worry</b>	1: 9% (3) 2: 33% (11) 3: 36% (12) 4: 18% (6) 5: 3% (1) Mean: 2.73	1: 14% (11) 2: 32% (24) 3: 33% (25) 4: 12% (9) 5: 9% (7) Mean: 2.70	1: 18% (19) 2: 18% (19) 3: 32% (33) 4: 9% (9) 5: 22% (23) Mean: 2.98
<b>Using webcasts to help me control how I learn</b>	1: 9% (3) 2: 32% (11) 3: 21% (7) 4: 18% (6) 5: 21% (7) Mean: 3.09	1: 3% (2) 2: 24% (18) 3: 29% (22) 4: 14% (11) 5: 30% (23) Mean: 3.46	1: 7% (7) 2: 43% (44) 3: 25% (26) 4: 14% (14) 5: 12% (12) Mean: 2.81
<b>Using webcasts to take otherwise closed classes</b>	1: 24% (8) 2: 12% (2) 3: 15% (5) 4: 15% (5) 5: 33% (11) Mean: 3.21	1: 36% (27) 2: 16% (12) 3: 13% (10) 4: 18% (14) 5: 17% (13) Mean: 2.66	1: 5% (5) 2: 12% (12) 3: 20% (21) 4: 39% (40) 5: 24% (25) Mean: 3.66
<b>Using webcasts to take a class scheduled at the same time as another class</b>	1: 0% (0) 2: 15% (5) 3: 24% (8) 4: 24% (8) 5: 36% (12) Mean: 3.82	1: 8% (6) 2: 22% (17) 3: 21% (16) 4: 9% (7) 5: 39% (30) Mean: 3.50	1: 4% (4) 2: 11% (11) 3: 15% (15) 4: 34% (35) 5: 37% (38) Mean: 3.89

Rate how frequently you used webcasts for the following reasons (spring 2005 only).

**I used webcasts to review course materials.**

	<b>GOV 310V 11am-12pm</b>	<b>GOV 310V 3pm-4pm</b>
<b>Never</b>	7% (2)	10% (4)
<b>Rarely</b>	10% (3)	18% (7)
<b>Sometimes</b>	26% (8)	39% (15)
<b>Often</b>	42% (13)	26% (10)
<b>Always</b>	16% (5)	8% (3)

**I used webcasts instead of seeking assistance from my professor or TA.**

	<b>GOV 310V 11am-12pm</b>	<b>GOV 310V 3pm-4pm</b>
<b>Never</b>	44% (14)	39% (16)
<b>Rarely</b>	28% (9)	37% (15)
<b>Sometimes</b>	22% (7)	15% (6)
<b>Often</b>	3% (1)	10% (4)
<b>Always</b>	3% (1)	0% (0)

**I used webcasts instead of attending class.**

	<b>GOV 310V 11am-12pm</b>	<b>GOV 310V 3pm-4pm</b>
<b>Never</b>	52% (16)	15% (6)
<b>Rarely</b>	29% (9)	40% (16)
<b>Sometimes</b>	16% (5)	35% (14)
<b>Often</b>	3% (1)	8% (3)
<b>Always</b>	0% (0)	3% (1)

**Why do you watch lecture webcasts? (Check all that apply) (Fall 2005 only)**

	<b>GEO 303 webcast</b>	<b>GEO 303 no-webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>After attending a live lecture</b>	4% (4)	NA	0% (0)	23% (8)
<b>To understand lecture content better</b>	46% (45)	NA	47% (9)	71% (25)
<b>After I miss a lecture</b>	83% (81)	NA	79% (15)	80% (28)
<b>To add more information to my notes</b>	42% (41)	NA	47% (9)	46% (16)
<b>In addition to reviewing notes/handouts</b>	44% (43)	NA	32% (6)	74% (26)
<b>To study and review material prior to exams</b>	70% (69)	NA	42% (8)	86% (30)
<b>Instead of seeking assistance from a TA or professor</b>	12% (12)	NA	21% (4)	37% (13)
<b>Other</b>	1% (1)	NA	11% (2)	3% (1)

**Having webcasts reduced my anxiety about the course.**

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	4% (2)	13% (12)	5% (6)	0% (0)	5% (2)	2% (2)	0% (0)	3% (1)
<b>Disagree</b>	11% (5)	11% (10)	9% (10)	3% (1)	10% (4)	11% (11)	6% (1)	8% (3)
<b>Neutral</b>	28% (13)	23% (21)	22% (26)	34% (11)	24% (10)	18% (19)	31% (5)	17% (6)
<b>Agree</b>	45% (21)	40% (36)	39% (46)	38% (12)	37% (15)	49% (50)	31% (5)	44% (16)
<b>Strongly agree</b>	13% (6)	13% (12)	25% (29)	25% (8)	24% (10)	20% (21)	31% (5)	28% (10)

**Webcasts gives me more control of my learning experience (fall 2004).**

**I used webcasts to help control how I learn (spring and fall 2005).**

	Fall 2004				Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P		GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	4% (2)	3% (3)	3% (3)	<b>Never</b>	31% (10)	33% (13)	18% (19)	13% (2)	28% (10)
<b>Disagree</b>	13% (6)	14% (13)	5% (6)	<b>Rarely</b>	28% (9)	18% (7)	13% (13)	19% (3)	3% (1)
<b>Neutral</b>	26% (12)	22% (20)	22% (26)	<b>Sometimes</b>	25% (8)	33% (13)	24% (25)	19% (3)	22% (8)
<b>Agree</b>	46% (21)	49% (46)	47% (54)	<b>Often</b>	16% (5)	13% (5)	26% (27)	44% (7)	31% (11)
<b>Strongly agree</b>	11% (5)	12% (11)	23% (27)	<b>Always</b>	0% (0)	5% (2)	19% (20)	6% (1)	17% (6)

**I used webcasts so I can miss class and not worry (spring and fall 2005 only).**

	Spring 2005		Fall 2005		
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Never</b>	36% (11)	22% (9)	14% (14)	13% (2)	47% (17)
<b>Rarely</b>	39% (12)	17% (7)	19% (20)	6% (1)	22% (8)
<b>Sometimes</b>	13% (4)	34% (14)	32% (33)	50% (8)	14% (5)
<b>Often</b>	13% (4)	22% (9)	17% (18)	13% (2)	11% (4)
<b>Always</b>	0% (0)	5% (2)	18% (19)	19% (3)	6% (2)

**Why haven't you used webcasts? (Check all that apply) (Fall 2005 only)**

	<b>GEO 303 webcast</b>	<b>GEO 303 no-webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Because I go to class</b>	58% (18)	NA	NA	43% (3)
<b>Because of technical difficulties</b>	16% (5)	NA	NA	14% (1)
<b>Because I never felt I missed anything important</b>	23% (7)	NA	NA	14% (1)
<b>Because I did not have time for it</b>	35% (11)	NA	NA	71% (5)
<b>Other</b>	13% (4)	NA	NA	29% (2)

## Appendix D Survey Results: Students' Use of Webcasts

**Have you ever watched a webcast for this course?**

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Yes</b>	60% (47)	78% (98)	74% (114)	74% (26)	72% (34)	76% (98)	100% (19)	83% (35)
<b>No</b>	40% (31)	22% (27)	26% (41)	26% (9)	28% (13)	24% (31)	0% (0)	17% (7)

**How many lecture webcasts have you watched (fall 2004)? After finals, how many lecture webcasts (total) will you have watched for this class (spring 2005)?**

	Fall 2004			Spring 2005	
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm
<b>1-3</b>	49% (23)	48% (47)	38% (45)	19% (6)	23% (9)
<b>4-7</b>	30% (14)	31% (30)	27% (32)	36% (11)	50% (20)
<b>8-12</b>	13% (6)	10% (10)	11% (13)	19% (6)	13% (5)
<b>13-17</b>	4% (2)	5% (5)	8% (10)	10% (3)	13% (5)
<b>18-24</b>	2% (1)	5% (5)	8% (9)	7% (2)	3% (1)
<b>25 or more</b>	2% (1)	0% (0)	8% (9)	10% (3)	0% (0)

**After finals, how many lecture webcasts (total) will you have watched for this class (fall 2005 only)?**

	GEO 303 webcast	GEO 302D	GEO 302P
<b>Mean for the students who watched webcasts at least once</b>	12.08	9.28	11.97
<b>Mean for all students including those who have not watched webcasts</b>	9.16	9.28	10.55

**How often do you watch webcasts?**

	Fall 2004			Spring 2005			Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm		GEO 303 webcast	GEO 302D	GEO 302P
≥ 3 times a week	2% (1)	3% (3)	3% (3)	6% (2)	0% (0)	≥ 3 times a week	5% (5)	11% (2)	8% (3)
1-2 times a week	28% (13)	31% (30)	9% (11)	9% (3)	10% (4)	1-2 times a week	28% (28)	17% (3)	19% (7)
1-3 times a month	28% (13)	26% (25)	26% (30)	28% (9)	59% (24)	Less than once per week	26% (26)	39% (7)	14% (5)
Only before exams	43% (20)	40% (38)	62% (72)	56% (18)	32% (13)	Only before exams	42% (43)	33% (6)	58% (21)

**When do you typically watch webcasts (fall 2004 only)? When do you usually watch webcasts? (Check all that apply) (Spring and fall 2005 only)**

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
At the same time as the lecture (live)	2% (1)	3% (3)	0% (0)	0% (0)	5% (2)	3% (3)	5% (1)	0% (0)
On the same day as the lecture	7% (3)	11% (10)	2% (2)	0% (0)	22% (9)	13% (13)	16% (3)	6% (2)
During the same week as the lecture	33% (15)	42% (37)	22% (25)	34% (11)	34% (14)	43% (42)	47% (9)	29% (10)
Before exams only (fall 04) Before exams (spr & fall 05)	53% (24)	38% (33)	65% (74)	72% (23)	42% (17)	61% (60)	58% (11)	97% (34)
Other	4% (2)	6% (5)	11% (12)	6% (2)	12% (5)	3% (3)*	0% (0)	3% (1)

**What time do you typically watch webcasts?**

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
Midnight-6am	12% (5)	14% (12)	10% (11)	13% (4)	14% (5)	2% (2)	6% (1)	11% (4)
6am-noon	5% (2)	3% (3)	1% (1)	3% (1)	3% (1)	8% (7)	0% (0)	3% (1)
Noon-5pm	14% (6)	24% (21)	15% (17)	20% (6)	22% (8)	20% (17)	28% (5)	5% (2)
5-8pm	28% (12)	31% (27)	23% (26)	20% (6)	36% (13)	33% (28)	39% (7)	32% (12)
8pm-midnight	42% (18)	28% (25)	51% (58)	43% (13)	25% (9)	37% (32)	28% (5)	50% (19)

**How much of a webcast do you typically watch?**

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Less than half</b>	13% (6)	22% (22)	11% (13)	19% (6)	18% (7)	5% (5)	0% (0)	16% (6)
<b>About half</b>	17% (8)	16% (16)	17% (19)	28% (9)	23% (9)	10% (10)	22% (4)	16% (6)
<b>More than half</b>	26% (12)	18% (18)	29% (33)	9% (3)	13% (5)	20% (20)	28% (5)	37% (14)
<b>All of the lecture</b>	45% (21)	43% (42)	43% (50)	44% (14)	46% (18)	65% (66)	50% (9)	32% (12)

**How do you view the webcasts?**

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Listen and sometimes watch video and slides</b>	24% (11)	34% (31)	29% (32)	16% (5)	42% (17)	19% (19)	28% (5)	40% (15)
<b>Listen and always watch video and slides</b>	70% (32)	58% (52)	71% (79)	81% (25)	56% (23)	80% (79)	67% (12)	58% (22)
<b>Only listen</b>	7% (3)	8% (7)	0% (0)	3% (1)	2% (1)	0% (0)	6% (1)	0% (0)
<b>Other</b>	N/A	N/A	N/A	N/A	N/A	1% (1)	0% (0)	3% (1)

**Where do you usually watch webcasts (check all that apply)?**

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Off-campus housing</b>	53% (25)	58% (57)	69% (82)	66% (21)	49% (20)	81% (79)	53% (10)	69% (24)
<b>On-campus housing</b>	38% (18)	32% (31)	26% (31)	28% (9)	39% (16)	16% (16)	53% (10)	20% (11)
<b>Library</b>	11% (5)	13% (13)	6% (7)	9% (3)	12% (5)	4% (4)	11% (2)	6% (2)
<b>Computer lab</b>	6% (3)	9% (9)	8% (10)	13% (4)	15% (6)	11% (11)	16% (3)	6% (2)
<b>Other</b>	2% (1)	2% (2)	2% (2)	0% (0)	2% (1)	3% (3)	5% (1)	11% (4)

**What type of Internet connection do you use when you watch webcast (fall 2004 only)? How do you usually access webcasts (spring and fall 2005 only)?**

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Ethernet</b>	39% (18)	45% (39)	31% (36)	25% (7)	37% (13)	16% (15)	40% (7)	21% (8)
<b>Wireless</b>	17% (8)	9% (8)	24% (28)	18% (5)	17% (6)	40% (38)	28% (5)	42% (16)
<b>DSL</b>	22% (10)	13% (11)	16% (19)	11% (3)	9% (3)	14% (13)	17% (3)	24% (9)
<b>Cable (fall 2004)</b>	15% (7)	26% (23)	19% (23)	N/A	N/A	N/A	N/A	N/A
<b>Dial-up (fall 2004)</b>	2% (1)	1% (1)	3% (4)	N/A	N/A	N/A	N/A	N/A
<b>Cable modem (spr &amp; fa 2005)</b>	N/A	N/A	N/A	43% (12)	31% (11)	29% (28)	17% (3)	11% (4)
<b>Don't know</b>	4% (2)	6% (5)	7% (8)	4% (1)	6% (2)	2% (2)	0% (0)	3% (1)

## Appendix E: Expectations for Webcasts

At the beginning of the semester, what did you expect webcasts would add to your learning experience? (Check all that apply) (Fall 2005 only)

	GEO 303 webcast	GEO 303 no-webcast	GEO 302D	GEO 302P
<b>I learn better</b>	35% (47)	NA	55% (11)	30% (13)
<b>My grade will improve</b>	34% (46)	NA	40% (8)	33% (14)
<b>I thought I would not view them</b>	29% (40)	NA	10% (2)	40% (17)
<b>I thought I would skip more classes</b>	35% (48)	NA	55% (11)	16% (7)
<b>Other</b>	5% (7)	NA	10% (2)	14% (6)

## Appendix F: Negative Effects of Webcasts

What are the negative effects of webcasts for you, if any? (Check all that apply) (Fall 2005 only)

	<b>GEO 303 webcast</b>	<b>GEO 303 no-webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Webcasts make me want to skip class</b>	40% (55)	NA	35% (7)	21% (9)
<b>Webcasts are subject to technical difficulties</b>	13% (18)	NA	40% (8)	33% (14)
<b>None</b>	23% (31)	NA	25% (5)	40% (17)
<b>Other</b>	3% (4)	NA	5% (1)	30% (6)

## Appendix G

### Survey Results: Quality and Technical Problems

#### Quality

Rate the overall quality of webcasts (fall 2004 only).

	GEO 303 webcast	GEO 302D	GEO 302P	Total
<b>Very poor</b>	2% (1)	2% (2)	0% (0)	1% (3)
<b>Poor</b>	11% (5)	2% (2)	1% (1)	3% (8)
<b>Average</b>	35% (16)	26% (24)	14% (16)	22% (56)
<b>Good</b>	39% (18)	47% (44)	56% (63)	50% (125)
<b>Very good</b>	13% (6)	23% (22)	29% (32)	23% (60)

The overall quality of webcasts is good (spring and fall 2005 only).

	Spring 2005		Fall 2005		
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	0% (0)	1% (1)	0% (0)	0% (0)
<b>Disagree</b>	6% (2)	7% (3)	0% (0)	6% (1)	0% (0)
<b>Neutral</b>	9% (3)	22% (9)	7% (7)	13% (2)	11% (4)
<b>Agree</b>	47% (15)	49% (20)	55% (56)	50% (8)	50% (19)
<b>Strongly agree</b>	38% (12)	22% (9)	37% (37)	31% (5)	40% (15)

#### Technical Problems

Did you experience technical problems with webcasts in this course? (fall 2004)

	GEO 303 webcast	GEO 302D	GEO 302P	Total
<b>Yes</b>	16% (7)	30% (28)	23% (25)	24% (60)
<b>No</b>	84% (37)	70% (66)	77% (85)	76% (188)

I had difficulty using webcasts (spring and fall 2005).

	Spring 2005		Fall 2005		
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	34% (11)	25% (10)	38% (39)	25% (4)	39% (14)
<b>Disagree</b>	34% (11)	45% (18)	43% (44)	63% (10)	33% (12)
<b>Neutral</b>	19% (6)	13% (5)	11% (11)	6% (1)	17% (6)
<b>Agree</b>	6% (2)	10% (4)	7% (7)	6% (1)	11% (4)
<b>Strongly agree</b>	6% (2)	8% (3)	2% (2)	0% (0)	0% (0)

**What kind of technical difficulties did you have (check all that apply)? (fall 2005 only)**

	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Sound Quality</b>	13% (17)	45% (9)	19% (8)
<b>Sound Volume</b>	17% (23)	55% (11)	30% (13)
<b>Video Quality</b>	6% (8)	15% (3)	23% (10)
<b>Slow Loading</b>	8% (11)	15% (3)	23% (10)
<b>Slide and Movie Synchronization</b>	11% (15)	30% (6)	16% (7)
<b>None</b>	28% (38)	10% (2)	19% (8)
<b>Other</b>	5% (7)	5% (1)	12% (5)

**When you had technical difficulties, how did you solve the problem (check all that apply)? (fall 2005 only)**

	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Sought assistance from IT support</b>	2% (3)	15% (3)	2% (1)
<b>Asked classmates in person or via email</b>	2% (2)	0% (0)	2% (1)
<b>Did not seek any help</b>	50% (68)	60% (12)	56% (24)
<b>Asked instructor or TA</b>	0% (0)	10% (2)	2% (1)
<b>Other</b>	4% (6)	5% (1)	7% (3)

## Appendix H Survey Results: Webcast Features

### Current features

#### Read writing on the chalkboard (fall 2004)

	GEO 303 webcast	GEO 302D	GEO 302P	Total
Not at all important	0% (0)	2% (2)	5% (5)	3% (7)
Somewhat important	19% (7)	29% (25)	37% (39)	31% (71)
Very important	81% (30)	69% (60)	58% (61)	66% (151)
No opinion	0% (0)	0% (0)	0% (0)	0% (0)

#### “Seeing the blackboard or slides to know what the professor is talking about” is important to me. (spring and fall 2005)

	Spring 2005		Fall 2005		
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
Strongly disagree	0% (0)	0% (0)	1% (1)	0% (0)	0% (0)
Disagree	0% (0)	3% (1)	0% (0)	7% (1)	0% (0)
Neutral	13% (4)	5% (2)	7% (7)	7% (1)	15% (5)
Agree	38% (12)	57% (21)	42% (43)	29% (4)	27% (9)
Strongly agree	50% (16)	35% (13)	50% (51)	57% (8)	58% (19)

#### Stop/rewind (fall 2004)

	GEO 303 webcast	GEO 302D	GEO 302P	Total
Not at all important	0% (0)	2% (2)	2% (2)	2% (4)
Somewhat important	18% (7)	21% (19)	13% (14)	17% (40)
Very important	83% (33)	77% (70)	85% (93)	82% (196)
No opinion	0% (0)	0% (0)	0% (0)	0% (0)

#### “Stop/rewind” is important to me. (spring and fall 2005)

	Spring 2005		Fall 2005		
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
Strongly disagree	0% (0)	3% (1)	1% (1)	0% (0)	0% (0)
Disagree	3% (1)	3% (1)	2% (2)	8% (1)	0% (0)
Neutral	16% (5)	8% (3)	10% (10)	0% (0)	15% (5)
Agree	42% (13)	58% (22)	52% (53)	69% (9)	46% (15)
Strongly agree	39% (12)	29% (11)	35% (36)	23% (3)	39% (13)

**Scan through the video (moving the video play head) (fall 2004)**

	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>	<b>Total</b>
<b>Not at all important</b>	3% (1)	1% (1)	1% (1)	1% (3)
<b>Somewhat important</b>	21% (8)	25% (22)	21% (22)	23% (52)
<b>Very important</b>	76% (29)	74% (65)	78% (82)	76% (176)
<b>No opinion</b>	0% (0)	0% (0)	0% (0)	0% (0)

**“Scan through the video (moving the video play head)” is important to me. (spring and fall 2005)**

	<b>Spring 2005</b>		<b>Fall 2005</b>		
	<b>GOV 310V 11am-12pm</b>	<b>GOV 310V 3pm-4pm</b>	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Strongly disagree</b>	3% (1)	0% (0)	1% (1)	0% (0)	0% (0)
<b>Disagree</b>	3% (1)	8% (3)	3% (3)	7% (1)	0% (0)
<b>Neutral</b>	25% (8)	5% (2)	13% (13)	20% (3)	15% (5)
<b>Agree</b>	44% (14)	53% (20)	51% (51)	53% (8)	46% (15)
<b>Strongly agree</b>	25% (8)	34% (13)	33% (33)	20% (3)	39% (13)

**Play from a particular slide (slide list) (fall 2004)**

	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>	<b>Total</b>
<b>Not at all important</b>	2% (1)	6% (5)	2% (2)	3% (8)
<b>Somewhat important</b>	64% (27)	43% (37)	34% (35)	43% (99)
<b>Very important</b>	33% (14)	52% (45)	64% (67)	54% (126)
<b>No opinion</b>	0% (0)	0% (0)	0% (0)	0% (0)

**“Play from a particular slide (slide list)” is important to me. (spring and fall 2005)**

	<b>Spring 2005</b>		<b>Fall 2005</b>		
	<b>GOV 310V 11am-12pm</b>	<b>GOV 310V 3pm-4pm</b>	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Strongly disagree</b>	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)
<b>Disagree</b>	6% (2)	10% (4)	6% (6)	15% (2)	0% (0)
<b>Neutral</b>	19% (6)	26% (10)	15% (15)	31% (4)	11% (4)
<b>Agree</b>	47% (15)	46% (18)	56% (57)	46% (6)	50% (19)
<b>Strongly agree</b>	28% (9)	18% (7)	24% (24)	8% (1)	40% (15)

**Hear the other students when they ask questions (fall 2004)**

	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>	<b>Total</b>
<b>Not at all important</b>	12% (5)	13% (12)	10% (10)	12% (27)
<b>Somewhat important</b>	49% (20)	40% (36)	51% (54)	47% (110)
<b>Very important</b>	39% (16)	46% (41)	39% (41)	42% (98)
<b>No opinion</b>	0% (0)	0% (0)	0% (0)	0% (0)

**“Hear the other students when they ask questions” is important to me. (spring and fall 2005)**

	Spring 2005		Fall 2005		
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	0% (0)	1% (1)	0% (0)	3% (1)
<b>Disagree</b>	6% (2)	8% (3)	10% (10)	7% (1)	10% (3)
<b>Neutral</b>	28% (9)	22% (8)	22% (23)	7% (1)	32% (10)
<b>Agree</b>	28% (9)	47% (17)	45% (46)	50% (7)	32% (10)
<b>Strongly agree</b>	38% (12)	22% (8)	22% (23)	36% (5)	23% (7)

**Play in double speed or slow speed (fall 2004)**

	GEO 303 webcast	GEO 302D	GEO 302P	Total
<b>Not at all important</b>	41% (16)	46% (37)	48% (48)	46% (101)
<b>Somewhat important</b>	36% (14)	26% (21)	35% (35)	32% (70)
<b>Very important</b>	23% (9)	28% (23)	17% (17)	22% (49)
<b>No opinion</b>	0% (0)	0% (0)	0% (0)	0% (0)

**“Play in double speed or slow speed” is important to me. (spring and fall 2005)**

	Spring 2005		Fall 2005		
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	13% (4)	0% (0)	10% (10)	0% (0)	13% (4)
<b>Disagree</b>	16% (5)	19% (7)	16% (16)	21% (3)	23% (7)
<b>Neutral</b>	36% (11)	41% (15)	29% (29)	21% (3)	27% (8)
<b>Agree</b>	19% (6)	16% (6)	32% (32)	14% (2)	13% (4)
<b>Strongly agree</b>	16% (5)	24% (9)	13% (13)	43% (6)	23% (7)

**Live broadcast (same time as lecture) (fall 2004)**

	GEO 303 webcast	GEO 302D	GEO 302P	Total
<b>Not at all important</b>	34% (13)	25% (20)	36% (35)	32% (68)
<b>Somewhat important</b>	32% (12)	35% (28)	36% (35)	35% (75)
<b>Very important</b>	34% (13)	41% (33)	28% (27)	34% (73)
<b>No opinion</b>	0% (0)	0% (0)	0% (0)	0% (0)

**“Live broadcast (same time as lecture)” is important to me. (spring and fall 2005)**

	Spring 2005		Fall 2005		
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	0% (0)	0% (0)	4% (4)	7% (1)	7% (2)
<b>Disagree</b>	19% (6)	11% (4)	17% (17)	14% (2)	23% (7)
<b>Neutral</b>	41% (13)	45% (17)	34% (34)	43% (6)	43% (13)
<b>Agree</b>	25% (8)	29% (11)	29% (29)	14% (2)	10% (3)
<b>Strongly agree</b>	16% (5)	16% (6)	15% (15)	21% (3)	17% (5)

**Future features**

**“Index or search function to jump to a particular part” would be important to me. (fall 2005 only)**

	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Strongly disagree</b>	0% (0)	0% (0)	0% (0)
<b>Disagree</b>	3% (3)	6% (1)	3% (1)
<b>Neutral</b>	13% (13)	31% (5)	17% (6)
<b>Agree</b>	59% (58)	56% (9)	39% (14)
<b>Strongly agree</b>	25% (25)	6% (1)	42% (15)

**Be able to see the dot of the laser pointer on slides (fall 2004)**

	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>	<b>Total</b>
<b>Not at all important</b>	11% (4)	13% (12)	19% (20)	16% (36)
<b>Somewhat important</b>	39% (14)	54% (48)	42% (45)	46% (107)
<b>Very important</b>	50% (18)	33% (29)	39% (41)	38% (88)
<b>No opinion</b>	0% (0)	0% (0)	0% (0)	0% (0)

**“Be able to see the dot of the laser point on slides” would be important to me. (spring and fall 2005)**

	<b>Spring 2005</b>		<b>Fall 2005</b>		
	<b>GOV 310V 11am-12pm</b>	<b>GOV 310V 3pm-4pm</b>	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Strongly disagree</b>	10% (3)	0% (0)	0% (0)	0% (0)	0% (0)
<b>Disagree</b>	26% (8)	16% (6)	10% (10)	13% (2)	0% (0)
<b>Neutral</b>	29% (9)	42% (16)	13% (13)	44% (7)	22% (8)
<b>Agree</b>	29% (9)	32% (12)	47% (49)	38% (6)	33% (12)
<b>Strongly agree</b>	7% (2)	11% (4)	31% (32)	6% (1)	44% (16)

**Be able to manipulate the slide window or video window (separate, enlarge, reposition) (fall 2004)**

	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>	<b>Total</b>
<b>Not at all important</b>	5% (2)	5% (4)	13% (13)	8% (19)
<b>Somewhat important</b>	41% (16)	47% (41)	37% (38)	42% (95)
<b>Very important</b>	54% (21)	49% (43)	50% (51)	50% (115)
<b>No opinion</b>	0% (0)	0% (0)	0% (0)	0% (0)

**“Be able to manipulate the slide window or video window (separate, enlarge, reposition)” would be important to me. (spring and fall 2005)**

	Spring 2005		Fall 2005		
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	7% (2)	0% (0)	2% (2)	0% (0)	0% (0)
<b>Disagree</b>	7% (2)	8% (3)	5% (5)	17% (2)	9% (3)
<b>Neutral</b>	29% (9)	27% (10)	20% (21)	17% (2)	28% (9)
<b>Agree</b>	39% (12)	46% (17)	48% (49)	33% (4)	28% (9)
<b>Strongly agree</b>	19% (6)	19% (7)	25% (26)	33% (4)	34% (11)

**Better quality animation/video than are shown in class (fall 2004)**

	GEO 303 webcast	GEO 302D	GEO 302P	Total
<b>Not at all important</b>	13% (5)	13% (11)	19% (18)	16% (34)
<b>Somewhat important</b>	44% (17)	42% (35)	46% (44)	44% (96)
<b>Very important</b>	44% (17)	45% (38)	35% (33)	40% (88)
<b>No opinion</b>	0% (0)	0% (0)	0% (0)	0% (0)

**“Full screen animation/video” would be important to me. (spring and fall 2005)**

	Spring 2005		Fall 2005		
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	9% (3)	3% (1)	0% (0)	0% (0)	0% (0)
<b>Disagree</b>	9% (3)	5% (2)	10% (10)	13% (2)	8% (3)
<b>Neutral</b>	31% (10)	34% (13)	18% (19)	38% (6)	31% (11)
<b>Agree</b>	34% (11)	42% (16)	51% (52)	50% (8)	36% (13)
<b>Strongly agree</b>	16% (5)	16% (6)	21% (22)	0% (0)	25% (9)

**Ability to annotate (take notes, text search, make custom bookmarks) in the webcast interface (fall 2004)**

	GEO 303 webcast	GEO 302D	GEO 302P	Total
<b>Not at all important</b>	18% (7)	14% (12)	22% (22)	19% (41)
<b>Somewhat important</b>	47% (18)	41% (34)	37% (37)	41% (89)
<b>Very important</b>	34% (13)	45% (37)	40% (40)	41% (90)
<b>No opinion</b>	0% (0)	0% (0)	0% (0)	0% (0)

**“Be able to annotate (take notes, text search, make custom bookmarks) in the webcast interface” would be important to me. (spring and fall 2005)**

	Spring 2005		Fall 2005		
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	6% (2)	0% (0)	2% (2)	0% (0)	6% (2)
<b>Disagree</b>	16% (5)	3% (1)	13% (13)	6% (1)	8% (3)
<b>Neutral</b>	25% (8)	24% (9)	22% (23)	38% (6)	42% (15)
<b>Agree</b>	31% (10)	37% (14)	45% (47)	50% (8)	31% (11)
<b>Strongly agree</b>	22% (7)	37% (14)	18% (19)	6% (1)	14% (5)

**See the professor closer (zoom) (fall 2004)**

	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>	<b>Total</b>
<b>Not at all important</b>	30% (12)	35% (29)	32% (32)	33% (73)
<b>Somewhat important</b>	40% (16)	48% (40)	38% (38)	42% (94)
<b>Very important</b>	30% (12)	18% (15)	29% (29)	25% (56)
<b>No opinion</b>	0% (0)	0% (0)	0% (0)	0% (0)

**“See the professor closer (zoom)” would be important to me. (spring and fall 2005)**

	<b>Spring 2005</b>		<b>Fall 2005</b>		
	<b>GOV 310V 11am-12pm</b>	<b>GOV 310V 3pm-4pm</b>	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Strongly disagree</b>	10% (3)	3% (1)	2% (2)	0% (0)	6% (2)
<b>Disagree</b>	26% (8)	21% (8)	22% (23)	19% (3)	17% (6)
<b>Neutral</b>	36% (11)	55% (21)	34% (35)	50% (8)	44% (16)
<b>Agree</b>	23% (7)	16% (6)	29% (30)	31% (5)	31% (11)
<b>Strongly agree</b>	7% (2)	5% (2)	14% (14)	0% (0)	3% (1)

**Other**

**The video showing the professor is not necessary to me since I have audio and slides.**

	<b>Fall 2004</b>			<b>Spring 2005</b>		<b>Fall 2005</b>		
	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>	<b>GOV 310V 11am- 12pm</b>	<b>GOV 310V 3pm- 4pm</b>	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Strongly disagree</b>	13% (6)	16% (15)	20% (23)	19% (6)	8% (3)	22% (22)	13% (2)	35% (12)
<b>Disagree</b>	48% (22)	29% (27)	48% (56)	50% (16)	37% (14)	33% (34)	53% (8)	29% (10)
<b>Neutral</b>	24% (11)	42% (39)	23% (27)	16% (5)	21% (8)	24% (24)	26% (4)	29% (10)
<b>Agree</b>	13% (6)	10% (9)	8% (9)	13% (4)	29% (11)	17% (17)	0% (0)	6% (2)
<b>Strongly agree</b>	2% (1)	3% (3)	2% (2)	3% (1)	5% (2)	5% (5)	7% (1)	0% (0)

## Appendix I Survey Results: Comparing Webcasts with Classroom Experiences

### Webcast recreating classroom experiences

#### Webcast can replace being in class (spring and fall 2005).

	Spring 2005		Fall 2005		
	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	28% (9)	8% (3)	6% (6)	13% (2)	19% (7)
<b>Disagree</b>	38% (12)	38% (15)	21% (22)	25% (4)	42% (15)
<b>Neutral</b>	19% (6)	23% (9)	18% (18)	0% (0)	17% (6)
<b>Agree</b>	13% (4)	23% (9)	32% (33)	38% (6)	17% (6)
<b>Strongly agree</b>	3% (1)	10% (4)	23% (24)	25% (4)	6% (2)

#### Lecture webcasts are as good as going to class.

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	9% (4)	5% (5)	16% (19)	6% (2)	5% (2)	1% (1)	0% (0)	8% (3)
<b>Disagree</b>	15% (7)	27% (25)	34% (40)	50% (16)	20% (8)	15% (15)	19% (3)	39% (14)
<b>Neutral</b>	32% (15)	28% (26)	22% (26)	31% (10)	13% (5)	18% (19)	19% (3)	25% (9)
<b>Agree</b>	36% (17)	33% (31)	20% (24)	6% (2)	45% (18)	42% (43)	44% (7)	17% (6)
<b>Strongly agree</b>	9% (4)	6% (6)	8% (9)	6% (2)	18% (7)	24% (25)	19% (3)	11% (4)

#### Webcasts helped me learn course material better (fall 2004). Webcasts helped me learn the course material better than in-class lectures (spring and fall 2005).

	Fall 2004			Spring 2005			Fall 2005	
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	2% (1)	4% (4)	3% (3)	13% (4)	15% (6)	5% (5)	6% (1)	19% (7)
<b>Disagree</b>	13% (6)	21% (19)	3% (3)	44% (14)	37% (15)	20% (20)	13% (2)	36% (13)
<b>Neutral</b>	28% (13)	34% (31)	27% (31)	31% (10)	34% (14)	35% (35)	44% (7)	22% (8)
<b>Agree</b>	43% (20)	34% (31)	41% (36)	9% (3)	12% (5)	22% (22)	25% (4)	11% (4)
<b>Strongly agree</b>	15% (7)	8% (7)	27% (30)	3% (1)	2% (1)	19% (19)	13% (2)	11% (4)

## Appendix J: Survey Results: Webcasts and Course Satisfaction

**Class satisfaction**

**How important are webcasts to your overall satisfaction in this course (fall 2004)?**

	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Not at all important</b>	11% (5)	13% (12)	7% (8)
<b>Not very important</b>	23% (10)	12% (11)	13% (15)
<b>Neutral</b>	14% (6)	22% (21)	18% (21)
<b>Somewhat important</b>	39% (17)	35% (33)	35% (40)
<b>Very important</b>	14% (6)	19% (18)	26% (30)

**Webcasts are important to my overall satisfaction in this course (spring and fall 2005).**

	<b>Spring 2005</b>		<b>Fall 2005</b>		
	<b>GOV 310V 11am-12pm</b>	<b>GOV 310V 3pm-4pm</b>	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Strongly disagree</b>	13% (4)	5% (2)	3% (3)	0% (0)	11% (4)
<b>Disagree</b>	22% (7)	15% (6)	10% (10)	25% (4)	22% (8)
<b>Neutral</b>	34% (11)	32% (13)	22% (23)	13% (2)	25% (9)
<b>Agree</b>	19% (6)	34% (14)	41% (42)	56% (9)	22% (8)
<b>Strongly agree</b>	13% (4)	15% (6)	24% (25)	6% (1)	19% (7)

**I would recommend that other students take courses like this that use webcasts (spring and fall 2005 only).**

	<b>Spring 2005</b>		<b>Fall 2005</b>		
	<b>GOV310V 11am-12pm</b>	<b>GOV310V 3pm-4pm</b>	<b>GEO 303 webcast</b>	<b>GEO 302D</b>	<b>GEO 302P</b>
<b>Strongly disagree</b>	3% (1)	0% (0)	2% (2)	0% (0)	3% (1)
<b>Disagree</b>	6% (2)	10% (4)	1% (1)	0% (0)	3% (1)
<b>Neutral</b>	16% (5)	10% (4)	11% (11)	19% (3)	28% (10)
<b>Agree</b>	50% (16)	54% (22)	52% (53)	38% (6)	33% (12)
<b>Strongly agree</b>	25% (8)	27% (11)	35% (36)	44% (7)	33% (12)

## Appendix K: Survey Results: Webcasts Offered with Different Possibilities

I would take a class that was entirely webcast (no physical meetings) (fall 2004). I would take a course that is entirely webcast and has no face-to-face meetings (spring and fall 2005).

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	13% (10)	22% (28)	19% (30)	22% (7)	7% (3)	12% (12)	13% (2)	19% (7)
<b>Disagree</b>	23% (18)	24% (30)	30% (47)	31% (10)	12% (5)	23% (24)	25% (4)	31% (11)
<b>Neutral</b>	22% (17)	18% (23)	14% (22)	16% (5)	22% (9)	16% (16)	13% (2)	19% (7)
<b>Agree</b>	33% (26)	24% (30)	19% (30)	16% (5)	44% (18)	26% (27)	25% (4)	25% (9)
<b>Strongly agree</b>	9% (7)	11% (14)	17% (26)	16% (5)	15% (6)	23% (24)	25% (4)	6% (2)

If two classes I needed were offered at the same time, I would take one via webcast (fall 2004). If two courses I needed were offered at the same time and at least one were being webcast, I would enroll in both (spring and fall 2005).

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am-12pm	GOV 310V 3pm-4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	6% (5)	14% (18)	12% (19)	10% (3)	10% (4)	10% (10)	6% (1)	14% (5)
<b>Disagree</b>	15% (12)	11% (14)	16% (24)	26% (8)	20% (8)	15% (15)	6% (1)	28% (10)
<b>Neutral</b>	18% (14)	18% (23)	18% (28)	32% (10)	28% (11)	18% (18)	19% (3)	33% (12)
<b>Agree</b>	45% (35)	46% (57)	36% (55)	19% (6)	28% (11)	35% (36)	38% (6)	14% (5)
<b>Strongly agree</b>	15% (12)	10% (13)	18% (28)	13% (4)	15% (6)	23% (23)	31% (5)	11% (4)

Are you likely download to watch or listen to lecture recordings on a portable device such as ipod/video ipod, if lecture are made available for it (fall 2005 online survey only).

	GEO 302D	GEO 302P
<b>Not likely</b>	26% (5)	41% (17)
<b>Maybe</b>	42% (8)	29% (12)
<b>Very likely</b>	21% (4)	17% (7)
<b>Don't know</b>	11% (2)	14% (6)

**I would pay a fee (up to \$20) to have lectures webcast for a class (fall 2004). I would pay an extra fee (up to \$20) to have lectures webcast for a class (spring and fall 2005).**

	Fall 2004			Spring 2005		Fall 2005		
	GEO 303 webcast	GEO 302D	GEO 302P	GOV 310V 11am- 12pm	GOV 310V 3pm- 4pm	GEO 303 webcast	GEO 302D	GEO 302P
<b>Strongly disagree</b>	38% (30)	32% (40)	27% (42)	22% (7)	10% (4)	13% (13)	13% (2)	14% (5)
<b>Disagree</b>	24% (19)	29% (36)	25% (38)	38% (12)	20% (8)	20% (21)	13% (2)	28% (10)
<b>Neutral</b>	13% (10)	10% (13)	15% (23)	13% (4)	33% (13)	16% (16)	25% (4)	28% (10)
<b>Agree</b>	14% (11)	21% (26)	21% (33)	13% (4)	25% (10)	28% (29)	38% (6)	17% (6)
<b>Strongly agree</b>	10% (8)	9% (11)	12% (19)	16% (5)	13% (5)	23% (24)	13% (2)	14% (5)