

Can You Hear Me Now?

Pilot Study of Classroom Recording Technologies

By Elizabeth Scheyder and John MacDermott



2007 NMC Summer Conference

Thank you for your interest in our poster presentation! This handout provides more details about the results of our pilot study, and a copy of the poster for your reference. The poster is also available on our website at

<http://www.sas.upenn.edu/computing/instructional/recordings/>

If you're interested in our research, we would love to hear from you. Please contact us at scheydec@sas.upenn.edu and macderm@sas.upenn.edu

To recap:

Background / Motivation:

- Interest in podcasting at Penn and in Higher Education in general
- Instructors often concerned about impact on attendance
- Some research on effects of podcasting exists, indicating:
 - Perceived as positive learning tool by students
 - No significant effect on attendance

Research Questions:

1. Are cost-effective technologies available to make classroom recordings?
2. Are the technologies and procedures to make recordings reliable?
3. Is the outcome worth the cost and effort?

Methods:

- Piloted 3 low-cost means of making classroom recordings:
 - Audio-only automated recording
 - Just the instructor's voice in a large lecture hall with permanently installed hardware
 - Audio-only recording using a portable device
 - Instructor's and students' voices around a seminar table in a small room
 - Audio plus screen capture using Sympodium hardware
 - Created a movie of screen activity, including PowerPoint, with a synchronized audio track of the instructor's voice
- Tracked costs and labor
- Surveyed students before and after semester

Costs:

		Expenses		Staff Time	
Auto audio recording assumes existing mic system in room	Initial	Mac Mini w/ AppleCare WireTap software Audio interface	\$668 \$19 \$30 to \$400	Devise sys for auto file transfer Prep/ deploy computer, per room	35 h 5 h
	Recurring	None		Set recording schedule / server paths, per course	1.5 h
Portable audio rec. one recorder per instructor per term	Initial	Recorder kit	\$365	None	
	Recurring	Batteries, per recorder per term	\$15	Review recording / uploading procedures, per instructor	1 h
Sympodium screen capture assumes existing mic system in room	Initial	Sympodium sys, per room Audio interface to room mic	\$2900 \$400	Devise sys for auto file transfer / recompression Prep/ deploy Sympodium, per room	35 h 8 h
	Recurring	None		Set recording schedule / server paths, per course Faculty support, per instructor	1.5 h 5 h

Some additional data that didn't make it onto our poster:

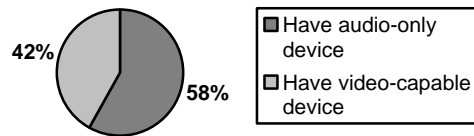
Pre-experience Survey

Response rate: 49% (373/759)

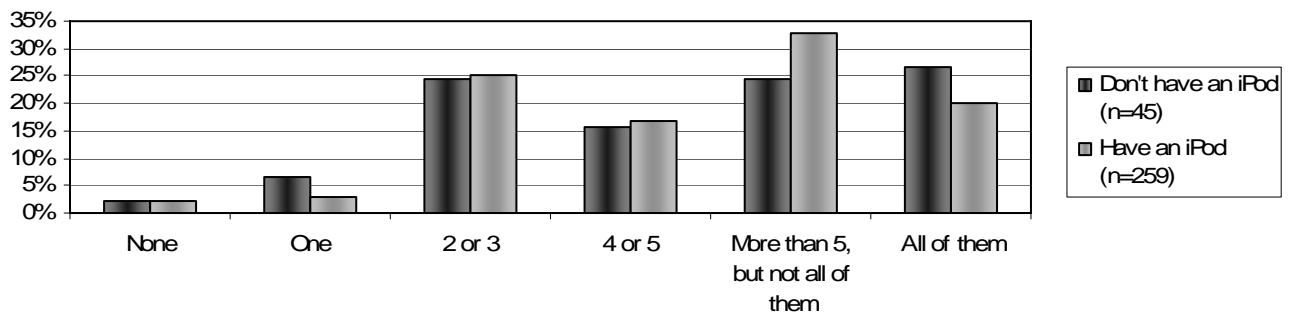
Most students have an iPod or similar device, split about equally between audio-only and video-capable

Of students surveyed, 85% have an iPod or other portable device that can play digital media.

Of those students:



But whether or not a student owns an iPod didn't seem to affect how many of the recordings they thought they would listen to:



Of the few students who said they might miss class frequently, most denied that this was because recordings of the class would be available

Number of students who might miss class "4 or 5" or "more than 5" times = 27 (7% of 372 responses)

Of these, how many "much more likely" because recording is available	0	
Of these, how many "slightly more likely" because recording is available	11	41%
Of these, how many "no more likely" because recording is available	16	59%

Problems During the Semester

Technical Issues:

- Audio interface in the room where the Symposium was installed was problematic, frequently requiring the user to go deep into Windows settings to make adjustments so that audio would be recorded
 - We plan to re-wire the system this summer to avoid this in the future
- Microphone batteries for the Symposium system had to be replaced frequently. Locating spares somewhere that was accessible to the instructor but reasonably secure required extra coordination with staff
- One of the professors using the portable audio recorder for a seminar encountered technical difficulties, but "things came up and [he] didn't pursue" a resolution, so only 2 of his 25 class meetings were recorded

Non-Technical Issues:

- One of the two professors who had signed up to use the Symposium missed half of the semester because of medical issues, and the replacement instructor didn't want to add the Symposium to his already-increased responsibilities. These students were not surveyed after the semester, since they never had the opportunity to listen to recordings.
- The other professor who signed up to use the Symposium also had an unexpected medical emergency that required him to miss 2 weeks of class meetings, and his replacement didn't attempt to use the Symposium
- One of the professors teaching in the room where automated audio-only recording was installed was not made aware of the system, so he did not let his students know that recordings would be available.

Some additional data that didn't make it onto our poster (cont'd):

Post-experience Survey

Response rate: 29% (223/780)

Quality and Usefulness of Recordings					
	Disagree strongly	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree strongly
The quality of the recordings was good enough	1%	2%	16%	24%	57%
I found these recordings to be useful in helping me learn	2%	4%	15%	21%	59%
I would recommend that we make similar classroom recordings available for other courses	1%	1%	7%	16%	78%
I would prefer that the recordings be available in a podcast format through iTunes	6%	3%	47%	19%	25%
The recordings would be much more useful if I could see the teacher on camera	5%	8%	21%	30%	36%
The recordings would be much more useful if I could see what was written on the chalkboard	2%	3%	11%	28%	56%
<i>(Students in classes with audio-only recordings)</i> The recordings would be much more useful if I could see the Powerpoint or other computer presentation	2%	4%	19%	22%	52%
<i>(Students in class with Sympodium recording)</i> The recordings would have been useful even if they had only the instructor's voice, without any video <i>(Note low response – n=10)</i>	0%	20%	40%	30%	10%
Do you think classroom dynamics (e.g., level of discussion, pace of presentation) were affected by the fact it was being recorded?	0%	3%	90%	5%	2%
I was reluctant to speak up in class because I knew it was being recorded	75%	5%	18%	2%	0%

Effects of Recording on Classroom Dynamics					
	Very negative effect	Somewhat negative effect	No effect	Somewhat positive effect	Very positive effect
Do you think classroom dynamics (e.g., level of discussion, pace of presentation) were affected by the fact it was being recorded?	0%	3%	90%	5%	2%
	Disagree strongly	Disagree somewhat	Neither agree nor disagree	Agree somewhat	Agree strongly
I was reluctant to speak up in class because I knew it was being recorded	75%	5%	18%	2%	0%

Can You Hear Me Now?

Pilot Study of Classroom Recording Technologies

Elizabeth Schreyder and John MacDermott, University of Pennsylvania

Background / Motivation

- Interest in podcasting at Penn and in Higher Education in general
- Instructors often concerned about impact on attendance
- Some research on effects of podcasting exists, indicating:
 - Perceived as positive learning tool by students
 - No significant effect on attendance



Research Questions

- Are cost-effective technologies available to make classroom recordings?
- Are the technologies and procedures to make recordings reliable?
- Is the outcome worth the cost and effort?



Methods

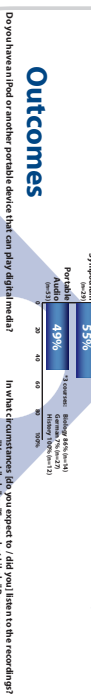
- Piloted 3 low-cost means of making classroom recordings:
 - Audio-only automated recording
 - Just the instructor's voice in a large lecture hall with permanently installed hardware
 - Audio-only recording using a portable device
- Instructor's and students' voices around a seminar table in a small room
- Audio plus screen capture using Sympodium hardware
- Created a movie of screen activity, including PowerPoint, with a synchronized audio track of the instructor's voice
- Tracked costs and labor
- Surveyed students before and after semester

Results

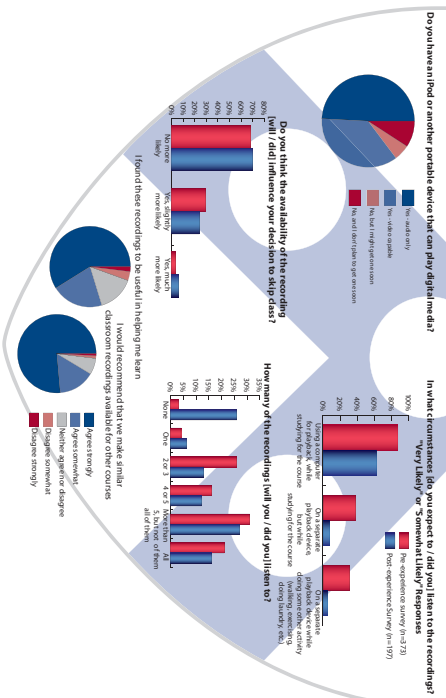
Costs	Expenses	Staff Time
Auto audio recording (includes recording device, software, and storage)	Initial Costs None to instructor None to student	Initial Costs None
Portable audio recorder (portable recorder kit per instructor per term)	Recording Costs Audio interface None to instructor None to student	Staff Time 1.5 hours None to instructor None to student
Sympodium (Symposium software, Symposium hardware)	Initial Costs None to instructor None to student	Staff Time 1.5 hours None to instructor None to student
	Recurring Costs None to instructor None to student	Staff Time None to instructor None to student
	Recurring Costs None to instructor None to student	Staff Time None to instructor None to student

Percentage of Classes Successfully Recorded

Reliability



Outcomes



Conclusions

- Costs for all 3 technologies were very reasonable
- Technologies that require the instructor to remember to bring hardware or do something were less reliable than automated installations
- Although the "buzz" is that students want to listen to lectures on iPods, relatively few do
- Using video formats not suitable for portable devices is acceptable.



Next Steps

- Continue the pilot test in Fall 2007
- Change setup of Sympodium to improve reliability
- Install a second Sympodium system in another room
- Deploy portable audio recorders with different faculty
- Repeat surveys, seeking ways to get higher response rates



Acknowledgments

This project was funded by an Instructional Technology Grant in the School of Arts and Sciences at the University of Pennsylvania in the Spring of 2007. This project was deemed exempt from oversight in its use of human subjects by the Institutional Review Board of the Office of Regulatory Affairs at Penn. For additional details, see <http://www.sas.upenn.edu/computing/instructional/recordings/>

Trapagan, T. (2005). *Class Lecture Webcasting, Fall 2004 and Spring 2005: A Case Study*. <http://www.utexas.edu/academic/dlta/research/reports/>