Putting Classroom Lectures Online: The ATC’s “Course Capturing” Pilot

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What is Course Capturing?

- Automated capture of class lectures
- Audio/video of instructor and projector signal are integrated in convenient interface
- Lectures viewed on a webpage that can be linked within myWPI
- Students play back lectures as needed
- Lectures can be viewed straight through or thumbnails can be used to jump around
Both “m” and “n” are positive even integers.

\[ \int \sin^2 \theta \cos^2 \theta d\theta \]

\[ \frac{1}{2} \int (1 - \cos 2\theta) \frac{1}{2} (1 + \cos 2\theta) d\theta \]

\[ \frac{1}{4} \int (1 - \cos^2 2\theta) d\theta \]

\[ \frac{1}{4} \left[ 1 - \left( \frac{1}{2} (1 + \cos 4\theta) \right) \right] d\theta \]

\[ \frac{1}{4} \int \frac{1}{2} - \frac{1}{2} \cos 4\theta d\theta = \frac{1}{4} \left[ \frac{1}{2} - \frac{1}{8} \sin 4\theta \right] + C \]
Goals of the Pilot

- Enhance student learning
- Little impact on faculty time
- Little impact on staff time
- Meet students’ interest in using more technology for learning
WPI Challenges

- 7 week terms
- Strengths and weaknesses of “Millennial” students
- Increasing student enrollment
  - Larger class sizes
  - Increased demands on faculty time
- Emphasis on projects
Research

- Faculty teach approximately 120 words per minute
  - Students record 20-30 words per minute
- Studies at other universities have shown:
  - Improved course retention rates
  - Improved grades, especially for students usually receiving C and D grades
  - No or very slight negative impact on classroom attendance
- Some universities mention lecture capturing as a recruiting point
Research Suggests That…

- Students who miss points during a lecture can review what they missed — saves faculty time by reducing questions outside of class.
- Students feel they learn better by attending the live lecture — recorded lectures used as study aids.
- Students are more engaged in lectures when they don’t have to worry about taking perfect notes.
- Recorded lectures provide students a sense of security and a reduction of anxiety.
- Recorded lectures add to students’ overall satisfaction with courses.
How it Works

Classroom → Server → Webpage → myWPI

Classroom

Server

Webpage

myWPI
Faculty Role

- Turn on projector
- Turn on wireless microphone
- Use Sympodium or Tablet PC instead of chalkboard
- Market the recorded lectures to students
Demo

- John Goulet’s Calculus I class
Challenges

- Scheduling courses in lecture capturing classrooms
- Chalkboards cannot be captured
- Student audio is not captured
- Concerns about attendance
Technical Issues

- Not Mac compatible
- Not compatible with all Web browsers
- Downloadable versions not available
- Microphone batteries
- Not turning the microphone on
Results

- Used by 3 Math classes and 7 Biology classes
- No data yet showing any impact on grades
- Good feedback from faculty and staff
Faculty Feedback

- All faculty who participated want to use it again
- Using the system in their class is no burden
- Adjusting to the Sympodium takes a bit of time
- No faculty reported a drop in attendance
- Some hope to use the recordings to review their teaching
Student Surveys

Primary Method of Watching

- 67% Straight through
- 33% Jump around
Student Surveys

When recordings were viewed

- Review after class: 29%
- At home: 78%
- After missed class: 57%
- Before quiz or test: 20%
- Doing homework: 4%
- Other: 1%
Do the recorded lectures affect attendance?

- Yes: 33%
- No: 67%
Student Surveys

Positive impact on performance?

- Yes: 78%
- No: 10%
- Not sure: 12%
Student Surveys

Should recorded lectures be used in more classes?

- Yes: 94%
- No: 2%
- Maybe: 4%
Student Surveys

- “They are great because you can always go back to see exactly what the professor said and it is less stressful taking notes.”
- “Sometimes in class the professor may be moving fast and if I need everything slower, I watch the recorded lecture after class and press play/pause whenever I am ready.”
- “I can go back and re-watch parts of the class I didn’t understand.”
- “I don’t feel like I can’t catch up if I do have to miss a lecture.”
Student Interview
Future Plans

- Expand it to more classes
- Market to TAs and PLAs
- Math Basic Skills Tests
- Conduct a grade analysis
- Investigate other lecture capturing solutions
- Market lecture capturing to prospective students?
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- [http://www.wpi.edu/+Collaboratory/News/lecturecapturing.html](http://www.wpi.edu/+Collaboratory/News/lecturecapturing.html)