

Podcast Your Lectures

or, why students will still attend class



Stuart Glogoff
Sr. Consultant
UA Office of Instruction and Assessment
November 2, 2009

What We Know About Learning

Dr. John J. Medina is a developmental molecular biologist focused on the genes involved in human brain development and the genetics of psychiatric disorders. He is currently an affiliate Professor of Bioengineering at the University of Washington School of Medicine. In his book **Brain Rules: 12 Principles for Surviving and Thriving at Work, Home, and School** he discusses such things as how we learn, what sleep and stress do to our brains, why multi-tasking is a myth, and why it is so easy to forget – and so important to repeat new knowledge. Medina tells us that research has shown that after 10 minutes of a lecture, we've lost as much as 35% of our audience. Furthermore, the percent of the class paying full attention can drop as much as 35% after ten minutes. UA instructors can counter this by podcasting audio and/or video of their lectures so students can revisit lectures and better understand course material.

What We've Observed at the UA

- The UA College of Engineering's Videostreamed Lectures. All students taking video-based courses are given access to videostreamed lectures. When asked if faculty have observed student attendance dropping, Dr. Mary Poulton, Professor and Department Head in the College, wrote: "We have not seen any drop in attendance. The students use the webcast as a backup to reinforce what was taught, they use it if they miss class, and they re-run old classes to refresh their memories. I think they really like the human contact with other students and the professors."
- Dr. James Collins, Professor of Veterinary Science and Microbiology, has recorded lectures for his MIC205A and VSC433 classes. He wrote: "I do not have any hard data, but in my opinion there was no

drop in attendance whatsoever in my General Microbiology classes. I believe this to be the case for my Virology classes as well. Most of the students who commented to me personally, said they used the podcasts for help in studying. A few said they were grateful for them when they were sick or unavoidably missed class.”

- Dr. Amy Fountain, an Adjunct Lecturer in the Philosophy department, regularly captures lectures and podcasts of her gen ed course INDV102 ‘Mind, Self + Language’. She wrote: “I’ve not taught INDV101 without podcasting, actually - so I don’t have a good direct comparison. But I can say these things, with some confidence that they’re true: * My INDV101’s with podcasting do not have a dramatically different attendance rate than do my lower-division gen ed classes that aren’t podcast. * My INDV101’s with podcasting do not seem to have a dramatically different attendance rate when compared with offerings of the course by other faculty who don’t podcast. * When asked about why they access podcasts (via anonymous user survey), very few students say that they use the podcasts instead of going to class. Instead, they say that they use the podcasts for review of lecture materials for classes they attended.”
- Dr. Leila Hudson, associate professor Near Eastern Studies has recorded lectures in her gen ed INDV and TRAD courses over three different semesters. She has not had any issue with student attendance and wrote: “I don’t have any statistics, but as you know, I find that there is not a big attendance problem. So for example, attendance records as indicated by the question writing sheets show that 14 of my 15 honors students were in lecture on one randomly selected date and 13 out of 15 were in lecture on another randomly selected date. Admittedly these are honors students, but I imagine

these rates are comparable with other lecture classes that don't podcast.”

What We've Learned About Students & Podcasting

Duke University is recognized as the first to introduce iPods in instruction. In its June 2005 report “What We've Learned About Students & Podcasting,” Duke identified these academic uses for the iPod - course content dissemination tool, classroom recording tool, field recording tool, study support tool, and file storage and transfer.

Further, the report identified these benefits

- Convenience for both faculty and students of portable digital course content, and reduced dependence on physical materials
- Flexible location-independent access to digital course materials, including reduced dependence on lab or library locations and hours
- Effective and easy-to-use tool for digital recording of interviews, field notes, small group discussions, and self-recording of oral assignments
- Greater student engagement and interest in class discussions, labs, field research, and independent projects
- Enhanced support for individual learning preferences and needs.

Literature Review

[note: see [References](#) section for citations]

Numerous reports and articles have addressed the question of student attendance when audio and/or video of class lectures are available. The results strongly indicate that the vast majority of students attend class and use recorded lectures to better understand

course material, review for quizzes and exams, and review material when missing class for legitimate reasons.

May reported on Dartmouth's Lecture Capture Pilot Project (LCap) during 2007-2008 academic year. Twenty iPods were distributed to faculty teaching 11 different courses with class sizes ranging from 14 to 169. From this group, 451 students responded to a survey administered through Dartmouth's Blackboard CMS, SurveyMonkey or paper surveys. The purpose was to assess if and how students used the recorded lectures and the effect that students felt the recordings had on their learning experience.

Among the things that Dartmouth learned were

- 34% responded that when listening to lectures, they followed their notes from the lecture
- 34% reported taking more notes
- 7% listened while doing other things, such as exercise or commuting

In terms of attendance, 88% of the 432 students responded that the lecture recordings had no effect on their attendance. Eleven percent (11%) said having the recordings available reduced their attendance and 1% said it increased their attendance.

The Dartmouth LCap group determined that students and faculty were

“overwhelming in favor of the lecture recordings. Students found the recordings useful across a range of disciplines, class sizes, and teaching styles. While they seemed particularly useful in large, lecture-based courses, students in smaller, discussion-based courses were very positive about their availability as well. The benefits for students included being able to review material

that was confusing, study for quizzes and exams, and pay closer attention in class rather than frantically scribbling notes. The availability of recordings also enabled students to review material when they needed to miss class without bothering the professor. The recordings provide a valuable additional course resource.”

White’s article refers to podcasting course lectures but what he describes are downloading audio files from Web pages. While the capability to subscribe using RSS feeds are in place, the notion of audio recordings of class lectures was available to students. One of the three main questions White addressed was whether the availability of these recordings reduced attendance. White concluded that “access to lecture podcasts is probably not a significant disincentive to lecture attendance.” He adds that his analysis leads him to conclude that students use lecture recordings to review for exams.

Turner and Farmer report on an interesting approach to meeting the needs of working students at the University of Michigan, Flint. Their paper discusses what they call the cyber classroom where lectures are automatically recorded and available to all students via the Web. Students have the option to attend class or “learn remotely on a class session by class-session basis.” Their analysis looks at student outcomes by grade distribution to assess if the cyber classroom is having a positive effect on demonstrated student learning. The system used at UM-Flint includes a digital whiteboard, document camera, PC, and DVD player. Its recording system is complex and involves capturing inputs from a camera focused on the projector screen, a room camera, a faculty tracking camera, audio inputs from room mics and a mic used by the faculty member.

The paper reports on student performance, comparing junior- and senior-level courses prior to and after the cyber classroom was created. The authors report “a significant improvement in student outcomes as assessed by final grades, a 56% drop in failing grades, and a 36% increase in grades B+ and above.” They state that most student failures are attributed to students “‘vanishing’ for extended periods of the semester due to external problems and commitments.” Having the class lectures available, they determined, enabled students to “remain connected and participating in the class despite their sudden inability to come to class.”

In her January 2006 report, Lane describes a University of Washington program introducing podcasting in four courses with 668 enrolled students. The goal was to learn from student responses to an anonymous survey about the benefits and drawbacks to using podcasting in large lecture courses. The author cautions that the research was not formal and the results should not be taken as formal research. She suggests that “it does offer a starting point for exploring the educational aspects of this technology.”

The survey attempted to gather information related to student listening habits, along with the strengths and limitations of podcasting. Among the findings were:

- strengths: listening to podcasts 1) helped students catch up when they missed a class and 2) helped them prepare for homework and exams by clarifying materials covered in lectures and enhancing their understanding of complex concepts.

- weaknesses: 1) difficult to hear questions & discussions, 2) challenging to search for specific information within a podcast, and 3) audio podcasts do not include visual information.

“In the multiple-choice questions, we asked students about the impact that podcasts had on attendance. An overwhelming majority, 77%, indicated that the availability of podcasts had no impact on their attendance. 13% even reported that the podcasts made them more likely to attend class, compared with 10% who reported the opposite. Overall, these patterns suggest that podcasting does not have a negative impact on attendance.”

Ashley Deal reported on Carnegie Mellon University’s “Lecture Webcasting” in a January 2007 CMU Teaching with Technology White Paper. The report presents the findings from formal evaluations of CMU’s lecture webcasting program. Deal explains that there are five general categories of activities and equipment in a lecture webcasting system: 1) classroom presentation, 2) classroom recording, 3) processing and editing, 4) hosting, and 5) distribution and playback. This report also provides an overview of related literature from other institutions assessing lecture webcasts: Georgia Tech, Berkeley, UT, Austin, Universtät Freiburg and Universtät Mannheim, and National University of Singapore.

Deal writes: “Overall, these studies indicate that the availability of lecture webcasts has only a slight impact, if any, on class attendance rates. However, survey results from several of these sources indicate that students perceive lecture webcasts as a valuable alternative when they do miss class.”

Deal reports that “UT Austin researchers assert that any negative effect of lecture webcasting on attendance can be ‘effectively reduced by other factors, such as an instructor’s attendance policies and their attitudes about attendance and the use of webcasts.’” At the UA, Dr. Leila Hudson, Near Eastern Studies, opens class with a question. Students answer that question on a sheet of paper and turn in the paper in with their names on it. She then begins that day’s lecture by addressing the question and engaging students in discussion.

University of Southampton’s Copley combined lecture slides and audio into video podcasts and a pilot that delivered supplementary lecture materials as audio and video podcasts to students. His survey results indicated “little likely impact on lecture attendance as a consequence of podcasting, but indicate that podcast recordings of lectures may not be effective in facilitating mobile learning.” Other reports similarly noted that students mostly listened to podcasts on computers, rather than syncing the audio to MP3 players such as iPods.

Copley’s podcasts appear to be audio recordings that students downloaded from the University’s web-based course management system. This enabled Copley to track downloads and he reports that 80% of students overall downloaded podcasts. Like students elsewhere, his students indicated they most often used the podcasts as learning aids when studying for exams, as a way to improve note taking, and to catch up on missed lectures. His survey also showed that 93% of the respondents wanted more podcast lecture materials. In terms of class attendance 575 stated that podcasting would not reduce their attendance, 12% said it would increase the likelihood of not attending class, and 31% said it depended on the course.

Copley makes two important points. First is that podcasting lectures is helpful to students with learning disabilities. Students with dyslexia or dyspraxia, he states, may find it helpful having more time to compose their notes. Second is that podcasting should help students for whom English is a second language.

Maag's presentation at the 2006 Australasian Society for Computers in Learning in Tertiary Education conference looked at podcasting's promise as an M-learning (mobile learning) tool for nursing students. The results from surveys administered at the end of spring 2005, fall 2005, and spring 2006 courses found:

- spring 2005 - 32.4% of the 34 students responding found podcast "very valuable," 14.7% "somewhat valuable," while 52.9% did not access the podcasts
- fall 2005 - 79% of the 33 students responding accessed the podcasts
- spring 2006 - 86% of the 43 respondents accessed the lecture podcasts and 79% of this group said that they thought listening to the podcasts assisted their learning

It may be that in spring 2005 podcasting was new to students, few owned MP3 players, at least some did not own computers, and some were challenged by what they perceived to be "technology." As the school exposed more students to podcasting over the next two semesters, an extended support group could have emerged that helped eliminate reluctance to download the files.

Evans, a Fellow of Brunel's Teaching Academy in the UK, described his study "of the effectiveness of mobile learning (m-learning) in the form of podcasting, for teaching undergraduate students in Higher Education." Approximately 200 first-level students were given a

series podcasts to use to prepare for an exam after completing a course in Information and Communications Technology.

Students in this study indicated that they preferred having podcasts for studying for exams over textbooks, that they were more efficient than taking notes, and, attitudinally, they preferred the podcasts over traditional lectures and textbooks. Also, students valued the flexibility inherent in mobile learning - anytime/anywhere - and they found that this component made it easier for them to engage more actively with the material. The author surmised that students preferred podcasts to textbooks because they were more accessible on portable devices such as iPods and MP3 players. Like Copley, he adds that audio podcasts should be valuable to students for whom English is a second language and could be helpful in acquiring subject specific skills.

Conclusion

It is important to recognize that podcasting recordings of class lectures is not a substitute for attending class. Throughout the literature, we find the majority of students responding that they do not cut class because audio or video of lectures are available. Instead they find them important learning aids.

References

[URLs provided where available]

Baker, Russell, et. al. "An Innovations in Education and Teaching International Podcasting As a Supplemental Instructional Tool: A Pilot Study," *College Teaching Methods & Styles Journal*, (v. 4, no. 3) March 2008.

Copley, Jonathan. "Audio and Video Podcasts of lectures for Campus-based students: Production and Evaluation of Student Use," *Innovations in Education and Teaching International*, v. 44, no. 4, November 2007, pp. 387-399.

Deal, Ashley. "Lecture Webcasting: A Teaching with Technology White Paper," Office of Technology for Education, Carnegie Mellon University, January 2007. <http://www.cmu.edu/teaching/resources/.../LectureWebcasting_Jan07.pdf>

Duke University. "iPod First Year Experience Final Evaluation Report," June 2005 <http://cit.duke.edu/pdf/reports/ipod_initiative_04_05.pdf>

Evans, Chris. "The Effectiveness of m-learning in the Form of Podcast Revision Lectures in Higher Education." *Computers & Education* v. 50 2008, pp. 491-498. [abstract <http://tinyurl.com/yjqo5q3>]

Lane, Cara. "Podcasting at the UW: An Evaluation of Current Use," January 2006. <http://catalyst.washington.edu/research.../papers/.../podcasting_year1.pdf>

Maag, Margaret. "iPod, uPod? An Emerging Mobile Learning Tool in Nursing Education and Students' Satisfaction," in *Proceedings of the 23rd Annual ASCILITE Conference*, pp. 482-492, c. 2006. <<http://www.ascilite.org.au/conferences/sydney06/proceeding/pdf.../p92.pdf>>

May, Vicki V. "Lecture Capture Pilot Project Results," Dartmouth Center for the Advancement of Learning, August 2008. <<http://www.dartmouth.edu/~dcal/resources/documents/lecturecapture>>

Turner, Stephen, and Farmer, Michael E. "Assessment of Student Performance in an Internet-Based Multimedia Classroom." 2008 International Conference on Frontiers in Education Computer Science and Computer Engineering, July 14-17, 2008. <http://www.autoauditorium.com/.../FECS08_StudentPerformance.pdf>

White, Brian T. "Analysis of Students' Downloading of Online Audio Lecture Recordings in a Large Biology Lecture Course," *Journal of College Science Teaching*, January/February 2009, p. 23-27.

[available through AccessMyLibrary <http://tinyurl.com/yzohhah>]