

Questioning the Student Use of and Desire for Lecture Podcasts

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Abstract

The use of audio files, specifically podcasts, has become more visible and accessible to students in higher education. Despite a lack of pedagogical research on the benefits of podcasting, several universities have adopted the technology of using audio for instruction outside of class and sharing of information. Although institutions and instructors have embraced the technology, have the students? A professor in an introductory geoscience course for nonscience majors recorded the audio from classroom lectures and made these audio files available through the university's online course management system. Student accesses of the audio files were tracked. The students were surveyed about their knowledge on how to utilize the audio files and if they believed the audio to be of some use. Although percentages were not high in terms of student accesses to individual lectures, and a little over half the students were aware of how to access and utilize the files, all of the students reported a perceived value to having lecture podcasts available.

Keywords: podcasts, technology, pedagogy, MP3, audio

Introduction

In Fall 2004, Duke University made the headlines by giving each student in the entering freshman class of 1,650 their own iPod. However, early reports that came out the following semester documented a lack of actual academic iPod use (Veres, 2005). Although a study by the Duke University Center for Instructional Technology reported 75% of freshmen surveyed said they used the devices for at least one course (Read, 2005c), less than 40% of first-year students enrolled in courses that used an iPod (Read, 2005b). Despite any clear conclusions, it did not take long for other universities to follow suit, such as Drexel University's School of Education distributing free iPods to the students entering their education program in Fall 2005 (Read, 2005a).

Podcasting has now been introduced to and integrated with higher education. A podcast is an audio and/or video file that is available as an internet download or online streaming content. Portable digital players, such as Apple Computer's iPod, allows the user to download music and any other audio file from a computer to the device. Some iPods are equipped to show video. However, a podcast no longer refers to files specifically placed on an iPod but to any audio file placed on any portable audio player, even a cellular phone.

The purpose of using the audio files varies. In terms of educational application, podcasts can enhance teaching and student learning beyond traditional classroom settings through content delivery and content creation by both the instructor and student (EDUCAUSE Learning Initiative, 2005). Many universities have jumped on board with establishing podcasting projects. Georgia College & State University has created a full virtual learning community, termed "The iVillage", to connect Apple technology with related sources such as WebCT (Our iPod Story, 2006). One example of podcast integration is with a war and politics course, where the faculty have students listen to Civil War ballads on an iPod. Purdue University has created BoilerCast which are audio recordings of classroom lectures (see <http://www.itap.purdue.edu/tlt/Boilercast/>). Some faculty are getting creative with MP3 file uses, as David Miller at the University of Connecticut uses podcasts for prelecture material (precast podcasts) and a post-lecture discussion with students in his office (see <http://web.uconn.edu/millerd/iCube.html>).

In addition, digital audio with portable audio players offers new possibilities for lifelong learning outside the academic classroom (Pownell, 2004). Stanford University is looking beyond their current students and are giving alumni and others access to lectures and other campus events (The Sounds of Stanford, via the iPod, 2005). This also has proven a successful strategy for American University Washington College of Law, as the number of listeners that selected lecture podcasts from guest speakers by Supreme Court Justices went from 400 listeners in September 2005 to 15,500 in early November 2005 (Briggs, 2006).

Use of Audio in Geosciences

The use of audio in geoscience instruction is not a new concept. In 1970, the Council on Education in the Geological Sciences authored an entire report on audio-tutorial instruction (Fenner and Andrews, 1970). From 1970-1980, St. Petersburg Junior College (now St. Petersburg College) reported on their audio-tutorial program for earth science, where students utilizing the tape recordings were receiving better grades and had a more positive attitude towards the subject (Gould et al., 1972; Mott, 1980). A more modern-day example is how Indiana University-Purdue University is using MP3 files for self-guided fieldtrips (Thomas, 2006).

Audio recordings have been used to provide geoscience information to the general public. A Chicago radio station used to host a *Geology and You* radio series back in 1964 (McKee, 1965) and Arizona Western College currently requires honors students to create a National Public Radio broadcast on Earth science (Conway and Croxen, 2000).

However, not everyone embraces the use of podcasts for student learning or communication to the general public. The argument has also been made that audio is a poor channel for conveying information to learners, as the learner cannot control the pace and is at the mercy of the speaker's tempo (Campbell, 2005). As podcasting is still a new technology, rigorous studies have not yet been

conducted and/or published to document the impact of audio podcasts on student learning. Although this investigation does not contribute to learning about the pedagogical effectiveness of podcasts, it does start at the beginning, asking if students really are embracing this technology and welcome this mode of learning.

Earth Science lecture podcasts at Penn State Delaware County

Co-author Guertin teaches introductory-level geoscience and Earth science courses for non-science majors. In fall 2005, she taught three sections of EARTH 150 – Dinosaur Extinctions and Other Controversies. The course satisfies Penn State University's general education requirement for science and enrolled 68 students across the sections. Guertin decided to record her lectures and place them in ANGEL, Penn State's online course management system, for students to listen to online and/or download for listening. There were several reasons she saw value to recording lectures. Penn State Delaware County is a commuter campus with students having a 5 minute to 2 hour commute time. Located twenty minutes outside of Philadelphia, it is not uncommon to have students arrive at campus late due to traffic backups and flat tires. The winter weather also causes delays sometimes for students trying to arrive for morning classes. The audio files allow students to go back and listen to the beginning part of the class lecture and hear any course announcements that were made.

The lecture podcasts had some unexpected benefits to the instructor. Despite how few of the podcasts were actually accessed by students, Guertin found that she was getting fewer questions from students outside of class to clarify what was presented in lecture. She could always counter student comments that, "you never told us that," with, "go back and listen to the lecture podcast." Finally, the unexpected benefit was when SEPTA, Philadelphia's public transportation system, went on strike for a week in November 2005. This had a significant impact on students that relied on the subway and bus to get to campus. With the podcasts, students could listen to the lecture at home and not be a week behind in class when the strike ended.

Students were surveyed at the beginning, middle, and end of the semester as to their ownership of computers and mobile listening devices. Additional survey questions focused on student awareness and preference to listening and downloading the lecture podcasts. All students were provided a survey to complete; however, due to Institutional Review Board (IRB) rules in the protection of human subjects for research, students were not required to complete all questions on the surveys or even complete the entire survey. This explains the variation in number of responses for each question presented in the text and tables below.

Did the students listen?

Students were asked at the beginning of the semester if they owned a MP3 player. The Pew Internet & American Life Project reports that 11% of American adults (over 22 million people) own an iPod or other type of MP3 player, and more than 6 million American adults have listen to podcasts (Rainie and Madden, 2005). The survey revealed that one-third (n=20/61) of the students responding to the survey in the Dinosaur class reported owning a MP3 player. Whether the students owned a MP3 player or not, the lectures were available as a file the students could download and listen to on any computer (97% of the students had a home computer with speakers) or burn on CD for a CD player (98% of the students had a CD player at home).

Despite the instructor informing students the first week of classes the ability to download the MP3 file to a personal or campus computer or other device, a mid-semester survey showed that just over half the students were aware this was an option (Tables 1 and 2). Whether students had access to the technology at home, they could always use any of the campus computers to just listen to the audio, with the campus library having headphones available for checkout.

Table 1. Survey question asking students about their awareness to download audio to portable audio players.

Are you aware that you can download the MP3 files to listen to on an iPod or MP3 player?		
	N	%
Yes	35	66%
No	18	34%
Total	53	100%

Table 2. Survey question asking students about their awareness to download audio to CDs or flash drives.

Are you aware that you can download the MP3 files and burn to CD or save on a flash drive to play at home?		
	N	%
Yes	36	68%
No	17	32%
Total	53	100%

Whether the students downloaded any of the podcasts or not, the students were asked if they listened to any of the MP3 files that were recorded for each class lecture and placed online.

In open-ended comments, the students that responded they did listen to the MP3 files stated their reasoning for listening:

- "I missed classes and needed to get up to speed"
- "To see if I missed anything"
- "Only when I had holes in my notes and I needed the information"
- "I gave an example early during the class period a few weeks ago, and wanted to hear myself"

The students that did not listen to the MP3 files commented:

- "I never really missed class"
- "Because I listened and took notes in class"
- "Because I don't care"
- "No time, I have other classes and two jobs. Plus I was in class, why would I listen to the same thing over again?"

To quantitatively determine if the audio files really were being utilized by students, the tracking feature was activated in ANGEL for each lecture podcast. The goal was to see which podcasts were accessed by students, and how many podcasts each student listened to. Note that although ANGEL records which student clicks on the link for the podcast and how many times, there is no way to determine if the student actually listened to all or even part of the podcast. In addition, a student may have been working with another student enrolled in the course, where both students may have listened to the material but only the access from one student clicking on the link would have been cataloged.

Figure 1 shows the percentage of students enrolled in the three sections of EARTH 150 combined that accessed the lecture podcast for the listed date. Note that not all lectures had a recorded podcast. For the lectures that were primarily group activities or video clips, the lecture was not recorded. On average, only eight students listened to each podcast. Of the 68 students in the course, 5 students did not listen to any of the lecture podcasts.

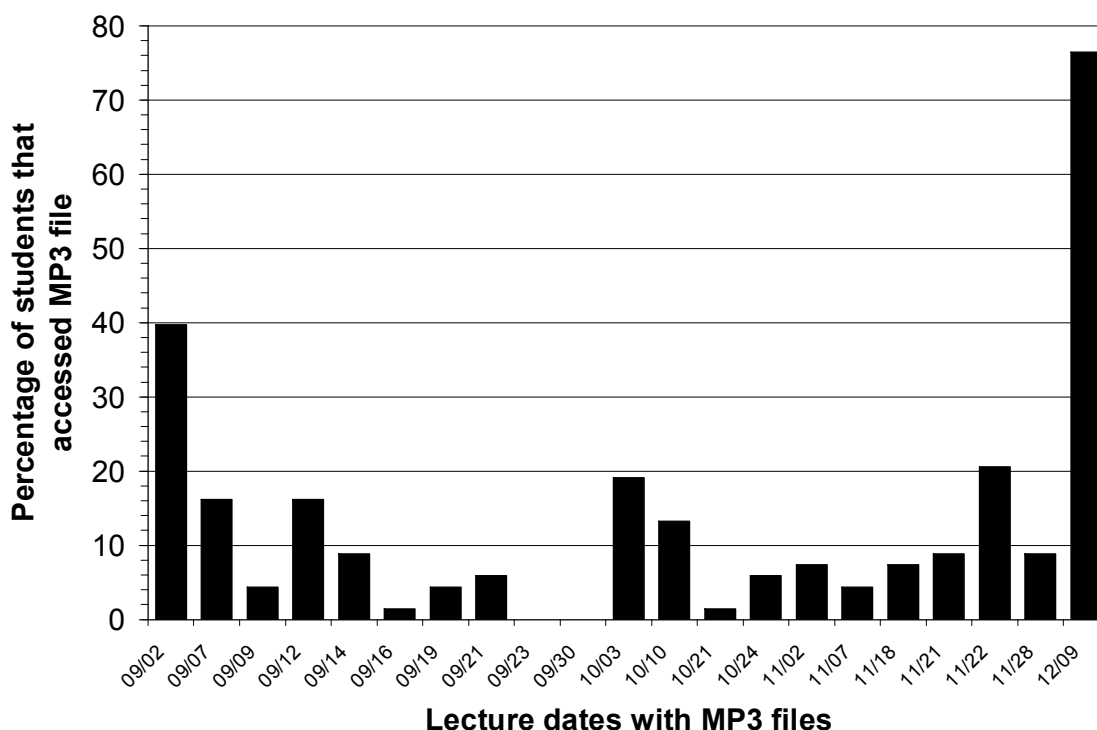


Figure 1. Percentage of students accessing lecture podcasts from specific dates. The total student enrollment of the Dinosaur class sections was 68. No students dropped during or at the end of the semester.

Forty percent ($n = 27/68$) of the students accessed the first lecture podcast. The relative high percentage of accesses on this date could relate to students that added the course late and needed to catch up on what happened the first day of class, or the accesses could have been from students curious to hear the podcast. The October 3rd lecture date coincides with the instructor reviewing the requirements for the community service project required for the course. The November 22nd lecture date is when the instructor reviewed the final exam. Both of these dates had a higher-than-average percentage of accesses. The December 9th podcast had a significantly higher percentage of students clicking on the link to listen. However, that podcast was not from a classroom lecture. December 9 was the last day of classes for the Fall 2005 semester, but it was a snow day and all classes were cancelled. So the instructor recorded a “final farewell” message that included some reminders about the final exam. It is believed that the students listened to that podcast to see if there were any additions or changes for the final exam. In fact, for 11 (16%) of the students enrolled in EARTH 150, this was the only podcast they listened to.

Data were also recorded to see how many lecture podcasts each student accessed throughout the entire course. Figure 2 shows that 30% of the 68 students accessed 2 podcasts, which represents 11% of the total number of podcasts available. One student accessed 10 different files, more than 32% of

the available podcasts.

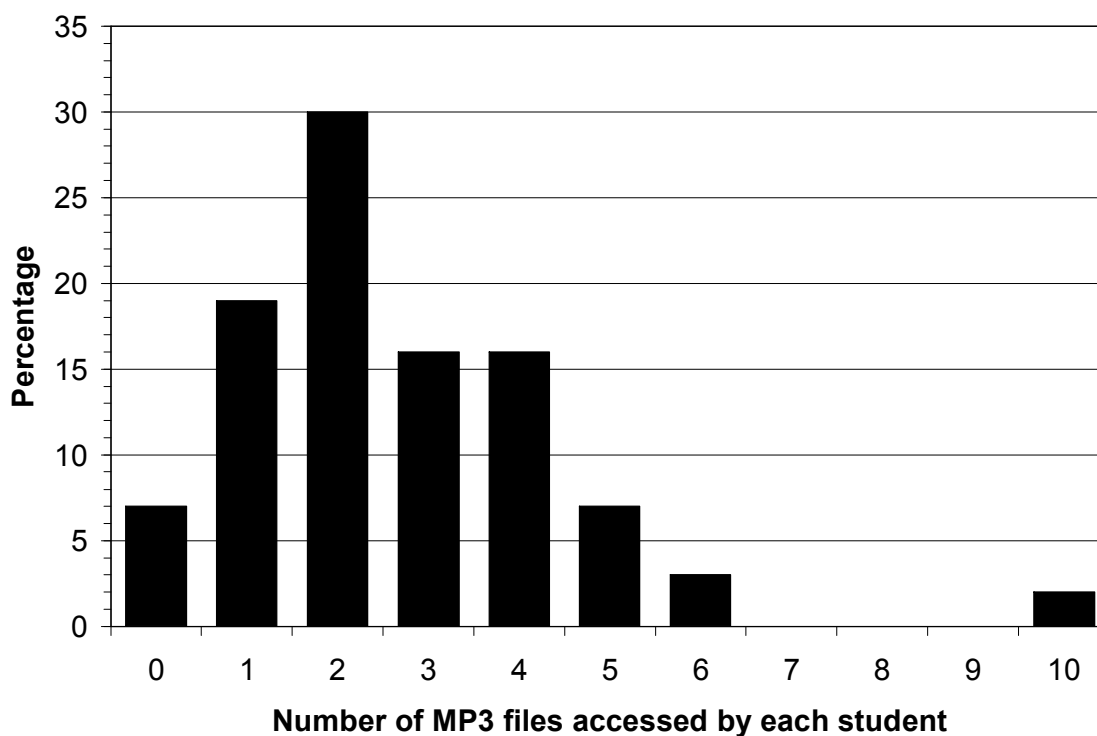


Figure 2. The total number of podcasts each student accessed throughout the course.

Do the students want recorded lectures as podcasts?

Even if an individual instructor or institution embraces the podcasting technology, that does not necessarily mean the students will realize the value and use this technological tool. As time and effort is required to set up the audio equipment to record each lecture, co-author Guertin wanted to find out if students felt that having lecture podcasts were worthwhile. Table 3 records the overwhelming support that students have for continued access for lecture podcasts, even if they did not all utilize this resource.

Table 3. Survey question asking students about the desire to have lecture podcasts.

Whether you listened to the recorded lectures after class or not, do you feel it is a valuable resource to have available in ANGEL to assist your learning?		
	N	%
Yes, keep recording the lectures and placing them in ANGEL	49	100%
No, it is not worth even having them available	0	0%
Total	49	100%

In a follow-up question that asked students to explain why or why not to have lecture podcasts, highlighted responses included:

- "You never know when you are going to need to hear it again; they were always helpful"
- "It's nice to have that they're a "safety net." I don't always get things the first time, so it's a nice option to have"
- "In case if you miss class, you know what can be expected of you"
- "It makes keeping up with everything easier, since you can go back and clarify what the professor was saying without having to ask the professor"
- "...And I let my parents listen to one so they could hear Dr. G and see what I do in my class"

Discussion

The data in Table 3 were unexpected. The access logs to the MP3 files showed very little engagement and use of the technological resource. Clearly, the students did not view the audio files as a primary mode of instruction but as optional, ancillary course material. The students listed the purpose of the audio files as "a nice option" and "safety net." Co-author Guertin did not expect the students to substitute the audio files for coming to lecture, but she was surprised that the students did not access the files more frequently for assistance and clarification of what was presented during lecture. She assumed the nonscience majors that filled this science course on Dinosaurs would have taken advantage of a course resource available all hours of the day, seven days a week.

Despite the initial student reactions and uses presented in this manuscript, MP3 files of lectures are not just a trend. Overall, students see the value, as audio delivery of course reading materials nowadays is reported with high satisfaction by students that used iPods for audio readings (Miller and Piller, 2005). Yet interestingly, students may not utilize the audio technology for lecture podcasts. Although K-16 teachers are discovering the educational uses of portable audio players, a lack of financial resources and effective pedagogical integration is slowing the use (Blaisdell, 2006a). Instructors should be aware of the time and resources needed to record lectures, as there are workload implications for utilizing technology. The poor use of the lecture podcasts in the Dinosaur course demonstrates a need for further research and a rigorous assessment of students attitudes and uses (or lack of) lecture audio recordings.

Conclusions

Although iPods and other MP3 players are common with students, the use of audio files as an educational device is still debated and has not undergone rigorous pedagogical research. University of Dayton's CIO Thomas Skills comments that, "podcasting has a very relevant application in higher education, but it needs to be carefully integrated into the curriculum in a thoughtful way" (Blaisdell, 2006b). Faculty need to clearly define and identify their objectives for using podcasts while instructing students how to make the most effective use of this technological tool. One suggestion to connect the students directly with the podcasts would be to hold a hands-on information session in a campus computer laboratory to show the students how to download the MP3 files onto their portable audio players or how to burn the audio files on CD. Having a session such as this at the beginning of the semester and perhaps again a month into the semester may engage students in the utilization of this technological tool to assist their learning and retention of lecture material.

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