

What are others doing?

Podcasting is already being used at many institutions. This section of the guide presents case studies of podcasting projects at three institutions—Drexel University, Middlebury College, and the University of Washington—as well as brief information about a number of other institutional efforts.

Podcasting Case Study: University of Washington

Rationale

The University of Washington offers students audio recordings of some of its large survey classes. Traditionally these recordings were offered on cassette and were accessed in the university library.

Recently the university's Classroom Support Services team realized the program warranted attention. Not only did the existing analog technology merit updating, but the cassette recordings placed demands on library staff and space (storage and listening areas), and both were at a premium.

When considering options, the team sought an affordable, scalable, automated system—one that would not require staff resources to set up or maintain. They also wanted to broaden access to the recordings beyond the library's hours and location. Ultimately, podcasting emerged as a solid, viable option.



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Description

The Classroom Support Services team, in partnership with several other units on campus, launched a simple podcasting pilot in 2005. The technology employed was straightforward—recording devices were hooked up to existing PA systems in classrooms. The MP3 file for each class was uploaded to one of the university's servers and then posted to a class blog site for easy student access via the blog or RSS.

Use of the system was intended to be very simple for both faculty and students. The program required no special faculty attention—neither in training nor in setup. And for the students, they ultimately could easily access the class recordings within minutes of the end of class from the convenience of any networked computer.

Implementation

Implementing the podcasting program at the University of Washington required almost no changes to the existing technical infrastructure, and costs were low.

*This section is part of the **EDUCAUSE Learning Initiative Discovery Tool: Guide to Podcasting**. The guide is designed to help you know what to expect of podcasting's abilities and limitations, where it fits in the broader context of teaching and learning in higher education, and how you might approach implementation. Each section can be used as a stand-alone resource, or all sections can be combined and into a handy compendium. Find the complete Guide to Podcasting at www.educause.edu/ELIDiscoveryTools/10564.*

ELI Discovery Tools are practical resources designed to support the development and implementation of teaching, learning, and technology projects or processes on campus. They are available to ELI members only.

Classroom setup was minimal. The team selected rooms for podcasting that were already equipped with the necessary PA systems. Initially each room was set up with an MP3 recorder connected to the PA system, but these were discontinued after it became clear that the faculty frequently forgot to turn them on or off or to even use them. Those systems were replaced with different recording devices that enabled automated, scheduled recordings that streamed audio directly onto the server; the instructor needed to remember only to turn on the microphone. The setup cost per classroom with these devices was about \$500.

The team quickly expanded the number of classes it recorded, targeting the university's larger survey courses, whose lecture format was compatible with the single audio recording device. They avoided smaller classes, in which discussion was an important element, because their podcasting setup did not easily support multiple audio inputs. At the time of this writing, about one-quarter of the university's large survey rooms were equipped with podcasting capabilities, and about 10 recordings per day were captured. Also, the team had begun video podcasting ("vodcasting") in two of the classrooms equipped with video recording equipment; the vodcasts had been posted on the class blogs along with the other class materials.

During the pilot, the team used an existing server at the university. As the project progressed, they purchased a dedicated server for about \$5,000. Each course's podcasts were copied onto DVD-ROM at the course's end for indefinite storage.

The team set up software for hosting and posting the recordings in class blogs. Blogs were deemed the most effective means for distributing the audio files. Faculty had control of their own recordings—they could delete, annotate, edit, repost, or otherwise enhance them—and access for students was simple through the blog site and RSS. Initially, the podcasts were openly available; access was later restricted to individuals with University of Washington user IDs.

To solicit faculty involvement in the program, the team sent invitations before the quarter began to the instructors of the classes targeted for podcasting, asking them if they wanted to participate. Those who accepted the invitation received instructions that would help them optimize the quality of the recordings. Technical staff monitored the recordings during the semester and alerted instructors when problems occurred.

Copyright infringement issues were avoided through an agreement in the podcasting request form submitted by instructors. The instructors were required to agree either to use no copyrighted materials in their presentations or, if they did use copyrighted materials, to take full responsibility for clearance.

Supporting the system was simple. File transfers and conversions were handled by automated computing processes; class times were entered into an automated scheduling system to control the recording schedules; and maintenance needs were minimal. Faculty involvement in the technical processes were negligible, so they did not need support. Student problems—usually of a predictable and simple nature, such as how to subscribe to a podcast—were usually resolved through the online help pages and FAQs.

Results

The University of Washington considered the podcasting program a clear success. They had developed an affordable, scalable podcast program that relieved resource burdens on the library and greatly expanded access to lectures.

Student response to the program was strong. Initially, there was minor confusion among students about how to use the podcasts—some thought they needed an iPod to listen. But podcasting quickly caught on and became popular. In the initial two quarters of use, when the podcasts were publicly accessible, the podcasts were accessed several thousand times. Even after access was limited to the university community, downloads have remained just about as frequent.

Students noted minor problems with the structure and content of the podcasts. For example, sometimes instructors failed to describe visual materials they referred to or to indicate when they moved ahead in the slide presentation. Overall, however, students found the podcasts easy to use.

No assessment was done ahead of launching the program to determine faculty interest in podcasting, but a general faculty survey had indicated broad interest in expanding classroom technology use. Only one instructor had independently employed podcasting prior to the program's launch. Some faculty were not even familiar with podcasting.

By its second quarter, the program had been written about extensively within the university community. The acclaim it received and its ease of use led to adoption by more instructors. Some had also been persuaded to podcast by listening to other instructors' podcasts.

Impact on Teaching and Learning

To gauge the impact of the program in greater detail, the university conducted surveys of both students and faculty involved in the podcasting program.

Although the faculty participating in the program expressed satisfaction with it, especially its ease of use, few had listened to any of the podcasts. Faculty participated not so much for the program's potential to improve the way they taught but for the benefits it offered students. They appreciated that students could use the podcasts to listen to lectures multiple times, make up a missed class, and review for tests.

Not surprisingly, then, the program had little effect on faculty instructional methods. Before the program began, some faculty had offered online materials (such as lecture notes and PowerPoint presentations) to supplement their lectures, and podcasts were seen as an additional beneficial resource. But faculty did not develop additional innovations for use podcasting to support their instruction.

As for students, results indicated that more often than not, they downloaded the podcasts and listened to them on their computers, even if they owned portable MP3 devices like iPods. It is worth noting that many students were using the podcasts at the same time that they reviewed other online class materials. For example, a student might listen to a class podcast on her computer while reviewing the corresponding PowerPoint presentation.

Students and faculty disagreed about the effect of podcasts on class attendance. Most students said the podcasts had no impact on their attendance; only a small percentage said the podcasts made them less likely to attend. The majority of students felt that the podcasts were useful when they were forced to miss class (such as for a doctor's appointment). Very few said that they would use the podcast as a regular replacement for class attendance.

On the other hand, a majority of the faculty felt that podcasts made students less likely to attend. Some faculty indicated that the podcasts tended to draw off only the less

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academically inclined students and that most academically engaged students continued to attend regularly. One instructor thought that this phenomenon improved the quality of discussion in his class. None of the faculty were daunted by concerns about attendance; most affirmed that they wanted to continue to offer podcasting.

Given the program's popularity and scalability, the university was considering broadening classroom podcasting. As of summer 2006, the university was planning to hold workshops and discussions with faculty to explore new ways the podcasts could be used to support learning.

Reflection

The University of Washington's podcasting program demonstrated that one need not spend a lot of money and have a complex central technology structure in place to carry out podcasting—one can succeed with much simpler solutions. And, for students, mobility was not the biggest draw; it was the anywhere, anytime access. Their use of the podcasts in tandem with other class materials was also noteworthy.

Further Reading

- University of Washington Classroom Support Services Blog, <<http://www.css.washington.edu/blog/blog/18>>.
- Nancy Wick, "Students Get Class Lectures on Demand, Thanks to Podcasts," *University Week*, <<http://uwnews.org/uweekarticle.asp?articleID=12921>>.

Podcasting Case Study: Middlebury College

Rationale

Middlebury College has piloted a program that uniquely combines select podcasting techniques in an effective new way for its second-language students to practice and develop their skills. The college was drawn to podcasting and iPods because of their ability to:

- facilitate mobile and anytime/anywhere access,
- expand the formats in which students can access course content,
- support the creation of custom learning objects through standard music-player software functions such as playlists, and
- enable students to record their language practice and instructors to monitor their progress outside the classroom.

Description

In both 2005 and 2006, Middlebury piloted the distribution of iPods to about 100 students in its summer language program. These iPods were loaded with sound files of the vocabulary words, dialogues, and other audio materials the students would need for the entire term. They were also fitted with voice recorders to allow students to record their language practice outside class.

Throughout the term, the students actively used the iPods and the files on them to study and practice. In a French phonetics class, for example, students were required to make audio recordings of spoken words twice a week. They uploaded the recordings to their computers and then posted them to a class Web site. This allowed the instructor to easily monitor their progress and provide feedback to students as needed.

When the iPods were returned to the school at the end of the term, the college extracted the usage data that had accumulated and analyzed it to determine how students had used the devices and the learning resources on them.



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Implementation

Prior to the summer language program, the instructors selected materials they wanted loaded onto their students' iPods. These materials included instructor-created content, files from textbook CDs, radio broadcasts, and music that would help their students practice. The instructor-created content was prepared either using the instructor's own recording device or in the college's recording studio. Copyright issues related to the use of these materials were being monitored.

Pedagogical metadata were embedded in the audio files to enable instructors to easily organize and refer students to the files. This was accomplished by making use of tags originally created within the audio file formats for describing music files (for example, album,

artist, and genre) and playlist functions. Because more than one thousand files were loaded onto each iPod, the added functionality was very useful.

Educational technology staff prepared and added metadata to the selected materials, formatted the iPods, and transferred the materials onto them. Each iPod took about 100 hours to load, and all told, all tasks related to preparing the iPods took about 300 staff hours.

At the beginning of the summer programs, the educational technology staff held hour-long sessions for both the instructors and the students to instruct them on the use of the iPods. The few support issues that arose shortly afterward, which dealt primarily with the iPod's recording functions, were referred to the college's media lab. Overall, the students had no remarkable support needs.

After the summer terms ended, the iPods were returned to the college; about 10 percent of them were no longer fully usable. Using a program the college developed, XML files of usage data were extracted from the iPods and imported into an aggregated database for analysis.

Results

The program was a mixed success. The iPods were well used, but students encountered a few minor problems that they now know how to correct. For example, the voice-recording function did not always work well, and transferring files from the iPod to the Web was sometimes tricky. They also found that some of the files were too short for playback to be easily controlled on the iPod; as a result, they increased the length of the files.

The college is considering discontinuing the program for the summer language students, primarily because of the short life span of the machines and because most students already owned iPods or other portable audio players. In the meantime, the college is offering current students language content on the college Web site in a format that can be used widely by any media player. To compensate for the iPod's recording function, students can buy separate audio recording devices.

Regardless of the program's long-term potential, the ability to extract usage data from the iPods offered useful insights on exactly how and when the iPods had been used, including the popularity of specific resources. The metadata enabled the faculty and students to customize the way they organized and used their materials.

Faculty used this extracted data from the iPods to improve their efforts. For example, if playback data for a single vocabulary word showed that it was played many times, it could mean that the file was popular—or that it was replayed because it was hard to understand. To compensate for this particular situation, they now record three repetitions of each vocabulary word in a single sound file.

The college will be expanding the use of educational metadata with all audio files. It will be included in all new audio files during the creation process, and it will be retroactively added to older files as time allows. To make better use of its growing collection of educational microcontent such as the audio files created for the iPod program, the college is seeking a robust content management system.

Impact on Teaching and Learning

Two surveys were given to the students participating in the iPod pilots. The first garnered few responses, but many students completed the second. Most said the iPods were helpful, especially with pronunciation and vocabulary studies. None went so far, however, as to create his or her own podcasts. Only a very small handful of students used the iPods outside of their intended educational purpose for recreational activities such as downloading music.

As for Middlebury faculty, few outside the project embraced podcasting. The main exception was the school's writing program, whose innovative faculty had already been recording class sessions and posting them to class blogs after each class.

Reflection

Even though the Middlebury iPod pilot program may not be continued, it succeeded in highlighting the potential value of mobile listening and recording devices like iPods to provide a new way for students to access language-learning materials and for instructors to easily monitor student progress outside class. Also, the use of metadata to organize microcontent like spoken vocabulary words and dialogue promises to make such material easy to find and manipulate when used within content management systems.

Further Reading

- Middlebury College Language School iPod Pilot Project, <<https://segue.middlebury.edu/index.php?action=site&site=iPod-LS>>.
- Middlebury College—Introduction to iPod Use for Second Language Acquisition, <<https://segue.middlebury.edu/index.php?&site=achapin-ipod§ion=11594&page=48788&action=site&tag=Languages>>.

Podcasting Case Study: Drexel University

Rationale

In the past 10 years, Drexel University's organic chemistry classes have gone from just a handful of students to more than 150. In spite of the growth, the class is still taught by a single faculty member, Jean Claude Bradley, without teaching assistants. Bradley therefore has leveraged technology—including podcasting—in creative ways to cultivate an effective learning environment for his students.

Description

Initially, Bradley moved to shift quizzes online. Multiple choice quizzes were posted on WebCT, and students were instructed to take them on their own time in the university's computer labs. More recently, influenced by seeing students record his lectures, Bradley decided to record them himself to improve the quality and, more importantly, make them accessible to the entire class. Ultimately, he began podcasting and screencasting the lectures and posting the files, along with lecture notes, to the class blog. The lectures were given as out-of-class assignments. Bradley now uses class time for workshops and small-group work, taking full advantage of the time for face-to-face interaction. The podcasts and other online resources have become part of an even richer online learning space that Bradley has developed.

Implementation

Podcasting was not Bradley's first effort to move content online. He initially created screencasts of his lectures during class. However, only one campus classroom supported these technologies, and it accommodated only 24 students. The following semester, he moved the class into a large auditorium and switched the software and computer he used so that he could more fully capture what he demonstrated during the lecture as well as accommodate more students. Bradley has continued to use these tools and now records his lectures outside class time.



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Preparation of the materials for each class lecture, including the podcast and screencast, generally takes Bradley an afternoon. He records the lecture and then converts the files into both Flash screencasts and MP3 podcasts. He posts these files, along with a PDF of the lecture notes, to the class blog and also syndicates the content via RSS. These resources are enriched further by a class wiki, accessible through the blog site.

Bradley's method of producing and distributing content is relatively inexpensive. Aside from purchased capture software and a Tablet PC, he relies heavily on existing physical infrastructure and resources available free on the Web.

Impact on Teaching and Learning

Bradley has asked students to complete evaluations of his classes, incrementally modifying his approach based on the results. For example, after he began offering lecture podcasts and screencasts, Bradley began to note a significant decline in attendance. The performance of the truant students, however, was nearly identical to that of the students who attended class. This finding prompted Bradley to make his lectures out-of-class assignments and dedicate class time to interactive activities that more fully engaged the students.

Although many often assume that today's students are tech savvy, Bradley found that a considerable portion are in fact uncomfortable with technology. Bradley therefore now takes nothing for granted. He takes class time—now no longer tied up with lecturing—to guide students in technology use and give personalized help as needed. The students often do not own iPods and have not created podcasts of their own. They tend to use their desktop computers to access the podcasts. They do actively use class blogs and wikis. Although most students adapt, Bradley has found that there are always a few students who do not catch on.

Drexel faculty have not yet fully embraced Bradley's methods. Only a handful podcast all their lectures. Some prepare lecture podcasts to fill in when they are out of town during class.

Bradley has succeeded in making freely available a well-rounded and dynamic collection of online resources and tools related to his course—of which podcasts are just a small part. His vision for online scientific engagement has grown beyond the course itself and led to the development of a blog and wiki for chemistry students to discuss and document their research—including lab metrics, research logs, procedures, and results. In this online environment, Bradley finds it easy to monitor progress, advise, and instruct as needed.

Evidence already exists that his approach has enhanced scientific discourse: the course sites' content, which includes openly accessible postings on student research, has precipitated comments from scholars around the world. Site metrics support these findings, showing the sites have attracted visitors from the United States and abroad.

Reflection

Among the most remarkable aspects of Bradley's podcasting has been the transformation of lecturing into an out-of-class task. The resulting opening of class time allows him to make the most of the interaction and learning possible only in face-to-face settings. On the other hand, Bradley's successful experiences with podcasting and other online learning tools such as blogs and wikis have led him to explore the possibility of shifting the class entirely online, expanding their potential benefit for teaching and learning beyond the boundaries of his own university.

Further Reading

- Bradley's Class Blog, <<http://chem242.blogspot.com/>>.
- Drexel College of Arts and Sciences E-Learning Blog, <<http://drexel-coas-elearning.blogspot.com/>>.
- Transcript of Drexel College of Arts and Sciences Podcast with Bradley, "Integrating WebCT with Vodcasting and Podcasting," <<http://drexel-coas-elearning-transcripts.blogspot.com/2006/05/integrating-webct-with-vodcasting-and.html>>.

Examples of Podcasting

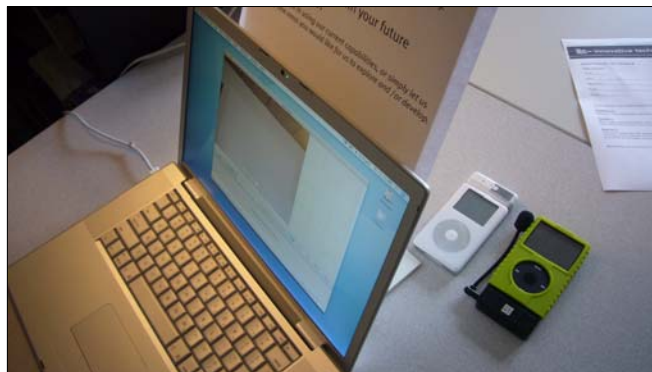
Educational uses of podcasting are still evolving. In addition to new tools that make it easier to create podcasts, distribution tools are evolving, making discovery and subscription more convenient. The examples below explore different approaches to the creation and distribution of podcast content, as well as the collection of metadata. These examples represent a snapshot of the possibilities for educational podcasting.

Podcast as a Convenience: Lecture Content to Go

BoilerCast at Purdue University

Podcasting is often described as TiVo for audio because it permits timeshifting of audio content. Podcasting lectures lets students listen when it best suits them. For capturing large amounts of lecture content and quickly making it available, BoilerCast at Purdue University is an ideal tool.

Purdue University uses BoilerCast to capture and package lecture material into MP3 files. The BoilerCast software automatically streams audio files to the Web and makes them available as podcasts. Find out more about the project at <<http://www.itap.purdue.edu/tlt/BoilerCast/>>.



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Podcast Distribution Channels: Getting the Word Out

Podcasts at the University of California, Berkeley

The distribution of podcasts changed when Apple's iTunes store started aggregating podcasts. While iTunes U standardized and simplified distribution for many institutions, other institutions continued to experiment with different formats and distribution models. By piloting podcasts using their own distribution system, Berkeley is able to compare different formats and let students decide which system suits them best.

Berkeley distributes its recorded lectures, often in several formats, to the general public. Find out more about the project at <<http://webcast.berkeley.edu/podcastabout.html>>.

Podcasts as Radio Shows: Getting Creative

Radio Fireball at McMaster University

While lecture podcasts allow students to make sure they don't miss lectures, educational radio shows distributed as podcasts are a great way to share discipline content, values, and perspectives in an engaging manner.

Radio Fireball is a series of podcasts featuring interviews, soundseeing tours, and music from the Faculty of Engineering at McMaster University. These podcasts, aimed at engineering students, explore engineering-related topics in the Hamilton, Ontario, area. The podcasts in this series are scripted and produced, giving them a different tone from that of recorded

lectures. These podcasts have a broad appeal, extending to listeners in the surrounding community. Find out more about the project at <<http://www.engpodcast.libsyn.com/>>.

Video Podcasting: Adding Pictures and Moving Pictures

Video podcasts at the University of Southampton

Entertaining radio show–style podcasts can motivate students to regularly tune in to hear their favorite podcast personalities. Video podcasts—video files using an RSS distribution channel—provide content creators the opportunity to create rich, compelling material. Using images and moving pictures to create enhanced and video podcasts, educators share richer experiences.

The Electronics and Computer Science unit at the University of Southampton in the United Kingdom produces a regularly hosted video podcast series featuring electronics and computer science topics and including interviews with scientists and students at the university. Find out more about the project at <<http://www.ecs.soton.ac.uk/about/podcasts.php>>.



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Tracking Podcast Listening Habits: Top of the Pops

Language learning at Middlebury College

Using metadata generated during the playback of MP3 files, instructors can begin to assess the usage of their podcasts. By analyzing which files were played most often and in what sequence, instructors now have the capability to continually tailor their offerings to meet student needs.

Podcasts have been used to teach languages at Middlebury College. The college converted its language audio files to MP3 files and presented them to students on iPods. Students used the audio files to become familiar with specific tones and sounds. By collecting and analyzing the metadata created in the iPods during student playback of lessons, instructors were able to determine which files received the most play. Middlebury staff describe the process at <<https://segue.middlebury.edu/index.php?&action=site&site=codelab§ion=11428>>.

Finding a Fit for Podcasts: An Ecosystem of Learning Technologies

Organic chemistry lectures at Drexel University

Podcasts may be the hottest new educational tool right now, but they are not the only tool. Finding the appropriate place for podcasting amidst other teaching and learning tools can be challenging. An organic chemistry professor at Drexel University has used podcasting to develop a successful instructional technology mix.

Organic chemistry lectures are recorded and distributed as podcasts. These podcasts are just one of a variety of tools including blogs, wikis, screencasts, WebCT, and games. By recording lectures and reusing them from year to year, the instructor has found a way to alter the focus of the face-to-face class sessions. By covering lecture details in the podcasts, the instructor has been able to shift to interactive workshops during class time.

All of the resources can be found on the wiki at <<http://drexel-coas-elearning.wikispaces.com/podcast>>.

Podcasting Student Voices: Beyond Passive Learning

Student-created podcasts at Marist College

In addition to permitting timeshifting and mobile learning, podcasts are extremely easy to create. In the hands of inspired students, podcasts can be an ideal tool to construct and ultimately share knowledge about topics of study.

Marist College students studying abroad used iPods and podcasting to construct their own materials to learn about the local culture. By interviewing locals and sharing with their classmates, Marist students were able to shift from consuming podcasts to creating and sharing as they learned. Find out more about the project at <<http://www.marist.edu/magazine/page14.html>>.

Building Community with Podcasts: Using Audio to Share Expertise

Creating podcasts for all aspects of student life at NC State

Capturing and sharing the voices of a campus goes a long way toward building a connection with the local community. By bringing the tools and practice within reach of all campus members, podcasts have the potential to provide effective outreach.

At North Carolina State University, students and interest groups are making their diverse content available to listeners in the community through Wolfcasts. The NC State Information Technology division makes this creation and collection of podcasts possible by providing the infrastructure as well as support through how to's and advice. The Wolfcast home page can be explored at <<http://wolfcast.ncsu.edu/>>.

Adapting to the Digital Generation: Giving Learners Control

Podcasts as part of a rich media repertoire at Georgia College and State University

Audio in the hands of students can provide unexpected and wonderful results. Students start with audio to create a soundtrack for their experiences. Including richer media like images and moving pictures can help them round out the telling of their stories.

Students at Georgia College and State University are extending their podcasts to fit into a digital lifestyle. Using audio as a starting point and incorporating images and moving pictures, students will be able to participate in the learning community on their own terms, using the media they grew up with. Details can be found at <<http://ipod.gcsu.edu/Course-related/index.html>>.

Share Your Own Podcasting Examples

If your institution is using podcasting and you would like to share your practice with ELI, please submit your practice for review. Go to the ELI Innovations Contribution Form on our Community Exchange page at <<http://www.educause.edu/ELICommunityExchange/6797>>.