

Podcasting: Recording, managing, and delivering the classroom experience

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What is it?

Podcasting is part of the so-called Web 2.0 that depends on push technologies to deliver content. Push technologies is terminology used to define the process of collective technologies used to send out information to users, regardless of whether anyone is tuned in. The updating process is usually an unobtrusive one. With that in mind Podcast creators can have their content delivered to subscribers as soon as it becomes available, without the steps of typing an URL and subsequently downloading the information. Students can subscribe to podcasts and have the content delivered automatically to their device management software. This allows for the time-shifted delivery of content, much like TiVo for TV.

Podcasting has revolutionized education and particularly higher education by enabling up-to-date content, addressing multiple intelligences and allowing for the anytime/anywhere delivery of instructional content. Podcast content can include but is not limited to audio and video recordings of lectures, incidental content (e.g. interviews, narrations) and generally any audio and video content. For example, Stanford University offers audio lecture content, but also offers videos of their sports activities. There have also been extensions that allow for the updating of content via the telephone and attaching podcasts to blogs. Much as the so-called Web 2.0 is evolving, the use of podcasting in academia continues to adjust to these changes.

Why do we care?

The pedagogical uses of podcasts can be primarily categorized into the areas of lecturing, tutoring and remediation. It is believed that podcasting has impacted all areas of education by providing: up-to-date content, addressing multiple intelligences and the anytime/anywhere delivery of instructional content. In distance education, new models of teaching are making it possible to increase student engagement, productivity and motivation (Beldarrain, 2006). Courses can be enhanced with content and in ways never thought possible decades ago. Instructional designers play an important role in this process by providing consultation on the design, usability, production and subsequent use of audible learning objects like in this case, podcasts (Morales, 2006). The main advantage of this technology is that it relies on its readiness to be made available immediately to large audiences via download or a subscription notification system.

Up-to-date content

Subscribers have access to podcasts as soon as they are made available. For example, students can subscribe to a podcast and have the content delivered automatically to their media player, thereby allowing time and place shifted access to the content.

Multiple intelligences and learning styles

In 1983 Howard Gardner developed the Theory of Multiple Intelligences, which basically categorizes the way people learn into eight categories: musical, rhythmic, spatial, mathematical, interpersonal, intrapersonal, and natural. This theory has been used as the foundation in the design behind instructional and curricular content. This theory provides instructors with specific indicators and their corresponding strategies to best serve students who show one or more of the intelligences.

Along with the theory of multiple intelligences go the learning styles; learning styles refer to the ways people learn, which then are categorized in three areas: visual, auditory and kinesthetic. Visual learners are the type of learners, which need to see the teacher's body language and facial expression to fully understand the information that is conveyed. These types of learners learn best from visual displays including: diagrams, illustrated textbooks, overhead transparencies, videos, flipcharts and handouts. Auditory learners learn best through verbal lectures, discussions, talking things through and listening to what others have to say. Written information may have little meaning until it is heard. Auditory learners often benefit from reading text aloud, listening to audio books, listening to music and using a tape recorder to record narrations or lectures. Tactile or kinesthetic learners are persons which, learn best through a hands-on approach, moving, doing and touching. These learners are very active in exploring the physical world around them.

Podcasts are attractive to learners because of the fact that they can learn at their own pace, they can listen to the audio or video object as many times as they want to, they can rely on time shifting to attend classes as well as to learn. With all this said, podcasting technology is of particular use to auditory and visual learners. It serves auditory learners who have shown musical and verbal intelligence, thus allowing them to retain up to 90% of the information received.

In a similar vein, it is believed that podcasts can influence the level of interaction within a class. In an online course, podcasts can trigger discussion around the audio or video object, or it could be that searching skills can be developed or enhanced.

Anytime, anywhere delivery of instructional content

The main attribute of podcasting relates to the independence the learner might have as a result of a course enhanced with audio or video files that can make the learning experience a portable one.

How is it evolving?

There are three major areas in which podcast technology is evolving. They span the spectrum from standards to usability, to the application of the technology. We will look at each of these areas below.

Standards: There are two prevalent formats for syndication, RSS 2.0 and Atom. RSS 2.0 is the earlier and more widely used format. Atom was developed later and ratified by the IETF. We can skip over the many details surrounding how we got there since this has been adequately documented elsewhere. A brief history of RSS can be found on Wikipedia¹. Both formats work fine with the widely available RSS aggregators. New standards bodies have been formed to continue the standards process forward. Increasing standardization in this space would allow the focus to shift to increasing the application of podcasting to a wider number of areas, including but not limited to alert systems and application data retrieval systems.

Tools and Usability: This is clearly an evolving space. The traditional method of creating and publishing podcasts involve the recording of the audio or video content using a laptop or other recording equipment (including iPods), the editing of the recorded content, the hosting of the content on a server system, the editing of an XML feed file to publish the presence of new content, and the listing of the XML feed file in a podcast directory – such as iTunes. These steps often involved the use of separate tools and systems. iTunesU seeks to reduce the complexity in terms of publishing and publicizing the content. There are other more DRM-friendly efforts underway. The success of the next wave of podcast adoption is going to largely depend on the reduction in the complexity of the process. Odeo² or Orb³ are such examples. For higher education, podcasting provides a wealth of potential benefits such as reaching a larger audience, increased interaction among students, faculty, administration and the community.

Application of the technology: Software vendors are incorporating this technology into Course Management Systems (CMS), while universities are expanding their usage into areas other than teaching. New delivery frameworks such as iTunesU have increased the feasibility of content generation and management at an institutional level. Examples include lectures, narrations, aural individual and group presentations, institutional announcements and training. This increases student interaction with content, the institution and peers. In the future Podcasting may enhance the learning experience with audio books. Content creators can easily insert content that positions the learner closer to the subject under discussion.

Podcasting will continue to evolve and we are seeing part of it with the inclusion of rich media podcasts - these refer to the combination of video, audio, and other digital media content. Online courses may see more of this type of content in the future as they could evolve into reusable learning objects.

Challenges and Opportunities

¹ [http://en.wikipedia.org/wiki/RSS_\(protocol\)](http://en.wikipedia.org/wiki/RSS_(protocol))

² <http://www.odeo.com/>

³ <http://www.orb.com>

There are some issues that continue to be actively debated in the community regarding podcasting as a technology and in the way it is applied. It might be of interest to take a brief look at some of these issues.

Podcasting as a replacement for in-class lectures: Not quite. Podcasting in order to be effective as audio content needs to be created in a way that the user get the most out of the experience. However, podcasts can be a useful tool to make available pre and post course material to students. While lectures could be recorded and made available via podcasts, it is important to remember that audio podcasts do not have a visual component. A presentation that has both visual and auditory components in it will need to be re-purposed for podcasting if it is to be effective. For example, NBC makes available an audio recording of its evening news via a podcast. However, there is not an interpretation of the visual components. Adjustments like presenting figures and tables, describing images or procedures at verbatim need to be made in order to be effective. It could be suggested that the NBC approach is not a particularly good one for delivering good podcast content. In a similar vein, class lectures run the risk of being incomplete if only the audio recording is provided as a podcast.

Rights Management: iTunes has created a small stir with its rights management. DRM'd content cannot be uploaded to iTunes - there is no facility for this. Institutions may want to protect their content in much the same way as music in iTunes.

Production and Maintenance of Content: Although easy today, the process of building sophisticated learning objects for the future takes far more skill than is currently available. At one time, producing this content required an AV department. Now, anyone can do this. The problem is that students are beginning to expect high-quality, Hollywood-style production in their content. In addition, this content ages and will need to be continuously refreshed. Expectations for what the content ought to be and what it ought to look like has evolved – very quickly, and students expect far more than is systematically feasible at the present time. To get an understanding of what an institutional commitment could look like, check out MIT's OpenCourseWare⁴ initiative.

End-user experience: Podcasting will do well to lose its geek ness. For example, the process of setting up and maintaining a podcast needs to become as simple as opening up and creating a spreadsheet. Podcasting will need to become spreadsheet-simple. There have been some notable developments in this quest for user-friendliness. For example, Odeo is a new startup from the same folks who brought us Blogger. Orb is another example. Much needs to be done in this space to lower the barrier for entry.

Integration with Learning Management Systems:

Current Learning Management Systems integrate podcasts with some limited functionality. The most common practice when using podcasts include providing a link to the audio file. But in most cases podcasts are dependent on a subscription model that will automatically update the list of audio files available, then delivering the most recent one to the user's computer. Despite these challenges, the opportunity exists for DRM content enabled services that will allow for the

⁴ <http://ocw.mit.edu>

creation, hosting, and distribution of the content. It remains to be seen whether the market responds with better solutions for this purpose.

What does the future hold?

The podcasting movement has provided an excellent delivery medium for instructors, students, and staff. Students have been able to unleash their creativity in many ways. From narrations and video recordings, to radio shows and home-made recordings, to spontaneous archival of audio and video. Learning has found the perfect ally in podcasting to create an on demand anytime/anywhere delivery of instructional content.

A small but growing number of easy-to-use tools have emerged on the market. This is encouraging. However, issues such as ownership and privacy of the content continue to limit the scope of use of the technology in academia. Many institutions such as the University of Chicago are establishing studios where podcast-caliber content can be produced both by faculty and students. Once the content has been created however, there is still a fragmented process to make the content available. The process, while not difficult, is cumbersome enough to prevent some from adopting the technology into their curriculums. This is unfortunate. However, this is not seen as a particularly strong deterrent to those who are convinced of its worth, and have a model for its use.

The use of podcast technology in areas outside of the teaching and learning space looks to expand. This will place added pressure on vendors and implementers to provide easy to use, stable, rights-protected, and secure podcast platforms. This is an evolving market. For better or worse, podcasting does need commercial support behind it. RSS has the potential to be used for the delivery of business data to staff and faculty. While this application of podcast technology in the business realm of academia is not a certainty, it is something to be considered. While podcast technology alone may not change much, how it is used and where it is used is set to change. Higher education institutions, can capitalize on the benefits of podcasting by creating reusable audible objects that can be given a variety of uses, from radio shows to lessons and from lectures to interview of guest speakers.

References

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