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## Intersection of training and podcasting in adult education

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*Podcasting is becoming more and more common as a method of delivery at universities and for training purposes. The concept to set up podcasting is simple, and the costs vary. The advantages of podcasting are enormous. Podcasting is especially effective for adult education programs.*

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In recent years, there has been an explosion in the use of technology in virtually every walk of life. Today, almost universally, college courses use email and computing technology. Due to its rapidly changing nature, the cosmos of computing technology is often considered enigmatic. This is because, while it creates possibilities

for autonomy and empowerment, it simultaneously broadens the gulf between adult learners who have and those who do not have the technological resources necessary for coursework. The following question appears that it will remain one of the daunting challenges in adult education: along the wide spectrum of computing technology, which includes asynchronous e-learning, two-way online communication, synchronous online training, eye-to-eye contact and mobile delivery, where exactly should the intersection point of the chosen delivery mechanism, curriculum and instructional tool be?

The number of corporate training programs and universities that use MP3 players to automatically download files is mushrooming. For instance, Duke University provides all incoming first-year students with iPods, while the School of Journalism at the University of Missouri offers podcasts of lectures through its school network. Additionally, while Stanford University gives its students free access to lectures and audio broadcasts, a large number of colleges and universities (for a partial list, see the footnote below<sup>1</sup>) use podcasts for lectures, seminars, interviews and discussions.

In keeping with this trend towards the electronic delivery of class material in higher education, Indiana University, at the behest of Provost Michael McRobbie, has established a committee which is currently looking at broader support for podcasting. This committee is charged, *inter alia*, to make podcasting 'easy to use' by various departments and to ensure that navigation is facile with standard use of the University logo. There will not be a single podcasting solution, however, as different departments have different needs.

1 Arizona State University, Buffalo State College, Drexel University, John Hopkins University, Georgetown University, University of California at Santa Cruz, University of Central Florida, University of Florida, University of Chicago, Purdue University, University of Louisville, Weber State University, Chautauqua Institution, University of Wisconsin at Madison.

Podcasting today is one of the newest trends on the Internet. According to a recent Pew/Internet study, more than 22 million American adults own iPods or MP3 players, and 29% of them have downloaded podcasts from the Web. It is an avenue to generate audio programs that can be listened to on a PC or portable music player such as an iPod. By employing podcast learning technology, an adult education program could generate savings from the consolidation of space, and learners could also find it to be an efficient use of their time as they can learn whenever and wherever they want (Duderstadt, Atkins, & Houweling 2002). This podcasting approach meets the unique needs of adult learners in web-based education environments (DuCharme-Hansen & Dupin-Bryant 2004). Learners could also benefit from reduced transportation time and costs and a work/life balance. Moreover, the audio content often adds to the experience of the adult student. Finally, it should be noted that many adult education programs now have, in addition to the traditional classroom instruction, a blend of e-learning and mobile instruction.

### What is a podcast?

The term 'podcasting' is a term used for over a decade to describe a particular method of delivery for types of content that have been produced for internet consumption. It is a process in which digital audio recordings are broadcast over the Internet to learners who have signed up to receive them. A podcast is like traditional radio, only it is a cognitive medium and is available on demand for a specific topic. The term 'cognitive medium' suggests that it helps the user *know*, not *do*. With a radio, one would have to listen to a certain program, on a certain station, at a certain time. With a podcast, one can listen to whatever topic is wanted, when wanted (e.g. in the car on the way to work), without being constrained by local radio reception or other inconveniences. For example, in the global media, one could listen to an Australian podcast just as easily as an American one. Also, depending on the topic, there could be a significant amount of

material already available at one of the online podcast directories. Obviously, there are issues of what one can or cannot use and of privacy and security.

Through encoding with Really Simple Syndication (RSS), the shows to which learners subscribe are transferred to a computer or an iPod. A small file written in XML has to be created to enable a RSS feed. A podcast is basically a computer sound file in MP3 format, but what makes it a podcast and not simply a sound file is the RSS. An RSS-enabled newsreader allows learners to 'subscribe' to topics they want to read or tune into and download new material in bulk, either written or audio. So, a student can wipe everything off of his/her i-Pod or other music player and use the RSS to only download podcasts, news or blog entries that are 'new', all at one time. A student can also configure his/her reader to download new material automatically. To see how an RSS works, visit <http://www.newsgator.com>.

A news-feeder takes some time to set up, but after set-up, it is an incredibly easy and targeted way to get news and business intelligence. Its key strength is in providing standardised access in one place to a variety of news and business intelligence. In an organisation, ten people could 'blog' information, and everyone in the company could access all ten blog postings (current only) via a single screen in a newsreader application. There are a number of free desktop RSS newsreaders for both desktop and iPaq (pocket pc) software.

### How much does it cost?

An adult education program that wants to embark in this direction to transform its training content onto podcasts would need a number of resources. This list includes an Internet connection, computers with speakers, and microphones. Currently, most adult distance education programs have these resources, and for those programs that do not have such resources, the estimated unit cost of beginning such

a venture is approximately US\$4,110 (see table below for details). Among the equipment listed below, the video/audio editing software is the most vital. The estimates given are only for procuring one unit each. Obviously, the costs would increase depending on how many units the program desires to have and also whether it wants to supply the MP3 players to its students as does Duke University.

Estimated unit costs to start a program		
Equipment	Cost (in US\$)	Recommended manufacturer
Adobe audition	400	
Microphones	210	Shure SM-58
Headphone	150	Sony
Sound forge	325	Sony
Video/audio editing software (uncompressed)	1,375	Apple
Digital recorders	550	Marantz
Laptop with microphone input port and line-level inputs	1,100	Dell
Total	4,110	

The learners would have to subscribe to the 'feed' using RSS technology to download new podcasts automatically when online. The advantage for an adult education program and its learners is that the learners can receive new podcasts that are part of a series on their computers without having to go to the Internet site each time and download them. Any user can then transfer the downloaded files to a MP3 player, iPod or cell phone with audio file capability.

### How to set up podcasting

The basic concept is simple. There are two fundamental kinds of podcasts. One is like a radio program with professional intros and exits. The other is simply a voice recording stating the podcast

number, a brief description of what the podcast is about, and then the body of the message. Since it is a cognitive medium, the latter is potentially better. If, for example, a person listened to four or five podcasts in a row, then he/she might grow tired of hearing the same intro over and over again.

This voice recording can be done with a simple computer microphone and MP3MYMP3 recording software (found at <http://www.mp3mym3.com>). This software is free, easy to use, and fairly sophisticated. It has a recording limit of about an hour, which is enough for one podcast. Moreover, it saves the recording to MP3 or WAV (waveform audio file format for storing audio on PCs). Another option for free recording software is Audacity, but it is a little more difficult to set up.

In order to get quality sound, a professional microphone and a very simple mixer that can give the person control over the recording level, tone, reverb and so on are required. Appropriate adapters for plugging the microphone into a computer microphone jack are also needed. If one were to do the 'radio program' type of podcast that requires mixing various sound files (e.g. mixing a music intro and closure with the podcast itself), then the other items mentioned in the list above would be needed.

Sound Forge, for example, is an audio editing program, while Adobe Audition is a recording and mixing program. Neither of these software programs is needed if music or an intro will not be used or if MP3MYMP3 is used to record. It is recommended that there should be only a very brief music intro or no intro at all because it can be abrasive after listening to several podcasts.

MP3MYMP3 is a digital recording software, so an external digital recorder is not needed. This could be an option for use instead of a computer rather than in addition to a computer. A digital recorder is needed if a person wants to record podcasts remotely, for example,

in the car on the way to work, but one is not needed if he/she is using the computer to record. The headphones should have the recording level set so that the peaks are just hitting the top of the grid, or there will be distortion.

### **What to do after a podcast is produced**

A podcast is simply an MP3 file. After it is produced, the program coordinators need to figure out how the adult learners are going to listen to it.

Some options include:

- Burn the files to a music CD and listen on any CD player, including a computer CD player
- Download from an intranet website and listen with headphones on computer (need headphones to avoid disruption)
- Allow learners to transport files home with a thumb drive
- Download to a one-gigabyte SD card (\$50) to use in a music player with expandable memory
- Download to a work-owned music player or iPod. Most players have their own storage memory. This ranges from 264 megabytes to 40 gigabytes. Some have expandable SD cards.

An important caveat is to work with the information technology department to avoid the risk of getting a virus. Also, the program should not economically discriminate against some adult learners, given that some learners may not have their own players. One way to get around this is by making the program a voluntary pilot and asking for participants who already have iPods, but eventually the program will have to pay to supply these.

### **Cost-benefits of podcasting**

Podcasting is a great means to teach learners. The cost of creating a podcast varies, depending on how demanding the program wants to

be in terms of sound quality. The cost of duplicating CDs is low. The cost of enabling all learners to listen to a podcast in a non-intrusive way (using headphones instead of playing through a computer speaker) is low. The cost of providing a means to transport files (e.g. expandable cards or thumb drives) is also low. However, the cost of providing the 'portability' (purchasing iPods for all learners), which is a key strength of podcasting, can be very high. An alternative could be for the program to have a check-out system for a limited number of iPods.

### **Some advantages of podcasting**

For many adults, learning takes place in a variety of locations. As a large number of adult education learners have to balance the competing pulls of the workplace with family and the quest for self-renewal, this broadcasting of information is very efficient and inexpensive. It facilitates self-paced learning and allows a restructuring of the use of class-time, as an adult learner can literally listen to instruction while on a lunch break at the workplace. Thus, because it is easier for the learner to be in the program than to take on-site classes, the programs may have a higher enrolment rate. The adult learner has the flexibility to turn down-time to study-time. Furthermore, with changing demographics, a greater number of adult learners are not proficient in the English language. For these adult learners, podcasting is a good technology platform as they can hear pronunciations and review the lectures as often as needed.

It appears that podcasts in an adult education program would be most effective when used to reinforce concepts or training content and to communicate. Podcasting, therefore, allows for the remediation of adults who may be slow learners, have learning disabilities or take in information aurally. At the same time, podcasting can offer additional content for those learners who are advanced. An adult learner has the flexibility to pull audio files, streaming video or animation from the education content material into his/her iPod, MP3 player or

BlackBerry, and listen to it while engaged in something else. Yet another benefit to learners is, by using an RSS 'aggregator' such as Firefox, Thunderbird or NewsGator, they are alerted to any new material that the adult education program puts out. Adult learners also have the latitude to review the audio files at their leisure before a test or for better understanding. In other words, podcasts should be used to supplement, and not replicate, classroom presentations, thereby enabling staff to expand the confines of a classroom in an adult education program. In other words, use of podcasting has the added value of improving and stretching educational activities beyond what is actualised in traditional teacher-learner interactions (Ginsburg 1998, Imel 1998).

One of the most significant advantages to an adult distance education program from the use of podcasting is the ability to use interviews (e.g. Sony's Hi-MD Walkman with MiniDisc recorder) and discussions with external or internal experts in order to teach and inform the adult learners who might not find time for face-to-face education. Podcasting gives an adult education program the flexibility to go beyond listening and may offer a greater range of creativity. Podcasting is a convenient and portable way to share knowledge. The main advantage is that a learner can listen and multi-task. The program can also combine learning with music and news. Podcasting also permits learners to organise the information for their day by reducing dependence on location-based resources. For example, one can hear a lecture by Henry Merrill of Indiana University on how to plan programs for adult learners, and then see a discussion on self-directed learning by guest speaker Sharan Merriam from the University of Georgia or some other remote location, followed by an accounting podcast by Mike Tiller at the Kelley School of Business of Indiana University. In the coming years, if educational institutions can decide to share podcasts, it would be an ideal situation for learners. It gives the individual the latitude to listen to a learning-module on the way to work or as a filler-time while making the class

content more engaging. Podcasting can be seen as a perk for adult learners and is good for morale. Obviously, it is both a marketing tool and a learning tool at the same time.

### **Some disadvantages of podcasting**

It should be noted that an over-emphasis on such high-tech driven education could dilute the value and quality of education. Podcasting is not recommended for teaching learners 'how to' do something or for processes that require compliance with every step or that cannot vary, as learners tend not to retain every point. Experience depicts that sometimes learners have to listen to the same podcast over and over to catch everything. It is also not suggested for group sessions, as it tends to be boring. Further, it is not good when combined with jobs that are phone-heavy or that require a lot of meetings, conversations or other activities that are not conducive to multi-tasking. The adult education program has to be cognisant that it is difficult to monitor what learners are actually listening; the downloading process would have to be fully controlled.

In a business organisation, the goal is performance. At a university, the general goal is to enable learners to perform in the workplace. It should be emphasised that having a new tool is not a replacement for good performance practices. Performance is first, tools are second. (For further information regarding the business uses of podcasting, see <http://answers.google.com/answers/threadview?id=714122>.)

### **Podcasting experience at Indiana University**

At Indiana University, UITS Digital Media Network Services has been supporting podcasting in academic classes for over a year. Fifty to sixty sections use one of the 250 rooms on the eight university campuses that contain a video-conferencing system (typically Polycom). There is an automated system that connects the conference to an encoder for live streaming and/or archived downloads.

Currently, Windows Media, Real and MP3 are supported for this service.

An instructor can use a recording device such as a 4G iPod with a microphone (usually a Belkin mic adapter and Sony lavalier mic) to record his/her audio and then upload the file to a server that converts it to a low bitrate MP3. If the instructor uses other production tools (say, iMovie or GarageBand), then he or she can upload a QuickTime movie to the server as well. The server automatically creates, for each class, an RSS feed that can be used with iTunes or any other RSS-aware application (NewsGator, Safari) so that the learner only needs to subscribe one time to the feed to receive new podcasts as they are released throughout the semester.

Experience over this one year has shown that if an instructor understands how to prepare his or her lecture and content for streaming/download/podcast delivery, then podcasting can be an effective tool. This is particularly true with video content. Many instructors like to show their PC's screen but may not understand the impact of scaling down the resolution to 320x240 for display in a streaming player or on a video iPod. Even applications like PowerPoint can work very well if they are planned on low resolutions. Another lesson that has been learned is that it does not matter how good the subject-matter of the podcast may be, if the audio quality is distracting to the student-listener, he/she will not finish listening to it. Relatively inexpensive headset microphones are usually a good method for recording the audio of a single speaker. It is recommended that most clips be kept as short as possible, but it seems that factors such as the subject itself or time for content creation dictates longer files.

### **Conclusion**

Today, information technology impacts almost all activities of an educational institution. The on-demand nature and portability of podcasting, in spite of it being in its infancy, bestows on adult

education program managers a mobile, asynchronous, learning-blended, reinforced solution in addition to the usual traditional modes of learning already available. If an adult education program can get over the learner-access hurdle, then podcasting is an extremely cost-effective way to share information. It is much easier to create a podcast than an equivalent website, and technology is inexorably moving toward a generation of automatically printed manuscript. Podcast is definitely a suitable way to leverage the delivery of course content and offers a richer learning environment in adult education classes. Therefore, as part of an overarching, coordinated technology strategy, podcasting should be integrated into adult education programs because of its great number of advantages, including cost-effectiveness, flexibility and classroom enrichment.

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### Web Resources

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