

Video Podcasting: When, Where and How it's Currently used for Instruction

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Abstract

This paper addresses the questions: What is video podcasting?; When is video podcasting a helpful addition to a live or online course?; What educational institutions are currently making use of video podcasting for instruction?; and, How does one create and distribute video podcast content? An overview is presented of what video podcasting is, who is making use of video podcasting for instruction, and the technical aspects of creating video podcast content.

Podcasting

A new technology currently receiving a great deal of attention is "podcasting." A podcast is an audio or video file placed on the Web for individuals to subscribe and listen to primarily on MP3 players such as the Apple iPod. The term "podcast" like that of "radio" or "video" can refer to either the content or the method of delivery. A number of institutions have been experimenting with providing audio podcasts as supplemental instructional media (Descy, 2005). Winer (2004) observes that podcasting works similarly to how a desktop aggregator works. One subscribes to a set of feeds, and then can easily view the new items from all of the feeds together, or each feed separately. Podcasting works the same way, with one exception. Instead of reading the new content on a computer screen, one listens to or views the new content on an iPod or any device that can play MP3 and/or MPEG4 files.

iPod Devices on Campus

Although it is possible to listen to or view podcast content via a computer, it is the near-ubiquitous use of iPods and similar devices that have captured the public's attention and the imaginations of educators. Duke University, for example, currently issues incoming freshmen with an iPod (Armstrong Moore, 2005). In Armstrong Moore's article, Greg Joswiak, Apple's vice president of iPod product marketing is quoted as saying, "Institutions such as Duke, Georgia College & State University, and others are using the iPod as a portable learning tool for listening to recorded lectures, foreign language study, research notes, storing files and photos, and listening to audio books and podcasts." Modern iPods have large storage capacities. The popular video iPods, with either a 30 or a 60-gigabyte capacity, allow users to store and play digital video and still images as well as sound files. The authors note from personal experience that the video iPod's 2.5" screen is remarkably clear.

One of the appeals of the iPod is that users have access to digital media when they are not sitting at traditional desktop or laptop computers. Johnson (2005) points out that portable media players like Apple's iPod are "...not home computers but body computers, fashion accessories that now want to be cameras, TVs and radios. The iPod has become a sex symbol of self-expression, a hi-tech fetish that's helped us see the media as something to be individually programmed." There is certainly an important novelty aspect to these portable media players, but the longer term implications of ubiquitous media access suggests a profound shift in how educators might make use of instructional media. Professors, teachers, and instructional designers may now consider how to create or distribute course content that individuals can access almost any time or any place.

Video Podcasting or Vodcasting

Although audio podcasting is a relatively recent technology itself, even more recent is the phenomenon of video podcasting (that is, podcasts that contain visual information either in the form of still images, animation, or video). Video podcasting or “vodcasting” is seen by many as a potentially powerful instructional medium (Johnson, 2005; Mackey, 2005; Warlick, (?)). Mackey (2005) suggests that video podcasting’s revolutionary potential is based on the fact that they can be made and distributed via the Web by a variety of producers, ranging from big-budget to almost no-budget situations. Podcast video does not require special server distribution software the way Internet broadcasting does (SCVI.NET, 2006). This means video podcasting may be useful as both a means to communicate content (Descy, 2005; Ellis and Cohen, 2001; Touvinen, 2000) and as a means of student media production (Anderson, 2005).

Using Vodcasting to Enhance Instruction

Vodcasting is a potentially significant enhancement to instruction. It may allow students an opportunity to receive supplemental multimodal presentation, which is generally accepted as beneficial, particularly in the apprehension of complex concepts (Tuovinen, 2000). Ellis and Cohn (2001) caution that instructional multimedia supplements are intuitively attractive, but their use must be weighed against the cost of production. Vodcasting presents interesting opportunities for design and research in that vodcast productions may be accomplished with a minimal budget and moderate technological expertise.

Educational Institutions Currently Making Use of Podcasts

Various educational institutions are making use of podcasting. Major universities such as Duke, Michigan, Purdue, Stanford, and UC Berkeley are making podcasts of course lectures available for their students – especially undergraduates. Students enrolled in various courses use the Web (typically a password protected university server) to access the podcasts. Purdue University, with their Boilercast project, is at the forefront of using podcasting for educational purposes. The idea behind Boilercast is to provide students with audio recordings of lectures allowing students to review daily course materials for use on homework or as a review for examinations. A course that is part of the Boilercast project will have a podcast available to students the same day a class lecture is given. Students at Purdue University have access to podcasts for 70 different courses offered on campus. This number is expected to significantly grow (Purdue University, 2005).

Educational Vodcasts and Vodcast Design

Perusing the educational vodcasts available to the general public, using primarily the Education Podcast Network (<http://epnweb.org/>) and Apple’s iTunes Music Store, it becomes readily apparent that educational video podcasting is in its infancy. The vast majority of video podcasts are essentially collections of clips produced originally for television viewing. This is unsurprising; historically new media begin by making what use they can of the content developed for older media (e.g. early television relied heavily on content “imported” from live theater and radio drama). There are few examples to date of vodcasting designed to make best use of this new medium. The significant differences between vodcasting and television viewing are the vodcast player’s portability and the size of its view screen. As the medium matures, the design of the presentation will no doubt take into consideration its unique features. Just as television matured into half-hour and one-hour programming that makes use of multiple camera angles and close-up shots, and takes into consideration the fact that most viewers will be watching alone or in a small group, which is very different from a two or three-hour live play or musical experience which the viewer shares with a large group and sees from a single angle, vodcast producers must learn what works best for this new medium. Some of the more sophisticated vodcast producers add subtitles to the video and present the video in multiple, short clips to take better advantage of the medium. An example of which is PBS.org’s NeRD TV vodcasts (PBS, 2005), the content of which is from PBS’s broadcast television show of the same name (see Figure 1).

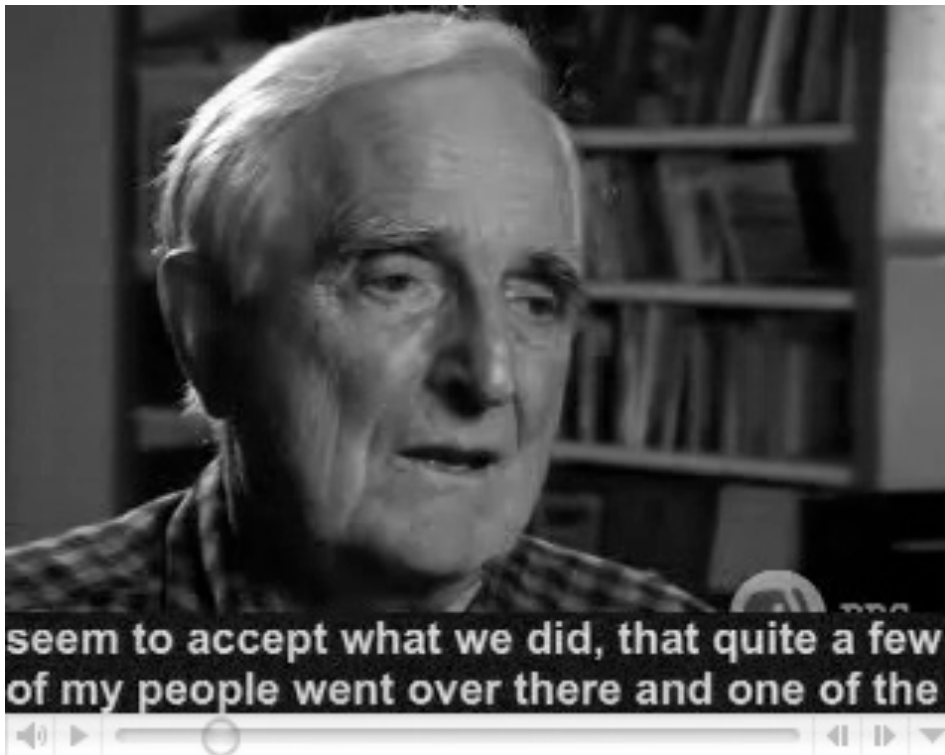


Figure 1. A still from the NeRDTV vodcast interview with Doug Englebart (2005)

Vodcasting Basics: Production Elements and Support Technology

From the perspective of accomplished media producers, video podcast production is reasonably simple using multi-platform software such as Flash, PowerPoint, and QuickTime. Video podcast production is particularly easy even for relatively unsophisticated media producers using Apple's multimedia production software such as GarageBand, iPhoto, and iMovie HD. Production is a matter of putting together a multimedia presentation saved in .m4a, .mov, .mp4, .m4v file format. In experimenting with the production and distribution of video podcasts, the authors found that in practice the only reliable method of creating an iPod-compatible video file was to use Apple's QuickTime software (using the "Export" function and selecting "movie to iPod") or to use Apple's GarageBand software, selecting "New Podcast Episode" when creating the file. The authors experimented with creating and exporting files from Flash and PowerPoint: both of these software programs allow one to export a digital video file, but these files ultimately had to be opened in and exported appropriately from either QuickTime or GarageBand to be viewable on a video iPod.

Figure 2 (below) is a screen capture of Apple's GarageBand software in "New Podcast Episode" mode. Note the tracks that are typical of most sound production software include a "Video Track" (the topmost track) which accommodates either video imported from iMovie or still images imported from iPhoto.



Figure 2. A screen capture of Apple's GarageBand in "New Podcast Episode" mode.

Once the video file is created, two more steps are necessary for the vodcast to be viewable to the public through Apple's iTunes software (presently the most popular method of collecting and viewing podcasts). The first is to upload the video file to a server. Write down the location of the video file because one will need this information as one completes the second step – creating an XML file. The XML file allows users to subscribe to the vodcasts through iTunes. This file needs to be uploaded to the same directory as the video file. Figure 3 (below) is a screen capture of XML code that the authors used.

```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <rss xmlns:itunes="http://www.itunes.com/DTDs/Podcast-1.0.dtd" version="2.0">
3   <channel>
4     <title>RECT Presentation: Dallas 2006</title>
5     <itunes:author>Abbie Brown and Tim Green</itunes:author>
6     <link>http://www.geocities.com/bookwormsandgeeks/vodcastexample.xml</link>
7     <description>Examples of Vodcasts for Presentation</description>
8     <itunes:subtitle>Dig this! It works!</itunes:subtitle>
9     <itunes:summary>Two examples of vodcasts for the RECT presentation in Dallas 2006. Created by Abbie Brown
and Tim Green. What wonderful product quality. I think these two guys are probably wonderful, funny, and great to
hang out with.</itunes:summary>
10    <language>EN</language>
11    <copyright>(c) 2006 Abbie Brown and Tim Green</copyright>
12    <itunes:owner>
13      <itunes:name>Abbie Brown and Tim Green</itunes:name>
14      <itunes:email>bookwormsandgeeks@yahoo.com</itunes:email>
15    </itunes:owner>
16    <category>Technology</category>
17    <itunes:category text="Technology"></itunes:category>
18  </channel>
19  <item>
20    <title>Episode 2</title>
21    <itunes:author>Abbie Brown and Tim Green</itunes:author>
22    <description>RECT Presentation</description>
23    <itunes:subtitle>Vodcasts</itunes:subtitle>
24    <itunes:summary>An example of a vodcast presentation</itunes:summary>
25    <enclosure url="http://www.geocities.com/bookwormsandgeeks/episode02.mov" length="8829" type="video/mov"
26  />
27    <guid>http://www.geocities.com/bookwormsandgeeks/episode02.mov</guid>
28    <pubDate>Fri, 22 Sept 2006 2:00 PST</pubDate>
29    <itunes:explicit>no</itunes:explicit>
30    <itunes:duration>00:00:29</itunes:duration>
31    <itunes:keywords>weather, satellites</itunes:keywords>
32  </item>
33 </rss>

```

Figure 3: A screen shot of XML code

There are several places in the XML code where information about the video file needs to be inserted. This information is unique to each vodcast. As other vodcasts are created, additional code needs to be added to the XML file. The code that is added is from the item tag to the /item tag. Figure 4 (below) shows an example of additional code included for a second vodcast.

```

1 <?xml version="1.0" encoding="UTF-8"?>
2 <rss xmlns:itunes="http://www.itunes.com/DTDs/Podcast-1.0.dtd" version="2.0">
3   <channel>
4     <title>RECT Presentation: Dallas 2006</title>
5     <itunes:author>Abbie Brown and Tim Green</itunes:author>
6     <link>http://www.geocities.com/bookwormsandgeeks/vodcastexample.xml</link>
7     <description>Examples of Vodcasts for Presentation</description>
8     <itunes:subtitle>Dig this! It works! </itunes:subtitle>
9     <itunes:summary>Two examples of vodcasts for the RECT presentation in Dallas 2006. Created by Abbie Brown
and Tim Green. What wonderful product quality. I think these two guys are probably wonderful, funny, and great to
hang out with.</itunes:summary>
10    <language>EN</language>
11    <copyright>(c) 2006 Abbie Brown and Tim Green</copyright>
12    <itunes:owner>
13      <itunes:name>Abbie Brown and Tim Green</itunes:name>
14      <itunes:email>bookwormsandgeeks@yahoo.com</itunes:email>
15    </itunes:owner>
16    <category>Technology</category>
17    <itunes:category text="Technology"></itunes:category>
18  <item>
19    <title>Episode 2</title>
20    <itunes:author>Abbie Brown and Tim Green</itunes:author>
21    <description>RECT Presentation</description>
22    <itunes:subtitle>Vodcasts</itunes:subtitle>
23    <itunes:summary>An example of a vodcast presentation</itunes:summary>
24    <enclosure url="http://www.geocities.com/bookwormsandgeeks/episode02.mov" length="0029" type="video/mov"
/>
25    <guid>http://www.geocities.com/bookwormsandgeeks/episode02.mov</guid>
26    <pubDate>Fri, 22 Sept 2006 2:00 PST</pubDate>
27    <itunes:explicit>no</itunes:explicit>
28    <itunes:duration>00:00:29</itunes:duration>
29    <itunes:keywords>weather, sattelites</itunes:keywords>
30  </item>
31  <item>
32    <title>Episode 1</title>
33    <itunes:author>Abbie Brown and Tim Green</itunes:author>
34    <description>RECT Presentation</description>
35    <itunes:subtitle>Vodcasts</itunes:subtitle> |
36    <itunes:summary>An example of a vodcast presentation</itunes:summary>
37    <enclosure url="http://www.geocities.com/bookwormsandgeeks/episode01.mov" length="0044" type="video/mov"
/>
38    <guid>http://www.geocities.com/bookwormsandgeeks/episode01.mov</guid>
39    <pubDate>Fri, 22 Sept 2006 2:05 PST</pubDate>
40    <itunes:explicit>no</itunes:explicit>
41    <itunes:duration>00:00:44</itunes:duration>
42    <itunes:keywords>weather, sattelites</itunes:keywords>
43  </item>
44 </channel>
45 </rss>
46

```

Figure 4: Screen shot of XML code that includes two vodcasts

Testing the vodcast is accomplished through iTunes. One opens iTunes and selects the Advance drop-down menu – selecting Subscribe to Podcast (this process is referred to as “subscribing”). In the dialogue box, the URL for the vodcast will be entered. As an example, the URL created in the XML code in figures 3 and 4 is <http://www.geocities.com/bookwormsandgeeks/vodcastexample.xml> . Completing this process will allow the vodcasts to be downloaded to a computer and viewable in iTunes. The iTunes software will then also check to see if new vodcasts are available at this location and offer the user an option to download the new vodcasts as they become available.

Discussion and Conclusion

Like film and television at their inceptions, video podcasting is an exciting technology that has captured the imaginations of instructors, students, and the news media. There seem to be a number of possibilities for its use in instruction and many individuals, institutions, and organizations are currently experimenting with producing and distributing video podcasts. However, like film and television, these instructional possibilities may only be realized by those educators who put significant time and effort into experimenting with design and production.

The authors found video podcast production software relatively easy to use. However, the entire process of production and distribution requires a good deal of arcane technical knowledge. The authors spent well over two days’ time creating and making available two 30-second vodcast episodes. Most of that time was spent learning the processes necessary to create and distribute the files; the initial vodcast episode took far longer to create than the

second episode. The authors are relatively sophisticated in the creation of digital multimedia and in the application of HTML and XML, but at times they had to turn to even more expert producers to understand how to make the process of video podcasting work correctly. The effort involved was a far cry from Apple's claim, "Podcasts can easily be created on your Macintosh," (apple.com, 2006). It should be noted that both authors used Macintosh computers to accomplish the video podcasting experiment. It should be further noted that the experiment was aimed only at accomplishing the technical task of creating and distributing video podcast episodes; the episodes themselves are "content free." There was no time spent creating actual instructional content, which would have added a number of extra hours to the entire process.

Similar to the production of film, traditional video, or Web sites, most educators are going to need the support of knowledgeable media producers and programmers to make video podcasting work for them and their students. Educators and sophisticated media producers and programmers are also going to have to be able to communicate effectively among themselves in order to create something that is both of genuine educational value and is technologically viable. The communication between such disparate groups presents a unique challenge in and of itself.

Of course, in terms of content selection and presentation design, the old computer programmers' term, GIGO ("Garbage In: Garbage Out") applies to video podcasting as much as it does to any instructional media production endeavor. The use of a new technology may briefly imbue content with a certain temporary glamour, but ultimately that content and its delivery must be of some genuine help to the learner or it will ultimately be discarded. While it is an exciting, promising new technology, it remains to be seen what significant effect on instruction video podcasting will have on the design of instruction in the long run.

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Winer, D. (2004). *What is Podcasting?* Retrieved Jan. 3, 2006, from <http://www.ipodder.org/whatIsPodcasting>