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Research Brief

Using iPods for instruction

Question:

Can iPods be used effectively for instruction at the high school?
What does the research say about using iPods for instruction?

Summary of Findings:

For many people, the iPod is a portable digital audio player that has the ability to hold large amounts of music. They are relatively easy to use and have a clear goal of facilitating the effective production, transfer and dissemination of digital audio and video and move beyond the limitations of the analogue world.

Moss (2005) observes that, since their first appearance in 2001, Apple's range of portable digital media players (e.g. iPods) have become one of the most recognizable icons of the twenty-first century. Campuses throughout the nation are now transforming iPods into education tools, a trend Apple hopes to capitalize on with "iTunes U," a nationwide service that makes lectures and other materials available online (see story: <http://www.eschoolnews.com/>).

According to Adenekan (2005) and Lederman (2005), the range of uses of iPods presently have given rise to ideas that their designers might never have seriously envisaged, especially in the whole area of e-learning education and innovation. And iPod is now deconstructing the border between education and entertainment. iPods are becoming study aids for students, allowing them to fast-forward to a part of a lecture they may not have understood the first time or review complicated themes before exams.

Presently, an increasing number of professors at various universities and colleges are experimenting with making lectures and study materials available to students via iPods and other MP3 players. Brown, Stanford, the University of Michigan, the University of Wisconsin-Madison and the University of Missouri School of Journalism recently participated in a pilot program with Apple called iTunes U. This core group was formed in collaboration with Apple Computer, Inc. to consider how pervasive technology impacts higher education, and to develop communities of practice around promising methods and tools. Basically, iTunes U offers students a chance to download and organize lectures and other content with the same technology they would use to click on a U2 song. The program proved so popular that Apple announced recently that it would offer the program to all colleges. Administrators with Pennsylvania's Mansfield University want to use podcasts--a hybrid consisting of iPod and broadcasting broadcast messages that can be downloaded to iPods and other digital music players--to recruit high school students to the 3,000-student campus.

Some K-12 educators and schools have also started using the iPod to enhance their curriculum and to support learning objectives in content areas such as – mathematic, science, reading, foreign language, and history among others. Much has been published recently about the use of iPods at several educational institutions. Journalistic and academic articles claim that iPods offer a rich pedagogical vein to be explored by educators of all disciplines, and language educators in particular. As Keegan (1995) indicates, language education remains one of the most innovative disciplinary areas for the development of new learning technologies, especially in the emerging area of mobile learning. Kukulska-Hulme and Traxler (2005) also pointed out that iPods can be used to aid language learning, when they function, for example as digital voice recorders or camcorders to produce interviews and make audiovisual tours of towns or museums.

In K-12 for instance, foreign language students in an elementary classroom can create an internet-shared presentation slideshow report on their community and using the iPod and voice recorder the children can create audio recordings in a foreign language (e.g. Spanish) to add to their digital photos and then share



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the narrated slideshow with their partner schools. Middle school students can write a radio drama based on a historical event or period and then record the radio shows using an iPod and voice recorder and then podcast the radio shows to others over the internet. High school students can conduct oral histories with a family member using iPod and voice recorder. Special education students can use video iPods when taking tests. All of these examples illustrate the innovative and diverse ways to use an iPod for K-12 teaching and learning. By using iPods, students are able to listen to content outside of their normal study periods, listen to content while travelling to and from campus, or moving between activities. It has also been reported that faculty noticed an increased student motivation primarily as a result of higher levels of student independence promoted by the technology.

A fair number of students also report using the iPods or similar devices as a way to block out distractions, especially the chatter of those who are not so concerned about working, while they are working. Students with ADD or ADHD have also been observed to become remarkably focused if they are able to have an iPod with them; it probably helps to give them control over the amount of sensory stimulation. Others also noted that iPods offer a unique and increasingly cost-effective way to differentiate instruction. They can be an effective way to take instruction home to the family and that the use of iPod in the classroom holds and heightened student interest, engages students in learning, and provides yet another means for expressive and receptive literacy. Thus, professors reported that students seemed more engaged in classes where they could use the iPods. They also cited strong student use of the audio capabilities of the iPod in their presentations, and more accuracy in quoting from interviews they did using the iPods and that the iPod isn't just changing the way students take notes – it is turning colleges into a realm of perpetual connectivity.

Also (2005) provide a break down of specific ways in which educators can use the iPods in teaching and learning:

Dissemination of Information

Lectures and other audio resources can be recorded, place on the web and then downloaded by students to listen to when they find it convenient. Students can even do this recording themselves. iPod devices can also be used to make audio recordings for distribution by 'podcasting' over the Internet. Downloadable audio files can also be linked to web blogs. An example is: [Economics Lectures Recorded, Reviewed with iPods](#) where an economics professor Lori Leachman is giving her students an extra aid to achieve 'basic economic literacy' in one semester: audio recordings of her lectures, which she makes with an iPod." Students can also transfer text-based information to their iPod and read it onscreen. With the notes reader, news articles, classroom notes, even flash cards for spelling tests can be right at hand. They can even link audio files and notes files for enhanced audio/visual learning.

Storage of Information

iPods can also be used by students as a portable storage device to be connected to computers using a USB or Firewire cable. The information backed up on these drives can include assignments, unit notes and research notes. For example, the School of Education in Edith Cowan University currently recommends that all students have an iPod to act as a storage device for holding their important files. Students can upload notes/assignments to lecturers storing files and photos collecting and analyzing data.

Research

Under some circumstances, iPods (with appropriate input devices and software) can be used to collect information. An example is [iPods speed the collection of data in engineering classroom](#) that uses iPods in the Electrical and Computer Engineering class 'Fundamentals of Digital Signal Processing' to collect and analyze pulse rate data, and using that data to design and test a heart-rate monitor." [Investigating](#)



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[electrophysiological phenomena](#) Noland White is “currently exploring the potential use of the iPod in administering such instruments and other procedures that require standardized presentation.” One thing that is emphasized in academic writing is that researchers are expected to move beyond speculation and support their claims with some form of evidence. iPods help in giving data to support that claim. Incorporating the sound files made that expectation clear.

Study Abroad Programs

Due to their portability, iPods can be used by staff and students to listen to pre-recorded material and immerse themselves in the language while travelling and studying abroad without the added weight of a laptop. They can also be used to create a mobile classroom. iPods can be loaded, for example, with Spanish language lessons, with pre-recorded lectures, Spanish and Irish folk music, audio books of literature, as well as contemporary music for the student’s enjoyment.

Recording information

There is a huge variety of information that can be recorded with an iPod and a suitable microphone. This could include: tutorials media files interviews recorded diaries podcasts speeches guest speakers spoken poetry “We investigated digital recording devices and the iPod was one of the cheapest and easiest to use on the market” says Peter Holland. “My assistant converts memos and documents from text to speech through translation software, and I listen to them via the iPod on the drive home, rather than wait until I arrive to read the hardcopy, as I did in the past. I also use the iPod to make verbal notes and then send them to key staff via e-mail the next morning, without needing to re-key them.”

Listening and responding to information

With a suitable microphone attached, there is almost no limit to what can be achieved. Students can listen to information and then record their responses to what they hear. Students can add their own audio files, text notes, voice memos and calendar entries to their iPods. They can share personal notes and use audio files for self-paced learning. Attach an iTrip or other broadcasting device to the iPod and they can play this back on an ordinary FM system for the whole class to listen to: including audio excerpts in the presentations reinforces a key principle of writing.

Music appreciation

There is an increasing amount of copyright free music available on the web. This can be downloaded to an iPod and used in music appreciation exercises. Faculty can also record tracks to their iPod from CDROM (as long as they stay within the copyright provisions) and with a suitable FM transmitter play this music to their students in a closed classroom for use in dance, music appreciation or for other reasons. High school students from San Francisco, California for example, wrote original short stories and combined oral readings of their stories with music excerpts to set the tone and mood using iPods.

Language instruction

iPods natural fit into this area. The ability of an iPod to link audio and text files means that students can listen to and read foreign languages, take dictation, and make recordings of their own voice for others to listen to. iPods are used to: hear dramatic recordings of the novel as they read; record responses during oral quizzes; play back verbal comments on quizzes and homework; review the pronunciation of each week's vocabulary words; listen to audio exercises inside and outside of class; and make “audio diary entries”. High School students and teachers in Columbus, Ohio, for example, iPod to better assess verbal skills and reading comprehension in foreign-language classes. It is a particularly useful tool with English as a Second Language and some special-needs students who find it difficult to learn sound and symbol relationships, inflection and accent of words, and grammar.



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Libraries

Libraries with audio files can have material for specific classes or exercises loaded onto iPods. Instructions for students can also be placed on iPods: students listen to these in times when the library is operating with minimal staff. Libraries can also act as a borrowing centre for iPods. Michael Stephens investigates ways that librarians are using iPods and noted that “The relationship between the iPod and libraries is off and running. All it needs is more librarians recognizing more uses for the devices. An art library might circulate an iPod Photo with digitized images to support an art history course. With the included cable, the artwork could be reviewed on practically any television. Could libraries also give users a chance to load a circulating iPod via iTunes in the library? Talk about user-centered: Here’s an iPod Shuffle and a library of 100 songs; fill it with what you'd like to hear.” Lab instructor Professor Michael Gustafson explained why he decided to incorporate the devices into the lab. “Rather than spend any money buying signal generators, we could just use the free signal generators [i.e., the iPods] that Duke provides,” he said. Plus, he said, the music helps connect engineering principles to a familiar experience.

Some Challenges in using the iPod

While many of the suggested advantages of using iPods in the classroom need more research, a series of challenges have also been identified. According to Thomas (2006), faculty and students at Duke indicated that the project initially suffered from an approach that emphasized ‘install first, think about the pedagogical consequences later’. On the technical side, the device’s short battery life remained an issue, as well as problems related to sharing files between different iPods. Other areas of resistance derived from the need to secure permission for copyrighted audio material, and sometimes as a consequence of the lack of quality content. The shuffle function on the iPod Shuffle tended to mix up novel’s chapters. Ear buds were uncomfortable. Furthermore, Podcasting and iPods for instance, require basic computer abilities and an interest in learning several new, although easy-to-use, software packages. Most students do not have enough basic technical skills to work easily within this environment. Some critics also argue that donning a pair of earphones is not the same as actively engaging with material in a classroom setting and that schools should ensure that iPod lessons supplement classroom work--not replace it. Some educators worry that through perpetual connectivity, iPods may encourage isolation because some student may substitute iPods for attending class, and may also use it for other purposes other than promoting learning. For example, about 75 percent of freshmen surveyed said, half the time, they used iPods in ways recommended by professors, but for the rest they devised uses of their own. Some of the students also said that while the iPods have potential in the classroom, they are still underutilized. The thing to remember is size; a 20-gig hard drive is like having a laptop in the palm of your hand.

Conclusion

One goal of the 2005 National Educational Technology Plan is to move toward digital content. “A perennial problem for schools, teachers, and students is that print textbooks are increasingly expensive, quickly outdated, and physically cumbersome. A move away from reliance on print textbooks to the use of multimedia or online information (digital content) offers many advantages, including cost savings, increased efficiency, improved accessibility, and enhancing learning opportunities in a format that engages today’s web-savvy students.”

In line with this the use of iPods in classrooms are beginning to emerge and the possibilities seem endless. Universities all over the world are experimenting how the iPod can enhance teaching and learning with their students and faculty. Some teacher education programs are also beginning to prepare teachers to



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benefit from the use of the new and emerging technology in instructional settings. Faculty in many institutions is also willing to provide iPod workshops and/or demonstrations to introduce other faculty on campus to the types of instructional and assessment opportunities that are possible using the iPods.

While the introduction of iPod Education has continued the wave of interest created by blogging, more research must be done on the actual consequences of using it in structured pedagogical contexts. Nevertheless, it is already evident from the results of the few educational institutions that are experimenting with it that the iPod does have a number of advantages, and opens up a world of digital audio and video to be explored by m-learning technologists in the future. A number of educational institutions have found a number of pedagogically valid ways to incorporate them into their learning environments.

However, it worth mentioning that iPod education is needed in the educational institutions that are experimenting with the device in order to realize maximum benefit from it use in education and it is necessary to involve everyone in discussions about its pedagogical implications prior to implementation.

Online Resources:

<http://isp.ecu.edu.au/ipod/ipods.html> : This site looks at using iPods, their accessories and trouble shooting:

<http://www.unf.edu/dept/cirt/events/past/Podcasting%20%20Brown%20Bag.pdf>: This site has information on Podcast and iPods and some university initiatives

<http://kt.flexiblelearning.net.au/edition-10/ipods-in-educationinnovations-in-the-implementation-of-mobile-learning/>: **An article by Michael Thomas on iPods in Education: Innovations in the Implementation of Mobile Learning**

Michael Thomas also compiled the following resources for teachers interested in using iPods in secondary school curriculum.

http://www.csus.edu/uccs/documents/workshops/using_your_video_ipod.pdf: An overview of using iPods.

<http://my-ecoach.com/online/webresourcelist.php?rld=6663>: Exploring iPod Use in Secondary Education *iPods & Learning in High School* Created by, Darlene Feldstein.

<http://www.indiana.edu/~tltl/projects/ipod.html> : iPod Resources (podcasting & iPod for instruction).

http://www.usatoday.com/tech/products/2006-03-14-ipod-university_x.htm?POE=TECISVA: iPods now double as study aids

<http://mtsu32.mtsu.edu:11218/PDFs/Using%20iPods%20in%20the%20ESL%20Middle%20School.pdf>: Using iPods in the ESL middle schools.

The Daily Idiom (<http://www.englishcaster.com/blogs>) Though listed in iPodder as The Daily Idiom, this site has changed its name to English Idioms and Slang.



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Barcelona Young Learners Podcasts (<http://bylpodcasts.blogspot.com/>) This site uses a blog format to offer downloadable and podcast audio resources suitable for young learners. Topics include, to date, witches, ghost stories, and accidents.

The Bob and Rob Show (<http://englishcaster.com/bobrob>) This radio show style podcast is created by an American and British pair. Their first podcast on 29 May, 2005 dealt with the issue of greetings and meeting someone for the first time.

Phonetic Podcast (<http://phoneticpodcast.com/>) This site is produced by a non-native speaker of English who is interested in developing students' pronunciation skills. Topics discussed include: phonetics, pronunciation of English language, stress, accents, various dialects of English language from the point of view of pronunciation, learning how to speak English like a native speaker, and learning how to speak various dialects of English language.

Japancasting (<http://stevemc.blogmatrix.com/>) This site is run by Steve McCarty, Professor of English at Osaka Jogakuin, where iPods have been circulated to students since 2004. Hosted by WebMatrix, Japancasting is aimed at students who want to study Japanese or English.

ESL Listening For Japan (<http://www.eigolistening.com/>) This site includes many free downloads of English phrases and expressions, as well as links to other sites which offer streaming or downloadable English listening.

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