Time shifting Time - Podvocation: What it is and why you should care.

Abstract

Do you ever listen to the radio whilst driving, ironing, gardening, studying or even lazing on the beach? It would be unusual if you don't! Radio broadcasts enable us to consume their content, and the experience whilst otherwise engaged. Podcasting is just like radio, but even better, because while we can be entertained and even learn, whilst otherwise engaged, more importantly, we can listen to podcasts at other times and places than when they are broadcast. We can even make them ourselves. But, is podcasting an effective learning method? Our student surveys suggest so. Do learner's use it? Our students say yes! Are podcasts easy for an educator to produce? Relatively so. Should you care about podcasting? You bet you should, and this article tells you why!

Introduction

This article is based on some of the findings of a 2005, work based learning research project called Time Shifting Time. The project assessed the potential use of podcasting for vocational education, termed herein ‘Podvocation’ - i. e. podcasting adapted for vocational education purposes. Time Shifting Time, the project, was fundamentally about the how, when, where, why, how much and the maybes of podcasting for vocational learning. The project was funded through LearnScope, a professional development program of the Australian Flexible Learning Framework. (See Acknowledgements for more details.)

Time Shifting Time - the project - is slowly becoming time shifting time - the reality - as commentary and ongoing trials demonstrate that for some learners, podcasting can offer the almost unique ability to improve their learning, by giving them the potential to juggle their precious learning time by shifting time and bending a little space (Greeson 2006). However, while offering great promise, the usefulness of podcasting as a vocational education learning strategy is still being clarified. Currently, it is far from being a mainstream learning strategy.

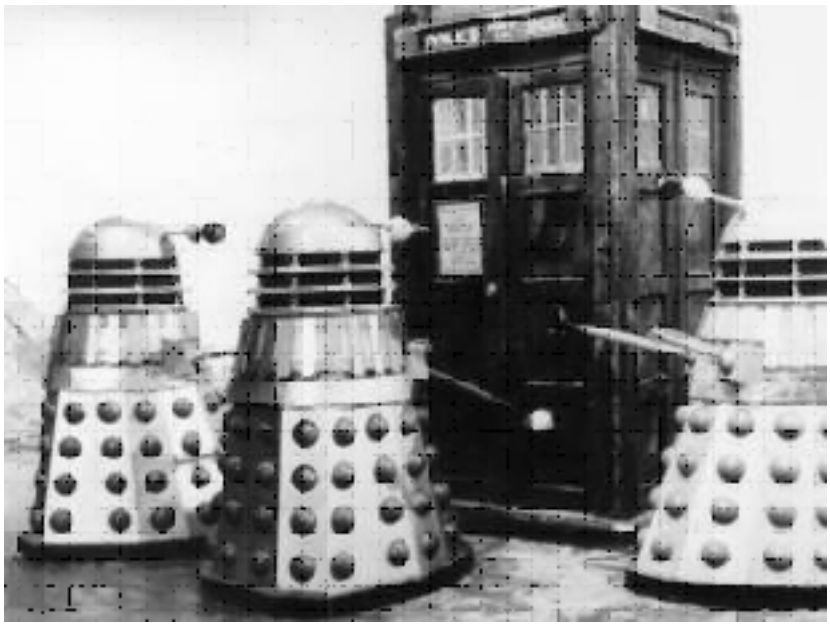
If podcasting is to be effective in vocational teaching and learning, what in particular might be the appropriate formats, textures (rough to smooth, short to long), topics, production and publishing techniques, hardware and software combinations and associated costs that make it work on a day to day basis? Vocational education podcasters have a few embryonic ideas, but there is still much to learn and even more to prove. Maybe podcasting is really is just another passing fad, seemingly a good idea, but unable to live up to all the hype and failing to pass the ultimate test of being effective on a day-to-day basis?

Podcasting defined

Podcasting, as a process is relatively new (no more than a few years old), but as a technique it’s as old as the developed human brain – the good, the bad and the broken bits. Podcasting is basically about encouraging people to put ‘voices’ in their minds, with the hopeful consequence of creating understanding and knowledge. Done well, podcasting has the potential to build a rich, aural world of imagination, understanding and knowledge. Done badly, podcasting can be just as ineffectual as any boring face-to-face lecture on a cold, rainy Monday morning. Podcasting done well, however, can link seemingly disparate concepts into melded, holistic atoms of knowledge.

Visual Explanations of Podcasting: The Time Lord and the Monster

When I try to explain the concept of podcasting to learners and my colleagues alike, I often fall back to these two visualisations of the Time Lord, Dr. Who (to explain the concept) and Nessie (to show what podcasting can do).



Just as Dr. Who is able to bend, warp, bash, pulp and shred time and space at will, whenever the Daleks' behaviour requires him to, so podcasting allows us to download audio files from the Internet to a portable audio player to be heard anytime, anywhere. Essentially, podcasts are shifted in time and space through their consumption by listeners. This may appear a bizarre linkage, but it helps our students get the idea of podcasting i.e. the possibility of listening to radio for more than just music and, most importantly, its potential to help their learning. Every learner has the ability to become a Dr. Who when they learn, but alas, not everyone gets to drive the Tardis!

So where does ‘Nessie’ the elusive monster of the depths of Loch Ness fit in? Nessie has inspired ‘Messie’, the name given to the possible Bunyip reportedly sighted in the shallows of Urrbrae Wetland, an urban catchment-based wetland, located a mere twenty minute drive from the heart of Adelaide’s central business district. Urrbrae’s wetlands are small, and unfortunately a lot dirtier than the deeper, darker, cleaner waters of Loch Ness. Despite a number of recent sightings, Messie still eludes objective confirmation as Urrbrae’s resident Bunyip and this is where some of our environmental management students become involved.

Our final year Diploma in Environmental Management students are posed the question: 'How can you prove scientifically that a Bunyip does not live in Urrbrae Wetlands? Design an experiment or survey to achieve this'. The first step of this project involves the students listening to a podcast with the instructions for the project, followed by an interview with the wetland's manager Dr. Allin Hodson, who outlines the nature of the reported sightings, and if Messie does exists, what it would eat and how it would probably live.

The podcast continues with some vox-pops (brief comments) from members of the public about their thoughts on the existence of Messie. It finishes with an amusing and highly implausible interview with Messie in person ... or is that 'in creature'? This audio resource is a humorous take on a quite serious, but often boring section of work on the design and analysis of experiments and surveys. Podcasting is arguably the best technique to approach a topic like this, because it is relatively easy to produce and as an educational resource is very effective. Video can be too hard and time consuming to produce and paper and face to face sessions - when they can be used - are often perceived as just more of the same old 'stuff'.

Why should you care about podcasting?

Podcasting is worth considering simply because any learning technique that proves to be effective, interesting and has the power to move a learner from a wetland in suburban Adelaide to a loch in Scotland to look for wee beasties, whilst they are driving their car or lazing on the beach, simply cannot be ignored!

What is podcasting?

My definitions:

1) An amalgam of the words 'iPod' and 'broadcasting'. The term iPod is now used generically to refer to any portable/personal media player capable of playing mp3 format audio files (or equivalent). MP3 is a format for compressing audio to reduce file size substantially without reducing listening quality excessively.

2) The process of automatically receiving time-shifted (accessible and usable at any time) content (audio, images, movies, documents, although mainly audio currently) from a personally selected subscription to one of a growing number of podcast-enabled (enclosure capable) Really Simple Syndication (RSS) feeds (covering education, sports, music, travel, languages, news, entertainment, technology, food, etc.) on a portable media device, enabling place-shifting use (accessible and usable in any place). A type of m- or blended learning depending on the formats used. Apple's iPod is the most widely used player at present.

3) Syndicated distribution of audio files (mp3 format) through the Internet from an individually selected source (podcast feed) using a computer program (called an 'aggregator') that automatically downloads to a personal audio device (an mp3 player).

4) An emerging model of distributed education and m-learning.

How It Works

Generally, podcasting is a relatively simple publishing/broadcasting process, involving just four main steps:

Step 1: Create a podcast - collect audio, edit and create the final mp3 audio podcast file
Step 2: Upload (publish) mp3 file to Internet host
Step 3: Tell the world about it via RSS or blogging
Step 4: Listeners' download mp3 files to their players & listen… creating new knowledge.

Of course, each of these steps has a range of tasks associated with it, which are documented widely on the Internet (see Useful Links). However, for podvocation it is Step 1 - the production of the audio content – that is the most important and time consuming part of the whole process.

Step 1: Creating a podcast can be further broken down into the following tasks. This is a generalised approach, which can vary depending on the format being developed - and may even start at task 5 for the recorded lecture format.

Task 1: Objective/purpose of your podcast - what's it for? This will often decide the format to use format (see Figure 1 below).

Task 2: Audience - who's it for? This will usually resolve the approach to style (rough to smooth, long or short, fast or slow).

Task 3: Content - what's it about and what audio do you need? What is the take home message?

Task 4: Talent - who's going to be talking? What is their relationship with the content? expert, student?

Task 5: Collect audio - with what and how? (Refer to Podcast Recording Section).

Task 6: Edit audio - transfer to PC for editing? Edit with what software? How much editing? Music needs? Voice links? File storage needs? Quality of mp3 files?

Step 2 and beyond includes:

Publishing audio - how will it be accessible and distributed?

If Internet, via RSS, what is your notification site - iPodder, iTunes, etc? and aggregation software?

You can also publish it to an intranet, CD-ROM, flash drive, personal audio player (mp3 player, mobile phone) and PDA.

Podcasting approaches

A podcast should only be used for educational purposes when it will add value to student learning. This seems self evident, but at times traditional, effective and tried and true strategies can be usurped by new trends. If there’s a better and easier learning approach to use other then podcasting, then use it! There’s no point in making a podcast about something when it can be done better another way. Podcasting is most appropriate when learners can seriously bend time and shift a bit of space, by learning as they are driving, or studying, or laying on the beach, or even relaxing in the bath.

For example, podcasting is not the most useful approach for botany and plant identification. When starting out, it's better to have real plants or images to learn with, rather than someone's audio descriptions. Imagine this description without any visual guide.

> The leaves are a broad oval to oblong shape, smooth and dark above and with a lighter, downy lower surface, with a short stalk, whilst the flowers have a white petals and a five-lobed calyx, which remains on top of the fruit as it develops.

If, however, you have a quince plant in front of you, then the previous audio becomes a very useful reinforcement. Ideally, podcasting adds learning value. For example, after initially viewing a quince tree, you may remember a lot more about it by holding a quince fruit in your hand, down on the beach and hearing a podcast:

> The quince, cydonia oblonga, is a native to west Asia, but it is cultivated throughout Asia and the Mediterranean for its astringent, pulpy fruit which is cooked and eaten in jams, jellies and desserts. The fruit is fragrant, yellow, shaped like a pear and is covered with frizzy hairs – take a bite and then go for a swim!

Podcasting can be a very effective tool for inducing, and then managing knowledge. Knowledge is formed in the minds of learners when they are able to link incoming symbols, data and information to their existing understanding of subject matter. If a learner actively listens to a podcast, and can make sense of the content, then to understand it, they are likely to paint a mental picture. When this happens, arguably, new knowledge is usually formed. If a mental picture cannot be formed then the podcast has probably failed for this listener, although it may work for others.

Producing educational podcasts for my students is about collecting those symbols, data and information that I think they will respond to most successfully, structuring these into knowledge packages that they should find interesting, and then challenging them to visualise the words so that learning may occur and new knowledge be formed almost as easily as daydreaming.

With educational podcasting, the chosen format is very important. Should it be an interview, or an audio story book - maybe a 'how to' guide or a super slick radio magazine approach? There are so many ways to do the same thing, but the final format used should always be based on a combination of the:

- characteristics of the learning material
- preferred podcast styles of your students
- data and information to hand
- time needed to collect, edit and publish the material
- equipment needed and its cost
- level of information and communication technologies (ICT) and support you have available
- confidence and the 'know how' you have to collect, process and publish the audio.

My preference is to collect, and then process (edit) audio in as high a quality format as possible in order to keep the final podcast product as easy to listen to as possible. There is nothing more annoying then having to listen to a really interesting podcast which is marred by poor quality sound. The final audio file format is usually mp3, which is a highly compressed, thus smaller sized file. This compression often reduces audio files to about 1/10th of their original size, but can be of varying fidelity, which may reduce listening ease at times. Keeping audio quality high until the last stage, helps to ensure the final product will be as easy on the ear as possible.

Oh, and did I mention information technology (IT) support? An external Internet site is needed, with the ability to upload and download mp3 format files, and enough storage space for audio files which can be largish in size, with each file often ranging from 2 to 20 MB. Broadband access is very highly recommended for podcast download and upload. Dial-up access is painfully slow for the file sizes in question. If students are campus based, then podcasts can be loaded onto an Intranet, but audio software, such as Apple's iTunes, needs to be installed on computers so that files can be downloaded to mp3 players, or played on the computer itself. Audio CDs can be distributed to students as an alternative to the two methods above, but it's really only suitable if small numbers are involved.

Potential Podvocation formats

Figure 1, to follow, describes a range of podcast formats and categorises producing them in terms of skills#, gear* (equipment) and time, against a production rating scale (1-5), where 1 denotes ease of production, in terms of skills, simple gear and a short time to produce, and 5 denotes complexity of production in terms of skills, more sophisticated gear and a longer time to produce. The level of gear (equipment) needed to produce podcasts is a slightly tricky issue, because it can range from the 'cheap and nasty', 'cheap and not-too-bad' to 'expensive and pretty good' and 'expensive and really good'. Essentially, you need to be really clear about who the audience is, what message they should end up receiving and how you are going to get it to them. There are many ways to do this, but here are three approaches to podcasting gear:

1. Keep it totally computer based. All that's required is recording/editing software (free versions are available) and a set of integrated microphone/headphones. Whilst these are available for as little as $10, to produce reasonable audio quality $50 is a better starting point. Field based recording isn't easy with this approach.
2. Use a portable recording device and external microphone available from about $150 assuming that you already have all the gear required in approach 1.
3. Use a PDA instead of a portable recorder. This option would realistically start at around $400 - $500.

FORMAT	COMMENT	SKILLS	GEAR	TIME
Sound-scene tours - digital audio story telling	An audio tour of place or object. Very powerful if done well, as it engages the listener with their own constructed 'mental' world based on the audio content	1-3	3-5	3-5
Extending topics	Extension material to provide greater depth, and enhance student motivation eg interview with a topic 'expert'.	1-3	3	3
Recorded talk/lecture	Straight recording of a class, talk or lecture presentation. Can, potentially, be boring, but useful to make up missed sessions, etc.	1-3	5	1
Audio tutorial	To provide extra clarification on specific topics of interest or concern. Can be simply recorded text, but not very engaging.	1-3	1	1-3
Audio assignment	Background material for assignment/project work	1	1	1-3

FORMAT	COMMENT	SKILLS	GEAR	TIME
Student exposition as digital audio stories	Students 'exposing'/talking about their work (especially project based work), field work or case studies. Sharing their knowledge and skills with other students – marketing potential?	1	1	1-3
The 'how to'!	Instructions on 'how to' do something eg. start a pump safely,	1	1	1-3
Audio 'package' style – a type of audio texture	Smooth – slick, high production values, bells n' whistles, fast paced, similar to some types of radio magazine formats Rough - can be hard to listen to, but earthy, raw, eg. – some community radio programmes Smooth tends to need multiple speakers with links tying segments together, music links and professional radio style Usually not an individual format, but a way in which some of the formats can be published	5	3	Smooth – very intensive, with 1 minute requiring approx. 1 – 2 hours work. Rough – can be as little as actual length of recorded audio, plus preparation time.
Sonification – representing data as sounds so that different values have different tones that can be easily heard as being different, etc.	Conversion of data to an audio format for ease of analysis and learning. Examples include 'talking' cockpits in aeroplanes, audio weather forecasts, etc. Potential for learning requiring the processing of large amounts of data/information. e.g. long term weather data sonified and analysed for trends, variations	Various	Various	Various

Figure 1: Podcast Formats

The following describes the Skills (#) and Gear (*) rating scales in more detail.

 # Skills:

• 1- Low - some basic knowledge of using recording and editing/publishing equipment, some knowledge of structuring interviews to reduce editing time.

• 3- Mid level - a higher level knowledge of using recording and editing/publishing equipment is needed, some knowledge of structuring interviews to reduce editing time.

• 5- High - high level knowledge of using recording and editing/publishing equipment is needed, high level knowledge of structuring interviews, use of multi track mixer software.

*** Level of gear (equipment) needed:**

• 1- Low - mainly computer based with integrated microphone/headphone set, assuming access to a computer this level starts at about $50, high quality recorder minidisk, high bit

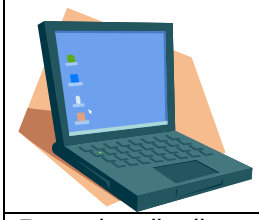
rare recording mp3 unit, pc interface unit, editing software, mp3 player, Internet site, aggregation software.

• 3- Mid level - either high quality computer based approach (better microphone, etc), or portable recorder with good quality microphone (for field based work) - starts at around $150, assuming prior access to a computer and recording/editing software.

• 5- High - High quality portable recording device and good quality microphone, and/or high quality microphone and computer audio card if just computer based. PDA approach fits at this level, as costs start at around $400.

Podcasting recording methods

Audio has to be collected, edited and then published and distributed for student use. There are a variety of ways to do this, varying in cost, time and effort.

METHOD	+ve	-ve	COMMENT
Record audio direct to PC [Memory/disk] 	Very quick, relatively easy	Not suitable for field based recording especially if moving about.	Need recording/editing software (e.g. Audacity on PCs, Garage Band on Macs). If possible, use an external audio interface unit, or high quality internal audio card. Built in audio interfaces are often of very poor quality.
Record audio direct to a portable, low quality recording such as an mp3 recorder/player, note-taker, phone or PDA [may record mp3 files directly, or some other format].	Very quick, relatively easy. Highly portable & suitable for field work. May be relatively cheap? Low visibility (helpful if people being interviewed are a little nervous).	Microphone recording quality is usually poor – often only 'note-taker' quality. Many devices do not have ability to use an external microphone, forcing use of built-in mics which are often not good enough for podcasting purposes.	Must have recording software/hardware built in – not all models offer appropriate file formats or recording quality. 
Record audio direct to high quality mp3 recorder (e.g. iRiver H340, m-audio microtrack, etc.) 	Very quick, relatively easy. Highly portable & usually very suitable for field work. Low visibility (helpful if people being interviewed are a little nervous). Ability to use high quality microphone, if needed.	Microphone recording quality is usually high, or very high. Usually have the ability to use high quality external microphone. More expensive.	Usually ideal for podcasting purposes, but some smaller devices may have confusing menu systems, small buttons, etc.

METHOD	+ve	-ve	COMMENT
Record audio to high quality portable recording device [non mp3 format, e.g. minidisc]. 	Very quick & relatively easy to use. Highly portable & usually very suitable for field work. Low visibility (helpful if people being interviewed are a little nervous). Ability to use high quality microphone, if needed.	Usually do not have in-built microphones. Audio must be transferred to PC for editing in real time – additional time required. Additional cost of recording unit and media over other methods, but often higher audio quality,	Need recording/editing software (e.g. Audacity on PCs, Garage Band on Macs. If possible, use an external audio interface unit, or high quality internal audio card. Some of these high-end recording devices now come with digital cameras and GPS (Global Positioning System) built-in.

Figure 2: Recording Methods

A high quality microphone ($100 - $150) is highly desirable, but not essential. A personal audio player (mp3) is highly desirable for testing purposes (start around $50). A personal audio player that also records is more expensive, and one that has a reasonable level of audio quality is even more so. These tend to start at around $100. A note of caution: recording mp3 players vary greatly in their ability to record reasonable quality audio for podcasting purposes. You need one that lets you record from an external microphone with a 'high' recording bit rate, as in-built microphones are rarely good enough for podcasting.

What Our Students Say about Podcasting

The results of a formal, written survey of a small sample of our students (approximately 45) studying Environmental Management and Garden Design diplomas generally confirmed the results of early, anecdotal focus group work. The sample consisted of approximately two thirds females and one third males, with half being in the 18 – 24 year old range, 40% over 30 years old age with the remainder in the 25 – 30 year old range. The survey was carried out in October, 2005, with the results indicating:

• the majority of students had never heard of podcasting or listened to one. Of those few who use podcasts, most listen to music.
• the majority of students don't own or use an mp3 player. Only one third plan to buy a player within the next 12 months (Some found out later that they actually had mp3 players in their mobile phones which could be used.)
• sixty six percent do, or would, find podcasts useful for their learning
• sixty percent do, or would, listen to podcasts as they drive (the largest response by far), study, or relax, including whilst gardening, lazing on the beach, having a bath, doing house work
• seventy per cent would prefer to listen to podcasts that are presented using a range of styles and formats
• the most preferred content/format of podcasts were: how-to guides, subject expert interviews, guest speakers, spoken word/documentary format, recorded lectures and tutorials
• the most preferred duration was 10 -15 minutes, mainly as interviews (that are short and fast) and recorded lectures and tutorials
• seventy per cent would be interested in video style podcasts.

A small focus group of final year environmental management students rated podcasting from eight to ten out of ten as a learning tool. All found the ability to learn whilst otherwise engaged as the most attractive feature of the tool, especially when extension material was involved. All of the participants thought that recorded lecture would be a very valuable learning tool, potentially enabling them to make up for missed sessions. Video style podcasts would be beneficial, although more limiting.

Issues & Challenges

As with many new learning technologies, there are issues, challenges and even some problems. They tend to fall into three main groups: IT related (the biggest challenge by far), time and cost. All should be, and can be overcome, however IT related issues have been the hardest for us to tackle. Blocked access to mp3 file downloads, lack of access to Internet hosting sites for audio files, inability to get RSS feeds working, and limited access to editing software are all common IT challenges, but which mostly can be overcome with either a workaround, and /or time and effort. This project has demonstarted that podcasting for vocational education - podvocation - is perfectly feasible and an increasingly valuable m-learning tool. It's well worth you giving it a go, so as Dr. Who might say, if he knew about podcasting, "Go and shift a bit of time and bend a bit of space yourself".

Useful Links

ABC Science Show - link to get podcasts at right

http://www.abc.net.au/rn/scienceshow/

BargainTravel.com - hosts a range of podcasts associated with travel

http://www.bargaintravel.com

BBC World Service Go Digital

http://news.bbc.co.uk/1/hi/technology/1478157.stm

Edupodder

http://www.edupodder.com

Introduction to Podcasting presentation

http://sridgway.wikispaces.com/IntroductionToPodcasting

Podcasting in Education presentation

http://seanfitz.wikispaces.com/access2005

The Connected Traveller

http://www.connectedtraveller.com

The Dawn and Drew Show

http://dawnanddrew.podshow.com

Wikipedia - Podcasting

http://en.wikipedia.org/wiki/Podcasting

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