The term podcasting was only created in 2004, and was noted as the word of year in 2005 by the New Oxford American Dictionary (British Broadcasting Corporation, 2005). In the same year, podcasting was touted as ‘the next big thing’ (Dvorak 2005) in educational technology, even taking over blogging in popularity. As Balas (2005) suggests, ‘blogging is so last year: now podcasting is hot’ (p. 29).

Podcasting is one of the newest trends in online computing, and is at home with other recently coined terms such as e-learning, mobile learning, web-based learning and third-generation learning technologies. At the time of writing this article, a Google search for the word ‘podcasting’ produced almost 40 million results, whereas an identical search in 2005 yielded just over one million (Dvorak 2005).

**What is podcasting?**

Podcasting is a way of accessing and distributing audio files over the internet via a method of online subscription or ‘syndication feeds’. Most podcasts combine audio technology, used to create sound and voice files, with web-based broadcasting technology; the production and dissemination of video files is commonly referred to as vodcasting. As Weiss describes, ‘it enables independent producers – like you, me, and the guy next door – to create self-published syndicated radio broadcasts’ (2007).

Users, or listeners, typically subscribe to a particular podcast by using ‘podcatching’ software, also known as aggregators, such as iTunes (see Figure 1). Podcasts subscribed to are regularly updated as the podcatcher software periodically checks for the latest version of each podcast. The podcast files can then be downloaded from a computer to a mobile player such as an iPod or an MP3 player. Although mobile players are very popular with today’s students, recent research shows that most students listen to podcasts on their computers (Maag 2006, Northcote, Marshall, Dobozy, Swan and Mildenhall 2007). Even so, more and more evidence is emerging that suggests that students are using podcasts in a variety of locations, in a variety of ways, for a variety of purposes (Chan, Lee and McLoughlin 2006, Maag 2006, Northcote et al. 2007).

Podcasting technologies are being used in both recreational and educational contexts by people of all ages, but especially by the young (Chan et al. 2006). School children and university students tend to view such technology as a natural part of life, and expect this technology to be used in their learning processes (Maag 2006). Because podcasts are relatively inexpensive, easy to produce (Meng 2005) and portable (Cebeci and Tekdal 2006), the popularity of podcasting continues to grow in a multitude of contexts. By building on students’ interests in new technology and by taking advantage of their existing abilities to use computers, iPods and MP3 players, teachers can utilise this new technology for teaching and learning purposes, especially in the area of language and literacy.

**Podcasts in education**

Even in 2005, soon after their appearance on the online scene, podcasts were advocated for their educational value: ‘Seriously, iPods are educational’ (Read 2005). Podcasts can be accessed, used, created and distributed by educators and students. Universities and schools are currently using podcasts to assist and enhance students’ learning.

Most students in Australia and elsewhere are interested in and knowledgeable about internet technology and typically have a range of skills which enable them to access and download all types of electronic files (DeBell and Chapman 2006). The

**Figure 1: iTunes software**
same students’ abilities to use mobile phone technologies are also relevant to using hand-held digital devices such as iPods and MP3 players. Such skills are currently being utilised and transferred from recreational to educational contexts by educators in school, university, professional and business contexts by introducing podcasts as teaching and learning tools.

However, because podcasting is such a new phenomenon, extensive and longitudinal research has not yet been conducted into how podcasting can be used effectively in education (Cebeci and Tekdal 2006, p. 47). Despite this, many reports abound on the internet of how teachers and students are currently using podcasts in education (British Broadcasting Corporation 2005, Fuller 2007). Similarly, research studies which examine methods of podcast creation, use and sharing are beginning to emerge (Cebeci and Tekdal 2006, Chan et al. 2006, Leaver 2006, Northcote et al. 2007, Weiss 2007). Instances of how podcasts are being used in education typically fall into two categories: (1) accessing and listening to podcasts; and (2) creating and sharing podcasts. The following cases provide examples of both categories.

There are obvious advantages to using podcasts in literacy teaching, especially in the areas of speaking and listening (Maag 2006). Borja also suggests that the use of podcasts in education can ‘help hone students’ vocabulary, writing and editing skills’ (2005 p. 8). Compared to text, the value of audio has often ‘been neglected and underused as a teaching and learning medium’ (Chan et al. 2006, p. 111). For example, children can be encouraged to record their own voices, with sound effects if appropriate, and to share their ideas with other students, parents or the community. Having such a purpose for voice recordings provides students with a meaningful learning context in which to create relevant resources which are used by others.

On a more individual basis, children can be encouraged to reflect on their own recorded observations of narrative stories, excursions or incursions, and even on their own learning processes in order to extend their metacognitive skills. For teachers, access to such student-made audio files provides evidence for developmental assessment processes which can also be shared with the child’s parents or caregivers. Within a whole school setting, language skills can be practised and demonstrated by involving teachers and students in the creation and use of ‘audio newsletters, soundseeing tours of a school or community, language tutoring, professional development, teacher lectures, student writing such as poetry and music, gardening and maintenance reports, school news and announcements’ (Pownell 2006, p. 1).

Using these types of podcasts can involve all members of the school community and can also provide opportunities for interaction between the various groups within a school.

Podcasting can extend levels of flexibility in school and university learning contexts by bringing the inside out and the outside in. For example, teachers report on how podcasting can be used both inside and outside the literacy classroom: audio recordings of textbooks, oral reports, collection of oral field notes, excursion observations and sounds (Meng 2005, pp. 8–9). Content for older students can be mixed with speech or music to modernise or localise the information (Cebeci and Tekdal 2006, p. 49). The world of experts outside the classroom can be brought into the classroom by students who record verbal interviews with leaders from a particular field for the purposes of distributing information to other learners (Read 2005).

In some cases, students and teachers are working together to create and distribute their own podcasts such as ‘Podkids Australia’ at Orange Grove Primary School in Perth (Fuller 2007). Students at the school work with the guidance of their teachers to report on their daily learning and to showcase their school work (see Figure 2). Year 3 and 4 children at the Hong Kong International School broadcast jokes, news and weather featuring host podcasters with names such as Spencer the Defender and Joe Shmoe. The ‘KinderGoobers’ podcast morning messages and news from their class on a regular basis from a school in Garland, Maine in the US. Students and teachers from Eaglehawk Secondary College in Bendigo, Victoria, work together on the iHistory Podcast Project ([http://ihistory.wordpress.com/](http://ihistory.wordpress.com/)) to gather evidence about history-related topics and use these artefacts and evidence to create multimedia files to share with their peers.

Lecturers at Edith Cowan University in Perth are working with their students to produce resources that can be used by current and future students (Northcote et al. 2007). Some of these lecturers and
students collaborate to create question-and-answer podcasts which assist students to reflect on unit content, while other podcasts are created by past students for the purposes of modelling their skills for future or current students. Academic staff at Duke University are asking their students to take audio notes as well as or instead of written notes and to create ‘audio Web logs’ of their university-related work off-campus (Read 2005). Honours students in the communications studies course at the University of Western Australia create audio podcasts for their media assignments in which they create resources ranging from ‘a “pod play” in the style 1930s RKO radio theatre to an alternative commentary for a Simpsons episode focusing on consumer culture’ (Leaver 2006). Staff at the Department of Education at Washburn University in Topeka, Kansas, are using podcasting to assist the education of their preservice teachers (Pownell 2006). Lecturers will supplement course material with relevant podcasts while preservice teachers will receive instruction on how to create podcasts for use in future school settings.

Clearly, teachers and students are working together to create and use podcasts in creative, innovative ways which add depth and interest to current learning resources and methods. Other examples of Australian educators and students using and broadcasting podcasts can be found at http://australianedubloggers.pbwiki.com/.

Benefits and limitations of podcasts
In educational contexts, podcasts should obviously be used in close conjunction with intended learning outcomes. Without this link to outcomes, the use and creation of podcasts risk becoming processes which provide little more than ‘bells and whistles’. With this caution in mind, many educators appear to agree that podcasts can be valuable learning objects if they are used in conjunction with clear learning objectives, hold genuine educational value (Cebeci and Tekdal 2006, pp. 50–52) and consider learners’ needs (Maag 2006).

The benefits of podcasting for teachers and students mainly lie in the areas of motivation, alternative presentation and skill enhancement. Since podcasts lend themselves to being used in social learning environments, they provide a context in which speaking and listening skills can be practised, studied and extended. Learning can become purposeful and motivating when authentic audiences are sought for children’s online podcasts. Such processes can often break down learning barriers, allowing parents and the community to come into the classroom: ‘What’s particularly interesting is that the students are incredibly keen to tell their parents about a new podcast that’s been put online – they’re now taking greater pride in the work they do in school; and that’s something that every teacher hopes for’ (Fuller 2007, p. 2).

For teachers, children’s involvement in the processes of accessing, using and creating podcasts can become the basis of valuable assessment exercises which focus on students’ abilities to interpret spoken instructions, to report on events, and to communicate and request information in a variety of authentic contexts. Furthermore, such assessment activities can also be extended or modified to include self and peer assessment activities.

When students are encouraged to critically reflect on and consider the sources of a variety of available and downloadable podcasts, they are provided with opportunities to filter and judge information. Such activities are clearly related to the listening outcome from the Western Australian Outcomes and Standards Framework: ‘Students listen with purpose, understanding and critical awareness in a wide range of situations’ (Department of Education and Training Western Australia 2005, p. 12a). Similarly, when students create podcasts, they are encouraged to extend their oral literacy skills beyond the obvious, providing learning opportunities to address the Speaking outcome: ‘Students speak with purpose and effect in a wide range of contexts’ from the Western Australian Outcomes and Standards Framework (Department of Education and Training Western Australia 2005, p. 12a).

As well as providing valuable records and samples of students’ work, podcasting technologies offer teachers and students effective ways to create and store resources for future use. Students’ podcast work from one class can be used for demonstration purposes for future classes of students, thus providing opportunities for modelling exemplar work. As learning objects, podcasts represent the outputs of certain types of learning and teaching that typify the time and culture in which they were created. In this way, podcasts also become cultural artefacts: ‘These podcasts are also cultural output themselves – they will remain downloadable indefinitely, allowing students to use them in future online portfolios and also providing a resource (or entertainment) for others. Moreover, the same system … also facilitates the students’ podcasts, in effect allowing them to take a turn at using the digital podium’ (Leaver 2006).

So, podcasts can become avenues by which students may be motivated and guided to become active constructors of their own knowledge through the co-creation of a particular product: the podcast. To harness the intellectual capacities and
technologically infused interests of our children in education is a must. The centrality of information as an educational public good becomes a critical value statement and fundamental principle of the modern classroom.

Creating a podcast

Podcasts need to be created, uploaded to a web server and distributed to listeners (or consumers or users). Firstly, audio files need to be created. Audio recording software is readily available, and frequently free of charge (for example, Audacity, a free audio recorder and editor available to download at http://audacity.sourceforge.net/). Low cost headsets with microphones, purchased from most department or computer stores, can be used to record the audio file. Of course, the creation of a podcast in an educational context should go hand-in-hand with articulating its purpose and audience – and these can often be decided in negotiation between teachers and their students.

Typically, the most difficult part of the podcast creation process is gaining online access to a web server that hosts the podcast file. Campbell (2005) suggests working in partnership with sound engineers or technical assistants to achieve this step. Other authors suggest using online blogger software (Gregg 2006). Many non-technical experts find PodOmatic a simple and inexpensive alternative (www.podomatic.com); it allows users to create, find and share podcasts without reliance on high-level technical skills.

Additional information about creating podcasts can be accessed from online resources which cater for users’ varied technical abilities. For example, the students and one of their teachers at Orange Grove Primary School in Perth have produced a podcast which explains how a podcast works to novice podcasters. This podcast can be accessed at http://www.podkids.com.au/ or by searching for ‘Podkids Australia’ in software such as iTunes. Alternatively, the ‘five steps to successful podcasting’ are described in an easy-to-follow diagram format by Meng (2005, p. 11) at http://edmarketing.apple.com/adcinstitute/wp-content/Missouri_Podcasting_White_Paper.pdf. These instructions provide the novice podcaster with instructions about how to record, edit, publish and distribute a podcast.

Of course, ask any primary or secondary student about how to create a podcast and they will more than likely type ‘how to make a podcast’ into Google to find such information. Although the information they find may not be peer-reviewed or highly academic in nature, they will find a way to solve problems such as how to upload your podcast to a web server and how to ‘feed’ your podcast to other online users.

The future of podcasts

So far, podcasting technology has afforded teachers and students opportunities to blur the divisions between classrooms, home and the community, and to blur the divisions between teacher and student. By working with such technology, knowledge can be constructed, deconstructed and reconstructed in meaningful ways for both school teachers and students. So, hopefully, the future of podcasts in education will be driven just as much by students as their teachers. Teachers and students will no doubt indicate their opinions on the value of podcasts by using or not using podcasts in and beyond the classroom for learning. Ideally, the future of podcasts in education should go beyond the ‘talking head’ of the classroom (Meng 2005, p. 9) and take learning beyond the school gates (Cebeci and Tekdal 2006) and bring the world into the classroom. As Paul Fuller explains: ‘Podcasting really is opening up entirely new avenues of education for both students and teachers!’ (2007).

Whatever podcasting is, it is a shift away from a purely text-heavy learning environment. By providing learning content and opportunities which involve audio, graphics, video and text, the future of podcasts will contribute to pushing oral language and teachers’ and students’ voices to the forefront of some learning contexts.

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