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# Using mobile technology to deliver information in audio format: learning by listening

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# **M-libraries 3**

Transforming libraries  
with mobile technology

edited by  
**Mohamed Ally** and **Gill Needham**



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Margie Wallin is a Liaison Librarian at Southern Cross University, Coffs Harbour, New South Wales, and one of her dreams is to make the process of navigating the 'world of information' a little easier for students and staff. Providing access to information in a mobile setting is one way of achieving this goal – especially in terms of flexibility and access.

Andrew Walsh works at the University of Huddersfield as an academic librarian, where his main role involves subject liaison for the schools of Education and Professional Development and Music, Humanities and Media. Andrew is particularly interested in information literacy, the use of active learning within library sessions, the application of mobile technologies within the library environment and making use of appropriate Web 2.0 technologies. In recent years he has delivered conference papers, including keynotes, and published articles on information literacy, active learning and mobile learning in libraries; has co-written a book on active learning tips for librarians; and has written several book chapters on social media and mobile learning. Most of his recent publications and talks can be found via the University of Huddersfield repository (<http://bit.ly/lilacAW>). Andrew is an active researcher-practitioner, including studying part time for an information literacy-related PhD at the University of Huddersfield.

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environments. This means that a librarian will be expected to multi-task more and also to become 'mobile'. For example, although one can be a reference librarian to an on-campus student, one will also be expected to instruct a student off-campus in how to use the mobile phone or mobile broadband to access library services.

Librarians will need to be more assertive and bolder in the way they use mobile technology for their work. This means that they should be making their demands known to the mobile service providers in the areas that either lack service or are in need improvement.

### Conclusion

For the USP region, the use of mobile technology in libraries is in its early stages. Most libraries lack the services of full-time professional staff and have other operational priorities on their agendas that need attention. There is not going to be a better time than now to gradually begin using mobile technology to offer library services to students. It is hoped that the digital divide will be narrowed once a choice and implementation for either mobile broadband or mobile phone is made – first for the campuses at Laucala, Fiji; Emalus, Vanuatu; and Alafua, Samoa; and then for the other campuses.

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# 7

## Using mobile technology to deliver information in audio format: learning by listening

Margie Wallin, Kate Kelly and Annika McGinley

### Introduction

Libraries globally are exploring ways to deliver the myriad of quality information resources available to their users – via mobile devices. As well as focusing on documents (with the inherent problems associated with reading on small screens), Southern Cross University (SCU) Library has explored ways of accessing key documents and converting them to audio form, so that students and staff have an alternative way of engaging with academic literature.

Learners today exist in an increasingly multimodal environment. Mobile devices provide them with extra levels of flexibility, offering them both auditory and visual input and allowing them to learn anytime, anywhere and while doing anything. As Eisenwine and Hadley (2011, 5) state, 'the digital generation prefers parallel processing and multitasking as a way of digesting information. In addition, that generation prefers pictures, sounds and video over text.'

Traditionally, academic libraries have provided access to predominantly text-based materials. With a highly mobile cohort, however, the problems inherent in viewing or reading on small screens, combined with the need to support different learning styles, have provided the impetus for exploring audio-based alternatives to the academic literature.

As SCU Library staff worked towards the development of a mobile platform, they simultaneously explored the provision of text-based audio files within that platform and the University's learning management system.



### Read, listen and learn

The pedagogical value of providing audio-based resources, especially podcasts, has been well documented (Hew, 2009; Kervin et al., 2006; McGarr, 2009; Tempelhof, et al., 2009). Generally, such podcasts have been based on lecture materials or supplementary materials designed to support specific units. Other examples include the provision of conference or workshop presentations. Little has been written evaluating the use of audio forms of published and/or scholarly literature.

Between 2008 and 2010, database vendors began providing audio files of selected academic literature. Factiva led the field with linked audio files for all its articles (of less than 4000 words). EbscoHost and Gale Cengage followed suit, providing audio files for full-text HTML documents, but not for PDF files. All three vendors provided an immediate 'listen' function and the facility to download an MP3 version. Ironically, despite being the provider of the first mobile database platform, EbscoHost disabled the 'audio' function for mobile devices. Ebook Library (EBL) provided a 'read aloud' facility within its e-book collection, but not downloadable MP3 files.

In January 2011, SCU Library invited the University community to participate in a research project to evaluate the use and usability of audio files as learning tools. The 'Mobile Resources' Library guide (<http://libguides.scu.edu.au/mobile>) incorporated a research project tab that linked to selected journal articles (on m-learning/e-learning) with both text and audio formats. A screencast provided instructions on downloading and listening to the selected articles and a link to the survey tool was provided.

Forty-two responses were received, from both staff (15%) and students (85%). This low response rate was not unexpected because the project was undertaken during the traditionally quiet summer session of the academic year. All faculties and schools within the University were represented, and there was a fairly even spread across ages, which ranged from 18 to 64 years. Of the student cohort, 41% were studying internally, 6% were offshore students and 53% were studying at a distance.

Survey participants were asked to comment on how effective they found a particular format for their learning, and which article format they would prefer to access on their mobile devices. A preference for access to both formats was expressed by 64% of respondents. Many of

the comments reflected the general advantages of mobile devices – convenience and flexibility:

It's a lot easier than lugging around a huge text book or pages that add to clutter and can get lost.

More mobile than sitting at a computer work station. Was able to relax in own environment.

Not surprisingly, the main criticisms of accessing 'text' on a mobile device related to screen size and the associated reading difficulties. Some respondents also commented on the limited or non-existent 'note taking' functionality of some devices:

Words too small to read.

I like to use the hard copy so I can make notes and add Post-its.

Having audio access to journal articles was a new feature for many of our survey respondents, and this was reflected in their overwhelmingly positive comments:

As I am an international student, this format assists me to develop my listening skill.

It was excellent. How good, can we have all the journals available to listen to?

I prefer reading for academic-related info, however I found podcasts useful. I would download audio to my mobile device and play it while driving, or maybe peeling carrots, etc. . . . This sort of facility would be very useful for me.

However, despite the positive responses, almost all criticisms of the audio format pertained to the voice quality – its synthesized nature and speed of delivery:

But I want a human voice rather than a computer-generated one.

I found I was able to read much quicker than the speaker was relaying the text, however, with the amount of reading time available to us, as it takes total concentration, being able to listen while walking, driving, on the train etc. has huge benefits. Having the text means you are able to refer back to specifics if needed.

Having access to both text and audio formats was the most popular approach (64%):

This is such a great idea and I hope the time and effort is put in to make this a freely available tool for all students. Accessing the data in both audio and text format is so invaluable as a greater understanding is gained by using both styles of learning. It is a far more complete experience.

Although I did notice that when I read the article after listening to it I picked up some things I hadn't when just listening.

Listening is good but reading can allow clarification.

A preference to access neither format on a mobile device was expressed by 10% of respondents. Generally these comments reflected a preference for print materials:

With a difficult article I need to study what is being said with frequent backtracking. I usually prefer to print the difficult papers.

### **Unit-based cohort**

In addition to the resources made available to the entire University community, selected articles – relevant to two assessment tasks – were embedded in online course material for a postgraduate unit (Foundations of Management) within the School of Business. This cohort was keen to embrace new learning technologies – being time poor, yet with ready access to technology, internet and mobile networks. Students provided informal feedback via a virtual focus group within the learning management system.

Feedback both on the forum and via the discussion lists indicated a lack of expertise in downloading (usually via iTunes) and managing the files. Students discussed technical frustrations that diminished their experience. In response, the SCU Library and Flexible Learning Development Services (FLDS) are developing a 'software toolkit' with advice and screencast instructions on managing multimedia files.

Students on the forum were enthusiastic about resources provided in multiple formats for use on mobile devices. One student explained that he was able to expand his study time by listening to audio content on his daily commute to work. For these students, the overwhelming

response was that providing material in multiple formats allowed them to make better use of their time and to use different formats to optimize 'reading' time.

### **Audio investigations**

As a result of this feedback, SCU Library staff continued to investigate opportunities for providing both text and audio forms of academic literature to their users. Feedback was provided to those database vendors who offer an audio alternative to the academic literature, based on respondents' comments. The provision of such services by other database vendors is being monitored on an ongoing basis and new resources are promoted when available. Journals providing their own podcasts (e.g. *Nature*, *Wall Street Journal* and *New England Journal of Medicine*) have also been explored and promoted (Tempelhof et al., 2009).

In addition to providing access to existing audio files, the Library hoped to generate audio files (using text-to-speech software) for unit e-reserve materials. However, there are a number of implications pertaining to the creation and distribution of 'adaptations' of such literature. Each publisher or vendor applies varying restrictions or negotiates specific licence agreements, and having to investigate this on a document-by-document basis would not be cost or time efficient. In one study (Miller and Piller, 2005) audio versions of set readings were created. There were a limited number of readings involved and permission was sought for each reading.

While institutions are bound by copyright and licensing restrictions, individuals are able to create such files, solely for personal research or study. It was decided to explore the possibilities of making text-to-speech tools available to university students and staff.

### **Text-to-speech**

Text-to-speech tools (or speech synthesizers) have been in use for many years, often for accessibility purposes or to support language students. Such tools are equally valuable for auditory learners, and some interesting applications of these tools include essay revision, assisting struggling readers and providing narration for web lectures (Balajthy, 2005; Chong, Tosukhowong and Sakauchi, 2002; Garrison, 2009).

As stated by Rughooputh and Santally (2009, 137), 'Research into personalization and individual learning preferences has shown that the use of multi-modal approaches to delivery can help improve learning experience of learners irrespective of whether in classrooms or through distance education.' This reinforces the comments made by a number of the survey participants.

A range of free and commercial text-to-speech software tools and applications were identified and evaluated. Evaluation criteria included ease of use, voice quality, choice of accents and speed, file size and format, as well as cost. As with the audio files provided by database vendors, the quality of 'voice' was viewed as a key consideration. A selection of these tools were documented, along with key features and comments, and the information was made available to SCU staff and students on the Text-to-Speech tab within the 'Mobile Resources' Library guide (<http://libguides.scu.edu.au/mobile>).

As mobile devices are more than just 'phones', desktop-based software and mobile applications were also investigated. Thus, all users are supported – whether they have high-end mobile devices, including smartphones, or just basic MP3 players. This ensures a service that is both equitable and flexible. One comment from a student was: 'I will still access files via the web and then load them onto my phone from my computer (it is cheaper that way)'.

Initially, information about text-to-speech resources was provided to participants in the research project and promoted via the SCU Library web page. Individual feedback was extremely positive. Students and staff reported using these tools to create MP3 files of journal articles, selected e-readings and course materials, book chapters and book sections, web pages, newspaper articles – to name just a few. All the respondents commented on the value of these tools and the increased flexibility they provided to them as mobile learners. They also reinforced the comments from the initial survey, on the value of having multiple formats of the same resource.

### Conclusion

Novelty is probably one of the most powerful signals to determine what we pay attention to in the world. (Poldrack, 2010, 1)

While the use of audio files or podcasts in the academic environment is not new, the ability to access audio forms of scholarly literature is a recent development. In addition, enabling staff and students to create their own personalized collections of audio files – generated from text-based resources – is both novel and empowering for mobile learners.

This project has demonstrated that scholarly literature can be repurposed to suit a variety of learning styles, particularly in the mobile setting. The success of embedding dual-format, mobile-ready scholarly resources into a unit has also created opportunities within other unit offerings.

In response to the research findings, the SCU Library, FLDS and the Teaching and Learning Centre continue to collaborate on the development of 'mobile literacy' resources, enabling students to navigate the technical complexities of creating or downloading and listening to content via mobile devices.

As Low and O'Connell (2006, 2) note, 'the highly personalised nature of digital mobile devices provides an excellent platform for the development of personalised, learner-centric educational experiences'. By providing opportunities for learners to both create and access multi-format and mobile-ready scholarly resources, the Library continues to support mobile (and indeed all) learners in their academic endeavours.

### Acknowledgements

Trevor Davey, Lecturer, School of Business, Southern Cross University.

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