

Podcasts – an adjunct to the teaching of dentistry

A. D. Walmsley,¹ C. S. Lambe,² D. G. Perryer³ and K. B. Hill⁴

IN BRIEF

- Podcasting provides an alternative way of delivering educational content.
- Students prefer listening to these Podcasts on a computer.
- A structured Podcast is a valuable educational resource.

The aim of this study was to evaluate how clinical students reacted to the use of Podcasts for undergraduate teaching. The most popular way of listening to them was on a computer. Students scored highly the subject matter of the Podcasts and used them for learning around the subject, especially during examination time. Podcasts are a valuable vehicle for delivering learning materials to students: offering flexibility but in tune with students' love of downloading materials to use when they wish.

INTRODUCTION

Podcast is a portmanteau word derived from iPod and Broadcast.¹ A Podcast is similar to a sound track recorded from a radio transmission. The difference is that the material can be distributed automatically: subscribers to a Podcasting website will receive notifications of new Podcasts as soon as they are published and are able to listen to the material at their leisure.

Downloading music for private listening at any time or location has caught the imagination of the younger population and the progression to Podcasts containing learning materials is appealing to many of them. There is currently great interest in the ways that computer-based social networking technologies, such as Podcasting, might impact on education. Many providers of medical and dental education have enthusiastically embraced the use of new technologies for delivering learning materials. In medicine, Podcasts have already become a favourite with students and there are reports of their use in various specialities.²⁻⁴ Dentistry has also introduced

the use of Podcasts successfully in both lecture format^{5,6} and video format.⁷ It is acknowledged that a Podcast should be used as an adjunct to traditional teaching methods rather than a replacement.⁸

Since early 2006, the School of Dentistry in Birmingham has been developing a library of Podcasts for a number of teaching areas, including a series which covers the various clinical and technical aspects of prosthetic dentistry. The latter were created by members of the Prosthetics Department. The intention was to capture students' enthusiasm for this specialty by devising a novel way of helping them to revise key topics while on the move. Our students download the Prosthetics Podcasts to their iPods, mp3 players, mobile phones or listen to them on a computer. Students who have subscribed to iTunes automatically received new prosthetic Podcasts when they become available.

The aim of this work is to evaluate the technologies used by students to download the Podcasts and their acceptability to students as a medium for learning and teaching at the School of Dentistry, The University of Birmingham.

MATERIALS AND METHODS

Our approach was to specifically relate the Podcasts to educational objectives of the prosthetic dentistry undergraduate course. They were designed to be no more than ten minutes long. Each

Podcast topic was developed into a script and discussed within the teaching unit. Following agreement on the script and its content, the recording was then made. The Podcast was presented as an enthusiastic discussion between teachers rather than a monologue, to maintain the interest of the listener. From start to finish a ten minute Podcast took around two hours to script, record and make available on iTunes.⁹

A questionnaire based on previous work¹⁰ was piloted with first and second year students who had not encountered the use of Podcasts for their speciality teaching in removable prosthodontics. The questionnaire was modified in the light of the pilot responses and is shown in Table 1.

The questionnaire was distributed to 149 students who were participating in the removable prosthodontics speciality teaching course, which runs during years 3 and 4. Ninety-six questionnaires were returned giving a response rate of 67%. Anonymity of the respondents was maintained by not asking the students to record their names on the questionnaire.

RESULTS

The students were asked about their use of popular social networking sites and the results show that Facebook and YouTube scored highly with the students (Fig. 1). Those sites which contain large repositories of pictures and music such as Flickr and Last FM did not score as

¹Professor of Restorative Dentistry, ²Clinical Scientist, ³Lecturer in Clinical Practice, ⁴Lecturer in Behavioural Science and Dental Public Health, School of Dentistry, St Chad's Queensway, Birmingham, B4 6NN
*Correspondence to: Professor Damien Walmsley
Email: a.d.walmsley@bham.ac.uk

Table 1 Student questionnaire on use of Podcasts

This is a questionnaire to help the Prosthetics Unit at the Dental School to evaluate both the prosthetics site on the ecourse and the new addition of the Podcasts. We would be grateful if you could please answer the questions below. All responses will be treated anonymously.

1. Gender

Male Female

2. Which item from the following list do you use to listen to music?

Ipod mp3 player Video Ipod Computer CD player Mobile Phone
 None of the items mentioned

3. Have you heard of the following and do you use any of them?

Facebook MySpace YouTube Flickr LastFM Deli.cio.us

Podcasts

4. Please indicate with a tick those Podcasts which you have listened to. Please rate the Podcasts you have listened to by ticking the column which you feel reflects the quality of the Podcast. Please tick one column only when rating!

Podcast	Excellent	Good	Average	Fair	Poor
Examination of the Partially Dentate Patient					
Preliminary Jaw Registration					
Removable Partial Denture Design					
The Shortened Dental Arch					
Immediate Dentures					
Additions and Repairs					
Complete Denture Problems					
Overdentures					
Impressions in Prosthetic Dentistry					

5. Which item from the following list do you use to listen to them:

Ipod mp3 player Video Ipod Computer cluster Computer at home Mobile phone

6. Where do you listen to them, in general:

BDH Home Bus/Train Gym Other (please specify)

7. Why did you use the Podcast? (Please tick all those that apply.)

I was looking for a particular piece of information I wanted to 'read around the subject'
 I wanted to see how to formulate answers in vivas For examination revision
 Other (please specify) the subject"

8. Do you feel that the information on the Podcast helped you learn more about a particular subject?

Yes No

What are your reasons?

9. Should there be more Podcasts on the Ecourse?

Yes No

If yes, what other material would you like to see on the Ecourse website?

10. Any other comments?

Thank you for the time you took to fill in this questionnaire.

highly. The students who replied to the questionnaire used a variety of technologies to listen to the School's Podcasts. The most popular location for listening was at home (Fig. 2) although public

places such as on public transport and in the gym were also mentioned. The main technology used for listening to the Podcasts was their home computer (Fig. 3). Perhaps surprisingly, other

formats such as the iPod were less popular. This pattern of use reflected their choices when listening to music, again with the computer being more popular than portable devices. Although there

are a number of Podcasts available the most popular one on 'impressions' had been listened to by 39% of the students. The quality rating of the subject matter of all the Podcasts was scored highly at the 'very good' to 'good' rating level (Fig. 4) with few responses at the average rating level and none below this. The reasons for using the Podcasts were for 'reading around' the subject areas especially during examination time (Table 2). They particularly liked the Podcast as it provided a different medium for learning (Table 3).

DISCUSSION

The use of Podcasting in education is relatively new and follows on from the youth-driven mp3 revolution whereby people are able to access sound recordings in an easily accessible and portable medium.⁴ The prosthetics Podcasts were mainly accessed in the comfort of our students' own homes away from the dental school, on their home computers. Whilst the students' awareness and knowledge of Podcasting is high, it is recognised that there is a lack of knowledge among some on how to use the technology and set up the computer for downloading a Podcast.^{8,11} For instance Apple iTunes normally downloads only the most recent Podcast in a series. A setting must be changed to download all relevant Podcasts. The School of Dentistry's Podcasts are openly available on the Apple iTunes store but there is a trend in the United States to prevent public access by using a separate part of the Apple site called iTunesU. This site is specifically made available to an individual student's university only⁵. All our Podcasts are made available on the school elearning environment (ecourse) and are not password protected. This availability to the international community has been well received with over 6,000 downloads to date.

The Podcasts in this study were different to those that had been used in previous dental applications where the Podcast is simply a recording of a lecture.^{5,6,8} Our Podcasts did not replicate existing educational resources but complemented them, providing another way to learn and reinforce core knowledge. This is in accordance with our school's

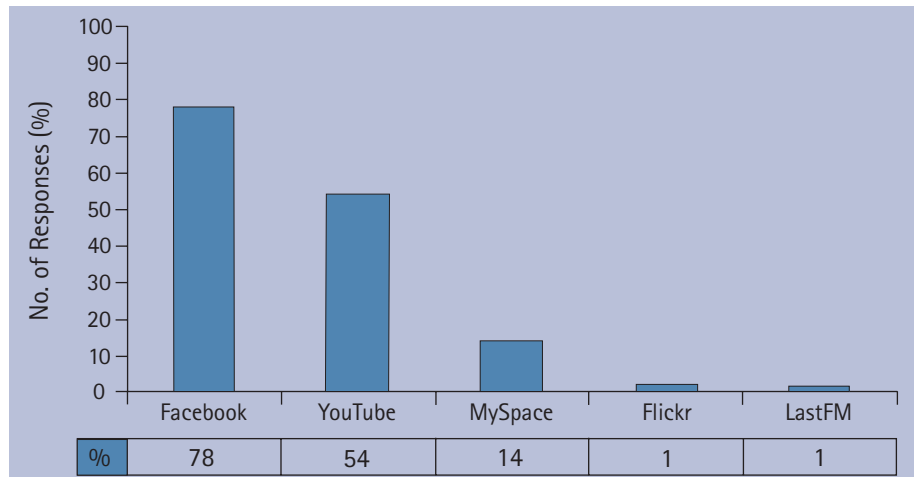


Fig. 1 Which of the following sites do you use?

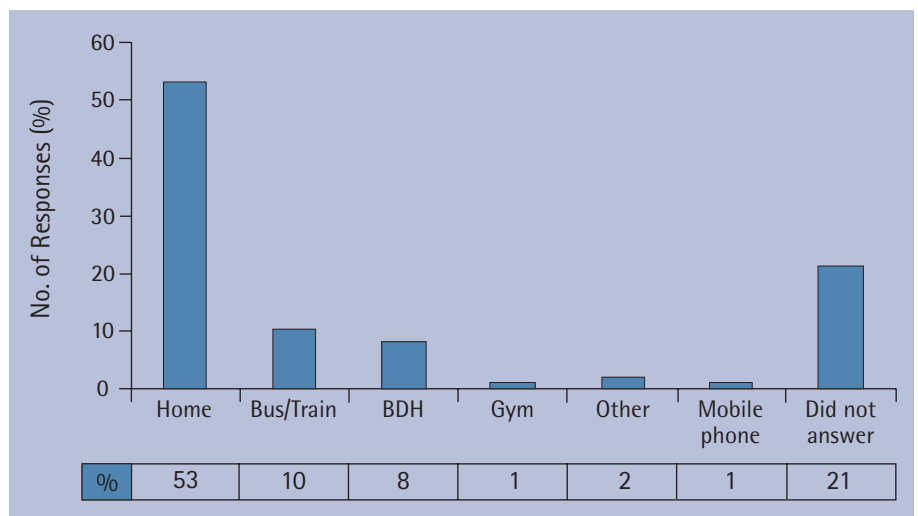


Fig. 2 Where do you listen to the Podcasts?

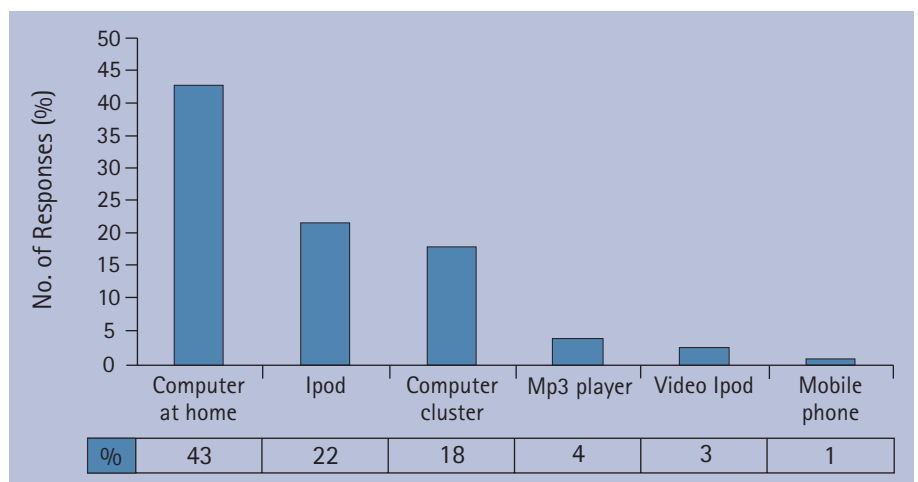


Fig. 3 How do you listen to the Podcast?

general objective of providing learning materials in as many formats as possible, to suit individual students' learning styles. Whilst the paper focuses on the use of Podcasts in prosthetic dentistry, the school is expanding its library into other subject areas. It would be interesting to see how the national picture

develops as other schools release their own podcasts into the public domain.

There are important characteristics to incorporate in Podcast design. They should be based on a course's required educational outcomes. However they should also be attractive to young people. The short and snappy discussion

format suits the short attention span of the YouTube generation which prefers such media.¹³ Another aspect of producing Podcasts for younger people is that students consider the content to be much more important than the recording quality. This is another trait of the YouTube generation, and means that Podcasts can be produced quickly and inexpensively. This low level of investment in turn allows their use as disposable items, to be discarded or replaced as a course changes over the years.

Podcasts allow versatility for the student learner. Our learning environment (ecourse) allows (persistent) notes to be written onto screen at the same time as the Podcast is listened to but interestingly this facility is little used by our students. The pedagogical approach is that students can choose to use/not use our Podcasts and can choose when and where to use them. This and the availability of dental learning and teaching materials in different formats, both conventional and electronic, allow them to control their own learning space. The School's ecourse also has the facility for Podcasts to be created and published by students, which enhances their feeling of ownership of their learning space. Our study shows that despite the topicality of Podcasts not all students used them, but an appreciable number did, and they found them a very acceptable method of learning. This reflects much of the emerging literature on the use of such tools but our experience is that students see them as an adjunct and not necessarily as their first line of learning.¹⁴

CONCLUSION

Short Podcasts are a useful vehicle for delivering learning materials to students. They offer flexibility and are in tune with students' love of downloading materials to use when they wish.

1. Podcast (From Wikipedia, the free encyclopedia) <http://en.wikipedia.org/wiki/Podcast> (accessed 20 August 2008)

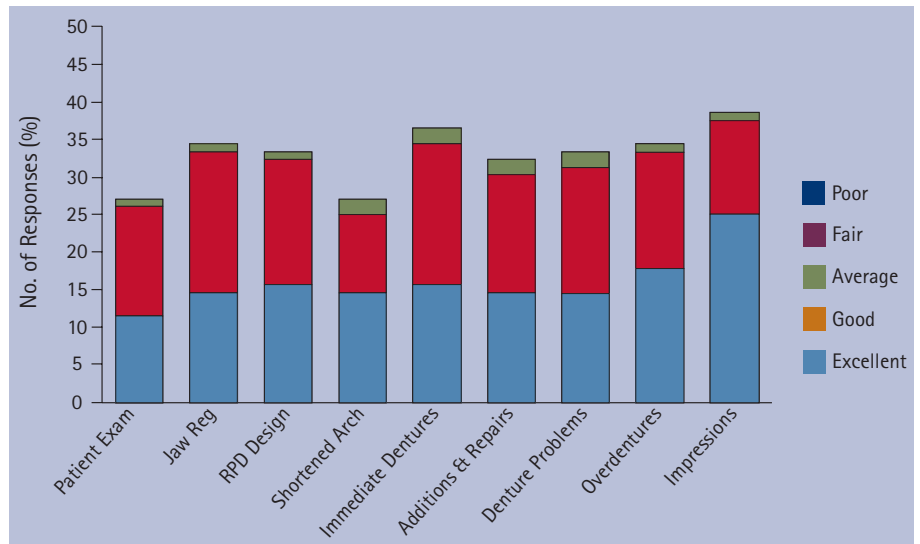


Fig. 4 Quality ratings of each Podcast

Table 2 Why did you use the Podcast in your studies?

For examination revision	28%
Looking for a particular piece of information	25%
To 'read around the subject'	23%
To formulate answers in vivas	17%
Other	6%

2. Boulos M N, Wheeler S. The emerging Web 2.0 social software: an enabling suite of sociable technologies in health and health care education. *Health Info Libr J* 2007; **24**: 2-23.
3. Whitehead D E, Bray D, Harries M. Not just music but medicine. Podcasting surgical procedures in otolaryngology. *Clin Otolaryngol* 2007; **32**: 3-6.
4. Boulos M N, Maramba I, Wheeler S. Wikis, blogs and Podcasts: a new generation of Web-based tools for virtual collaborative clinical practice and education. *BMC Med Educ* 2006; **6**: 41.
5. Johnson L, Grayden S. Podcasts - an emerging form of digital publishing. *Int J Comput Dent* 2006; **9**: 205-218.
6. Brittain S, Glowacki P, Van Ittersum J, Johnson L. Podcasting lectures. *Educourse Quarterly* 2006; **29**: 25-31. <http://www.educause.edu/ir/library/pdf/eqm0634.pdf> (Accessed online 20 August 2008)
7. Boynton J R, Johnson L A, Nainar S M, Hu J C. Portable digital video instruction in predoctoral education of child behavior management. *J Dent Educ* 2007; **71**: 545-549.
8. Jham B C, Duraes G V, Strassler H E, Sensi L G. Joining the Podcast revolution. *J Dent Educ* 2008; **72**: 278-281.
9. Perryer G, Lambe C S, Attrill D, Walmsley A D. Podcasts, wikis, videos, and blogs: a case study in dental education. *The Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine Newsletter* 01 2007; **13**: 6-7. ISSN 1740-8768.
10. Walmsley A D, White D A, Eynon R, Somerfield L. The use of the Internet within a dental school. *Eur J Dent Educ* 2003; **7**: 27-33.

Table 3 Other comments

- Remember the information better by listening to it compared to reading about it
 - Gives a good overview of the subject
 - Easier to listen to someone explain it again on demand and repeat if you missed something
 - More Podcasts on the ecourse please!
 - A different way of learning other than sitting at your desk reading!
 - You can replay it, make notes from it, put it on your mp3 phone for your train journey home!
11. Sandars J, Schroter S. Web 2.0 technologies for undergraduate and postgraduate medical education: an online survey. *Postgrad Med J* 2007; **83**: 759-762.
 12. Perryer G, White D, Walmsley A D. Student heaven. *The Academy Subject Centre for Medicine, Dentistry and Veterinary Medicine Newsletter* 01 2008; **16**: 3-4. ISSN 1740-8768.
 13. Cann A J. Podcasting is dead. Long live video! Bioscience Education 10-c1 <http://www.bioscience.heacademy.ac.uk/journal/vol10/beej-10-c1.aspx> (Accessed 12 July 2008) DOI:10.3108/beej.10.c1
 14. Deal A. Teaching with Technology White Paper: Podcasting. Educause CONNECT. 2007. http://connect.educause.edu/files/CMU_Podcasting_Jun07.pdf (accessed 12 July 2008).