

## Podcasting: Is it a technology for informal peer learning?

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We describe a semester long pilot project in which a podcasting system was created to support informal peer learning in a problem based medical curriculum with so called Net Generation students. Students could create short podcasts that communicated their understanding, difficulties or opinions to their peers about the weekly clinical problem under investigation. Student activity was logged throughout and a focus group was held at the end of semester. About one quarter of the student cohort used the podcasting system but very few students created podcasts. Students were interested in listening as consumers of content and a small group visited the site weekly to check for updates. However, student engagement with the podcasting system required incentives. It seems that in the absence of quality content, the technology itself does not provide enough incentive to drive participation.

Keywords: peer learning, podcast, net generation, Web 2.0, higher education

### Introduction

Increasingly podcasts are appearing on the educational technology landscape. These media files, usually audio but also video, can be obtained directly or via subscription from websites. They are growing in use in the education sector but are more widely available through news and media outlets as well as through the promotion and entertainment industries. This is partly because it is now relatively easy to produce podcasts and post them to the Internet. Users can also easily download podcasts to their computer or portable MP3 player for immediate or delayed playback. Through syndication technology (e.g. Really Simple Syndication) users can be kept up-to-date with the latest episode of their favourite programs. Aggregators or podcatchers such as iTunes can be programmed to download the latest instalment automatically and synchronisation with an MP3 player makes the podcast portable.

Podcasts have been used for a number of purposes in education. Harris and Park (2008) recently summarised educational usages of podcasts based on four principal drivers: teaching, service, marketing and technology. In this classification, teaching driven podcasting is described as the provision of teacher-created content such as lectures, seminars, updates and interviews but also student-created content such as interviews. The idea that learning can take place "anytime anywhere" is attractive and is often included in the hype of surrounding podcasting technology (e.g. Lee & Chan, 2007).

Current university students have been characterised as the 'Net Generation' (Oblinger & Oblinger, 2005) who are heavy and proficient users of technology (Barnes, Marateo & Ferris, 2007; Prensky, 2001). With this in mind it might be reasonable to expect that many of these students have been exposed to or have used a range of Web 2.0 technologies including podcasts. While a 2006 study by Kennedy et al (2007) found that few first year students participated in podcasting and were more likely to download than to publish podcasts, the idea persists that students of this generation are happy to both consume and produce new media (Lorenzo, Oblinger & Dziuban, 2007).

This paper reports on a pilot study that investigated the use of student-generated podcasts as learning resources. The context for the investigation was the problem based learning (PBL) curriculum at The University of Melbourne. PBL uses an ill-defined problem and the progressive disclosure of information to encourage students to identify learning issues through critical thinking and reasoning about the information provided. Once learning issues have been identified students investigate these through self-directed learning. In the medical degree at The University of Melbourne, students already generate text based content through discussion lists to complement their self directed learning. We were interested to see whether a parallel informal peer-based learning environment using audio-based podcasting rather than

text, would be embraced by so called Net Gen students as another opportunity for self-directed peer-based learning.

## Method

### Participants

A cohort of 319 second year students from the medical curriculum at The University of Melbourne were given the opportunity to participate in this pilot project. Students from that cohort had access to the podcasting activity throughout the 14 weeks of semester and each week they undertook a new PBL case. Before the start of semester students were informed of the upcoming podcasting activity through posters placed in tutorial rooms, computer rooms, hallways and lifts. Once semester had begun regular emails were sent to the cohort reminding them of the podcasting activity and offering a weekly consultation to assist with creating and publishing podcasts.

### **Problm: A podcasting system for problem based learning**

A podcasting system was developed for this trial which was called Problm. The system consisted of a web database application, custom built to provide an interface to the podcasting activity with facilities to upload, publish, subscribe to, listen to, rate and comment on podcasts related to each of the 14 weekly PBL cases encountered during the semester. The podcasting activity was designed to minimise technological impediments associated with the use of the system and was loosely based on the features offered by YouTube.

The Problm home page contained a table of contents with the title of each PBL case as a link to another page containing the titles of podcasts created for that PBL case. These were displayed in reverse chronological order, with the most recently recorded at the top of the page. Students could also upload a podcast from this page. Students could select a title link and this would display a page with the detail of the track (creator, category of podcast, duration, date and a short description) and included an embedded Flash-based MP3 player for playback. In addition, students could download the podcast, rate it or post a comment about it. All submitted comments were displayed at the bottom of the page in reverse chronological order.

Detailed advice about planning, recording, posting, accessing and subscribing to podcasts was always available to students from the website. Students could create podcasts in three categories, which we labelled Aha!, Huh? and IMHO.

- Aha! - I get it! Podcasts that offer an explanation of some aspect of the PBL case.
- Huh? - I don't get it. Podcasts that express some difficulty about the PBL case.
- IMHO. - In My Humble Opinion. Podcasts that offer a comment on something related to the PBL case or to the course in general.

In addition to web-based support files students could send an email to the site administrator requesting specific help. One hour was allocated each week throughout semester for student consultation regarding any aspect of podcasting. To further minimise barriers to participation a readily accessible computer, Apple iMac, was set-up in a tutorial room with shortcuts to all of the necessary software required to generate, publish and listen to podcasts. The free software program, Audacity (<http://audacity.sourceforge.net/>), was used with the inbuilt microphone on the computer to record podcasts and the LAME plug-in was used to convert these to MP3 format.

Interaction with the podcasting activity was audited by logging the number of clicks on links and buttons. Four students who used the podcasting system over the semester participated in a focus group at the end of semester. Students were asked to reflect on their likes and dislikes, use, learning experiences and recommendations in relation to podcasting. The focus group was conducted in accordance with University human ethics protocols (focus group questions can be obtained by email from the authors).

## Results

### Profile of participants

Of the cohort of 319 second year students, 85 participated in the podcasting activity and 6 students made a podcast. The majority of participants (65) were 'listeners', who either played podcasts online or

downloaded them (see Table 1). There were 28 'visitors' who were students that came to the podcast website but did not listen to or upload podcasts. Eight of the 85 students were 'commenters' who wrote an observation about the podcast. 'Scorers' were students who rated a podcast on a scale from one to five where one was poor quality and five was excellent.

**Table 1: Type of participants**

| Participants                                                    | N  |
|-----------------------------------------------------------------|----|
| Podcasters                                                      | 6  |
| Listeners - played online                                       | 55 |
| Listeners - downloaded                                          | 10 |
| Visitors to website                                             | 28 |
| Commenters                                                      | 8  |
| Scorers                                                         | 2  |
| Total distinct students participating in one or more activities | 57 |

### Total usage

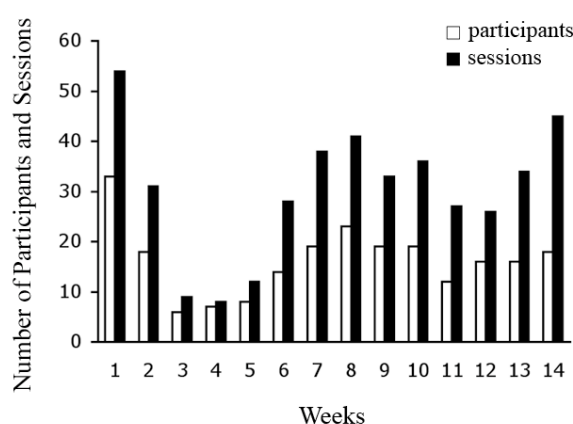
For the 85 participants, 442 sessions were logged with a total of 3749 hits across all pages. Forty-eight podcasts were created by the 6 podcasters, who produced 64.4 minutes of recording with an average recording length of 1 minute 20 seconds (range 40 seconds to 3 minutes 46 seconds).

### Profile of recordings

Over the first five weeks of the pilot, no podcasts were produced. The developers and curriculum coordinators then decided to offer an incentive for students to participate in the activity (2 movie tickets each week for a random Podcaster, and an overall prize of an iPod for a randomly selected Podcaster). This resulted in an overall increase in participation, with an average of just over 2 podcasts per week in weeks 6 to 13. In the last week 28 podcasts were uploaded with one student uploading 25 podcasts. Of the different categories of podcast, 28 were Aha!, 6 were Huh! and the remaining 14 were IMHO. No group podcasts were created.

### Interest in informal peer learning

Initial interest in peer-produced podcasts was high with 54 sessions logged by 33 participants (Figure 1). As no podcasts were produced for the first 5 weeks, interest progressively waned. After the incentive plan (see above) was implemented in week 6, interest remained constant with an average of 32 sessions logged by an average of 16.4 participants for the remainder of the semester (Figure 1).



**Figure 1: Number of participants and sessions in each week of semester**

### Detail of activities

The 55 participants who listened online to podcasts logged 116 listening sessions. They played podcasts at least once, but many listened to individual podcasts more than once (range 2-7 times) over a number of sessions. Most students listened online but 14 podcasts were downloaded by 10 students. There were 8 commenters who produced a total of 17 comments. There were two scorers and they rated 2 of the 48 podcasts. It is not clear how many people used syndication through RSS to subscribe to podcasts.

Analysis of the web server logs revealed the majority of traffic to RSS came from sites external to the university, most likely sites that were harvesting RSS feeds.

### **Focus group**

Students expressed various likes and dislikes about podcasts. Likes included the opportunity for self expression, the novelty and fun associated with making podcasts. Dislikes included difficulties in using the recording software and understanding the instructions. There were positive aspects of podcasts in relation to support for learning because they "helped reinforce some of the stuff we're learning. Like, it helped me put it into words." One student felt they were making a positive contribution to student learning. Along the same lines another student reported "...in Med', often you find that by teaching someone else a concept... you're learning as well to revise the concept..." However there was a sense of suspicion about the quality of the content produced by other students with one student commenting "But listening to other people's, not so much, depending on obviously if you know anything about what they're talking about." There was a sense that podcasts were a poor use of time: they took time to produce and there was no way to easily skim and evaluate the content, compared to text based discussion, before deciding to listen to it.

### **Discussion**

Podcasts are perceived in some quarters to be part of the accepted toolset of Web 2.0 technologies for Net Generation students. Podcasts appear to be a valuable low cost and user friendly method for transmitting lectures, seminars and other information (Harris & Park, 2008; Lee, 2005) but whether podcasts are a useful tool for informal peer generated learning is not entirely clear. However the landscape is broad in this area as peer learning can promote a number of outcomes including working with others, critical enquiry and reflection, communication and articulation of knowledge, managing learning and assessment (Boud, Cohen & Sampson, 2001, p. 8) and podcasting could contribute in a number of these areas (see Belanger, 2005; Lee, McLoughlin & Chan, 2008).

One of the main findings of this pilot study was that medical students were interested in using the medium with one quarter of the cohort participating in the activity. However, despite initial interest and the implementation of incentive strategies, student participation waned over the semester with only 48 podcasts created by 6 podcasters. The majority of podcasts produced were either Aha! or IMHO which may indicate more comfort in expressing ideas that students may have spent time thinking about, reflecting on or researching and thus providing information to their peers i.e. articulation of knowledge. The Huh? category, on the other hand, requires the expression of uncertainty and students chose not to do this. A content analysis of the podcasts to investigate the nature of ideas expressed for peer learning is an area that we are considering in our further research.

Our findings indicate that simply providing a podcasting service to a cohort of undergraduate medical students is unlikely to be sufficient in stimulating widespread participation in informal peer-learning processes. If podcasting activities were formalised, integrated and aligned with the curriculum and assessment it is likely that greater participation from students would be seen. If students do not value podcasts as a learning medium, which may in part be due to the absence of strong pedagogical drivers, podcasts may not be a successful informal peer-based learning method. In addition, a number of other factors were identified as potentially impacting on students' interest in informal peer-based podcasting. These included students seeing less value of podcasts over text-based discussion and students questioning the benefit of informal peer learning compared to information garnered from more authoritative sources such as lecturers and textbooks.

The profile of the participants clearly indicated that students were more interested in listening to podcasts produced by their peers rather than creating, commenting on, or rating them. This indicates a preference for consuming content rather than producing it and a small group of students visited the site on a weekly basis in search of content. The focus group identified a possible reason for poor participation was the time commitment required (i.e. long) to create podcasts and listen to them in relation to perceived benefits to students' studies. Potentially, more podcasts of perceived quality might have driven more participation.

Technological issues that may have impacted on participation include the difficulty of using the recording software with students reporting they used alternative means to make recordings. Another perceived difficulty was students' inability to review and select the content of the podcast on which they would like to concentrate compared to their normal text-based discussions. The results clearly suggest that without the incentive strategies no podcasts would have been produced. Indeed our results are skewed somewhat

with one student producing 25 podcasts on the last day of semester, presumably to enhance the chances of winning the iPod. In this particular case there was unlikely to be much interest in informal peer assisted learning as few students were likely to log in and listen to these podcasts during the study vacation.

While these findings are not overwhelmingly positive there is reason to think that this type of peer-based learning could work. Quite reasonably students are strategic in their learning choices and any implementation of technology to enhance their learning should account for this. Implementations of technology should pay particular attention to integration of the technology with curriculum, assessment and the attributes of students and also consider more formal strategies in peer learning environments.

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