Using short podcasts to reinforce lectures

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Abstract: Podcasting, the pushing of potentially mobile multimedia files to end users, is not a new tool in relation to learning and teaching. There is a perceived association between recording lectures and podcasting, however many kinds of materials may be podcasted in higher education. In this paper, we discuss the use of podcast episodes – short audio files – recorded by a lecturer in the Faculty of Economics and Business at The University of Sydney. Files are designed to reinforce lecture content and are produced by the lecturer and uploaded to the Faculty learning management system, Blackboard*, for student subscription. We consider the impact on students based on survey data, particularly regarding the technology itself, any perceived learning benefits and the proportion of the participating student population. We further consider the impact on the lecturer, his experience using the learning technology and any perceived teaching benefits. This paper may be useful to academic staff or institutions interested in providing multimedia content for students.*

Background

Podcasting is commonly considered synonymous with recording lectures in higher education. In the past four years many institutions have begun recording lectures, for example the University of Washington (USA) (Aldrich, Bell, and Batzel, 2006) and the University of New England (Australia) (Tynan and Colbran, 2006). High-level and fully automated lecture recording solutions, such as Lectopia, already cater for podcasting, but are primarily aimed at streaming lectures.

In contrast, short podcasts have many possible learning and teaching benefits. A podcast differs from other multimedia files in three ways: a podcast may be pushed to users via a syndication feed, podcast episodes are downloaded (not streamed), and podcast episodes may be transferred to and consumed on a mobile device. A series of short podcast episodes may provide a flexible means to support student learning, taking into account the average human attention span (Price, Gay, Searle and Brissenden, 2006), lecturer and student time constraints, and potential bandwidth limitations (Chan and Lee, 2005; Chan, Lee and McLoughlin, 2006; Gay, Price and Searle, 2006).

There is a range of potential technical and pedagogical uses for podcasting in higher education. Podcast episodes may be audio-only (either voice only, or voice with music or other sounds), enhanced (audio with some static visual elements, such as slides), or vodcasts (video on demand episodes). Podcast developers may choose the appropriate format to use depending on their purpose or the technology available. Pedagogically speaking, the uses are largely only limited by the chosen technological method and the teacher's imagination.

Introduction

A short, audio-only podcast was trialled with postgraduate students in 'Management and Organisations' during the first semester of 2007 in the Faculty of Economics and Business. The unit of study is designed to provide students undertaking postgraduate coursework degrees – particularly the Masters of Commerce – with an introduction to the study of management and work organisations. The unit incorporates both conceptual and empirical material with an emphasis on applying the concepts introduced to particular cases and examples. As an introductory unit, students who have previously studied management in their undergraduate degrees are unlikely to enrol. The result is that the student population has, generally, not previously studied in management or related disciplines with a significant number having completed undergraduate degrees in unrelated areas. In addition, a

significant proportion of students undertaking the unit are from non-English speaking backgrounds; 66% of surveyed students are international students. As an Australian campus, a number of local students are likely to be from a non-English speaking background as well. Together these factors create particular challenges for teaching the group.

The student population has varying degrees of familiarity with the broad organisational and management literatures. While 'Management and Organisations' is largely a preliminary unit, the intention of those teaching the unit is to treat the study of work organisations and the management of these organisations in a critical way. However, in order for concepts and explanations to be analysed in a critical fashion, it is necessary to have a good working knowledge of these concepts and explanations. The dilemma for the lecturer, heightened by the diverse student population, is the relative weighting in terms of time and emphasis to place on the introduction of concepts (with which a significant section of the student population were familiar) and the evaluation of these concepts. In this case, podcasting provides a potential avenue to allow an appropriate consideration of both introductory and explanatory material, thereby affording a focus on the latter during face-to-face time. Podcasting offers one means for the lecturer to support all members of the unit of study's student population by supporting less experienced participants.

The desired learning and teaching aims require examining prior to creating podcast episodes. Time limitations are recommended due to a combination of concerns, including student internet connections (download time and the bandwidth needed), the lecturer's limited available time to spend creating the extra resources, and due to an awareness of the optimal length of time students would be willing to engage with audio-only content (some literature suggests that less than twenty minutes per episode is ideal. For example, Price et al. 2006). The recommended length for each podcast episode, then, is 10 minutes. Consequently the podcasts are supplementary to the lecture – rather than replacements thereof. The aim is to broadcast an audio-only summary, recapitulating the substantive themes and arguments covered in the lecture. The podcast episodes are then made available to students following the lecture and their purpose is to reinforce and perhaps refine lecture content. This approach focuses explicitly on clarifying ideas, information and evidence presented in the lecture.

Methodology

The trial began in week 7 of Semester 1, 2007. Lecture material from early in the semester was not supplemented with audio podcast episodes. In contrast, those topics covered between weeks six and twelve of the semester were reviewed and summarised in short podcast episodes that were posted on the learning management system (*Blackboard*) within a week of the lecture. Six podcast episodes in total were created in audio-only format. The lecturer achieved this by using a headset and microphone plugged into his desktop computer, and recording the file using free, open-source software. Content included key concepts from the lectures discussed in an introductory manner to address some students' unfamiliarity with the subject matter.

This research uses utilises qualitative and quantitative methods for gathering data from students and the lecturer, including surveys and interviews. Student information is gathered at the end of the semester using a true-false or likert scale survey questionnaire with A-E scannable answer sheets for easy data collection. Questions determine initial demographic information about the students (local/international students and gender), whether they own an MP3 player, question their perception of what a podcast is and whether they already download and listen to podcasts. Three questions address students' perceptions of how the learning technology's use fits in with their learning. Three questions relate to whether the students recommend a further use of podcasting at university, and finally, three questions seeks to glean how students use the podcasts, and why. Interviews are

designed to encourage open-ended answers from the students and the lecturer, welcoming more depth on the same issues as the survey. All participation is voluntary and complies with Ethics Committee guidelines.

At the end of the semester a qualitative survey was conducted by interviewing the lecturer using a semi-structured interview approach. This approach provides an opportunity to gain an in-depth understanding of his perceived students' learning experiences and whether he feels podcasting can support teaching. The academic staff interview asked for an outline of what approach was taken to podcasting and why. Three questions addressed possible learning and teaching outcomes. A series of questions determined the suitability and acceptability of the learning technology for the academic's purpose, and finally, questioned the expected level of support.

Findings

Variably forty-one to fifty-nine students of a total eighty-two enrolled students answered the survey questions (not all students chose to answer every question). The survey results on student demographics showed sixty six percent of participating students were international (thirty four percent local) and sixty eight percent (forty of fifty nine respondents) were female (thirty-two percent male).

Student use and perceptions of podcasting
The analysis of the data provided insight into the students' use and perceptions of podcasting, which highlighted a number of key findings.

First, student responses showed a large proportion (seventy percent) of students already own an MP3 player and that many students already had some familiarity with podcasting; sixty nine percent of students have listened to other podcasts. Thirty two percent of students who listen to other podcasts have done so more than twice, mostly for entertainment.

Second, in relation to the lecturer's podcasts, sixty three percent of respondents did listen to the podcasts for this unit of study. Interestingly the majority of students (fifty seven percent of respondents) listened to the podcasts on their home computers (not on a mobile MP3 player).

Points one and two suggest that many students have a familiarity with podcasting and value the episodes as learning resources enough to engage with this type of approach. More importantly, in terms of this trial, students found that their engagement with the podcasts was a valuable aspect of their learning experience (see Table 1).

Table 1. Student perceptions of podcasting

Statement	Strongly agree/ agree		Respondents
Podcasting supported or enhanced my learning.	66%	38	58
Podcasting helped me actively engage with learning.	58%	33	57
I like podcasting because I can learn in my own time.	62%	36	58
I recommend the lecturer keep using short podcasts.	70%	40	57
I would like to see podcasting used in other university units of study.	79%	44	56

Table 1 suggests that many students were positive in their evaluation of podcasting. Two points stand out: first, seventy percent recommended the lecturer keep using short podcasts – notwithstanding that only sixty three percent actually listened to the 'Management and

Organisations' podcast episodes, and second, seventy nine percent, a large percentage of the users and non-users, said they would like further use of podcasting in other units of study.

The lecturer's primary objective for introducing podcasts into the unit of study was to reinforce main points from the lectures by recapping key themes discussed. Forty one percent of students who actually listened to the podcasts nominated that they did so to reinforce key points after the lecture when asked why they listened to podcasts (Table 2). Other notable findings were that twenty six percent of students who listened to the podcast episodes did so because English was not their first language, eighteen percent listened because they had difficulty hearing the lecturer, seventeen percent listened as part of their exam revision and twenty percent to reinforce information for assessment.

Table 2. Why students listened to podcasts

Question	Number	Percentage	Respondents
I mostly listened to my lecturer's podcasts to revise for exams.	10	22%	45
I mostly listened to my lecturer's podcasts to replace lectures.	2	4%	45
I mostly listened to my lecturer's podcasts to reinforce information for assessments.	12	27%	45
I listened to my lecturer's podcasts after the lecture because the content was complex.	6	15%	39*
I listened to my lecturer's podcasts after the lecture because English is not my first language.	10	26%	39*
I listened to my lecturer's podcasts after the lecture because I sometimes have difficulty hearing the lecturer.	7	18%	39*
I listened to my lecturer's podcasts after the lecture to reinforce key points.	16	41%	39*
* Total respondents were fifty, but eleven answered 'not applicable' because they had not listened to podcasts after the lecture. Only applicable respondents are mentioned here.			

Student interviews
Interviews provided a new angle on some of the survey feedback however, due to the busyness of students during the exam period, they were poorly attended (two student interviews were held). The interviews highlighted that students for whom English is a second language found podcasting useful. Comments include, '[for students whose] English language ability is not that good… I think this idea is really good [for those who wish to revise the lecture].'. Participating students were positive toward using podcasting for learning, with comments highlighting that it was 'something new… really kind of exciting… refreshing… [and] mobile.' An interesting comment revealed that students thought that the audio-only recordings from their lecturers seemed quite personal; '…with podcast it is more personal, I think. You can literally speak to the student.'.

Lecturer interview
For the lecturer, the function of the podcasts was to recapitulate and reinforce key themes discussed in the lecture. The lecturer believed that by providing podcasts after the lecture this would help students by scaffolding and focusing their learning by 'drawing out what were the main areas or issues that were covered in the lecture material'. The podcasts were developed specifically to support two groups of students: non-English speaking background students and students who have not had any experience with studying management. The lecturer felt that anecdotal evidence gathered by feedback from students led him to believe that the podcasts had helped the students. An additional benefit was by developing the podcasts the lecturer had reflected on the material presented and liked

the short podcast because it enabled him to 'focus on what it is you think the students should be taking away from that particular topic'.

In relation to other approaches to podcasting the lecturer stated it would be useful for providing student feedback because 'it's easier for me to sit there for five minutes and go, these are what the general strengths of the essays were, these are what the general weaknesses were, rather than to type up a document that sets that out, or write it time and time again on essays as they come through'.

In terms of workload the lecturer stated that using podcasting did require additional effort but felt that 'even though it was an extra half hour each week, it's a relatively small cost for what is potentially quite a big benefit. So in terms of workload, I don't think it's a huge imposition, I don't think it's a very large imposition to actually generate better outcomes in terms of teaching learning. …I'd recommend it to colleagues as something to think about, because there are a variety of things that you can do with it. And (regarding) pure audio-only podcast, it is reasonably straight-forward and not all that time consuming to do.'

Discussion and Conclusions

This paper presents the findings from a study on the impact of podcasting on postgraduate students in 'Management and Organisations' during the first semester of 2007 in the Faculty of Economics and Business at The University of Sydney.

Findings from the research suggest that students do feel they obtain learning benefits from this use of podcasting and that the podcast episodes support their learning. Almost two thirds of respondents said that podcasting enhanced their learning and over half stated that podcasts helped them actively engage in learning. Almost two thirds of students liked the fact they could be supported to learn in their own time, supporting the 'anywhere, anytime, at any pace' dictum commonly associated with podcasting and other means of flexible learning. Almost half of the students who listened to the podcast episodes recognised the lecturer's aim in creating resources that reiterate important points from the lecture. This suggests that not only was the lecturer's intention realised by the resources he produced, but that pedagogically motivated resources are recognised by students as attempts to help them learn.

A larger proportion of respondents recommended the lecturer keep using podcasts (seventy percent) than actually listened to the podcasts (sixty three percent). This is interesting as it may suggest that most participating students support the lecturer's attempts to support their learning using this learning technology, regardless of whether they actually utilised the podcasts. Further, three quarters of respondents indicated they would like to see podcasting in other units of study within the university. This perhaps reinforces the anecdotal evidence received by the lecturer.

In terms of the learning and teaching objectives, the findings show that almost one third of participating students used the podcasts for the intended purpose of reviewing key themes after the lecture. In addition, the podcasts were used by non-English speaking students to support their learning and those with difficulty hearing the lecturer. These results show that short podcasts have the potential to address not only supporting student learning, but also those with other issues. Feedback from the lecturer highlights that podcasting is an efficient and beneficial approach to addressing these key issues. The additional workload could be comparable to the amount of time taken to prepare any other kind of learning resource for students, and was something the lecturer would recommend to others.

Future directions

The results of the semester one podcast have sufficiently roused the lecturer's enthusiasm to continue the trial for the remainder of the year. The aim is to make podcast episodes available from the beginning of semester (rather than mid-semester) so that students have the opportunity to get into the habit of using them from the outset. The lecturer will trial two different formats with the aim of determining which the students like most: (i) creating pre-lecture previews intended for students to listen to before the lecture and designed to augment and inform their subsequent learning, and (ii) the frequently asked questions format, including general assessment feedback and content-related queries. The facility to syndicate podcasts via the learning management system (Blackboard) will be upgraded from the beta to the full version of the application (Podcasting LX) and technical support will continue to be extended to both the lecturer and the students to ensure comparable results.

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