How do podcasts influence the transition to first year university study?

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The first year of university is a crucial time for equipping students with the skills to be successful and independent learners. Students' diverse backgrounds and needs should be taken into account when designing curricula in order to support their transition into this new learning environment.

Podcasting is now used extensively across many universities. The speed with which this has happened has given little time for reflection on the value of podcasting for student learning or whether they impact upon student's transition to the university environment. Results from this study indicate first year students make extensive use of podcasts. Students generally used podcasts as a supplement rather than a replacement for lectures, and for some students knowing that podcasts would be available allowed them to listen more actively in lectures. However the concern remains that podcasts reinforce student reliance on lectures rather than inquiry as the primary source of knowledge.

Keywords: first year experience, podcasting, engagement, active learning

Introduction

First year has been recognised as an important touchstone for shaping students' attitudes and approaches to learning, with success at university being largely determined by their experiences in this crucial year (McInnes, 2001; Upcraft, Gardner & Barefoot, 2005). A positive transition to higher education impacts upon students' persistence in higher education by strongly influencing their future learning, engagement, and success (Krause, Hartley, James & McInnes, 2005; Pitkethly & Prosser, 2001). Negative experiences can lead to students failing their courses and discontinuing their programs (Peat, Dalziel & Grant, 2001). Of those students who withdraw from their programs, over half withdraw in their first year Department of Education, Training and Youth Affairs (DETYA, 2000) which is costly both for the individual student and also for the institution.

The massification of higher education has created a large increase in the diversity of first year students due to improved participation and inclusion. Many students now enter the sector from non-traditional backgrounds and as a consequence may have diverse characteristics including academic ability, socio-economic background, ethnicity, and physical location (Dobson, 2001). Such factors often influence students' university expectations and experience (Harvey, Drew & Smith, 2006; King & Thalluri, 2006; Laing, Robinson & Johnston, 2005).

Many health science undergraduate students come from non-traditional backgrounds. For example, increasing numbers of first year students are mature-aged with work and family or carer responsibilities. As a consequence, some of these students experience considerable difficulty in managing the extra demands of work and family concurrently with their full-time study commitment (Thalluri & King, 2009). However it is not just mature aged students who

experience difficulty in managing the competing demands of fulltime study and work. Over fifty-five percent of Australian students who are studying fulltime are also are committed to paid employment (Krause et al., 2005), with many working to support themselves through university or to pay their HECs fees (James, 2002; James, Bexley, Devlin, & Marginson, 2007).

Large classes, engagement and inquiry-based learning

First year health science programs often consist of large, multidisciplinary courses that present heavy factual content, such as Anatomy and Physiology, to a range of allied health programs. Although these large foundation courses create economies of scale, and can allow students to change pathways through their student career, they are often a negative experience for students, and are perceived as being quite "impersonal and rigid" (Bath, 2008; Dallimore, Hertenstein & Platt, 2004; Weaver & Qi, 2005). The impact of large classes on engagement of students is well documented (ACER), 2008; Weaver & Qi, 2005). Students are reluctant to ask questions (Dollman, King & Hemphill, 2009) and the lecturer can find it difficult to assess whether students understand the lecture content.

Students also feel isolated from other students and from teaching staff as active engagement and learning is more difficult to achieve in this learning environment (Howard, Short & Clark, 1996). Given the importance of the first-year experience in supporting student retention in later years, these are concerns that should be addressed in any large class context. One response to this issue has been the increasing use of technologies, such as podcasts, to support student learning in large class environments (Elliot, King & Scutter, 2009).

Podcasts of lectures are easy to produce, using relatively simple technology and as a result podcasting has become common practice in many universities (Edirisingha, Salmon & Fothergill, 2007; Mathieu, 2007; McKinney, 2009). However, the speed with which this has happened has given little time for reflection on the value of podcasting for student learning, and the ways in which students use podcasts. For example, does the provision of podcasts impact on students' engagement in learning during lectures? Are they able to listen more carefully, confident that any "gems of knowledge" they may miss will be contained in the podcast? Do podcasts diminish student's skills in note taking and self-directed learning? Do students feel more inclined to ask questions during lectures, or does the fact that they themselves will be recorded inhibit questioning?

This study sought to investigate the ways in which first year students use podcasts of lectures. Of interest is the *number* of podcasts to which students listen, but more importantly *how* students use podcasts and whether provision of podcasts changes student engagement with materials or promotes more passive forms of learning.

Method

Podcasting of lectures was initiated in the Faculty of Health Science in Semester 1, 2009. Trials of podcasts had been undertaken prior to this time, but an effort was made to podcast as many lectures as possible during this period. The podcasts were audio recordings of a lecture, recorded by a digital recorder operated by the lecturer. The lecture podcasts were uploaded onto the course web page as soon as possible after the lecture: usually within 2 days. No editing of podcasts was undertaken prior to uploading, and the only intentional change in teaching style was for the lecturer to announce when a PowerPoint slide was being progressed.

An email survey using Survey Monkey software was distributed to all undergraduate students in the Faculty of Health Science of a large Australian university. The survey was distributed in the latter part of the first semester, when students had established their study habits. The responses from first year students studying in internal mode were extracted from the main dataset and analysed for this study. The responses from students studying in external (online) mode were not included as it was anticipated that their use would be quite different. The survey requested details of how, when and for what purpose students listened to podcasts, whether it impacted upon their attendance at lectures, and whether the students had any difficulties using the podcasts. Likert scales and free text were used for the students to indicate their responses. The data was entered into SPSS (v17) for analysis and reporting. Free text comments were analysed and themes extracted. Ethics approval for the distribution of the survey was obtained from the university's human research ethics committee.

Results

Over six hundred (616) first year students responded to the survey, and of these 493 were studying in internal mode. As shown in Figure 1, the largest number of responses came from students in the Bachelor of Nursing program; this is the largest program in the Faculty.

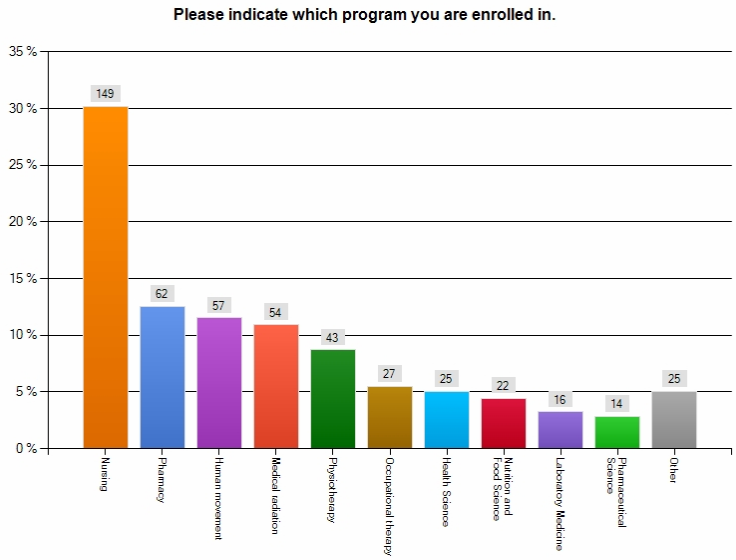

Figure 1: Number (above columns) and percentages of students responding from each program in the Faculty of Health Science.

Of these students, 95% indicated that podcasts were provided for their courses, and 83% of these students had listened to podcasts with 35% of students listening to at least 11podcasts. The majority of the students were studying full time, with only 19 indicating that they had a part-time load. Most students (96.1%) thought that all lectures should be podcast.

Most (78.3%) of the students had some paid work, with 15% working more than 15 hours per week and a further 10.8% working 11-15 hours per week. Of the students who worked more than 15 hours per week, over 30% listened to more than 15 podcasts. However, chi-square analysis showed that there was no relationship between the number of hours worked and the number of podcasts to which students listened ($p>0.05$).

Student access to podcasts

Students listened to podcasts while doing a variety of activities (Table 1). The primary use of podcasts was while students were studying, although listening while travelling or doing housework were not unusual.

	Total	Never	Occasionally	Often
Listen while travelling	340	57.1%	30.1%	12.8%
Listen doing housework	333	59.1%	30.1%	10.7%
Listen when studying	380	2.4%	34.3%	63.3%

Table 1: Podcast listening modes

Most students (73%) listened to the whole podcast, whereas 22.9% tried to find a particular part of the podcasts. A small number "flicked through" to find out if there was anything they should listen to.

Thirty-one percent of students indicated that English was their second language. However, there was no relationship between the number of podcasts listened to and whether English was a second language ($p > 0.05$).

Few students listened to podcasts straight after the lecture or within a few days. Podcasts were used primarily when revising for exams (Table 2).

I listen to podcasts…	Total	Never	Occasionally	Often
Straight after the lecture	345	69.8%	23.0%	7.3%
Within a few days of the lecture	359	66.9%	28.5%	4.7%
When I am revising for exams	372	17.3%	44.4%	38.3%

Table 2: When students accessed podcasts

Reasons given for accessing podcasts

When asked why they listened to podcasts, it was clear that many students found them useful for "memorizing" content from lectures, as well as clarifying concepts from the lectures (Table 3).

Podcasts enable me to:	Total	Very useful	Somewhat useful	Not at all useful
Memorise material from the lectures	379	91.6%	8.1%	.3%
Clarify material from the lectures	387	88.7%	10.7%	.5%
Allow me to skip inconvenient lectures	359	19.3%	80.7%	.0%

Table 3: Reasons for using podcasts

In the free text responses a number of students commented on replaying the podcasts to ensure that they had retained all of the essential information.

I use the podcasts to supplement not replace lectures and I play them again and again to clarify my understanding.

Listening to the podcast instead of, or as well as the lecture, gives you a chance to listen to the lecture first and then go back over it as many times as what is needed to understand the content.

Podcasts makes the lecture more easier to memorise.

In addition, a number of students alluded to the heavy content load of their lectures in their open-ended responses and suggested that more of their courses should provide podcasts.

I would really have liked other subjects to incorporate podcasts because some lectures are so content rich that I miss the majority of the information, especially if you are new to the topic being covered.

Changing behavior during lectures

Most students indicated that they didn't change behavior in lectures if they knew a podcast would be provided (Figure 2). However, they were less worried about making lots of notes and more likely to just listen to the lecture.

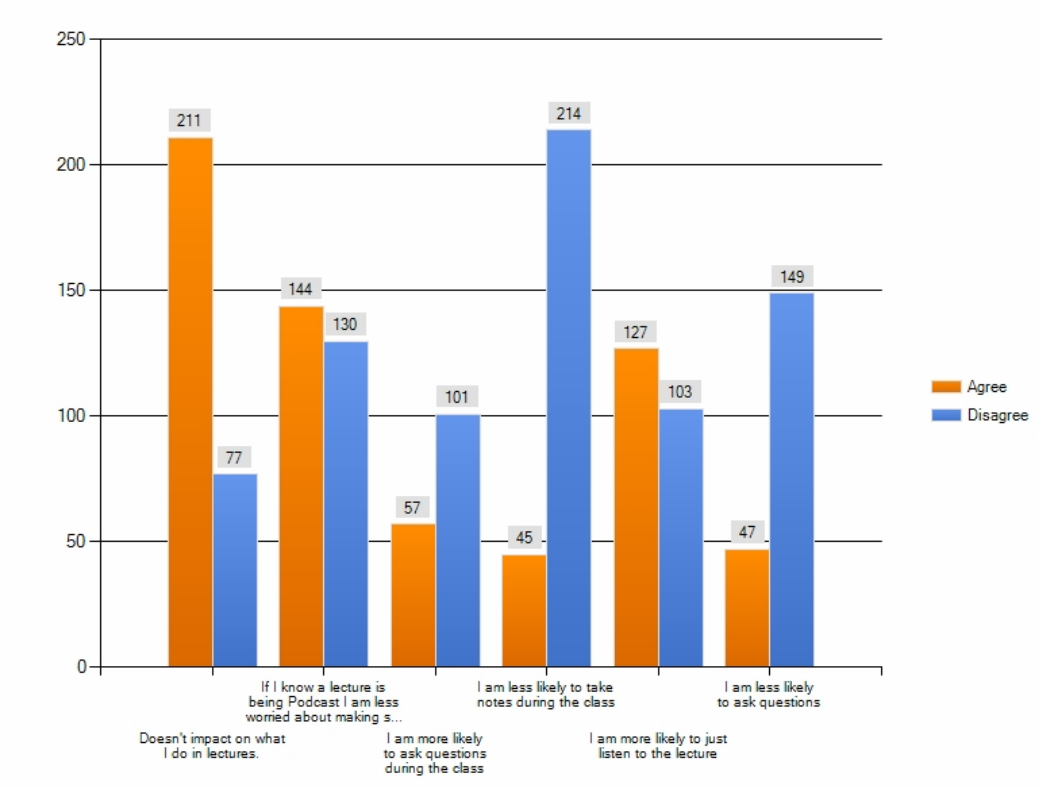

Figure 2 Student actions in lectures

In terms of their open text responses a number of students indicated that whilst they still took notes during the lecture they felt reassured by the fact that they could return to the podcasts to fill in any gaps or concepts that they may have missed.

I am not worried if I happen to miss a few important points that the lecturer might not have repeated...because I know that I can always go back and get them off the podcast.

I believe podcasts are an excellent idea, because they give you the opportunity to listen to the lecture again, allowing a broader understanding of the topic.

In particular, the students commented that knowing the podcasts were available allowed them to listen more carefully during the lecture.

I find with the lecture notes and podcasts I can go to the lecture and really listen and take things in without having to write quickly and most probably miss things that the lecturer is saying.

I know that as a learner it often takes more than one explanation for the point or concept to be understood. Podcasts allow me to listen intently to the lecturer and then go back after the lecture and clarify.

Many first year students found it difficult to take comprehensive notes and listen at the same time during lectures. They valued the opportunity to be able to review the lectures in their own time and make additional notes.

I have difficulty (with) auditory learning. I use podcasts to review the lecture and make additional notes as I can start/stop the podcast at my convenience.

Having podcasts available also influenced student's choice to ask questions in class, with a number remarking that they chose not to ask a question in class time as it would only delay other students. Other students indicated that they were less likely to ask questions because they knew they could go back and listen to the lecture again.

Although students indicated that they did not change their behavior in lectures if they knew it would be podcast, 50% indicated that they would skip lectures that were at "inconvenient" times.

It means that I can listen to my occupational science lecture online, because Monday is the only day I can work.

Less pressure to attend uni as it is often difficult and time consuming to get to uni, easier to listen at home.

Non-use of podcasts

Table 4 shows reasons students gave for not using podcasts.

Table 4 Reasons for NOT using podcasts

I haven't listened to podcasts because:	Number of students
I do not think I would benefit from listening to Podcasts	14
I cannot access the Podcasts	8
I don't have time to listen to Podcasts	40
I find that other methods of studying are more effective	47

As shown in the free texts responses, students gave a variety of reasons for not listening to podcasts. Ten students simply said that they didn't listen to podcasts as they had attended the lectures. Others elaborated further;

> *Because I have already listened to my lectures and taken notes carefully. I study other subjects instead of spending the time on podcasts*
>
> *The pace of the lectures and the notes provided allow me to absorb the material. I love reading the book instead of listening to the Podcast*

Several students also alluded to the fact that lecturers used diagrams, gestures and PowerPoints during lectures, and that this visual element of the lecture presentation was not available through podcasts.

A third (33.4%) of the students indicated that English was their second language (ESL) However there were no differences in the number of podcasts listened to by ESL students, with the only difference in the way that students used podcasts being that they were less likely to listen to podcasts while doing housework (Chi-square 16.4, $p<0.05$).

Discussion

This study examined the use of podcasting by first year students in a faculty of health science. The large data set allows some meaningful conclusions can be drawn from the responses to the anonymous online survey.

Overall, students were overwhelmingly supportive of having lectures available via podcast. They felt that all lectures should be podcast. A considerable number indicated that they would skip inconvenient lectures if a podcast was available. Of interest was the fact that students who worked more did not listen to more podcasts, suggesting that students who were working either did so at non-lecture times or chose other ways in which to catch up on missed lectures. The flexibility of being able to download a lecture onto an MP3 player and listening to it at times convenient to them was considered important but most students actually listened to the podcasts while watching the lecture PowerPoint at their home computers. The major change in behaviour during lectures was that some students took the opportunity to listen to and watch the lecture, rather than focus on taking extensive notes. As noted by one student *'It is much easier to concentrate on what the lecturer is SHOWING at a certain time, because I know I can go back over it and listen more carefully to what the lecturer was SAYING at that point in time'.*

For the majority of students, the podcasts did not serve as a replacement for the lecture material but rather as a 'back-up' resource. Many students found it difficult to take notes whilst listening and watching visual demonstrations. Hence they chose to listen more carefully during the lectures knowing they had the podcasts available to obtain every detail of the lecture content. Some students stopped the podcasts to allow them to digest the material and add additional notes from alternative sources. It could be argued that these students used podcasts in an active way to reinforce their learning. However, for other students it seemed to reinforce a transmission mode of learning where they focused on the lectures as the sole source of information rather than developing information literacy skills. Of particular concern was the high number of students who indicated that they listened to podcasts repeatedly in order to "memorise" content.

In a related study (Elliot et al., 2009), most staff at this institution regarded lectures as providing a framework for student learning which should then be supplemented with self-directed learning from additional resources such as texts, online materials, and readings. However, student use of the podcasts showed that in general they regarded the lectures as the main, or even sole, source of information.

To embed effective lifelong learning strategies, we need to develop first year curricula that encourage inquiry rather than didactic modes of learning (Justice et al., 2007; Sproken-Smith, 2007)

An ideal first year curriculum should include scaffolding to mediate and support student's 'transition *from* their previous education experience *to* the nature of learning in higher education' (Kift, 2008). A curriculum that supports active engagement with learning environments through intentional integration and sequencing of knowledge, skills and attitudes is most effective in first year. That is, curricula that facilitate quality, authentic learning experiences and promotion of active student engagement (Krause, 2006). However, embedding authentic learning experiences in large, multi-dimensional first year classes can be difficult.

One of the key requirements of a successful first year program is assisting students to take responsibility for their own learning (Laing et al., 2005). As Brew (2003) and Healey (2005) have both noted, developing problem-solving and inquiry-based learning skills form the basis of lifelong learning. However, unless sufficient resources are available to support an inquiry-based mode of teaching and learning then a didactic approach to content delivery becomes the simplest and most 'efficient' way of teaching. If this mode of teaching is to be used, then support needs to be provided for students who are less proficient at taking effective notes. Although developing skills in note taking is important, it takes time. As shown in recent research those students able to take effective notes in class time (Titsworth & Kiewra, 2004) or via supportive technologies such as podcasts (Evans, 2008) ended up with higher achievement in test scores and better overall learning outcomes (McKinney, Dyck & Luber, 2009).

Conclusion

The massification of higher education and reduced government funding over past decades has led to increasing class sizes in first year. As a consequence the driving force behind much of the curricula design has been efficient use of limited resources rather than promotion of independent learning inquiry-based skills. We have now reached the stage where universities must recognize the need for institution wide approaches to enhancing the first year experience (Krause et al., 2005). Technologies such as podcasting can be used to good effect to support student learning needs. However as this study has shown, podcasting lectures has the potential to reinforce students' dependence on passive or "surface" modes of learning (Entwistle, 1981; Ramsden, 1992), where they focus on the content provided by lecturers, rather than actively engaging with the material and developing skills of inquiry.

If we are going to podcast we need to make explicit to students that learning is an active process and that lectures are not meant to be the sole source of knowledge. Students should be encouraged to approach their learning from a critically inquiring stance. By developing skills to seek and use alternative sources of information students are more able to take responsibility for their own learning and facilitate transition to higher education.

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