

Interactive lecture podcasting: Probing the impact of dialogue design in LAMS

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This paper discusses the potential utility of interactive lecture podcasting in LAMS, which is based on a preliminary examination of the data of a curriculum innovation study. The case was a teacher education (TE) unit that produced unexpected student learning behaviour. An analytic induction methodology, in conjunction with educational data mining techniques, was used to analyse the data. The purpose of the study was to better understand one specific aspect of students' active participatory learning behaviour, vital for their success in higher education (HE): willingness to engage in online peer-to-peer dialogue. The paper closes with a suggestion for more systematic monitoring of HE students' online learning behaviour.

Keywords: podcasting, active learning, teacher education, LAMS

Introduction

The podcasting of lectures has gained popularity as a technology to provide flexible and personalised learning support in higher education institutions in Australia and elsewhere (Dobozy, 2007; Lonn & Teasley, 2009; Shantikumar, 2009). Podcasting is the term used to describe the provision of audio and/or video files for download through the internet. Not only are face-to-face lectures recorded and made available in addition to live delivery, Kim, Bonk and Teng (2009) report that there is a general trend in moving towards increased online delivery of services in HE, workplaces and government departments. Through the growing incorporation of Web 2.0 technologies, and the use of multimedia to enhance learning and service provisions, the education, professional and personal landscapes have become profoundly altered (Kim & Bonk, 2006; Kim, Bonk & Teng, 2009). Ideally, digital pedagogies enable students to embrace 'active learning methods' (Dobozy, 2007; Kirkwood, 2008; Martyn, 2007), share and compare knowledge and personal opinions, and contest ideas in a flexible, personalised learning environment. However, as Dixon, Dixon and Axmann (2008) point out, the transition from traditional to multimedia-enhanced learning and teaching needs to be carefully planned and, even more urgently, to be evaluated. Thus, this paper reports on preliminary findings of the impact of the interactive lecture podcasting on student learning. More specifically, it focuses on assessing students' willingness to use the online space provided to engage in asynchronous dialogue with each other. The objective of the additional learning space provided is to help these first-year students new to university learning culture prepare for their end-of-semester examination in an education studies unit.

The structure of this paper is as follows: First, the concept of interactive podcasting is outlined. This is followed by an exploration of the design of 'theme-based asynchronous learning dialogues'. Third, the study is introduced, the hypotheses outlined and the data are explored noting affirmation and/or disconfirmation of the hypotheses. Finally, the discussion and conclusion provides an argument for greater debate on the potential utility of interactive podcasting and its somewhat problematic relationship with student learning motivation. It outlines speculations on possible contributing factors that may impact some teacher education students' willingness to become active learners and participate in theme-based online dialogue tasks, not because they are persuaded to do so through the awarding of assignment points for participation, but rather, through a growing pedagogical understanding and appreciation of learning about teaching through dialogue.

Interactive podcasting

The conventional lecture podcast is a simple 'one-way delivery systems', without the opportunity for collaboration. However, as Gattis (2009) points out, its advantage over traditional teaching methods, such as face-to-face lectures or book learning, is that "students can time-shift the delivery" (p. 3),

allowing for the rewinding or fast-forwarding of the content. Moreover, the possibility of permanently saving the digital media to be used at a later stage makes this form of lecture delivery attractive for students.

My design sought to expand the 'one-way delivery system' through a shift in the emphasis from information delivery to active dialogue; therewith enhancing the learning experience and helping students to prepare for the final examination. Actively thinking about and discussing the information presented through various media (live lectures, podcasts and texts) has the capacity to transform students from passive consumers of information to active participants in dialogue and producers of content and knowledge (Downes, 2008).

Social constructivist learning theories emphasise interaction and aid learner's knowledge production: this occurs through the testing of one's hypothesis or assumptions; inviting others to scrutinise one's ideas, and arriving at a joint understanding of similar or divergent positions through intellectual exchange. Recently coined terms that explain this intellectual pursuit and personal knowledge expansion are: 'the crossing of conceptual thresholds (Wisker & Robinson, 2009, p. 317), 'ubiquitous knowledge construction' (Peng, Su, Chou & Tsai, 2009, p. 171), 'from knowledge production to knowledge configuration' (Brown, 2006, p. 111), and 'knowledge transfer' (Nokes, 2009, p. 1). In essence, these trendy terms express a belief in the value of digital social presence and communication in promoting higher-order thinking through active participation and minimising teacher-directedness and input. The key is for students to 'buy-into' the educational experience, share personal ideas and opinions with others, and display active learning behaviours (Kelly, 2009).

Interactive lecture podcasting is arguably more than a 'natural' extension of the one-way-delivery of lecture content. It is a fundamental departure from traditional 'input education' to clearly focus on designing learning spaces for student production and output. Thus, interactive podcasting marks a paradigmatic shift in educational practice, underpinned by a belief in the idea of self-organising communities of learners as an application of social constructivist and connectivist learning principles. George Siemens (2006), who coined the term connectivism as: "driven by the understanding that decisions are based on rapidly altering foundations [and] the ability to recognize when new knowledge alters the landscape". Connectivism entails the sharing of personal knowledge in a multi-faceted exchange of ideas, distributed through knowledge 'nodes'. This sharing enables the construction of what Stephen Downes (2008) calls 'distributed knowledge', which is only possible through deep engagement with each other's ideas and arguments, posing challenging questions and providing specific explanations rather than unquestioned agreement.

The interactive podcasting design lends itself to assist students' understanding of a key difference between school-based, traditional teaching and learning and contemporary HE learning. The latter learning design provides a concrete invitation to students to take ownership of their learning. Constructivist learning means an active grappling with, and beginning understanding of, the goal of education, which is the production of knowledgeable and critical thinkers and lifelong learners. This idea was explored in various lectures and the relationship between independent learning, active participation and 'soft skills development' was explained using the interactive podcasting design as concrete example.

Designing 'theme-based asynchronous learning dialogues'

Learning and teaching in HE is in the process of re-conceptualisation to provide a "supportive and cutting edge environment" (Maddux, 2009, iii). As a coordinator of a first year teacher education unit, my aim was to 'design dialogue', based on my understanding of the educational value of student-to-student communication, discussion and debate. The technology-enhanced learning feature was built on the premise that purposeful dialogue is the process and product of meaning making through open-ended, asynchronous multi-faceted conversations. A dialogue can move through the stages of information exchange to debate, where contrasting ideas are presented, analysed, and evaluated, or it can remain a discussion, where gentle probing and exchange of ideas are foregrounded, without the need for judgement or clarification of respective positions (Nagda & Gurin, 2007).

The invitation to the ‘dialogue’ was presented as an audio version of the weekly face-to-face lecture, in conjunction with weekly readings, broken up into ‘bite-size bits’ and topics (see below) via the learning activity management system (LAMS), designed by Macquarie University. The lecture podcasts were made available shortly after the live lecture and were uploaded in Blackboard (BB), the university’s learning management system. However, instead of simply placing the lecture podcasts on BB (adhering to a simple one-way delivery system), they are integrated into a LAMS sequence, (shifting focus from information consumption to knowledge production) through a plug-in (see Figure 1).

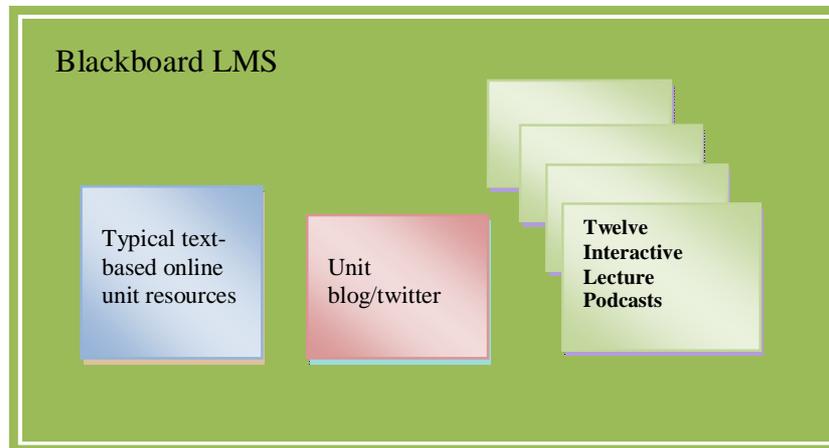


Figure 1: Embedded media in LAMS within a Blackboard unit

Research design

As stated above, the overall purpose of the case study was to investigate how students engaged with the interactive lecture podcasts. Their willingness to participate in the weekly theme-based, asynchronous dialogue tasks, referred to as the forum activity, was gauged. The LAMS sequences, integrated into BB, consisted of only four elements:

- (a) lecture podcast (audio or video file),
- (b) voting activity (usefulness of information and personal interest),
- (c) forum activity (theme-based asynchronous dialogue), and
- (d) survey (time spent and personal value of interactive podcasting activity)

At the weekly lectures, the importance of the structured *forum activity* (see Figure 2 below) was emphasised for their personalised deep learning and exam preparation. Moreover, the relationships were made explicit between the 12 weekly *forum activities*, lecture topic, readings and exam questions in the end-of-semester exam throughout the duration of the unit. In other words, the *forum activity* was the centre piece in the interactive lecture podcasting sessions. LAMS was perceived as the preferred online learning medium as it was found to be user-friendly with its ‘swim-lane approach’ (see Weller & Conole, 2007) and its well-developed monitoring system (see Dobozy & Pospicil, 2009).

Why is Bloom's taxonomy of learning a hierarchically organised classification system?

Now it's time to be creative and think of your own task examples. Try to contribute at least two tasks, identifying the learning area (LA) and the level of learning, according to Bloom, that the task or activity provides for students.

Why is it harder to plan for higher-order thinking and learning than lower-order thinking and learning?

Why use taxonomies?

What is the relevance of the term: 'cognitive-constructivist approach to learning and teaching'?

Subject	Started by	Replies	Last post
Immediate reaction	Lecturer	53	7 June 2009 07:07:40 PM EST
Discuss Edwards & Watts's (2004) quote		8	8 May 2009 12:58:54 PM EST
Planning higher-order thinking tasks		7	10 May 2009 08:43:15 PM EST
Bloom's taxonomy - A hierarchically organised system		6	20 May 2009 04:02:07 PM EST
Level 1: Knowledge		10	6 May 2009 10:03:38 PM EST
Level 2: Comprehension (Understanding)		6	6 May 2009 09:21:36 PM EST
Level 3: Application		6	6 May 2009 09:25:24 PM EST
Level 4: Analysis		4	6 May 2009 09:27:40 PM EST
Level 5: Synthesis		4	6 May 2009 09:33:26 PM EST
Level 6: Evaluation		2	6 May 2009 09:42:39 PM EST
Why is it harder to plan for higher-order thinking?		5	6 May 2009 09:47:06 PM EST
Why use taxonomies?		8	13 May 2009 06:59:49 PM EST
What is a cognitive-constructivist approach?		7	25 May 2009 12:51:39 PM EST

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Figure 2: Structured Forum Activity - Lecture 9

The structuring of student online interaction is of importance. The ways in which the forum activities were organised to engage students in higher-order thinking and knowledge expansion, is shown in Figure 2 (above) and Figure 3 (below).

Analytic induction methodology

The case study research reported here uses an analytic induction framework. The term 'case study' is used in a variety of ways and underpinned by a number of different epistemological positions, which makes it necessary to specify the particular meaning attributed here. Clyde Mitchell notes: "in its most basic form, a case study may refer to the basic descriptive material an observer has assembled, by whatever means available, about some particular phenomenon or set of events" (2006, p. 26). He continues by explaining that "the single case becomes significant only when set against the accumulated experience and knowledge that the analyst brings to it" (p. 36). Similarly, Evans and Handelman, (2006), Flyvbjerg (2006) and Yin (2003) argue that there is great variation and confusion among scholars concerning the conception and classification of case study research. Hence, there is a need to make explicit how it is defined.

Case-based research is classified rather loosely here as the study of a single case without the use of controls or manipulations in a naturalistic setting. My intention with the study of students' willingness to engage in online peer-to-peer dialogue was to contribute to theoretical thinking and data-driven decision-making about online discussion forums as a pedagogical tool. The explanation of the results will draw on the theoretical argument outlined in the introduction, emphasising the increasingly prominent role of Web 2.0 technologies in HE and a need to better understand their utility and impact on student learning. Thus, the construction of hypotheses or propositions relating to the pedagogical value of new learning designs, such as the incorporation of additional interactive podcasting provisions, becomes a logical step in the evaluation of the potential impact of these new technologies. An analytic

induction methodology was used to test theoretical formulations and interpretative arguments outlined above. The cyclic focus of this methodology is explained by Katz (2001) as follows:

There is no methodological value in piling up confirming cases; the strategy is exclusively qualitative, seeking encounters with new variables of data in order to force revisions that will make the analysis valid when applied to an increasingly diverse range of cases. The investigation continues until the researcher can no longer practically pursue negative cases. (p. 84)

The use of analytic induction is favoured over grounded theorising (see Jones, 2004 for a distinction between the two methodologies), because it provides a political standpoint, making overt the personal values held by the researcher. As Katz (2003) so aptly notes, “in the conduct of fieldwork, methods and theory interests are so closely mixed with each other and with historically and socially contextualized relevancies that neutrality is relatively hard to come by” (p. 282).

Analytic induction as a case study methodology has its roots in the writing of Florian Znaniecki (Ratcliff, 2006). A variation of the situated data analysis follows the six-step model of analytic induction resulting from Goetz and LeCompte’s (1981, cited in Ratcliff, 2006) adaption of Znaniecki’s original theory is outlined below:

Table 1: Analytic induction steps used in the study

Steps	Description of step	Description of step in current study
Step 1	Identification of phenomenon	What is the utility of interactive podcasting for deep engagement and exam preparation?
Step 2	Development of hypothesis	Students will engage in dialogue to similar degrees and it is not expected that there will be a significant difference in the utility of interactive podcasts in Weeks 8 & 9 compared with other interactive podcasts
Step 3	Development of a single case to study	323 students enrolled in one first-year unit and agreed to have their online work monitored for study purposes are the research participants.
Step 4	Confirming or disconfirming hypothesis	In the event of disconfirming results, the phenomenon or the hypothesis needs to be revised and the process will begin by Step 1.
Step 5	Finding of new cases to test the validity of the hypothesis that can lead to prediction of behaviour (affirmation of hypothesis)	Follow-up study to be developed later to affirm or reject refined hypothesis based on the findings of the present investigation.
Step 6	Negative results require a reformulation of the hypothesis (rejection and reformulation of hypothesis)	

A technique known as educational data mining (EDM) is used in this pilot study to gather relevant information on students’ willingness to participate in online dialogue (forum activity) from a small data set. It has been noted that EDM lends itself better to small data samples than DM in general (Heiner, Heffernan & Barnes, 2007) as there is no need for large sets to data to test the accuracy of predications made. Data mining, also referred to as ‘knowledge discovery in databases’ (KDD) is a research method that facilitates the extraction of meaningful information from unstructured data sets, such as access logs (Zhao & Luan, 2006). My preference for EDM as an emerging method is based on the following reasons:

- First, there is growing evidence that survey response rates, which traditionally have been less-than-ideal, are falling (Porter & Umbach, 2006; Porter & Whitecomb, 2005). This phenomenon is commonly referred to as ‘survey fatigue syndrome’ (Clarkberg, Robertson, and Einarson, 2008).
- Second, since participation in a research project is optional for students, it seems likely that the survey sample is skewed towards the more engaged students.

- Third, willingness to spend time and energy to engage with survey questionnaires for no apparent personal benefit or incentive may seem to be an even greater indicator of intrinsic involvement with education than the participation in the forum activity.

I saw a need to use a research technique that provides ease-of-access and reliable data that would lend itself to the replication of the study if needed and the refinement of the assumptions that guided the learning design evaluated here.

The research questions (*Step 1 of Analytic Induction*)

What is the potential utility of interactive lecture podcasting in LAMS?

Sub-questions:

- (a) How willing are students to engage in theme-based, online peer-to-peer dialogue as a form of exam preparation when *no* assessment points are provided?
- (b) How willing are students to engage in theme-based, online peer-to-peer dialogue as a form of exam preparation when a negligible amount of assessment points are provided as an added incentive?

Assumptions (*Step 2 of Analytic Induction*)

The investigation was grounded in three interconnected assumptions that underpinned the learning design:

- A1: *Willingness to access interactive lecture podcasts*: I expected that students would generally be motivated to access the theme-based dialogue starters in the *forum activity* because of their strong relationship to the exam questions and flexible, interactive learning design.
- A2: *Social presence will lead to communication and active participation*: I expected that students would, once they were ‘present’ (listening to the podcast) engage in some form of dialogue with their peers.
- A3: *Minimal fluctuation between access data for assessed and non-assessed interactive podcast*: I expected that making the strong relationship between the ‘forum activity/dialogue tasks’ and the ‘exam preparation’ explicit would lead to minor fluctuations in access data between interactive podcasting lecture/workshop that attracted a minimum amount of assessment points (2% in total) and interactive podcasting lectures that attracted no reward for engagement.

The study context (*Step 3 of Analytic Induction*)

The first year education studies unit, from which this example is drawn, was designed to assist TE students to form their beginning understandings about teacher skills and teacher roles. Thus, the learning objective of the unit was for students to begin to establish a tentative teacher identity through the introduction of key themes, various theoretical perspectives, in conjunction with first-hand professional experiences at university and in schools.

The learning design provided (invitation to the ‘dialogue’ through the provision of the interactive podcasting facility in LAMS) was explained to students as an effective exam preparation, with the potential for personalised deep engagement with the learning content on a ‘just-in-time’, flexible learning basis. To get inducted into HE learning culture, which emphasises ownership of learning and self-regulation (Schunk & Zimmerman, 2007), the benefits of this additional medium was emphasised to students. However, no compulsion or restriction was placed on students’ access of the information presented in LAMS. Students were free to move in and out of tasks and lecture podcasts as they wished, up until the exam date. To ensure familiarity with the technology and the underlying philosophy of flexible collaborative learning design, the nature and purpose of the interactive

podcasting provision was explained in the second lecture of the unit, in conjunction with a practical demonstration of the media. The relationship between the interactive podcasting sessions and students' induction into an adult learning culture was emphasised in addition to the benefit of this medium as an additional learning tool for exam preparation and success in the transition from school learning to university-style, independent learning. Thus, it was anticipated that the mix of emphasis on self-management, exam preparation and successful learning about teaching would be sufficient to help students sustain their motivation to learn independently and as part of a learning community.

An illustration of the interrelationship between a week's lecture topic and illustrative example used in the lecture (topic lecture 4: The learning environment and example: Anna's story), tutorial tasks (intrinsic and extrinsic motivation exercises), weekly reading (two chapters in unit text: Motivation and Behaviour Management), and the forum activity, is made visible in Figure 3.

Lecture 4 - Form
This is your space to discuss aspects of the lecture and the readings of the week.

Subject	Started by	Replies	Last post
Anna - Real-world (exam) scenario	Lecturer	8	6 June 2009 05:45:07 PM EST
Anna + Motivation theory	Lecturer	3	6 June 2009 05:54:13 PM EST
Anna + Maslow's theory	Lecturer	2	6 June 2009 06:09:13 PM EST
Anna + the motivation and engagement wheel	Lecturer	2	6 June 2009 06:17:11 PM EST

New Topic Refresh Next Activity

Anna + the motivation and engagement wheel
By Lecturer - 6 June 2009 06:17:11 PM EST

On page 447 of your main text, it is noted that: "The motivation and engagement wheel (figure 12.6) is a multidimensional model that reflects the thoughts, feelings and behaviours underpinning academic engagement at school."

In which of the four quarters of the wheel would you place Anna? - Explain your choice by making reference to the text, table or figure on pages 447-8.

Edit Reply

Figure 3: Lecture 4 – Forum activity

Two of the 12 weekly lectures were available only through online mode, without the face-to-face component. In the past, students complained about the increased stress during the latter part of their semester resulting from having to prepare their assignments to attend face-to-face lecture and tutorial sessions. To assist students with greater flexibility and study time during the weeks of their major assignment, two successive lectures and tutorials were presented as interactive lecture/workshop podcasts (Lectures 8 and 9).

All of the TE students enrolled in the first-year unit agreed to have their online unit work monitored and completed all assignment points became research participants, which constitutes a participation rate of 93%. A total of 323 students' online access was monitored.

Results

The first bubble graph representation of access patterns of the interactive podcasts shows the relative uptake of the learning media on a weekly basis. The x-axis denotes the lecture number and the y-axis denotes the number of students enrolled in the unit (n=323). Large bubbles represent a large number of students accessing the learning media, relative to the total student population, and small bubbles represent a small number of students accessing the interactive podcasts. In other words, the larger the bubble, the greater the number of students who accessed the particular interactive lecture podcast in LAMS.

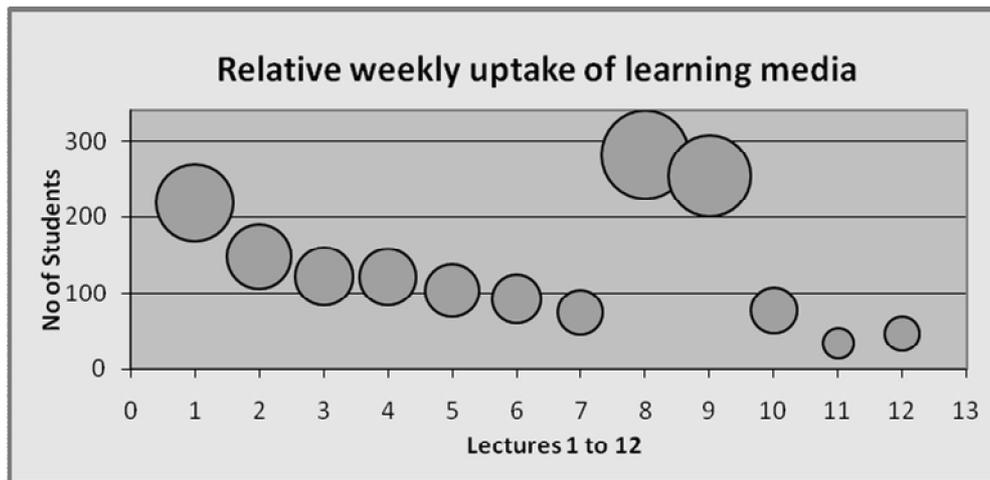


Figure 4: Student access of interactive podcasts in LAMS

The data on student access was gathered to test the first assumption (A1): *Willingness to access interactive lecture podcasts* and the third assumption (A3): *Minimal fluctuation between access data for assessed and non-assessed interactive podcast*. The results presented here do not support either of these assumptions. As is shown in Figure 4, there was interest in the interactive lecture podcast, but it was not sustained. Moreover, there was a clear fluctuation in access, with lectures 8 and 9 attracting many more students than other lectures throughout the 12 weeks.

Although, I expected that students would generally be motivated to engage in some form with the *forum activity*, precisely because of their strong relationship to the exam questions and the convenient way they could be accessed; the data clearly shows that students are primarily motivated by assessment points (extrinsic rewards). The most accessed interactive podcasts are Lectures 8 and 9, both attracting 1% of the total assignment mark each (see Figure 4), illustrating the general trend in the interactive podcast access and the pragmatic stance of the majority of students. The least accessed podcasts were Lectures 11 and 12, attracting only 34 and 46 students respectively. Lectures 3 to 7, and lecture 10 show gradually declining access rates of access with between 37% for Lecture 3 (122 students) and 23% for Lecture 10 (75 students).

The first interactive podcast (Lecture 1) was accessed by 219 students (68%), and the most accessed podcasts were lectures 8 and 9, attracting 282 (87%) and 254 (79%) students respectively. This result suggests that a great majority of students were able to access the interactive podcasts, but not particularly willing to do so on a regular basis. Hence, the empirical data contradicts the third assumption (A3).

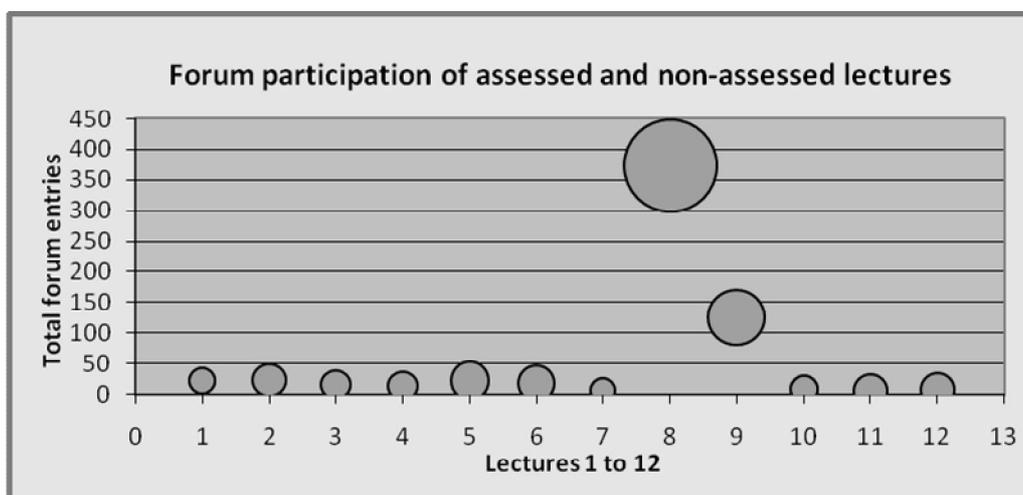


Figure 5: Forum participation by students who accessed the interactive podcasts

The data shown in the second graph in the series (Figure 5) were gathered to test the second assumption (A2): *Social presence will lead to communication and active participation*. Dissimilar to the findings outlined above, the results presented below are not as clear. At a first glance they do not support the assumption, but an interrogation of the data for Lectures 8 and 9 do seem to suggest a more complex picture.

Assumption two makes explicit that it was clearly expected that students would, once they are ‘present’ (and listening to the podcast), be willing to engage in some form of dialogue with their peers about the topic or issues presented. Contrary to my belief, the data as shown in Figure 5 illustrate the general participation pattern of students who accessed the interactive podcasts. The findings suggest that participation in the online forum by students who accessed the respective interactive lecture podcasts was generally low, except for Lectures 8 and 9. Again, the data is represented as a bubble graph for easy comparison. This graph shows almost identical bubbles located on the base line for all interactive podcasts that did not attract assessment marks for access (see Figure 5). This result indicates a steady pattern of engagement with the forum activity by a minority of students (between 10-20%) who accessed the interactive podcasts. Whereas 23 students engaged in some form of dialogue on the topic introduced in Lecture 5 (lesson planning), the topic discussed in Lecture 11 (reflective teaching), attracted only 6 student comments, some of which were simple notes of agreement with views expressed by others. The pattern of moderate forum contribution (up to 22% contributions) changed to medium or even high levels of forum activity engagement for Lectures 8 and 9, which showed much higher degrees of student-to-student interaction (between 50-135%). The significantly higher number of entries recorded for these lectures represent mainly multiple postings from a core group of students (125 students for Lecture 8 and 53 students for Lecture 9), who seemed to engage in some dialogue with each other, resulting in significantly greater bubbles for the two assessed lectures. The forum activity log for Lecture 8 presents a significant finding, confirming to some degree assumption two (A2). It recorded 374 entries, indicating that a considerable number of students posted multiple entries, signifying patterns of meaningful interaction and multi-level dialogue. However, it is noteworthy that Lecture 8 did not conform to the customary lecture format. It introduced a somewhat controversial topic (teacher merit pay) through a four-part video production of a televised Q&A debate session (SBS, Insight Program, 2007).

Re: Immediate reaction
By [redacted] - 20 April 2009 12:29:52 PM EST

I found this pod cast to be very useful in explaining Bloom's Taxonomy of learning and the 6 different levels. I rea through the text got more of an understanding. I think it was very useful and a good learning tool.

Reply

Re: Immediate reaction
By [redacted] - 20 April 2009 06:37:42 PM EST

Upon reflection i realised that after completing this activity i have a much greater understanding of what Bloom's Taxonomy is about, i found the podcast in conjunction with the lec notes a great way to understand a key idea. Most of the levels were clearly explained with relevant practical examples, however i found i am still a bit fuzzy on level 5 Synthesis. I think that i will understand it all better when i match up this learning with the info in our text.

Reply

Re: Immediate reaction
By [redacted] - 20 April 2009 08:30:43 PM EST

The podcast was really useful and easy to understand. It made everything I had read more understandable.

Reply

Re: Immediate reaction
By [redacted] - 21 April 2009 06:51:04 PM EST

The podcast was very insightful, it helped me understand the idea of critical thinking and problem solving skills by providing examples.

Reply

Figure 6: Student comments on Lecture 9

Lecture 9, which was an introduction of 'Bloom's taxonomy of learning', presented as a CAMTASIA recording, utilising a customary lecture powerpoint format (vodcast), attracted much less interest and postings. Lecture 9 recorded the second highest amount of student entries, with a total of 126 postings logged (39%) for the 13 dialogue and exchange tasks (see Figure 2). Even though less than half of the student population posted a comment, entries were very positive and insightful (see Figure 6). The interactive Lecture 9 podcast was the second of the two exclusively online-presented lectures that attracted a minimal assessment marks for participation (1% per access and a total of 2 assessment points for accessing Lectures 8 and 9). More significantly, the exclusively online provision of the two lectures attracting a negligible amount of reward for access has had some impact on participation in the forum. Therefore, it may be possible that there is a relationship between social presence and students' willingness to provide an entry on their immediate reaction, which may lead to a learning exchange or dialogue at a later stage.

Discussion and conclusion

The analysis of the frequency of access of the interactive lecture podcasts and the pattern emerging provide interesting indications of students' ability and willingness to engage in online forum activities as one form of active participatory learning. The majority of students (87%) in this study clearly display an ability to engage with the interactive lecture podcasting set up as a short LAMS sequence. It is not known why 13% of students did not register any entries in LAMS. Although a number of students reported technical difficulties, the large number of student entries recorded for Lecture 8 suggests that most of these first-year students, which most probably were unfamiliar with learning management systems, were able to overcome initial difficulties and gain access to the online information. More importantly, the results as illustrated in Figures 4 and 6 suggest that the willingness to participate in online work is closely tied to the reward that participation attracts, irrespective of the amount of reward granted. In other words, if there is an assessment mark attached to access of online work, students are generally much more willing to engage with this learning medium. The incentive that the online learning tasks are closely related to the end-of-semester exam questions does not seem to alter the pattern of access. A small number of students will engage with additional support structures for learning; whereas the majority of students will do so for assessment purposes (see also Goodyear & Ellis, 2007).

The purpose of the present study was to construct an overview of the utility of interactive lecture podcasting. The pattern analysis of students' access logs was able to locate patterns in student online learning behaviours. The results presented here seem to disconfirm two of the three assumptions outlined at the beginning of the study, necessitating a reconfiguration of the assumptions for follow-up studies. The data testing the second assumption are mixed and seem of most value. It may be possible that 'social presence' can lead to peer-to-peer interaction and a deeper engagement with the learning information presented. This study may prove useful and the topic of the utility of interactive lecture podcasting demands further investigation.

Although disappointing, the finding that the strategy to link the forum activity with exam preparation was not successful in encouraging students to engage in learning dialogues with their peers, is important and warrants greater understanding. Other studies conducted by Dawson (2006) and Dobozy (2009), have shown that HE students seem reluctant to engage in online dialogue with each other. Supporting Goodyear's analysis, this preliminary study showed that this pattern is reversed as soon as assessment points are attached to the activity. This finding is disturbing, especially as the trend in HE is heading towards greater online and blended learning provisions. The fluctuation in podcast access and forum activity participation was unexpected between the interactive lecture podcasts that attracted negligible rewards, and those that attracted no explicit rewards in the form of assessment points. These findings may point to a culture of learnt behaviour that reflects a dependency on extrinsic motivation and teacher-directedness, suggesting that further monitoring of students' learning behaviour and self-management skills, or the lack thereof, is warranted.

Students may need special training that demonstrates how the deepening understanding of information exchange will lead to gradual increase in personal as well as collective knowledge. One possible conclusion from this study is that it is difficult for some students to express their opinions in an open forum situation. If so, a way must be found to increase students' willingness to 'have a go' and engage with others' thought processes through online discussion forum exchanges. Building expectations and

gradual understanding that active participation means to take increased responsibility for one's learning behaviours and actions needs to feature in all HE units, especially in first year. Does this require the granting of participation marks? Maybe. By actively engaging with others' views and opinions, students are signalling that they understand the personal value of intellectual exchange. The potential for learning is, however, not primarily academic, but more so social and cultural as students unlearn old patterns of 'passive learning behaviour' as they are undergoing a resocialisation process. Students will need to be put in a position that prompts them to increase their sense of responsibility for their own learning and personal cognitive and emotional growth. Interactive lecture podcasting may be one of a number of tools used to achieve this goal.

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