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Pod it All? The use of Podcasting in Curriculum Delivery, Assessment and Feedback

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1. Introduction

The use of audio-visual materials in the provision of educational programmes is by no means a recent phenomenon. The earliest pioneers of television saw the potential of the new medium for educating the public and sought to expose them to content designed to 'Educate, Inform and Entertain'. For the ensuing five decades the technology required to produce and distribute audio-visual material remained highly specialised, very expensive and available only to very few people and companies. This meant that the ordinary teacher wishing to extend the range of experiences offered to a class was limited and essentially passive. In the United Kingdom during the 1960s and 1970s this entailed the introduction of a radio into the classroom, or perhaps the scheduling of the class into the designated TV room in order to listen to a live broadcast of material designed by the BBC specifically for schools. Technological advances in the price, format, portability and ease of use of audio-visual (AV) equipment advanced first to reel-to-reel tape, followed by the audio and video cassettes, and led to the possibility for the introduction of a range of teacher-generated materials. These remained the preserve of the teacher-enthusiast, perhaps with their own equipment, or of the AV specialist employed specifically to manage and facilitate this aspect of an educational organisation's resources. During the 1980s there was a growing, but marginal and still largely optional opportunity for trainee-teachers to engage with the use of AV materials. While teachers were encouraged to generate innovative and engaging classroom activities such as 'games' and worksheets, the focus remained upon the incorporation of existing AV materials produced by educational suppliers or recorded under licence from television broadcasters. The move towards the teacher as a producer of bespoke audio-visual materials emerged only after the first wave of computers and recordable media of the early 1990s had been replaced by the internet-based formats for audio and video and the recordable CD and DVD. These began to provide the low-cost, readily available framework that teachers required in order to consider apportioning valuable time to the development of the skills necessary to create and distribute their own materials. It was into this context that Apple released their first generation digital music player (iPod) on 23rd October 2001, although at that time it was seen as a music player for the leisure market rather than a tool for educators. The rapid development of the iPod

product from simple audio player with small monochrome display to full-colour, larger screen with video capacity and internet connectivity has broadened the appeal and opened new areas of activity, reinvigorating the use of AV materials in curriculum delivery. However, just because it has become possible to use these and similar devices as an educational resource does not automatically make it a desirable or an effective strategy. This study will reflect upon the various ways in which the iPod and its associated frameworks have been employed in the Higher Education context and examine the claims made by early-adopters and enthusiasts of the processes. A summary of developments in the use of podcasting for curriculum delivery and for the provision of assessment feedback to students will be followed by an outline and evaluation of my own research into the use of student-generated podcasts as an assessment technique.

2. When is a Podcast not a Podcast?

In common with most new technologies, the podcast has been accompanied by developments and additions to the language: Words such as webfeed, aggregator and syndication, have become familiar terms to those involved in this activity. Since this has been a web–based development and one that has emerged from an open-source background, the precise genesis of the terminology is complicated and contested. Most will agree, however, that the word 'podcast' in a conflation of ipod and broadcast and there is also broad agreement about what constitutes a podcast. The three definitions that follow provide the commonly held interpretation of this term – each indicating that a podcast is available via the internet and obtainable through an automatic download, RSS feed or similar syndicated mechanism. These terms refer to the process through which podcast files are automatically 'pushed' out to subscribers.

Definitions of a Podcast:
Merriam-Webster: *Podcast: a program (as of music or talk) made available in digital format for automatic download over the Internet.*

Dictionary.com: *Podcast: a Web-based audio broadcast via an RSS feed, accessed by subscription over the Internet.*

Wikipedia (as of 04/02/09): *A podcast is a series of audio or video digital media files which is distributed over the Internet by syndicated download, through Web feeds, to portable media players.*

However, in an educational context it may not always be desirable to deliver such material through the RSS mechanism. It may be preferable instead to keep teaching material within the confines of an organisation – perhaps downloadable from a University's Virtual Learning Environment (VLE). This may be to avoid breaching the copyright licence for content that it would be permissible to employ within an institution, but not to broadcast to the wider world. It may also be preferable to limit access in response to the views of students who see themselves as paying customers of their University and who are perturbed at the thought that the materials for which they feel they are paying are also being made available to everyone else free-of-charge. While there are mechanisms for restricting access to materials delivered via RSS subscription, the point here is to consider whether identical files delivered in different ways could both be considered to be 'podcasts'. The linguistic purist would certainly differentiate between these artefacts, but since language is a dynamic,

evolving phenomena, it may not prove possible – even if it were desirable, to constrain its meaning in this way. It is already clear that within education at least, the term 'podcast' has been stretched to include audio files in mp3 format that are produced as a single item rather than as an episode of a series, and that are distributed as downloadable or 'pulled' files without the use of the RSS feed. This is evident in the definitions employed by the IMPALA project (Salmon et al 2008 p20) where the issue of syndication is ignored and a podcast defined simply as a downloadable audio file that '…is made available from a website.'

3. Educational Podcasts? Early adopters and Media messages

The development of educational podcasting followed a familiar trajectory for the introduction of new ideas: Enthusiasts for the technology bring ideas forward and find allies among the 'techies' of an organisation. This may lead to formal institutional support, special units, programmes of staff development and training, and so on. However, at an early point in the development of podcasting, Duke University in the USA raised the profile of this particular innovation to the wider HE community through their institutional-level support and implementation. This gave encouragement and credibility to the educational 'early-adopters' and support to those seeking resources to initiate investigations into podcasting in other Universities. Following their initial explorations, Duke University went on to develop facilities for the automated recording and publication of lectures and other events (DukeCapture), something that Apple have also sought to develop with the combination of Podcast Producer and iTunesU. These frameworks arise from the perception that podcasting is a method for recording and distributing lectures, and that this is a desirable activity that adds value to the student experience. The unfortunate, yet predictable response of journalists in the UK can be illustrated by the following:

Students' lectures by iPod
LAZY students who miss lectures can catch up by getting recordings sent to their mobiles and iPods. The scheme is being tested at Coventry University to help youngsters who doze off in class or fail to get out of bed. (The Sun Newspaper 13th June 2005)

Podcast lectures for uni students
A lecturer at a West Yorkshire university has abolished traditional lectures in favour of podcasts.
(http://news.bbc.co.uk/1/hi/england/west_yorkshire/5013194.stm)

While Glasgow University also provided examples of the live recording of lectures, these received more favourable responses, in part due to the perceived caché of the subject matter of Dr Susan Stuart's series on Philosophy. This capacity to record and distribute lectures as audio or video has been available for many years. It has not, however, been widely practised in the sector except where such activities were devised specifically for this purpose. A lecture is an environment in which students engage with tutors and peers in a social learning space that has benefits beyond the immediate delivery from the presentation screen. It is unfortunate, therefore, that the early focus upon the use of podcasts in education saw the simple recording of lectures as a desirable and beneficial application. Attempts to listen to such artefacts made available through iTunes would discover many live lectures whose recordings include passages where what was being discussed was inaudible and what could be heard being written was invisible. Nonetheless, early research into student responses to recorded lectures noted some enthusiasm for the opportunity to revisit lectures

in order to revise for exams or catch up on missed sessions. (Winterbottom, S. 2007; Salmon & Edirisingha 2008), The question arises as to why, if such recordings were desirable and useful, they had not been made available through earlier technologies. The answer lies perhaps, in the iconic status of the iPod mp3 player for which a use was being sought, but more positively, in the easy to use and cheap technology of podcast production and mass distribution and the desire of lecturers to motivate students to engage in their learning materials.

4. Curriculum Delivery - Beyond the Recorded Lecture

One of the earliest explorations of educational podcasting in the UK was set up at the University of Wolverhampton in June 2005. This group began to explore the potential of the combination of the fourth generation iPod Photo with Apple's iTunes and Garageband software. Members of the project experimented with the new 'Enhanced' Podcasts that could integrate speech, images, web-links and music along with a 'chapterisation' tool that enabled listeners (and watchers) to navigate effectively to specific sections. While the audio podcast was retained for certain functions such as assessment and feedback, the advantages of the enhanced podcast format led to its wider adoption within the project team for the creation of bespoke, media rich materials that were well received by students and tutors. Within a few months of the release of the iPod Photo, Apple released the Video iPod (October 2005) and further broadened the range of materials and activities that could be incorporated into educational podcasting. The initial expectation that podcasting was to focus upon recording lectures or consist of simple audio podcasts was quickly replaced with a wide variety of experiments that included dance videos, drama scenography, location-specific podcasts in leisure & tourism studies and enhanced podcasts in music history and songwriting. These early outcomes were reported to a conference supported by the UK Higher Education Academy in June 2006 with a more complete evaluation published in the British Journal of Music Education. (Dale et al. 2009). It was clear from these explorations that students found added value in the use of podcasts as support for lectures, whether presenting related material to be consumed prior to or following the sessions, but expressed no appetite for mere recordings of the lecture:

"I think if it [the podcast] had been the same as the lecture then I
don't think I would have listened to it. If you've got notes from the
lecture then there wouldn't be much point." (Students CB & LT)

"I think it's a good consolidation for the actual lectures, I don't think
you could substitute the lectures all together" (Student AS)
(Cooper & Spencer (2006))

Since these early investigations into the educational use of podcasting, a wide field of research has emerged to explore strategies for curriculum delivery. At the simplest level, this has seen the creation of audio or video memos from tutors that act as personalised reminders or provide all of a class with summaries from matters arising in tutorial sessions. At the other end of the scale, material has been produced that incorporates choreography for small screen delivery or embeds webquest activities into the podcast for a more interactive experience. Such developments take podcasting away from the iPod or mp3 player and make use of a computer's facility to combine 'tutor talk' with guided journeys into internet

resources. A broad range of innovative approaches have been reported in *Podcasting for Learning in Universities* (Salmon & Edirisingha 2008) that outlines the work of the Impala Project based at University of Leicester. Many of these – such as the location specific developments in fieldwork, practicals, interactions with digital libraries and interactive materials for use in museums and galleries have supplanted the mobile learning attempts of earlier advocates of the use of PDAs where the access to the necessary hardware proved an insurmountable obstacle to wider adoption. The podcast phenomena has been a more fruitful development because it has made use of hardware that students already own, or are willing to purchase and use for their own communication and entertainment purposes. The educational materials made available by tutors sit alongside the libraries of songs, family photographs, holiday videos, and in the latest devices, a telephone, address book and an ever-increasing number of applications. These developments have embedded curriculum materials at the centre of students' lives and made them accessible at any time and in a format that gives greater control and choice to the learner.

5. Assessment feedback by Podcast

The use of podcasting as a mechanism for curriculum delivery has been complemented by explorations into the use of the podcast format as a vehicle for providing feedback to students on assessment activities. This goes beyond the original concept of a podcast but makes use of the same technologies for production and consumption. Distribution of these files sits outside of the podcast mechanisms since the products are intended for one listener only. It is this individual, personalised, bespoke nature of the feedback provided through this method that has been found to be a key benefit of its use. Cooper (2008) reported on a study that demonstrated that students valued audio feedback highly and considered it to be a more effective method of delivery than formal written notes in terms of communication of the information, and also as a means by which they felt they could apply this in order to improve their future learning. (See also France & Wheeler. 2007)

6. Podcasting as an Assessment Technique

While the use of podcast technology as a vehicle for curriculum delivery and the provision of feedback on assessment has been the subject of enquiry, my own work sought to investigate the potential benefits of students generating their own podcasts as an assessment activity that replaced more traditional techniques.

6.1 Context
This study was located in the second semester of a level two Historical and Contextual Studies module that is a core aspect of a BA in Popular Music degree at the University of Wolverhampton. This module, and its level one predecessor, engages students with the historical development of popular music genres and of the social and cultural issues that accompany them and has been assessed through group presentations and essays. The final activity and assessment in this module was originally cast as a research project leading to another essay but in September 2005 it was decided to explore whether the emerging technologies of podcasting could offer an alternative approach.

6.2 Methodology

The approach employed for this research activity aligns with the form of enquiry known as Action Research. This was selected since it presented an open, participatory way of exploring changes to educational practice in which all those affected by the actions would have a voice in the planning, implementation, generation of data and evaluation stages. It has developed from the work of Kurt Lewin (1946) through researchers such as Stenhouse (1975) Whitehead & Foster (1984), Carr & Kemmis (1986), Elliott (1991), Stringer (2003) and many others. The knowledge and experience gained through the process of critical reflection would lead to the generation of theories of practice as outlined by McNiff (1988 pp131-136), Stringer (2003 pp 144-147), and Elliott, (1991 p53).

6.3 Planning

The planning stage of the research was undertaken in the light of the importance placed upon this – sometimes referred to as the 'input or reconnaissance stage (Lewin, 1948). In order to engage and illicit support from participants a planning forum was set up to discuss the philosophical, ethical and practical issues arising from the proposed change. This involved academic staff, technical support staff and student representatives.

A primary concern from academic staff was that the change in assessment would continue to promote learning, contribute towards the goal of constructive alignment (Biggs 1999) between the assessment activity and the learning outcomes of the module, and that it should be seen as a relevant and valid approach by students and other stakeholders. The assessment criteria for the activity were specifically aimed at the quality of the content and not on the quality of the production. The module team were clear that since production technique was not part of the module delivery it should not be part of the assessment. In order to ensure equal access for all students it was decided that the option to submit the assessment as an essay would remain for any student for whom this was preferable. Other mechanisms for supporting students with specific needs were to be made available if required such as signers and video subtitling facilities. The student representatives greeted the change favourably since many viewed essay writing as an obstacle rather than a learning activity and were drawn to the challenge of constructing a podcast that could incorporate music, interviews and images. At this early stage there were no concerns expressed about the practicalities involved and it was considered to be a more relevant approach that would develop technical, presentational and employability skills. Technical support staff participants were personally enthusiastic about the exploration of the podcast mechanism and were able to assist in determining the policy of the module team in relation to matters of copyright, ownership and distribution of materials and the provision of training opportunities for students to learn how both to record a podcast and to submit the completed file.

6.4 Implementation

The involvement of participants in the planning stage led to a smooth introduction of the change into the module in October 2005. Students were provided with clear information about the new assessment technique and the support mechanisms provided to assist with its technical and academic requirements.

The stages of the activity are shown in table 1.

Cycle of Activities. 2005-8

Planning Forum
Implementation
a) Outline of assessment activity
b) Discussion of Assessment Criteria
c) Provision of training sessions on relevant software
d) Tutorial support (Academic & Technical)
e) Submission of completed podcasts as mp3 files on CD
f) Marking and feedback
g) Data Collection - evaluation forum, interviews, grade analysis.
h) Planning for next cycle
Repeat (a) to (h)

Table 1. Cycle of Activities.

The project engaged with a number of specific tools for the production and assessment of the podcasts. While these were standardised to ensure that all students had equality of access, students retained the freedom to employ alternative software that met with the basic requirement to produce an audio podcast on a CD and in mp3 format. Table two shows the range of equipment and software that was employed by staff and students in the process of undertaking this activity. The items that were recommended and made available by the faculty to students are shown in italics.

Details of Tools employed by staff & students	
Recording of interviews	*Griffin iTalk microphone for iPod* *Portable Mini-Disc* Portable cassette recorder Laptop with microphone
Compiling podcast	*Audacity Software* Garageband Software Cubase software Logic Software
Marking podcasts	*iTunes*

Table 2. Tools employed during the project.

The project ran for three cycles over a period of three years. During this time the process was the subject of continued monitoring in order to address issues as they arose. A more formal Evaluation Forum supplemented this at the end of each cycle and informed and altered the detailed implementation for the following year. These alterations focussed not upon the technical demands as had been anticipated, but upon the grading criteria and overall length of the podcast. The criteria presented to students had been similar to those for the essay from previous iterations of the module but after the first cycle the experience gained was used to improve the process. The style of a podcast in non-academic circles is usually informal and conversational. As this assessment was a report on a research project it required a more academic tone and precision of language, yet needed to reflect the

difference between this and the construction of an essay. The examples chosen to guide staff and students were the BBC Radio 2 documentaries on popular music and the expectations written into the grading criteria were revisited to reflect this model. The task of marking the podcasts was undertaken on a laptop with a built-in CD drive and Apple's iTunes software. During the first cycle the assessment feedback was written in the normal way but during subsequent cycles the feedback was recorded onto the same laptop using Audacity software and the resultant wav file converted to mp3 and following internal moderation, emailed to individual students.

6.5 Data collection and analysis

The project sought to discover if the change in assessment technique would have a positive impact upon student engagement with the learning activity and to the content of their responses to the assessment task. Insight into these matters was sought through the Evaluation Forums at the end of the each cycle and through a series of semi-structured interviews in small groups. The discussions and interviews were recorded using an ipod and transcribed for ease of access and study. These were subjected to a process of codification in order to retrieve, order, cluster and categorise the data (Miles & Huberman, 1994) and to identify converging or diverging perspectives. (Stringer 1996 p84). This was supplemented by comparison between the content of the podcasts and of the previous submissions of essays, and by analysis of the grades awarded for the assessment of this phase of the module over a four-year period.

7. Research findings and discussion

The key words and phrases that had the greatest prominence in student responses were:

> motivation,
> preference,
> familiarity,
> comfort,
> enrichment,
> style and format,
> media-rich content,
> real-life assessment.

Table 3. Interview data coding.

There was a very high degree of convergence in student feedback on the use of podcasts such that of the 93 students involved over the three cycles, not a single student chose to submit the assessment in essay format. This statistic, alongside the high degree of enthusiasm expressed by students in their particular projects, demonstrated the motivational impact of this change. Although by no means an absolute requirement, students wanted to include appropriate music clips, extracts of their research interviews and even a title image in their submission. At the beginning of the first cycle, many students had not downloaded nor listened to a podcast. In spite of this, students were clearly more confident and familiar with the spoken format in a manner that exceeds their familiarity with the essay. Detailed discussions revealed that few students had read any essays other than their own and found difficulty in articulating the demands of a 'good' essay. Their life-

long exposure to radio and television, on the other hand, seems to have given them a reasonable level of comfort, competence and literacy in this method of communication. While some guidance was given to ensure that the podcast touched upon matters of context, scope and methodology, on matters of style and content the outcomes were personalized, yet consistent: the documentary 'voice' seems to be a part of the shared vocabulary of modern life. Added to this, many students perceived this task as their first opportunity to undertake real-life, primary research involving live, rather than written sources of information. At this point is must be pointed out that some students were less engaged in the task, some even to the point of plagiarizing the script of their podcast from websites. However, it proved no more difficult to trace the original source than for a written submission once key phrases were typed into internet search engines. The module cohort for each cycle was populated by students from diverse backgrounds, including international students and UK students identified as dyslexic. Work has been undertaken elsewhere regarding the use of audio assessment as an additional entitlement for dyslexic students with the recommendation that this be made available as an alternative or 'accommodated assessment' (Symonds 2008). Through the introduction of the podcast assessment, the distinction between dyslexic and non-dyslexic students seemed to be mediated. In fact, the general level of expression was improved in most cases since, while many students submit written work containing sentences that lack clear structure or sense, it would be unusual for a student to speak phrases of this kind. In the same way it was noted that international students were more comfortable using speech than the written word, although these students had taken up the additional support offered by the learning centres in the preparation of their scripts. The attitude of academic staff and departmental technicians involved in this research was also very positive towards the change, although nuanced by early struggles with the institution's Information Technology department. In this particular organization it was only possible for staff to have access to the tools for this project on laptop computers that were not maintained nor serviced by central IT services. While this may appear as a minor and essentially local issue, attempts at translating this innovation to other locations and contexts would need to be able to ensure proper access to equipment for students and staff. Although the provision of facilities was a necessary prerequisite for the introduction of the podcast assessment, in practice, most students had access to their own computers and either borrowed or purchased their own microphones. The process of marking the podcasts proved also to be a positive experience because of the nature of the products themselves: the individual voices of each student and, at times, their enthusiasm for the subject was communicated clearly and many were able to include audio extracts of the interviews they had undertaken. From the second cycle onwards the decision was taken to record the feedback and grade decision as an mp3 file and this provided the opportunity for tutors to give a similar experience to students – expressing enthusiasm for their achievements in a more direct and personal manner. These outcomes represent genuine benefits to staff and students and are the primary argument for the continued use of the student-generated podcast. Nevertheless, an analysis of grades awarded for this module has also shown some improvement in performance. At the end of the first cycle that employed podcasts the grades were not significantly different from the previous iteration, but for subsequent cycles the number of students obtaining the top grade increased markedly, with a third of the students achieving in the top two bands. This may have been due to the experience gained in delivery of this methodology and in the changes made to the clarity and precision of the grading criteria employed. The availability of examples of student work for the later cohorts may have raised awareness of the requirements and enhanced

motivation. It should be noted however, that the podcast assessment is not a task that can be rushed at the last minute in the manner of some essay submission. This may account for the number of students in each cycle that did not achieve a satisfactory outcome and highlights the demanding nature of this assessment technique that maximizes results for the motivated students and exaggerates the weakness of those less committed.

8. Conclusion

While the facility to utilise audio recordings as a means of assessment is not a new phenomenon, it is, perhaps, a tool whose time has come. The ubiquity of audio and video media in the life experience of students and staff make these artefacts accessible, familiar and appropriate as vehicles for the communication and assessment of learning. Teachers in all sectors of education have been quick to adapt the podcasting framework for their own purposes and have created a specific field of educational podcasting. These are similar to other podcasts, but are not necessarily part of a series, pushed to subscribers, or broadcast beyond a specific clientele. Research has shown the podcast to be a valued tool for lecture catch-up and for the presentation of additional material prior to or following a lecture and one that has been useful in revitalising the field of mobile learning. Teachers have provided tutorial summaries and feedback on assessment through podcasting, and this study has shown the value of podcasting as an assessment tool that utilises the ease of use of the technology to create motivational assessment tasks. The overwhelming preference of students for the opportunity to create a podcast is significant, while tutors valued the clarity of spoken expression and familiarity with a documentary voice that students exhibit. This contrasts favourably with essay submissions and is a method that has been appreciated by international students and dyslexic students. The student-generated podcast seems to increase differentiation in assessment by providing a vehicle for enthusiastic and committed students to excel in a format that can be stretched to include the rich media of modern communication techniques in response to a research activity. Future work in this area will follow the increasing flexibility of the technology of the iPhone and its imitators to connect to the web and to each other and to respond to their specific location to explore mobile and distributed learning methods for which other innovations in assessment technique will undoubtedly emerge.

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