



Podcasting in Higher Education - 12 approaches

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October 2008



1. Learning and study skills development

Challenge: Linda teaches a 1st year core module called "Introduction to Intercultural Communication" within a degree programme in English Language and Communication. Sixty-five students from Journalism, Literature, Creative Writing, French, Drama, Business and Sociology are enrolled in this module. The module is delivered face-to-face with lectures and seminars, and assessed by portfolio tasks. Five trained student mentors (students from level three) work with staff to support students' learning throughout the module.

The module itself has a focus on skills development, which embeds academic skills development activities within an introduction to the study of intercultural communication. Linda wanted to provide supplementary materials to address problems that students face when undertaking assessment tasks. Another challenge that Linda faced was how to create a cohort identity and prompt students to learn from each other, due to the fact that students come from a wide range of disciplinary areas and all study in combination with other subjects.

The use of podcasts: Linda decided to develop a series of podcasts (six) to be integrated with other teaching and learning provisions. Each podcast was 10-minutes long and delivered via Blackboard VLE on a fortnightly basis. Each podcast consists of a variety of elements, and is designed to be interactive and informal in style. These podcasts consisted of:

- Lecturer summaries of key concepts
- Interviews with senior students on key study skills
- Discussions and conversations on how to tackle assessment tasks between students, mentors and tutors
- Top tips on presentation and research skills given by mentors

2. Researching and communication skills

Challenge: Charles teaches Genetics. This year he is teaching a module called "*Genetic Research Special Study*" to a group of students from the Medical School. In their second year, Medical School students can choose a subject of interest to study as a special module. About 30 students chose to study this Genetics module.

This module has been taught through lectures, tutorials and practicals. Charles was quite enthusiastic to use new developments in learning technologies to improve his teaching practice. He wants to introduce students to podcasting, as a new way of presenting information. Also, he wants students to create their own podcasts, as a means of developing independent and active learning skills.

In order to support this process, the department bought several MP3 sound recorders and laptops installed with free software (Audacity) for students to use. Students were shown how to use Audacity through lectures.

The use of podcasts: A group approach was chosen to encourage student interaction. Thirty students were divided into 6 groups. Each group was responsible for researching their chosen topic, relevant to ethical issues surrounding Genetics, and developing a podcast based on the selected topic. The recommended formats were discussions, debates, or interviews so that each member of the group could contribute equally. The suggested length for each podcast was a maximum of 10-minutes. These podcasts will be made available within the Medical School learning environment (VLE) for other students to use.

Examples of the topics that students chose for their podcasts are: Designer babies, Genetic screening, Genetic testing, Diabetes-type11, DNA fingerprinting, and HAEMOPHILIA A+B.

3. Developing collaborative and active learning skills

Challenge: Mike is the head of a Centre specialising in promoting approaches to developing active learning skills, within the department of natural and social sciences. More than 100 1st year students join the department each year. Preparing students for effective learning skills such as collaborative, active, independent and reflective skills, required by Higher Education, has always been a challenging issue faced by staff members.

Since 2006, the Department, in conjunction with the Centre, has introduced a specialised induction week activity for 1st years to assist with their transition to higher education through social learning. The induction week activity is based on collaborative group work. In a one-day field trip, each student group is given a scenario related to their disciplines. Students are expected to gather data (e.g. pictures) related to their given scenario and make a group reflection based on their experiences. The induction week activity intends to provide an enjoyable, relaxed learning experience that introduces students to active learning opportunities through social networking.

The use of podcasts: Digital Storytelling, a combination of still images with MP3 files (podcasts) was introduced as a technique to enable an innovative approach to student engagement and reflection. In order to enable the success of the induction week event, the Centre bought the necessary devices for students to use. This comprised of 22 laptops with headsets, 7 multi-card readers, 7 digital cameras and 30 memory sticks.

Students were prepared for the field work through a series of briefings and preparation activities, including training sessions for digital storytelling led by the Centre's learning technologists. In these sessions students were first shown some existing digital stories, then were provided with digital cameras and laptops and instructed in their use.

Students were advised to make their stories with a maximum 250 words and 2-minutes in duration. In the field trip, students took photos using digital cameras and transferred them to their laptops later on. They recorded their audio reflections directly onto the laptop using the software Audacity.

Given this is the first attempt at using this technique, students only needed to create the components (pictures and MP3 files) of their digital story. The completed stories were put together by the Centre staff and shown to students at a social event on the last day of induction week.

4. Location-based learning: fieldwork techniques

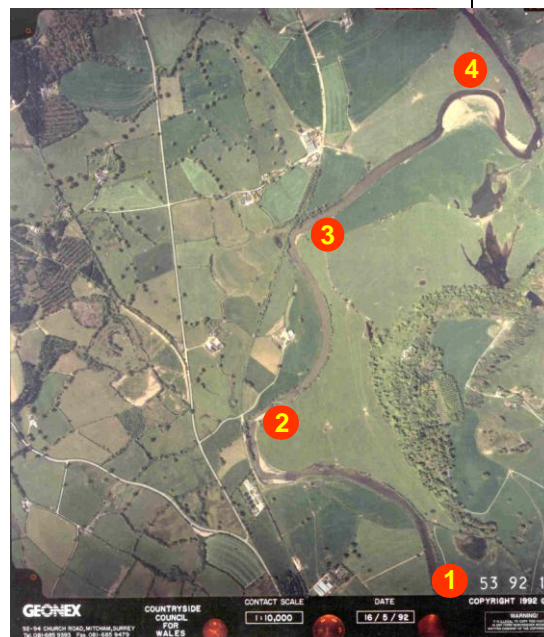
Challenge: Acquiring fieldwork techniques is an essential part of learning in subjects such as Geography. Traditionally, there is a lack of support for student field-based learning for several reasons. First, fieldwork techniques are not sufficiently and systematically covered in the current curriculum. For this reason, students will inevitably come across “unknown” situations, whether that is the use of a particular piece of equipment, a sampling method or an unfamiliar geographical process. There is also the “forgotten” situation in a field context. With no easy access to a textbook or a manual, those techniques or concepts previously learnt are simply remote to students. There is also a lack of on-site support due to the fact that only one of two staff members will accompany students on the field trip. If students are dispersed in different locations, they can only phone up the member of staff for help, or the staff member may need to travel a long distance to help.

The use of podcasts: A podcast library (including 35 video podcasts) for geographical techniques was created. These podcasts cover generic techniques that can be used for any field trip and by students at all levels (from 1st year to dissertation to PhD). Each video podcast was about 7-10 minutes long. The podcasts will be available on Blackboard VLE. All students in the Geography Department will be given access to the library. Students can watch the podcasts anytime they want, and can also download the podcasts onto their own laptops or mobile devices. The library will also be preloaded onto 12 video iPods owned by the department. During a field trip, each group of students will be allocated with an iPod. If students come across any problems in relation to fieldwork techniques, they can refer to the podcast library from the iPod first, instead of relying on a member of staff.

5. Location-based learning: field information

Challenge: In addition to fieldwork techniques, knowing what to look for when on a fieldtrip is also an essential way of learning in subjects such as Geography. During a field trip, the lecturer often needs to provide information about a particular site, or a narration for a particular phenomenon. Steve was faced with the task of orientating a group of 1st year Geography students around the River Thames environment at induction week. During the field trip day, students must follow a pre-determined route from a map, and stop at a number of identified sites. At each stop, Steve needs to give a description specific to that location. He may also need to give instructions to prompt students to undertake particular activities, such as directing them to record a particular phenomenon at a given stop. In the case illustrated below, students stop at nine individual sites along the River Thames where they receive information on nine specific geographical themes (Figure 1).

Figure 1: Map of the River Thames



The use of podcasts: Steve developed nine podcasts for the induction week event. Each site is represented as a separate audio 'chapter'. Each podcast chapter is 5-minutes in length. The podcasts will be pre-uploaded onto iPods owned by the department. During the field trip day, students use the iPod and select the chapter that corresponds to the site on the map.

6. Learning to use specialised software

Challenge: The ability to learn and make use of software tools is now a mainstream feature of learning outcomes in degree programmes across all disciplines. Nigel teaches such a module in Geographical Information Sciences to a large student cohort of over 200 students that involves the use of GIS software. Surprisingly, Nigel discovered that despite the rapid development in software technology over the last two decades, approaches to teaching students how to use software tools has changed little – still largely relying on paper-based manuals illustrated with screenshots. Nigel was quite enthusiastic to adopt the rich media approaches and develop visual-based instructions, replacing traditional text-based manual for students learning the software. He also expects that students will be given more flexibility in learning and be more engaged with independent learning in practical sessions with visual-based instructions.

Solution: Nigel developed 70 video-podcasts, each consisting of several screen shots and graphical illustrations to demonstrate how to use GIS software. Each video clip was about 5-7 minutes long. All video-podcasts were made available on the WebCT VLE. Students accessed the video podcasts to learn how to tackle practical tasks step-by-step in weekly practical sessions.

7. Learning 'threshold concepts'

Challenge: Martin teaches a 1st year, semester one introductory course called "*Physics 1A: Foundations*" at the School of Physics. Approximately 250 students are enrolled in this course. About 40% of these students are studying for non-Physics degrees and take this as an elective course in their 1st year. The cohort is thus diverse with respect to their background studies and previous qualifications: Scottish Highers, Advanced Highers, A-levels and other qualifications.

Based on Martin's previous experience, many students who enrol on this course hold misconceptions in relation to certain topics in classical mechanics and dynamics. Martin was quite keen to adopt podcasting as a means of pre-lecture preparation to provide advance exposure to conceptually difficult topics in elementary undergraduate Physics.

The use of podcasts: Two podcast episodes were created, each between 5 and 10 minutes in duration. They were specifically developed to address conceptually-challenging topics within the course. Each podcast was delivered a few days ahead of the material being covered in the lecture. An Electronic Voting System (EVS) was used to collect student responses to conceptually-challenging questions posed in the lectures. Analysis of student responses showed a slight but positive and consistent result: the majority of correct answers were identified in the group of students exposed to the podcast before lectures.

8. Learning complex systems

Challenge: Ron teaches a "*Head System*" module to about 200 students at a veterinary college. The Head System has a very complex structure including the central nervous system, the muscles of mastication, the respiratory system, the digestive system, and the sound production system. For this reason, students always have difficulties in learning the module. The module was traditionally taught by PowerPoint slides and textbooks with static pictures showing the head structures. Ron realised that it was hard for students to develop 3-Dimensional thinking from a 2-Dimensional image. Another challenge inherent with the study was, students (especially the 1st year and 2nd year), needed to be able to retain and reproduce a lot of anatomical information. For this reason, students often want to go over museum specimens again and again and have a member of staff going through the structures with them. RM was very keen to adopt new digital technologies and transfer current museum specimens into video podcasts to facilitate students' 3D thinking and learning.

The use of podcasts: Eighty video podcasts – called "Potcasts" were created to demonstrate 3D structures and dissections. Each potcast was about 4-5 minutes long. The potcasts were delivered via Blackboard VLE so that students at all levels could access them. Potcasts also provided students with more flexibility for independent learning.

9. Enriching formal curriculum through informal and topical content

Challenge: Ken teaches a level one core module called “Skills4Sustainability” to a group of 1st year students within the Geography Department. The module itself is skills focused, and embeds academic skills development activities within an introduction to topical issues in environment and sustainability. One hundred and ten students from a wide range of study programmes: Landscape and Garden Design, Environmental Science, Physical Geography, Human Geography, Community Development, Biology, Psychology and Sociology are enrolled in this module.

As students come from diverse disciplinary backgrounds, their prior knowledge and awareness of the environment and sustainability issues are varied. Ken was keen to adopt Podcasting as a means for disseminating additional information surrounding Sustainability (e.g., topical, background, contextual information) in informal forms (e.g. discussion, debate, interviews) and enriching the formal curriculum.

The use of podcasts: A weekly podcast, around 10-15-minutes long, was developed and delivered through Ken’s s personal blog on PebblePad. Each podcast had three sessions and consists of a skill theme, a content theme and a review of resource. In the skill theme, Ken introduced students to a range of academic skills including presentation, report writing, reflective learning and portfolio development, teamwork, and independent research skills. In the content theme, the lecturer introduced students to a range of main issues related to sustainable development. In the resource session, the lecturer provides students with additional learning resources to introduce them to current debates on environment, sustainability and development from global, national, regional and local perspectives. The content for this session is derived from interviews or discussion with colleagues, practitioners, experts in the field, and representatives from the local resident and business community.

10. Providing feedback to students

Challenge: Assessment is a central component of student learning in Higher Education. Providing students with effective feedback on assessment is a challenging issue for teachers. Traditionally, feedback on student assessment is provided in written text. Podcasting may offer an innovative approach for enhancing the assessment feedback process. It is widely recognised that spoken words can communicate emotions and create a sense of intimacy with the speaker. This allows learners to identify and interpret personalised content compared with traditional written text¹.

Darren teaches a group of 26 students who study a level 3, semester 1 module called "Climate Change and Natural Hazard Management". The module is accessed through an individual e-postcard (33%), group presentation (17%), and an individual report (50%). Darren was keen to provide students with more timely, constructive and individualised feedback in podcasting for all three assessment points.

The use of podcasts: Podcast feedback was recorded directly onto a handheld iPod with a microphone attached. The audio files, around 2-3 minutes in duration, were automatically downloaded and compiled into a podcast. Each enhanced podcast (with supplementary images) consisted of two sections: generic group feedback on the assignment, and more specific, individual feedback. Podcast assignment feedback was recorded after each assessment point. In total, 76 podcasts were uploaded onto the university's VLE, and were situated within each student's personal development portfolio (PDP). Students without a suitable MP3 player are able to borrow an iPod from the department. An automated email was sent to each student communicating that feedback is available².

¹ Powell, D.J. (1990). The use of audio in distance education. In S.Timmers (ed.) *Training needs in the use of media for distance education*, Singapore: Asian Mass Communication Research and Information Centre.

² France, D. and Wheeler, A. (2007). Reflection on using podcasting for student feedback. *Planet (18)*.

11. Addressing issues of distance learners

Challenge: Matt is a lecturer at an Australian university. As a country, Australia has a strong tradition of distance education, due to its small and geographically dispersed population. The distance student cohorts represent 65% of the total student enrolments at the institution where Matt works. As a result, the need to offer quality and effective learning experiences to distance learners is paramount within many tertiary education providers in Australia. The potential of podcasting for offering flexibility in how distance learners might undertake their own studies, and reducing a feeling of isolation among distance learners, has been increasingly recognised at the institution.

The use of podcasts: Matt produced short, 3-5minute audio podcasts. The material contained in the podcasts was designed to provide background information and expose students to subject-specific terminology. The podcasts were structured in a relaxed and informal style, with senior students holding discussions on pertinent issues related to the subject. The lecturer and other subject matter experts are occasionally brought in as guests to offer insight into, or clarification of, the more difficult or complex issues and topics. The podcasts are made available to the entire cohort of students studying the subject, including those enrolled in on-campus and distance education modes.

12. Supporting online learning of campus-based students

Challenge: Peter has been teaching an engineering module for many years. About 4 years ago, he started to use the institutional VLE Blackboard to deliver the core content of the module as online lectures together with other resources and assessment activities. His students therefore were carrying out a significant portion of their studies online. Although he meets students face-to-face for problem solving and surgery sessions, Peter was looking to technologies that can improve the student learning experience.

The use of podcasts: Peter began to explore the potential of podcasting as a way of supporting the online learning of his cohort of campus based students. Since 2006 he began weekly podcasts to supplement his online teaching through updated information and guidance on the weekly activities, and motivates his students by incorporating relevant news items and jokes.. The podcasts complemented e-tivities (structured online group activities) based on Salmon's (2000, 2002) 5-stage scaffolding model by providing summaries and further guidance to students. Each podcast appeared on the VLE at the beginning of the study week, for 9 consecutive weeks. The podcasts were about 10-minutes long and the format was:

1. an introductory news item
2. the main content section typically referring and extending the week's work and referring to the previous week's work
3. lighter weight but fibre optics related items, e.g., a joke at the end, or rap