Podcasts to support student learning in the GEES subjects

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Abstract

This article reports on a research project called IMPALA 2, exploring podcasting in the GEES disciplines. The work was funded by the GEES Subject Centre. The project involved five institutions in the UK and explored the broad pedagogical benefits of using podcasting to support learning and teaching in the GEES subjects.

The article introduces the background to the project, the research outputs and provides a number of examples of how podcasts can be integrated into the curriculum to address specific teaching and learning challenges faced by GEES colleagues. Some key findings based on students’ feedback, particularly in relation to the effectiveness of podcasting in improving learners’ cognitive and motivational aspects of learning, are also included.

Background to podcasting in Higher Education

From 2005, podcasting started capturing the attention of academics in Higher Education (HE). At Duke University in the US, first year students were given iPods and academics were encouraged to develop applications that can be used on iPods to support student learning (duke.edu/ddi). Early uses at Duke included course content, classroom recordings, field recordings, study support, file storage and transfer (Belanger, 2005). At Stanford University, students can subscribe to Stanford on iTunes U (itunes.stanford.edu), and download courses, faculty lectures and interviews and listen to them from their iPods. Another early pilot was held at Georgia College and State University (ipod.gcsu.edu) where they began to introduce the iPod to a range of courses in Liberal Arts from 2002. Since 2006, podcasting initiatives have started to span academic disciplines and student university life in HE in many countries.

In Australia, a large project researching the broad educational benefits of student-generated podcasts has been underway at Charles Sturt University since 2005. It began with a small pilot group of undergraduate on-campus students studying Information Technology, but it soon expanded to include a wide range of undergraduate and postgraduate subjects and to involve both on-campus and distance learning students. A series of publications based on this project revealed that this student-centred approach is beneficial for both student producers (McLoughlin, Lee and Chan, 2006) and listeners (McLoughlin, Lee and Chan, 2007).

In the UK, early in 2006, a research project called IMPALA (impala.ac.uk), funded by the UK Higher Education Academy (HEA), was carried out at University of Leicester. The project set out to explore the subject-specific pedagogical benefits of podcasting to support students’ learning. Around 20 university lecturers and 500 students across six topics, subjects and disciplines and different modes of learning were involved. The project has shown that there is a wide range of intrinsic advantages offered by
podcasting that can have a positive impact on student learning in a wide range of subjects (Salmon and Nie, forthcoming).

**The IMPALA 2 project**

Interestingly, five out of ten case studies involved in IMPALA focused on the use of podcasting for supporting GEES subjects. The enthusiastic uptake of podcasting by GEES practitioners prompted the GEES Subject Centre to invite the IMPALA team to carry out another podcasting project - IMPALA 2, specifically to explore the potential of podcasting for supporting GEES disciplines.

Six UK institutions (Leicester, Nottingham, Leeds, Sussex, Gloucestershire, and Kingston) were involved in the project. A full write up of the research work is now available at [http://gees.ac.uk/projtheme/elearning/geesel.htm](http://gees.ac.uk/projtheme/elearning/geesel.htm). Some key findings are briefly outlined later in this article.

The IMPALA 2 project provided GEES practitioners from around the UK with a platform for exchanging ideas, sharing experiences of using podcasts, and disseminating findings. This was supported through two workshops.

The workshops were attended by GEES colleagues, both new to and experienced in podcasting, from different universities across the UK. Many colleagues presented their approaches to using podcasts to support their specific module or course. In the second workshop practitioners were given an opportunity to create a video podcast.

As an outcome of preliminary research activity and the workshops, eight pedagogical approaches for using podcasts to support student learning in the GEES subjects were identified:

- Podcasted lectures
- Podcasted students’ presentations and discussion
- Video podcasts to provide lecture summaries
- Video podcasts to support software teaching and learning
- Video podcasts on field techniques and equipment use
- Video podcasts to provide a field guide
- Podcasts to provide additional information about the subject
- Student-created digital stories

**Using podcasting to support student learning in the GEES disciplines**

The eight pedagogical approaches outlined above can be seen in the following examples identified during research and the workshops:

**Supporting fieldwork**

The widespread availability and the falling cost of mobile technology have resulted in considerable interest in off-campus learning (Maskall et al, 2007). Podcasting can be used across learning spaces and can support knowledge continuity and transfer from the classroom to the field. Some practitioners from the GEES disciplines use podcasting to provide instructions and information to support fieldwork, a crucial component of teaching and learning in these subjects. For example, Thomas (2006) reports on an experiment in providing audio instructions to support student field trips in an Earth Sciences course. Students listened to instructions provided as MP3 audio
files and completed three field trips in their own time. In another study, field instructors delivered PowerPoint presentations, instructional DVDs and CD-ROMs to students on a bus while they were travelling to the field site, via a portable audio and video system (Elkins and Elkins, 2006). A comprehensive discussion on how to use podcasts to support fieldwork, including fieldwork preparation, providing information and instruction in the field, demonstrating field techniques and equipment use, and using student-created video podcast as a means for assessment, is documented in Downward et al (forthcoming).

Two colleagues participating in IMPALA 2 developed a podcast library of geographical techniques. They wanted to help students do more independent learning in the field by empowering them with mobile devices and technology (Jarvis and Dickie, 2008).

**Improving learner engagement and motivation**

GEES subjects are inherently visual. Lim (2005) suggested that “the nature of the discipline lends itself far better to the use and/or authoring of video podcasts than audio ones.”

IMPALA 2 colleagues were enthusiastic to explore the effectiveness of video podcasts in promoting learner engagement and motivation. One technique engaged first year students in creating digital storytelling, giving them active, independent, collaborative and reflective learning experiences (Jenkins and Lonsdale, forthcoming). Another approach involved the practitioner producing supplementary material in video documentaries to engage students with the topic and motivate them to learn more about it. Other colleagues examined how video podcasts can engage students and help them learn geographical software more effectively (Mount and Chambers, forthcoming).

**Fostering collaborative learning**

GEES subjects often involve introducing students to controversial and debatable issues. Earlier studies in Information Technology (Lee, McLoughlin and Chan, 2007), and English Language and Communication (Edirisingha, et al, 2007) have revealed the effectiveness of using podcasting in collaborative learning. Podcasts can provide alternative perspectives to enhance a students’ understanding of the subject matter.

One GEES practitioner working on the IMPALA 2 project developed podcasts that included interviews, conversations and debates with colleagues, local residents and site managers. He aimed to increase the breadth and depth of student learning by exposing learners to different viewpoints about a controversial issue through podcasts. Another colleague podcasted students’ presentations and discussions. He wanted to examine the effectiveness of peer-discussion in developing students’ in-depth understanding and critical thinking of the issue covered.

**Offering flexibility and learner control**

Winterbottom (2007) reports on a study of delivering lectures using podcasting technology for a second year Environmental Science module. Students’ feedback showed that they enjoyed the flexibility that podcasting brought to their study, ‘as they could then view the lectures at the time of the day most suited to their learning styles, rather than be constrained by lecture times’ (p.8). This approach can also allow the lecturer to cover basic principles with a podcast and use the face to face session to explore the subject matter in more detail with the students.
Providing effective feedback

Podcasting has been used to provide assignment feedback to students studying GEES subjects (France and Wheeler, 2007). Their study suggests that podcasting offers an opportunity of providing students with a more personalised and effective feedback than traditional written feedback.

Enhancing understanding of subject related troublesome concepts

Certain concepts and ideas in the GEES subjects can be difficult to understand and learn. Podcasted lectures or summaries can offer an opportunity to reinforce and enhance student understanding of course material through repeated listening (Winterbottom, 2007; Subject-specific exemplars (IMPALA, 2007)).

The use of podcasts to enhance students’ understanding of difficult and complex concepts is not unique to GEES. Other studies have found that podcasts based on discussions of key or difficult concepts were effective in addressing students’ common misconceptions and enhanced their understanding of subject-related issues for other difficult subjects, such as Information Systems (Newnham and Miller, 2007), Information Technology (Chan and Lee, 2005), Physics (Aliotta et al., 2007), and Sports Science (Abt et al., 2007). However, these studies have not revealed sufficient evidence of how the improvement of students’ conceptual understanding related to an improvement of their performance. A few studies marginally reflected a slight but positive impact of podcasting on student learning in relation to their learning outcomes (Aliotta et al., 2007; Abt et al., 2007).

Overview of IMPALA2 outputs

A full write up of the research findings collected from student focus groups, interviews and questionnaires, and staff interviews was included into a final report and is now available at http://gees.ac.uk/projtheme/elearning/geesel.htm. The research was based on a number of examples outlined in the previous section.

Key findings from interviews with students regarding their use of podcasts as a learning tool are very positive. Students’ feedback showed that podcasts were effective in engaging them and promoting learning motivation, improving their cognitive learning, particularly in relation to enhancing their understanding of subject-specific difficult concepts, and improving their practical-based learning. Feedback also showed that incorporating visuals and perspective-taking were valuable in contributing to students’ cognitive and affective learning in GEES subjects.

Seven user-exemplars based on different approaches of using podcasts adopted by IMPALA 2 colleagues and students’ feedback are now available at http://www.impala.ac.uk/impala2/outputs/index.html

Staff interviews showed that IMPALA 2 colleagues are keen on the idea of building a digital repository of reusable podcasts for GEES practitioners to share. Some planned to build a podcast archive for their own module. Some have already established initiatives in sharing their podcasts with colleagues who work in other institutions both within and outside the UK through their personal links. The project team developed a podcast repository that included real podcast examples contributed by IMPALA 2 colleagues, now available at http://www.impala.ac.uk/impala2/outputs/index.html. We hope that by building this repository, we can encourage GEES colleagues to use and contribute to it, and further
explore the key issues and enablers for sharing and reusing podcasts across GEES disciplines.

Resources generated from the two workshops, such as the PowerPoint presentations given by experienced GEES colleagues and the video podcasts created by participants are available through the project wiki at http://www2.le.ac.uk/projects/impala2.

The project team also delivered a model of podcasting for GEES subjects. This IMPALA 2 model is adapted from the IMPALA model, which is a 10-factor design model presented by the IMPALA research team as a guide for developing podcasting for learning in HE. The Impala 2 model guides GEES practitioners through the process of developing their own educational podcasts and offers them options for their own teaching and learning challenges and contexts. Detailed information about how to use this Impala 2 model was included into the final report and is now available at http://gees.ac.uk/projtheme/elearning/geesel.htm.

References


