
Acknowledging the 'forgotten' and the 'unknown': The role of video podcasts for supporting field-based learning

Claire Jarvis, Jennifer Dickie

Department of Geography, University of Leicester

Abstract

A library of video podcasts has been constructed for geographers and those of cognate disciplines, providing detailed information and operational demonstrations for a range of field apparatus relating to matters such as soil properties, water quality and field surveying. Evaluation, conducted through the use of reflective diaries and focus groups, identified that all students consulted thought the podcast reference library was a positive pedagogic development. They also thought the process was capable of building confidence in many and of particular appeal to students with a more visual approach to learning.

Introduction

Preparation is key to successful field experimentation and learning (Bradbeer, 1996). Focusing on aspects of technical preparation, we identify two situations where students can find themselves requiring a "crash course" regarding particular equipment or techniques. Firstly, Geography curricula are designed to introduce core techniques and are ultimately designed to educate and not train. Therefore they will never be all encompassing in their coverage. A particular example of the "unknown" arises during fieldcourses that are designed to encourage students to design and follow through small research projects *in situ*. Further, both in the context of enquiry-based learning as a part of project focused field work and as part of a taught field course, we also need to consider "forgotten" material. Taken together, it is clear that innovations that improve the way in which we support enquiry-based independent learning concerning equipment and techniques used in fieldwork are required. In order to succeed as useful learning tools, these innovations must be flexible and adaptive to a variety of pedagogic contexts. Given the requirement for an inherently mobile solution, we turn to the emerging genre of mobile-learning (m-learning) for inspiration, focusing particularly on the podcast.

Podcasts have been used by geographers in a variety of contexts, from providing assessment feedback (France & Wheeler, 2007) to delivering lectures (Winterbottom, 2007), practical materials (Mount & Chambers, 2008) or in support of walks (Downward, 2008), and have most commonly been accessed at

a student's explicit request via Blackboard or similar sites. Of the literature now emerging in peer-reviewed journals, the general suggestions are that podcasts are particularly beneficial as a revision aid (Evans, 2008), can be effective for provoking reflective thought (Fisher & Baird, 2006), provide a forum for collaborative learning and student knowledge creation (Lee *et al.*, 2008) and are useful in highlighting University resources (Berk *et al.*, 2007).

In this particular paper, we explore the notion of the podcast as a pedagogic bridging strategy that links, and extends, technical skills support within research-focused fieldwork. Our overall focus here is to evaluate the effectiveness of a library of audio-visual podcasts developed in house, that explain how to use a variety of field equipment and software. The work seeks to reduce frustration in (potentially isolated) groups or individual learners. It does not attempt to replace traditional pedagogies, but rather augment them in a flexible manner to enable teachers to spend more time with the students on the intellectual challenges of the discipline as opposed to technical "troubleshooting".

Methods

The podcast library

The podcasts provide detailed information and operational demonstrations for a range of field apparatus relating to matters such as soil properties, water quality and field surveying. Broadly speaking, the equipment or software treated by the podcasts fall into three categories:

- Familiar piece of equipment for which there are year-on-year usage issues
- Equipment that could not be considered core and that is unlikely to be introduced within classes, but is used annually in specific dissertations
- New equipment that challenges student or staff comfort zones. In this case the podcast is seen as a means of supporting change

Downloads from the simple website (<http://www.geog.le.ac.uk/splint/geopods/>) and Blackboard, themed by broad subject content, have been enabled in high and low resolution graphics formats.

Secondly, the podcast library was uploaded onto a range of mobile equipment, in a format most suited to the particular device.

Evaluation

An ongoing programme of evaluation is being carried out throughout the development of the approaches and strategies reported here. Focus groups and individual interviews, together with tailored additional entries to student module feedback forms have all been utilised. However, the most meaningful feedback about student learning, in relation to this project, has been through reflective diaries written by our students. This paper reports the results one year after the initial launch of the techniques library. It incorporates the anonymised views relating to the role of podcasts in their learning experience of our 2nd year BSc Geography, BSc Joint Geography Archaeology & BSc Joint Geography/Geology cohorts, provided as one component amongst wider reflections on experiences with mobile technology in the field. We also note commentary from staff who were not involved with the development of the podcast library, but who have subsequently made use of it within their teaching following the initial trials.

Findings

The podcasts were initially designed for use by students in the field using iPods to combat either the "forgotten" (in regard to core techniques) or "unknown" (in regard to unusual ones) in a context where textbooks were not available and staff not always immediately on hand. As usage of the library has matured however, its wider utility to both staff and students alike has become apparent.

Student learning

Initial results at the six month trial point of the library demonstrated the following advantages of the podcast library as a pedagogic tool (Jarvis & Dickie, submitted):

- The podcasts were supportive yet fostered independence.
- Students used the podcasts in a much wider range of scenarios than initially envisaged, both in regard to space and time of use.
- The podcasts were a particularly powerful form of learning media for those with predominantly visual learning styles; The use of multi-modal representation appears to foster more effective learning and preparation.
- More unexpectedly, the library also appears to be used as a revision tool that students use when writing up field methods. The resource, while supportive, forces students to explain techniques using their own original text, a point noted explicitly and favourably by students.

More recent results confirm what was previously

an emergent trend amongst student reportage, that the use of video podcasts boosts students' confidence in their ability to undertake the techniques themselves. Consistently, student comments report the use of podcasts has increased their confidence in the field:

Student A – *"The podcast library was exceptional in familiarising me with techniques and building confidence before going into the field. I think that taking them into the field is a brilliant idea as they can be referred to at any time and would prevent misuse of equipment and inaccurate data collection."*

Student B – *"The technique podcasts have been a huge confidence builder and I definitely consider them a useful tool in making these mobile technologies more accessible to researchers"*

Student C – *"Reviewing the podcast library was an essential step contributing to the success of the field day, although no substitute for input of various staff members during the activities. ... I had never used any of the water quality testing equipment before or the tinytag sensors, but having researched their operation and setup logistics via the podcasts, I didn't feel so out of my depth, especially when that information was substantiated by staff guidance."*

Student D – *"I also found the Geopods useful for preparing myself to know how to use equipment confidently on the fieldtrip."*

Students are also clear in their reports that the videos alone are not an adequate substitution for active practice and that they value the two-way interaction with their lecturers during a demonstration but that watching a podcast first enabled them to grasp a subsequent demonstration much more effectively. These points sit comfortably with us, since the podcasts were not designed as substitutes for face-to-face teaching per se, but as supporting aids that were intended to allow a higher ratio of staff time spent on deeper aspects to learning relative to that spent teaching factual techniques.

Further, staff echo the supportive role of the podcast library in relation to their ability to enhance student learning in their own teaching:

Lecturer - *"Without needing to worry about the specific operation of a piece of equipment, far greater emphasis can be placed on observing and questioning phenomena in the landscape, which are clearly higher level cognitive processes ... It was also clear to me instructing students in basic levelling*

techniques that those who had not viewed the relevant podcasts were far more prone to making mistakes and carried out the activity slower than their peers."

Staff perspectives

The library has also been of ongoing value to both academic and technical staff alike. As a recent talk by Carolyn Roberts for GEES, entitled "Someone in the lab can help you': student learning and the invisible army" highlighted, materials that are able to support the continued professional development of laboratory technicians who play a vital role in student learning are scarce.

Lab technician - "Having started working in the department nearly a year and a half ago (and with no previous Geography background knowledge about equipment), I have found the Podcasts very informative and have "self-taught" myself how to use various pieces of equipment. The Podcasts are very easy to use and I find the demonstration pictures very helpful ... At times, especially in my earlier days the Podcasts have been like a lifeline and are very helpful when out on location doing field work."

Given the diverse nature of geography, both technical and academic staff come from a wide range of academic backgrounds and may not necessarily be familiar with all types of field equipment. The degree to which the podcast offers a means to encourage staff to trial new methods or equipment in the comfort of their own company in less pressured situations remains to be seen, but we would highlight the library as one tactic with which to approach a difficulty noted by Maskell *et al.*, (2007) in regard to the use of mobile computing in the field: "... the requirement for staff and students to familiarise themselves with the technology through training or preparation sessions".

Conclusions

The podcast library is not designed to replace staff demonstrations of core geographical techniques. The findings to date suggest that the library can potentially act as an agent of change both to release staff to spend more 'quality' time with students and to facilitate change and updating of skills in staff and students alike. The wide range of contexts in which the podcasts may be used allows learning strategies to travel to and from the field that supports the integration of pedagogies between field, practical laboratory and lecture hall. Overall, the podcast approach to support field techniques appears to be a valuable contribution to geographical teaching and learning for students and staff alike.

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Claire Jarvis and Jen Dickie
chj2@le.ac.uk, jd92@le.ac.uk