



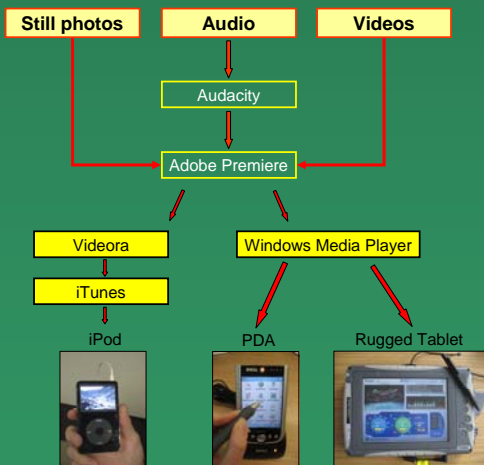
Supporting experimental field-based learning: Interfaces and archives

The educational issue

In a context where the cost of field courses are a further and politically unwelcome burden on student budgets, there has been considerable reflection on the role of fieldwork on the geosciences curriculum. The useful role that the modern day fieldcourse can afford by involving students actively in research processes, has been highlighted (Healey 2005); Panelli & Welch (2005) also argue that field studies should follow the teaching of research methodology. This approach, through various forms of inquiry-based learning, has long been embedded at Leicester, where students frame research questions, design and then implement methodologies to solve them at various points during their academic career.

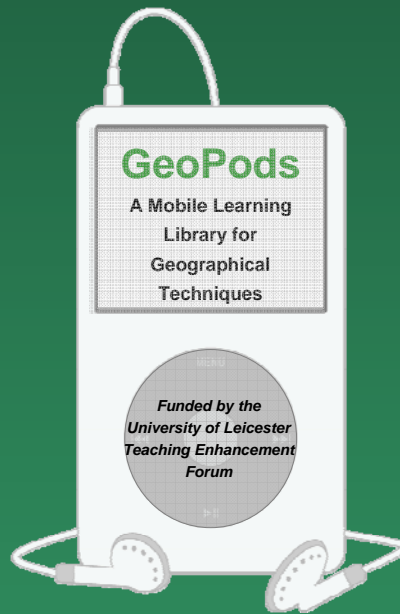
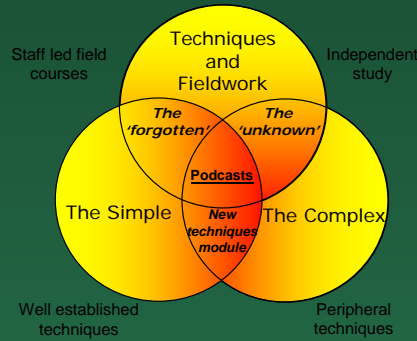
However, two important caveats have emerged. Firstly, we need to know more about the effectiveness of fieldwork in improving learning (Fuller *et al.*, 2006); secondly, more needs to be done to integrate fieldwork into pedagogic strategies (Scott *et al.*, 2005). Following Kirschner *et al.*, (2006) we might therefore ask of our evidential inquiry based approach whether, while it may assist with the motivation of students, components within these less guided situations can in fact leave learners less competent than when they began the activity. The openness of research topic during either a formal field course or the dissertation makes it inevitable that student groups spend some time doing the "unknown", whether that is the use of a particular piece of equipment, a sampling method or an unfamiliar geographical process. We should also consider the "forgotten" in a field context; with no easy access to a text book or journals, techniques or concepts previously learned are similarly (if less) remote to students. This proposal seeks to develop novel digital learning resources that better support students working remotely in the field, that are generic across a range of cognate disciplines such as geology and archaeology as well as geography, and that build pedagogic bridges from class to field. The work seeks to reduce what can be slow and frustrating progress in the learner, while releasing the teacher to spend more time with the students on the more intellectual challenges of the discipline.

Technology and method

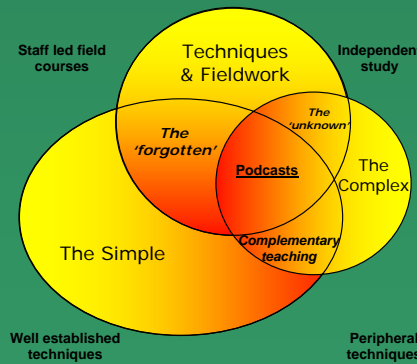


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 Kirschner, P. A., Sweller, J., Clark, R. E. (2006). Why minimal guidance during instruction does not work: an analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist* 41, 75-86.

Before



Hypothesised results



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Research overview

Aim: To develop & evaluate podcasting as a means of supporting evidential inquiry-based student research in the field

Objectives

- Build on the work of the Distance Learning Alliance's Impala and Impala 2 projects within Leicester, via the development of techniques & models for audio-visual podcasts demonstrating the use of field equipment.
- To use the equipment library in field courses, independent study & in a new methods course in Geography at Leicester.
- Review structures & interfaces for management of the podcasts on a variety of equipment from iPod to tablet, utilising current Human Computer Interface literature on mobile devices.
- Development of metadata structures for the library such that it could be accessed safely by a wider National and International audience and potentially, an up-loading & maintenance system.

The progress so far...

- Discussions with academic staff and technical staff in the Geography Department about which podcasts to create, how they will be used in the field and how they can complement existing and new modules.
- Discussions with academic staff out with the University of Leicester about the expansion and utilisation of the podcast library at their institutes.
- Initial podcast reference library (35 podcasts to date) to Blackboard site.

Podcast category	Finished	In progress	To do
Surveys and surveying techniques	✓		
Sampling strategies			✓
Field techniques:			
Soil	✓		
Water	✓		
Atmosphere	✓		
Mobile Technology	✓		
Data loggers			✓

Who will use the podcasts?

...in the Geography Department

- **Undergraduate & postgraduate modules:** Library already in use within Techniques in Environmental Analysis (GY2710 & GY2711) & Research Design and Methods (GY7024)
- **Undergraduate & MSc dissertation students** across all aspects of geography
- **Undergraduate fieldtrips** concentrating on the Almeria fieldcourse initially.



...and once the library is established & evaluated

- **Other field-based disciplines within the University of Leicester**
- **Beyond the boundary of Leicester**
 - Other interested IMPALA parties
 - Other personal contacts

