Geospatial technologies in distance teaching and learning in Science

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AIMS OF PROJECT

- We will gather the views of Open University students and tutors on:
  - How effective GIS-based teaching is in existing OU Science modules
  - How easy geospatial technology is to adopt and use
  - How geospatial technologies compare with traditional paper maps for distance learning
  - Whether GIS-based materials help students grasp ‘threshold concepts’ such as 3D visualization
- We will identify the strengths and benefits of GIS-enabled distance teaching
- We will pinpoint problems with the GIS approach to distance teaching, and suggest possible solutions (e.g. technological, pedagogical, or logistical)
- We will modify the S276 Geology Blog (Fig. 1) based on initial findings for re-launch in late 2011

METHODOLOGY

Questionnaire: tutors
Eliciting ALs’ opinions, prior GIS experience, and examples

Questionnaire: students
Assessing prior GIS experience, views on geospatial technology in the module, examples of specific benefits and problems

Face-to-face interviews
Collecting more detailed information on GIS-based aspects of S276 and S288 from students and tutors

Statistical analysis
Collation of IET data from end-of-module reports, and requesting additional data relevant to the student experience of GIS technologies (e.g. demographic, educational background, region, IT experience/facilities, ethnicity, career, mobile ownership)

We will focus our evaluation on 2 modules (S276 Geology and S288 Practical Science):
S288: Feb – Sept 2012; Feb – Sept 2013

ANTICIPATED OUTCOMES

1. Identifying particular problems – and benefits – associated with GIS software and materials in a distance learning context.
   How can we maximize the advantages of using GIS in distance teaching?

2. Documenting solutions to GIS-related problems in module production and presentation.
   What can be done to alleviate student, tutor and production team difficulties in using GIS?

   What specific modifications can we make to benefit the students on these modules?

4. Identifying issues involved in geolocation (photos, videos, data) for distance learners.
   Are students comfortable engaging with GIS technology in this way?

5. Dissemination of results via: (i) at least 1 peer-reviewed manuscript; (ii) conference papers; (iii) series of internal papers on using GIS materials/software in distance teaching; (iv) podcasts on using open-source GIS software; (v) internal workshops/seminars connecting different communities using GIS at the OU.

Figure 2 3D model of bedrock geology, Assynt