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
 - o How easy geospatial technology is to adopt and use
 - o How geospatial technologies compare with traditional paper maps for distance learning
 - o 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

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 analysisCollation of IET data from end-of-module reports, and requesting additional data relevant to the **student experience** of GIS technologies

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):

S276: Nov 2010 – Jul 2011, and Oct 2011 – Jun 2012

S288: Feb – Sept 2012; Feb – Sept 2013

Map Markers show locations of ehotors and videos that have been uploaded to the blog. Click a marker to see the media associated with that location. Use the search and filter buttons below the map to search for media or to show only media of a particular type. You can also display goological map overlays for different LK regions using the checkbooses at the bottom of the page. Clicking on a graduplad unit anywhere on the tomost correlay will provide further information on the unit leg, or chyc bype, egy if the you want information on an overlay benefit by the power shiply remove the versity above it by unchecking the boars in the list. Note: The map and overlays may take a little time to appear, depending on various factors including the quality of your connection and how many versity surface attempting to display. RETURN TO THE SAME ADMINISTRATION OF THE SAME ADMINISTRA

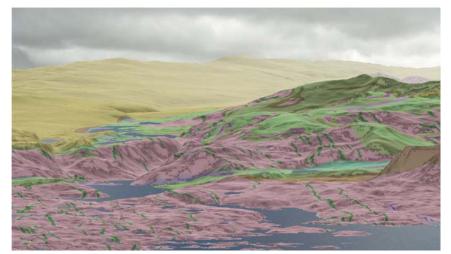


Figure 2 3D model of bedrock geology, Assynt

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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?

3. Improving S276 Geology Blog and S288 presentation (esp. Remote Observation unit).

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.

