Digital Geological Mapping for Earth Science Students

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This SPLINT (SPatial Literacy IN Teaching) supported project is developing pedagogies for the introduction of teaching of digital geological mapping to Earth Science students. Traditionally students are taught to make geological maps on a paper basemap with a notebook to record their observations. Learning to use a tablet pc with GIS based software for mapping and data recording requires emphasis on training staff and students in specific GIS and IT skills and beneficial adjustments to the way in which geological data is recorded in the field. A set of learning and teaching materials are under development to support this learning process.

Following the release of the British Geological Survey's Sigma software we have been developing generic methodologies for the introduction of digital geological mapping to students that already have experience of mapping by traditional means. The teaching materials introduce the software to the students through a series of structured exercises. The students learn the operation of the software in the laboratory by entering existing observations, preferably data that they have collected. Through this the students benefit from being able to reflect on their previous work, consider how it might be improved and plan new work. Following this they begin fieldwork in small groups using both methods simultaneously. They are able to practise what they have learnt in the classroom and review the differences, advantages and disadvantages of the two methods, while adding to the work that has already been completed. Once the field exercises are completed students use the data that they have collected in the production of high quality map products and are introduced to the use of integrated digital databases which they learn to search and extract information from.

The relatively recent development of the technologies which underpin digital mapping also means that many academic staff also require training before they are able to deliver the course materials. Consequently, a set of staff training materials are being developed in parallel to those for the students. These focus on the operation of the software and an introduction to the structure of the exercises.

The presentation will review the teaching exercises and student and staff responses to their introduction.