



The student fieldwork experience: influencing factors and implications for learning

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Fieldwork has always been a crucial component of undergraduate geoscience degrees, yet our understanding of the learning processes that operate in a field environment is limited. Learning is a complex process, and there is increasing interest in the role played in this process by the affective domain, in particular the link between affect (emotion and attitude) and cognition (understanding). This presentation covers two UK-based studies that investigated the impact of residential geoscience fieldwork on students' affective responses (e.g. feelings, attitudes, motivations), and their subsequent learning outcomes; student affective responses are thought to be linked to the adoption of effective approaches to learning.

The first study involved ~300 students from 7 UK universities undertaking residential field classes in, geography, earth and environmental sciences (GEES disciplines). Mixed-format surveys applied before and after fieldwork demonstrated significant effects in the affective domain. In general, student responses were very positive prior to fieldwork and became more positive as a result of the field experience. The data were analysed for any subgroup differences (gender, age, previous experience) but the only significant difference concerned levels of anxiety amongst some groups of students prior to fieldwork. However, post fieldwork surveys showed that the field experience mitigated these anxieties; for most it was not as bad as they thought it would be. This study demonstrated that fieldwork generated positive attitudes amongst students to their subject of study as well as development of 'soft' interpersonal skills.

The second study collected qualitative and quantitative data from 62 students at a single UK university before, during and after a nine day geologic mapping-training field course, a style of fieldwork not surveyed in the first study. As with the first study, pre-field class positive affects became strengthened, while negative feelings and attitudes were ameliorated as a result of the fieldwork. However, some aspects of the students' experience generated new negative responses, whilst extra-curricular social and cultural activities generated unexpectedly positive responses. In terms of outcomes the geological mapping training fieldwork enabled students to develop generic as well as subject-specific skills, e.g. teamwork, decision making, and autonomy, whilst engagement in social interactions both within and outside of the field environment enabled the development of valuable interpersonal skills.

Both studies demonstrate the positive effect of residential field work on students' attitudes and feelings towards their subject but also towards fellow students and academic staff through the development of interpersonal skills. Such skills are seldom assessed as learning outcomes, but are an important part of students' development from novice to expert geoscientists, and a vital component of the wider competences required by employers and society. They are potentially best developed during residential fieldwork and help to make GEES students employable.