Geophysical Research Abstracts
Vol. 17, EGU2015-15031, 2015
EGU General Assembly 2015

Introducing glacial geomorphology to secondary schools – an edutainment resource targeting the New Zealand curriculum

Maree Hemmingsen and Stefan Winkler
Department of Geological Sciences, University of Canterbury, Christchurch, New Zealand (stefan.winkler@canterbury.ac.nz)

Outreach has become an important undertaking for many tertiary institutions and government agencies. Quite often universities and other tertiary institutions view outreach solely as a tool for the recruitment of future students or as a cost-effective way of meeting governmental obtruded institutional obligations towards community engagement. But for every serious scientist outreach should have an importance beyond that. Competent scientists value the opportunities that an effective outreach programme brings, to inform others of the significance of their particular discipline within the wider framework of science. In this context, glacial geomorphology and related fields of research constitute no exception.

Although outreach activities seem to be becoming increasingly popular among scientists in New Zealand, there is still a lack of understanding of what is actually useful for the end user. Often what scientists assume will be useful for school is not. An effective outreach programme needs to be aligned to and represent the school curriculum, regardless of the fact that this may not always be the main focus of the scientist. The most successful resources are those which are developed in collaboration with teachers, by practitioners with an ability to develop outreach activities appropriate for "real" school life with all its restrictions. Sadly, all too often academics and scientists assume they know what schools want and what is important. We cannot stress highly enough that the resources produced need to be accessible to the teachers, who often lack a deep enough scientific background or do not have an appropriate confidence in their own scientific knowledge as well as meet the needs of their students. Frequently educators report their frustration when they cannot properly access resources or run simulations because of IT incompatibility or limited supportive guidance.

Geomorphology and its individual sub-disciplines like e.g. glacial geomorphology has an excellent opportunity to become increasingly implemented in outreach programmes. Geomorphologists can promote their subject as well as demonstrate the importance of geomorphology across countless scientific and engineering disciplines. Within the New Zealand secondary school's curriculum there are, for example, several opportunities where "landforms" are the topics of scientific teaching, providing an excellent opportunity for (glacial) geomorphological outreach.

The morpho-memory resource presented here incorporates and utilises a number of educational principles. Its competitive character links it to "edutainment" which has successfully been applied in self directed and instructional museum programmes and popular science, enhancing the active engagement ("interaction") and acceptance by students in preference to more traditional methods. Another principle easily integrated is "visualisation", i.e. combining textual or numerical information with supportive visual information to enhance both understanding and deep memorisation. Evidence of the success of morpho-memory was already demonstrated empirically when used in the context of university block seminars and field trips. And updated and specifically version targeting the New Zealand curriculum for years 11 to 13 has now been developed and is currently supplied to a considerable number of schools for practical application and subsequent evaluation. Strength of our resource is that its concept easily allows for any future adjustment to individual requirements because the actual level of information provided as well as the selection of features/processes displayed can quickly be modified following teacher's feedback and practical experience.

Summarising, this outreach resource also helps to highlight (glacial) geomorphology as an essential topic within the broad field of geosciences/earth system science, giving it the focus it deserves.