



Using Oceanography to Support Active Learning

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Teachers are always on the lookout for material to give their brightest students, in order to keep them occupied, stimulated and challenged, while the teacher gets on with helping the rest. They are also looking for material that can inspire and enthuse those who think that school is 'just boring!' Oceanography, well presented, has the capacity to do both.

As a relatively young science, oceanography is not a core curriculum subject (possibly an advantage), but it draws on the traditional sciences of biology, chemistry, physics and geology, and can provide wonderful examples for teaching concepts in school sciences. It can also give good reasons for learning science, maths and technology. Exciting expeditions (research cruises) to far-flung places; opportunities to explore new worlds, a different angle on topical debates such as climate change, pollution, or conservation can bring a new life to old subjects. Access to 'real' data from satellites or Argo floats can be used to develop analytical and problem solving skills. The challenge is to make all this available in a form that can easily be used by teachers and students to enhance the learning experience.

We learn by doing. Active teaching methods require students to develop their own concepts of what they are learning. This stimulates new neural connections in the brain - the physical manifestation of learning. There is a large body of evidence to show that active learning is much better remembered and understood. Active learning develops thinking skills through analysis, problem solving, and evaluation. It helps learners to use their knowledge in realistic and useful ways, and see its importance and relevance. Most importantly, properly used, active learning is fun.

This paper presents experiences from a number of education outreach projects that have involved the National Oceanography Centre in Southampton, UK. All contain some element of active learning - from quizzes and puzzles to analysis of real data from satellites and Argo floats - all combined with background information about the Ocean. Many also aim to inspire and enthuse, by bringing in the human and personal, for example through blogs and Q/A sessions. This presentation takes a look at what has worked, and what may perhaps have been a little less successful.