



Key-Board Science?

In this issue we again look at the importance of school camps – but this time from a science discipline perspective. Although science is the focus, the message from research of science students applies equally well to other study disciplines.

In 1996 Reed Noss (Editor, *Conservation Biology*) made a passionate plea for science educators to resist the trends towards indoor science, arguing that nothing will destroy science – *'... faster than a generation or two ... raised on dead facts and technology and lacking direct, personal experience with Nature.'*

Fast forward to today and Kennedy, Lyons and Quinn (*Teaching Science*, 2014) report that whilst the total number of students in Year 12 in Australia increased around 16% between 1992 and 2012, the enrolments in science declined between 5 – 10%. They attribute this to increased curriculum offerings, in student's self-perception of ability, and perceptions of subject difficulty and usefulness.

A US National Science Foundation initiative (Bischoff, Castendyke, and Gallagher, 2008) found results similar to Kennedy, Lyons and Quinn, whilst a further study across five countries by Roth (US Department of Education, 2006) attributed loss of interest in science by students to science texts and classroom settings that do not appear to be relevant to the lives of students.

This is a complex problem and there are no simple solutions or short-term remedies. Indeed it touches on a seemingly never-ending discussion - is knowledge needed to comprehend relevance, or is relevance needed to encourage learning.

In light of these trends the US National Science Foundation initiated a major program to take students on a camp! A camp designed and framed as *'an exhilarating science experience ...'*. Indeed the camp goal was *'to provide an environment where participant's can share their enthusiasm for science and brainstorm and apply solutions to scientific challenges with their peers.'* In short – have fun, have relevance.

Repetitive camps over numerous years did create a rich science and social environment and the number of students wanting to focus on science significantly increased. Their success was based on engaging students in challenging scientific tasks requiring teamwork, and the negotiation of meaning and application of scientific principles. In short – they had fun, they found relevance.

And the numbers went back up!

Kennedy, J., Lyons, T. and Quinn, F. (2014) The continuing decline of science and mathematics enrolments in Australian high schools, Teaching Science, 60 (2), 34-46.

Noss, R. (1996) The naturalists are dying off, Conservation Biology, 10 (1), 1-3.

Roth, K.J. et al (2006) Teaching science in five countries: results from the TIMSS 1999 video study (NCES 2006-011), U.S. Summer SCIENCE 631 Department of Education, National Centre for Education Statistics, Washington, DC.

Bischoff, P.J., Castendyke, D. and Gallagher, H. (2008) A science summer camp as an effective way to recruit high school students to major in the physical sciences and science education, International Journal of Environmental and Science Education, 3 (3), 131-141.



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