



Teaching science "as it is practised" and the pedagogy of uncertainty.

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Abstract: *In the last decade there has been a significant move towards teaching science as it is practised (DiCarlo, 2006). This movement has spawned much laudable activity around the development of undergraduate research experiences and design of open-ended/enquiry based laboratory classes. There is however, a more fundamental reality to confront. We have recently written about creativity in science education (McWilliam, Poronnik, & Taylor, 2008) - scientists have long been recognised as being at the elite level of creative workers. One of the main attributes of creative workers is that they learn from error. We argue that in fact, learning from the instructive complications of unexpected outcomes forms one of the central pillars of scientific endeavour. Yet in undergraduate science curricula, when a student makes a mistake they are frequently penalised by losing marks. We put the case for the development of a "pedagogy of uncertainty" to provide a formalised framework for students to explore, learn and be comfortable with the very uncertainty that makes science an exciting and challenging voyage of discovery. We should therefore develop strategies to leverage uncertainties and take advantage of them.*

References

- DiCarlo, S. E. (2006). Cell biology should be taught as science is practised. *Nature Reviews Molecular Cell Biology* 7, 290-296
- McWilliam, E., Poronnik, P. & Taylor, P. (2008). Re-designing science pedagogy: Reversing the flight from science. *Journal of Science Education and Technology* 17, 226-235

Sydney Network of University Science Educators (SNUSE): I must have dozed off!

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Abstract: *SNUSE was formed in 2004 to facilitate collaboration between academics from University of New South Wales, The University of Sydney, University of Technology Sydney, University of Western Sydney and Macquarie University interested in learning and teaching. While this community of practice was energetic and successful in its aims in its early stages, it is now in much need of reinvigoration. We propose an "ideas exchange" and invite anyone interested in re-energising SNUSE. Feedback from the survey of SNUSE members last year indicated: 1) that a forum such as Uniserve is appropriate for a relaunch of this network, and 2) that devising strategic ways forward to develop our education research are important to the group. Topics for discussion will include laboratory teaching, including peer reviewed laboratory exercises, and professional development of sessional teaching staff, features of a recent meeting of ADEs from around Australia. Through this workshop we hope that we can re-engage existing members, recruit new members to SNUSE, fostering a new wave of collaboration in tertiary education in science in Sydney and identify ways to improve collaboration. Background information about SNUSE can be found at <http://www2.science.unsw.edu.au/guide/slatig/snuse.html>*