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**ChemNet skype meeting #18**

**Wednesday June 26 at 3:30 pm Brisbane time**

Attendees:

Madeleine Schultz (QUT) madeleine.schultz

Roger Read (UNSW)

Roy Tasker (UWS)

Dino Spagnoli (UWA)

Glennys O'Brien (UoW)

Magda Wajrak (ECU)

Simon Bedford (UoW)

Kieran Lim (Deakin)

Peter Lye (Armidale)

Mike Liddell (JCU)

Gwen Lawrie (UQ)

Ian Jamie (Macquarie)

Mauro Mocerino (Curtin)

Will Rifkin (UQ)

**Minutes:**

1. Catalyst grants

Dino - choose your own adventure pre-labs

through moodle - choices - outcome of each choice leads to different video eg choosing solvent

can see what outcome of other choices would be

marked to give incentives

critical stage is the story boards for 5 min videos

trial and error

Pracs: intermolecular forces, electrochem

Assessment: pracs worth 25%; they lose 20% of this if they don't do the pre-lab

Peter - Does Sydney uni have on-line pre-labs? Purpose of pre-labs - should they have multiple attempts and no marks?

Roy - We produced a prelab set of modules a long time ago, with the same idea as Dino's. Have a look at http://www.cadre.com.au/showcase/bridgingtothelab/Main\_Menu/Main\_Menu.swf and see if it triggers some ideas.

Kieran - Deakin has an intermediate online prelab system, multiple attempts and they do count a small amount of marks

Simon - Here is a quick summary of PEAK: : In particular students need to understand how to produce better research proposals. First drafts of their proposals generally lack clarity and focus, indicative of new writers stumbling clumsily around a topic rather than pirouetting on the ball of a contentious research question. To address these issues, we have designed a scaffolded activity using the television show Dragon's Den (http://www.bbc.co.uk/programmes/b006vq92 ) as a framework for pitching research ideas for “funding”. To integrate immediate peer review feedback into the pitch sessions, we will use live audience polling as a simple peer-review mechanism for determining which students could proceed to the next stage of the research process. Our guidelines will be broad enough to allow room for individual student interest and creativity, but with enough scaffolding to yield specific learning outcomes, based on the threshold learning outcomes. Idea is for this to go to whole faculty after development.

Peter Lye - 350 external first years - grant for online tutorials

intensive school on campus

only 10% take up of existing online tutorials - run through Adobe connect. Sessions run by experienced PhD students. Sessions well-received but why are students not using the on-line sessions? Six different times offered - day time and evening

Project to interview students to try to improve attendance.

Glennys - UOW First year Chem has flash prelabs in Moodle (was also in Blackboard) which are SCORM compliant modules, so completion recorded in the gradbook

MS - Marks? - tried using keypads to give some marks; problematic because they forget them, sick etc, if interntet

Glennys - issues of student engagement - don't want to overassess, tightrope to balance. Student commentary -

Gwen - UQ has Bb prelabs and links to Labskills activities/videos

Kieran - yes, the mixed on- and off-campus cohort is a problem. this year, for on-campus we re-introduced a participation mark for tutorials -- mere attendance doesn't get the mark -- it rewards communication etc which is supposed to be in the learning outcomes but otherwise hard to assess. attendance has gone from about 25% last year to about 80% this year

Will R - If there are 'flipped' classrooms, are there 'flipped' laboratories or lab prep sessions? 'Flipping' has been one approach to boost engagement.

Roy - do we have to bribe them to engage with marks? Roy gives tutorial workshop marks

Discussion continued regarding the space we sit in right now marking, and there is general deep concern at the huge effort put into developing a wide variety of support materials, when student engagement with these tools is less than encouraging.

To raise an encouraging note, Glennys described a new investigative practical run at UOW over the whole session for Engineering students in Introductory Chemistry using concrete “mini-slabs” cast by groups of students in their first practical and examined once a fortnight over the session. The students responded with much interest and enthusiasm to this “real” chemistry.

Back to difficulties faced by students, there is also grave concern at the prevalent lack of mathematical skills, among the comments, Peter reflecting the lack of skills with algebra (simple rearrangements and the usual problems introducing logs) and Roy commenting on students being unable to understand relationships shown on graphs (comparing linear and exponential).

Applicable references shared:

Richard A. Hoban , Odilla E. Finlayson & Brien C. Nolan (2013): Transfer in chemistry: a study of students’ abilities in transferring mathematical knowledge to chemistry, International Journal of Mathematical Education in Science and Technology, 44:1, 14-35

Australian context papers S. Britton, P. New, A. Roberts and M. Sharma, "Investigating students' ability to transfer mathematics", in Transforming a University. The scholarship of teaching and learning in practice, ed. A. Brew and J. Sachs, Sydney University Press, Sydney, 2007, p. 127–140; A. L. Roberts, M. D. Sharma, S. Britton and P. B. New, "An index to measure the ability of first year science students to transfer mathematics", International Journal of Mathematical Education in Science and Technology, 2007, 38, 429-448 <http://www.tandfonline.com/doi/abs/10.1080/00207390600712695>; A. L. Roberts, M. D. Sharma, S. Britton and P. B. New, "Identification and use of theoretical frameworks for a qualitative understanding of mathematics transfer", CAL-Laborate International, 2009, 17, 26-40 <http://sydney.edu.au/science/uniserve\_science/images/content/CALlaborate/robertsetal.pdf>.

1. **TLO meeting July 9**

At Melbourne airport

what lab skills are in the TLOs

assessment fit for purpose

group work to gather commentary

The discussion also noted the need for some output from the TLO working groups back to the whole of Chemnet as soon as possible.

**Next meeting:** Wednesday 31 July 3:30 eastern time