

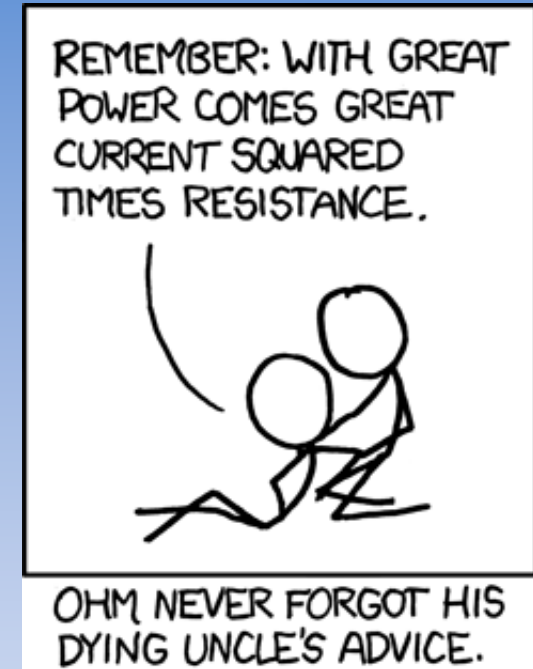
IRU Science & Maths L&T Forum
Flinders University
Physics Engagement

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Jamie Quinton – Flinders University

12 & 13 November 2009

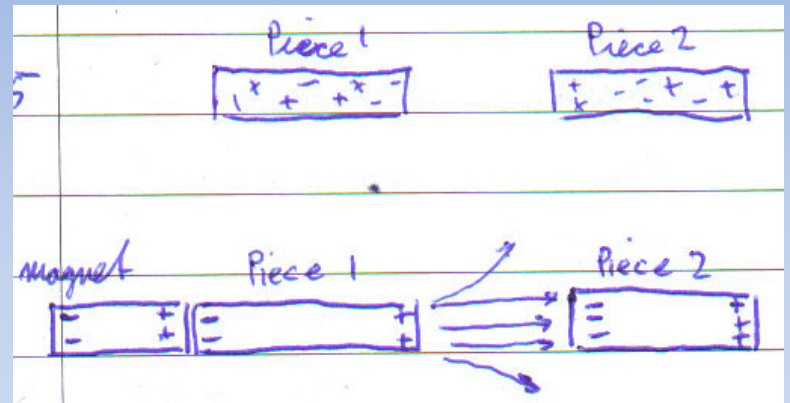
Lectures

- Demos - raw eggs and the sheet
- Applets
- Comics XKCD <http://xkcd.com/643/>
- LOL cat
- Problems that students work on and then we go over - Tablet PC - do the working on the big screen rather than OHP - needs a diagram to aid understanding.
- Student discussion e.g. Why does a rocket go up / why is escape velocity independent of the objects mass - talk about it with your neighbor.
- Things that can be circulating through the audience while lecturing e.g. a pair of plumbers plungers, [balancing bird](#), [jumping bean](#), bubble wrap.



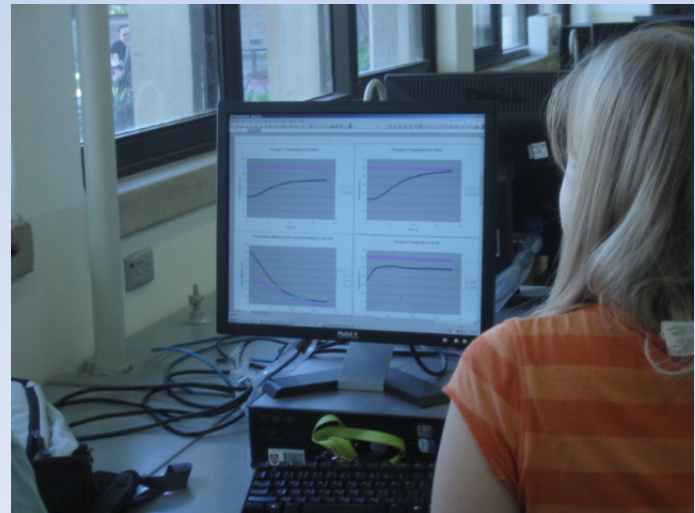
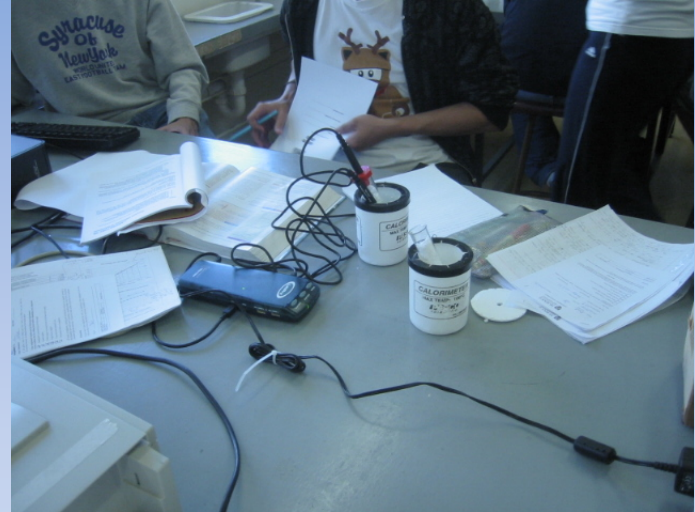
Tutorials

- Normal problem solving questions
- Hands-on minds-on
- Café Chat
- Video - Falling Cats
- Diagrams
- Tutors manual and tutors meetings - so they know what they are doing
- Brilliant lab tec who has everything organized on time



Internal Labs

- Relevance
- Clear instructions
- Well resourced
- Finished in the 3hr time slot
- Computer acquisition of data and data processing
- Brilliant lab tec who has everything organized on time



External Labs

- Kits

Assessment

- Two week turn around time max
- Relevant
- At the moment 5 labs, 5 longish assignments, mid topic test, exam
- Thinking about changing it to 5 short tests in tutorial time, 5 labs, 2 projects, mid topic test, exam. Probably be about the same amount of marking, less at home work for students, more time for independent study. Getting the right projects tricky.

Website

- Students encouraged to post info about interesting physics web sites
- Could do more here
 - pose questions that start discussion - did that on the community site one semester and got a good response - time poor
 - Wiki that links to outside lectures / applets / reading for interest that students could contribute to over the years

Nurturing

- Catch-up labs in the non-teaching weeks
- Informal help classes - one run by 3rd year students one run by staff
- Report to programme chairs if falling behind so they can administer metaphoric kick in the pants if needed or recommend support services

Action – Reaction Cycle

- Student surveys of teaching and / or how the unit is running
- Tutor debriefing sessions
- Unit coordinator consistency between units sessions
- Reflective teaching

Location / Contact

- My office is near the labs so I am easy to find
- Open door policy

Staff

- I use 3rd yr / honours / PhD students to tutor and demonstrate so the newer students can visualize themselves doing honours / PhD
- The older students empathise and understand where the newer students are coming from

Questions Still to be Answered

- Internal students are choosing a flexible learning style
 - How do we engage students if they are primarily a web based student only showing up for assessment?
 - How do we know if they are engaged?
- How do we give external students hands-on experience and personal interaction?
- In the past external students have not been a large group and they sorted themselves out fairly early in the semester into self motivated high achievers and withdrawals. Now they are a mixed lot like the internal students.

So many questions – so little data – no time to find and analyse the data.