

Supporting beginning teachers to support student learning in large first-year science classes



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Background to project

Over 4,000 students take courses in the Faculty of Science every year, e.g.

1st yr Biology	1700
1st yr Chemistry	1800
1st yr Physics	1000

A large component of teaching is done by casual staff

- particularly in labs and tutorials
- often postgrad students, postdocs — a wide range of teaching experience and expectations

Pressures and Incentives

Academic Board Review (2002) identified casual teaching as a problematic area, “inconsistent and patchy”

Feedback from the SCEQ (Student Course Experience Questionnaire) gave some insights:

- *Not enough feedback, understanding of student needs and difficulties*
- *Students appreciate group work in lectures, labs, tutes — this is often where casual teaching occurs*

The Faculty of Science acknowledged that improvements in face-to-face teaching could address some of the issues that had been identified. A staff development program was then the subject of a successful 2003 TIF application.

Tutor and Demonstrator Staff Development Program

Aim to provide at least some orientation and training for every casual teacher in the Faculty of Science

Successful completion of the program contingent on approval from Heads of School for each participant

Schools agreed to require participation as a criteria for employment — even for experienced casual staff.

Developed by a small group of academic staff in consultation with the Institute for Teaching and Learning.

Administrative support for the program is provided by UniServe Science (<http://science.uniserve.edu.au>)

Structure of the semester length program

Orientation workshop – held jointly with the ITL before the semester begins

Discipline-based training – given in the Schools

Reflective ‘Triggers’ during the semester – sent out by email; responses sent in for comment by a mentor

Evaluation and reflection survey – sent out by email at end of semester

Head-of-School approval – requested from every School before certificate issued.

The Orientation Workshop

The program begins with a 2-hour workshop, covering:

- *Objectives, expectations and outcomes of program*
- *Management of small-group learning situations in both tutorials and lab demonstrating (preparation, the nature of groups, effective questioning, reflecting on your teaching)*
- *Discussion of a series of scenarios (vignettes) to prompt thinking about and modeling small-group processes*

Participants receive a folder with notes, templates for class preparation and reflection, tips and tricks ...

Example of a Vignette

During the first session, you ask students to work on a problem with their neighbour. There is a pause, then a few students start mumbling to one another, not about the problem. When you ask them what is going on, they say fairly aggressively that they just want you to give them the answers and let them go home ... they complain that no-one told them this course would involve compulsory group work. Another group complains that it isn't fair that you will not tell them how the problems are solved as they paid for this course and they consider this part of the service they can expect. The rest of the students either look out the window, just stare into their problem sheets or are occupied playing web games.

**What are the issues here?
What action could you take?**

Triggers

Twice during the semester participants are emailed a series of short reflective 'triggers' — asked to pick one and respond with how they might deal with the situation:

It's 8:00 am on a Thursday and you have four hours of tutoring scheduled today. Your nose is running and your head is spinning. You feel really ill — you need to spend the day in bed.

"According to the web page I have no mark for assignment 2, but you remember I handed it to you on the Thursday before Easter in the coffee shop!"

Mentors reply to submitted responses — shows someone is listening, allows comment and discussion



Survey of program

In 2003 Semester 1, Participants were sent an evaluation survey at the end of the program — of 481 enrolled, 213 returned surveys and gained a certificate of completion. Initial information indicated that the program was useful.

	Useful	Not useful	Didn't use
Workshop	172 (81%)	41 (19%)	
Triggers	152 (71%)	52 (24%)	9 (5%)
Web site	83 (39%)	19 (9%)	111 (52%)

Open-ended comments....

The preliminary workshop was very helpful in demonstrating the situations that a first-time tutor would be faced with ... It helped to provide a means of dealing with nervousness, difficult or uncooperative students, and helped to establish an organised approach to our teaching.

I enjoyed reading the responses of other tutors to the [triggers].

Some people considered totally different strategies to me so that was useful

Most of the information we covered in the workshop was kind of obvious ... perhaps because I had taught already for a year previous to it.

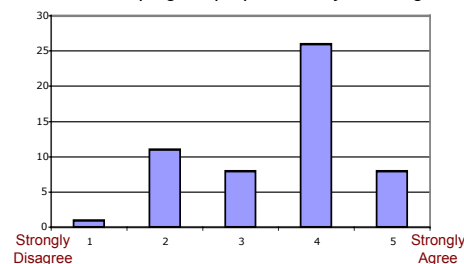
Most of it was common sense. I have also been demonstrating for years so don't need any assistance.

Each department has different focuses and needs for teaching. I think the main focus ... in chemistry is [lab] demonstration and I don't feel the skills required by demonstrators was thoroughly covered by the program.

It was a complete waste of time and the faculty's money ...

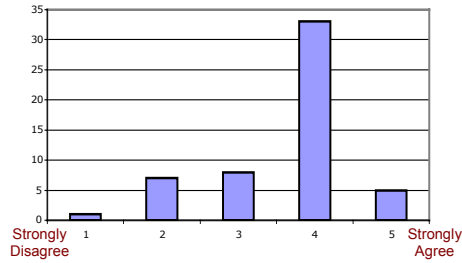
Survey Results

"I found the information provided in the training workshop useful in helping me prepare for my teaching"



Survey Results

"I used reflection on my classroom situation to improve my effectiveness as a teacher"



What do you think your role is in the classroom?

Helping students to understand material (20)

"Facilitate learning" (20)

Providing information, "teaching" content (20)

Encourage, support, enthuse, understand students (12)

Encourage students to think and learn for themselves (10)

Encourage interaction and discussion (8)

Reflecting on your teaching, is there anything you have done differently this year that may be as a result of the program?

Of those who responded (48), 65% mentioned some kind of change explicitly in their answer.

Preparation (12)

Reflection (10)

Awareness of different styles of teaching/learning (5)

Changed way of teaching (4)

Talked with other staff, peers about teaching (5)

Dissemination & further work

- Faculty of Science and ITL Tutor and Demonstrator Training: the management of small group teaching and learning. Report to Faculty, December 2003 (Adrian George, Chris Stewart, Kaye Placing & Mary Peat)
- Stewart, C., George, A. & Peat, M. (2004) Supporting beginning teachers to support student learning in large first year science classes. Refereed paper in 8th Pacific Rim First Year in Higher Education Conference Proceedings Eds. Dr Duncan Nulty & Dr Noel Myers ISBN: 1 74107 067 8, July 2004
- Small research project following up on the current teaching of the program participants (Chris Stewart, Adrian George & Mary Peat)