Teachers inspiring learning!

Some strategies

from candidates for the 2008 ANU education awards

Centre for Educational Development and Academic Methods  2009
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Introduction

As a member of the VC’s Education Awards Committee, I have been struck by the wealth of valuable ideas and strategies presented in candidates’ portfolios. For these to be seen only by members of the Committee seems a terrible waste, especially given the hours of reflection and articulation of educational goals, practice and evidence required to prepare each portfolio. Consequently, with the approval of the candidates, I have selected one idea/strategy from each of the 2008 portfolios to share with the rest of the ANU community via this booklet.

In line with the Festival of Teaching, the focus of this booklet is on strategies for inspiring students’ learning, including undergraduate, postgraduate and research students. Some key themes for inspiring students include:

- Showing your enthusiasm for the subject in your teaching/supervising;
- Making material relevant and meaningful to students through real-world examples, research anecdotes, linking assessment and materials to students’ interests, etc;
- Trying to imagine the learning process from the students’ perspective;
- Actively engaging students through lively debates, hands-on activities, research-like projects, problem-solving, etc;
- Providing timely and useful feedback on assessment and other displays of learning.

I would like to thank the contributors to this booklet for being willing to share these strategies with us. I hope that you, as a reader, can identify similar strategies in your own teaching as well as discovering some new ones.

Gerlese Åkerlind
Director, CEDAM

Centre for Educational Development and Academic Methods
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Strategies for Undergraduates

A learning community

We use mindmaps, story-retellings, reflection journals, role-plays, excursions and portfolio points to provide a learning framework within which students explore the course materials and interact in a lively and vibrant learning community. In a weekly workshop students receive feedback from both staff and fellow students, providing supportive, formative feedback and excellent motivation, and fostering a real sense of a learning community. Students comment that they put in more effort because their work would be read by other students and is in the 'public domain'.

Dr McComas Taylor and Mr Ashvin Parameswaran
Faculty of Asian Studies

Capturing attention

My lectures are unashamedly theatrical. I explain complex concepts and processes visually by constructing models and doing demonstrations in front of the class. The models are deliberately amateurish, for example molecules are represented by scrunched up balls of paper that are thrown around the lecture theatre. In a break in the middle of every lecture I tell the class something interesting and non-assessable, often relating to how particularly important discoveries were made. This gives the students a sense of the history and personalities of the field, and an understanding of the scientific enterprise.

Prof Kieran Kirk
Biochemistry and Molecular Biology

Real world examples

Many students start with a deeply held belief that statistics is boring, overly mathematical, and difficult, and struggle to see the need for statistics in their future career. So I use real world data and real world examples (like electoral polling results, or the underwear wearing habits of students!), with little emphasis on the formulae and much more emphasis on the practical interpretations. I expose students to the possibilities of statistics to develop their understanding in the future.

Dr Bronwen Whiting
School of Finance and Applied Statistics
Real research projects

In group projects students engage in real science communication research and choose their own topics according to their interests and aspirations. Projects provide an opportunity for students to have hands-on experience of the science-public interface and to learn science-related skills outside the lab and field. Graduates can further their career prospects and move easily into work such as consultancy or policy and program development, and have a weighty piece of original research of which they can be proud.

Dr Rod Lamberts and Ms Lindy Orthia
Centre for the Public Awareness of Science

A collegial network

We encourage and support students to form a network of PhD students, across all years and all discipline areas. New students are invited to participate in a casual weekend at the ANU's coastal facility at Kioloa at the beginning of their degree. The weekend provides an opportunity to establish friendships and collegiate relationships between students and between students and staff. The early establishment of an intellectually stimulating as well as socially supportive network underpins the success of student exploration in research projects through the subsequent years of the degree.

Bachelor of Philosophy (Honours) degree offered in Science
Dr Paula Newitt
College of Medicine, Biology and Environment, College of Physical Sciences

A cultural context

Students are taught through thematic subjects which focus on current affairs and cultural knowledge development and encourage an exciting and active language learning experience. Students use iPods, containing songs, radio programs etc. so they can 'immerse' themselves in Spanish language and culture wherever and whenever they want. Discussions on the historic, social and cultural aspects of the Hispanic world are provided through guest speakers who provide the class with different aspects of media and film from their respective region. Students are continually exposed in person to accents from different parts of the Spanish-speaking world.

The Spanish Program
Prof Daniel Martin
School of Language Studies
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Strategies for Undergraduates

Immediate feedback

As part of a teaching team we introduced innovations into the curriculum and pedagogy of the 1st semester physics course: the Unlecture project. Amongst the novel assessment used in this course were audience response devices, known as “clickers”. Students spent a large proportion of (un)lecture time problem solving in groups. Answers were assessable and registered using the clickers. Both students and the lecturer got immediate feedback on the classes’ understanding of the material, and could shape their subsequent activity in the light of this. Lecture attendance was consistently high.

A/Prof Craig Savage
Centre for Learning and Teaching in the Physical Sciences and
Department of Quantum Science

Problematising assumptions

In the first lecture of “Introduction to Religions B: Asian Traditions,” students are asked to reflect on what constitutes a religion: what are the main characteristics that identify a set of beliefs and practices as a “religion”? Many cite things like a clergy, a set of sacred scriptures, churches, a canon, and dogmas. During the course we refer back to this list and I point out that many Asian traditions lack one or more of the features that students commonly associate with “religion.” This serves to problematise something that most assume is well understood and unproblematic.

Dr C. John Powers
Faculty of Asian Studies

Making reasoning visible

I am careful to choose material for my lectures that illustrate the thinking, reasoning and deduction important in understanding biological processes. The students then acquire learning strategies they can adapt and apply to topics of their choice. To further illustrate my lectures, and scientific concepts, I often describe the background to discoveries, and the research processes which led to important findings. Students learn about the discovery process and its inherent difficulties, and often recall my stories or historical events in their written exam answers. Making the material interesting to students is one key to their learning.

Prof Helen O’Neill
School of Biochemistry & Molecular Biology
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Strategies for Undergraduates

Imagine being a student

One cannot adopt the same set of teaching methods each year as the class dynamic is so variable, and what works for one class may not work the following year. This process of renewal and reflection relies on several key factors that help to attain my overarching principle: if students are engaged – they will learn. I have a variety of approaches designed to keep the class motivated, such that if one way isn’t working – there are other things I can try. It is not in my nature to deliver a lecture in the traditional sense – I find it boring. Therefore, I try and run a class as if I were me in the audience, and I know I need variety in delivery and material to keep me focused in a class environment as my attention span is poor.

Dr Adrian Lowe
School of Engineering

Reflect on student feedback

All of my courses are evaluated by CEDAM and I meet, separately, with the Director of the Crawford School and the Director of Education to discuss the course evaluation results, and ways to improve, after each semester. We also exit-survey our students to canvas opinion about courses and the overall learning experience. At least three times each semester, I also meet with our student representatives to obtain feedback on courses and lecturers from all current students. For my courses, I invite one academic colleague and one of our Academic Research Skills (ARS) professionals to attend my lectures at least twice each term, to judge content, pace and clarity of exposition.

Professor Tom Kompas
International and Development Economics Program
Crawford School of Economics and Government

Reflecting on assignments

I make use of ‘in-class learnings’ in all of my courses, as per the course outline, for example, for ethics: ‘To demonstrate your in-class case learnings, you will make handwritten notes in class on your typed assignment, pointing out errors that you have made or noting important or interesting points that you missed. This demonstrates that you have continued to learn during the class, and are actively thinking about the relationship between your preparation and the class discussion’. I have found this to be a very useful pedagogical method: far more useful than me writing the same comments on the assignment. I then check each assignment for issues not covered in class.

Dr Royston Gustavson
School of Management, Marketing and International Business
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Strategies for Undergraduates

A help desk

To improve student access to, and feedback from, tutors I introduced a Help Desk. Rather than each tutor offering the required one hour of consultation, I booked a room for two three-hour sessions a week in which two tutors would sit for any one hour to take questions from any students who came along. Student demand for this Help Desk was high throughout the semester and as a sign of its success the two other largest courses in the School of Economics now also run Help Desks.

Dr Jane Golley
Crawford School of Economics and Government

Relevance to students

Clarity, enthusiasm and the creative and pertinent use of innovative instructional techniques are the hallmarks I strive for in maintaining a freshness and relevance to my teaching. I try hard to make my classes enjoyable, contextual and memorable. To keep students’ interest, the information you teach needs to be relevant to their lives. If you can show the students why the content is important to their daily lives, then it is easy to capture their interest and imagination. I keep in mind some relevant questions. These are: “What, exactly, am I trying to communicate to my students?”, “How do these components of my course interrelate?”, “What is the most appropriate medium (lecture, seminar, etc) to use for each component?”, and “How do I know if I have been successful?”

Dr Mark Ellison
Research School of Chemistry

Lecture note gaps

Whilst making my lecture notes as comprehensive as possible, I tell students that my notes only complement what I actually do in class. To emphasise this, I came up with lecture notes with ‘gaps’. These ‘gaps’ are made so as to help students work actively during and outside the lecture. Typically, practice problems follow explanations of some new ideas. The gap is usually the solution to those problems. It is extremely important that I actually go through the solutions and show students that it actually takes time (and effort) to arrive at the solution. This helps students to learn not only the solution but to see and appreciate the process. With the ‘gaps’, the students get into the habit of actively writing down the process of deriving the solution.

Dr Akihita Asano
School of Economics
Hypothesis testing

I have been developing the interactive component of my lectures to encourage students to be active participants rather than a passive audience. For example, in BIOL2154 I present problems and then ask for students to put forward hypotheses. The class considers these hypotheses and then suggest ways of testing those ideas. This encourages students to engage with the challenges of testing ideas about evolutionary past and process that cannot be directly witnessed, and emphasises the process of science as a series of questions and tests, rather than a catalogue of static facts.

Dr Lindell Bromham
School of Biology

Student-led seminars

Student led seminars: I believe, it is important for students to increase their public speaking skills. In the first tutorial of each course, students choose a specific topic to give a presentation on. In every other tutorial, I run the first 20 minutes of the class, and then the students give a ten minutes talk followed by discussion with their peers. This task is one of the best methods of ensuring that students participate in the tutorials, facilitate discussions and express their creativity. Students have done a number of innovative projects such as visual essay, poems on security and role play to discuss their assigned topics.

Dr Bina D’Costa
Faculty of Asian Studies

Cultural immersion

Partnerships with key players in rural communities give students a deeper, richer and more engaging educational experience, and the university works with each community for better health outcomes. For example, our partnerships with indigenous medical services allow students to be immersed in an indigenous health setting and have the opportunity to assist with culturally appropriate health promotion and clinical activities. This shifts learning from the theoretical to deeply active experiential learning in a real community environment. A positive and sustained rural experience positively influences career choice to rural medicine.

ANU Medical School Rural Program
Assoc Prof Amanda Barnard
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Strategies for Postgraduates and Research Students

Writing workshops

My thesis writing workshop is taken by students in the early stage of their candidature. With key concepts and practical examples I demystify the writing process and help them to get started by making visible the five essential elements of a thesis – Issue, Context, Texts, Methodology, Voice - and how to develop an argument. Students learn to trouble-shoot their writing and take ownership of planning and executing their thesis. The collegial nature of the workshop helps to alleviate isolation.

Dr Rosanne Kennedy
School of Humanities

Master classes

Our weekly staff-student seminar includes a ‘pre-talk’ master-class where presenting scholars discuss the background and process of their research; the foundations reading group provides a recurring six-week module familiarising students with the foundations of their discipline; at a weekly graduate student-run seminar students traditionally ask the initial questions of speakers, and regularly give papers themselves; our visitors program attracts about 50 visitors per year - students can share a corridor with some of the best philosophers in the world, and can see and talk to them, and exchange ideas on a daily basis.

The Philosophy program
Prof Daniel Stoljar
Research School of Social Sciences

Keeping imagination alive

Research students can be motivated by inspirations of creativity and I keep their imagination alive by allowing them to explore many aspects of their project. I have an open door policy so students can come to talk to me at any time, however I also try to see my research students at their work stations once a week. My ‘monthly work schedule’ monitors student’s work progress and student/supervisor contact. At every meeting I ask the student ‘What is the question you are trying to find an answer to?’. As a mentor to students I emphasise the need to develop an awareness of research ethics and students’ confidence in their ability to contribute to society.

Dr Zbigniew Stachurski
School of Engineering
Articulating questions and concerns

I help students develop a sense of the context in which they locate, and critically reflect on, their work. I have framed a series of questions whereby students articulate their key concerns, for example the kinds of questions which interest them as painters, the imagery and key principles, devices or processes of painting they will use to investigate their chosen theme, and how their work engages with the history and the contemporary practice of painting.

Ms Ruth Waller
School of Art

Appreciating disciplinary aesthetics

I encourage students to see and appreciate an under-recognised aesthetic dimension to theory in economics – an elegant solution to a problem has a real beauty, aside from its practical value. The thrill of finding that is a main motivator in my own research. I emphasise the need for students to have realistic expectations of what they can achieve, and for student and supervisor to share expectations of the research project.

Prof Martin Richardson
School of Economics

An early joint project

In every encounter with research students I try to model intellectual robustness and I am never afraid to say ‘I don’t know’. I focus on building a relationship of trust as well as a diligent work ethic. To hasten and deepen reciprocity I forge an early joint project which can also form a basis for the thesis. It could be a journal article, a submission to a Parliamentary inquiry, or a consultancy for government, anything with an action component that yields dividends in terms of team-work, sense of completion, clarifying expectations and hopefully having some fun.

Dr Jane Dixon
National Centre for Epidemiology and Population Health
Strategies for Postgraduates and Research Students

Learning by doing

The program combines theoretical knowledge with extensive hands on experience allowing students to critically evaluate the process and outcomes of their day-to-day work. Students are based in government health departments and other major public health units and research institutes for eighteen months of their 21 month course. Guided by an ANU-based academic supervisor and an experienced field-supervisor, students "learn by doing" and contribute substantially to the workplace and the development of policy and practice relevant knowledge. The integration of academic study, workforce output, formal and informal learning and social interaction enables a balance of excellence in science with relevance for public health.

Master of Applied Epidemiology Program
Assoc Prof Paul Kelly
National Centre for Epidemiology and Population Health
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