1. CITATION

For research-led education for sustainability through student engagement in campus environmental management practices.

2. OVERVIEW

The subject that I teach is Human Ecology. Human Ecology focuses on the interactions between groups of humans and their environments, the processes that occur in the course of that interaction, and the consequences. Human Ecology takes a holistic and inter-disciplinary approach to the sustainability of human systems. Many students are attracted to Human Ecology out of a concern that dominant patterns of production and consumption are causing massive and unsustainable environmental damage. However, the scale and complexity of the problems they are concerned with can appear overwhelming. This can lead to students feeling disempowered and disillusioned at the prospect of improvement. The challenge for me in teaching human ecology is to find ways in which students can come to understand these problems and then successfully intervene to improve them. In response to this challenge I have, over the past 7 years, developed student-led projects that research aspects of their own daily campus lives. These projects enable the students to learn about sustainability issues through the conduct of, and findings from, their exploration of their own daily behaviour. They also reflect on how the structure of their environments constrain their behaviour, and where intervention might lead to improvements. The benefit of this approach is that the issues are made meaningful to the student, comprehensible by being bounded at a manageable scale, yet representative of sustainability issues generally. Many of the students become involved with campus Sustainable Learning Communities, taking on leadership roles in mentoring fellow students around issues of campus sustainability. A particular benefit to the student is their critical reflection on the key role of their values and choices and this raises the liberating and empowering realizations that they might choose differently and that their choices do matter.

In developing this approach I have forged partnerships with the ANU campus Facilities and Services division, and its environmental management program, ANUgreen. ANUgreen is charged with reducing the environmental impact of the University’s operations through its environmental management plan and various other environmental management commitments across campus. Students undertake research projects into various aspects of campus operations and submit their findings for academic assessment – effectively employing the operational arm of the university as a teaching and learning resource. In return, many student project findings have been adopted by ANUgreen and incorporated into campus environmental management programs. Students derive immense satisfaction from seeing their project findings put into practice in this way and their learning is strongly reinforced.

Recognition of my teaching comes through a position on the board of the International Society for Human Ecology where I can promote at-distance collaboration between international partners in Human Ecology. Student exchange between ANU and international centres in Human Ecology forms a part of this, but I also encourage student-to-student engagement through electronic and other distance medium, including forum lists, wikis and blogs. I am collaborating with universities in USA, Sweden, Brazil and Singapore on comparative approaches to education for sustainability, in a project titled Networking Human Ecology Worldwide: Opportunities and Challenges for At-Distance Collaboration in Human Ecology.
I have twice been nominated by my students for the ANU’s Vice Chancellor’s award for excellence in teaching.

3. SELECTION CRITERIA

Approaches to teaching that influence, motivate and inspire students to learn

There remains a strong tendency among those in academia to conceptualise the environment as something ‘out there’ into which students move after they have completed their formal studies. The compartmentalisation of ‘real life’ and ‘university life’ is also prevalent within the student body, and is epitomised by the phrase ‘going out into the real world’.

It is my strong belief that this artificial divide between ‘real life’ and ‘university life’ needs to be addressed explicitly in education for sustainability initiatives. My courses are designed to draw on the students’ lived experience, which is of course always embedded in a ‘real’ ecosystem. I do this by ‘bringing the outside in’, ie finding ways that students’ currently ‘externalised’ lives and practices – the things they ‘go home to do’ after their learning experience has ‘finished’ – can become part of a mutually beneficial reflexive learning practice.

In practice this has meant weaving aspects of the student’s own lives into their learning experience. For example, in one course students are asked to conduct a material and energy analysis of some good or service that they regard as an ‘indispensable’ requirement for them to live a ‘normal’ life. Beer is a popular candidate, along with mobile phones, but the range selected extends to the full spectrum of materials mobilized by a typical undergraduate student across their routine daily lives. The list includes computers, internet and peripherals; T shirts and other clothing; photocopying and printing; comparative transport options; coke, coffee, chocolate and other food basket items; and assessments of the material flows caused by a day’s activities. Another of my courses has them audit their own home energy usage across a period of time and then produce a dynamic systems model based on their results. The students then have to explain their behaviour during the time period and why it produced the energy profile they recorded. In all cases the focus comes back to questions of how or why things are being done as they are and whether they could be done differently with more desirable consequences?

The interaction with ANUgreen also ‘brings the outside in’ to my courses and motivates students. Benefit for the students include:

- Real-world data and problems to develop into projects for course accreditation
- Paid internships
- Access to the Greensteps program. Greensteps is a government funded initiative in which students work with a business partner to develop ‘green office’ skills in a real world situation.
- Exchange with Yale University as a paid internship (a reciprocal arrangement expected to soon be extended to Tokyo)
- Short and longer term paid positions working within ANUgreen
- Opportunities for attendance and paper presentation at ACTS conferences
- Honours and PhD project and supervision opportunities
Student learning in this way provides transition to paid employment as well as lifelong learning about sustainability and its operation and importance.

4. STATEMENT

Feedback from the student body – through formal course evaluation, and informal, in conversation with the students – suggests that I am successful in achieving the creation of a challenging and stimulating learning environment. Evidence of my ability to sustain the quality of my undergraduate teaching is given in Table 1, using the means of student responses for two indicators from the course questionnaire: ‘Teaching and learning methods’ and ‘Overall impact on learning and development’. For both indicators I have responses consistently at or above the means for the Faculty of Arts and the Faculty of Science. The scores are presented for ‘Urban Ecology’ as that is the one course that I have always convened and lectured by myself.

![Graph showing teaching and learning methods and overall impact on learning and development](image)

Table 1: Means of student ANUSET responses to ‘Teaching and learning methods’ and ‘Overall impact on learning and development’ as indicators of quality of teaching for ‘Urban Ecology’ by year, with Science and Arts means for 2002-2004 as comparison. 1 is ‘very poor’, 4 is ‘satisfactory’, 5 is ‘good’, 6 is ‘very good’, 7 is ‘excellent’. The course did not run in 2006 as it is to become a 3rd year course for 2007.

I rely heavily on open-ended student comments to gauge my work and each year I take these comments into consideration as I seek to improve the way the course runs.

Evidence of the mutually beneficial cross over with ANUgreen is in the high number of students from the program who go on to secure placements in ANUgreen internships, where they are paid to work on campus management projects. It is not uncommon for these placements to eventually lead to part time and permanent job offers. Many students also are active within the Sustainable Learning Community program, which creates a rich learning environment in which like minded students work, live in common halls and share experiences. For theses projects I arrange, where possible and when the student wants, to get the student to write up their work in an academically acceptable form and submit for formal course credit.
Another indication of the sustained success of these methods is the high retention rate through courses in the Human Ecology program and into Honours.

My teaching is recognised nationally as I am the academic advisor to Australasian Campus Towards Sustainability (ACTS). ACTS is the umbrella body for sustainability practice on campuses, promoting the integration of the principles of ecologically sustainable development within the curricula and operations of the tertiary sector.

Internationally I work through the International Alliance of Research Universities (IARU), of which the ANU is a member. In developing the ‘Sustainability’ theme that the alliance is pursuing I have been sent by the ANU to Oxford, Singapore and Tokyo workshops. A major outcome from the Tokyo workshop has been to gain commitment by alliance partners to move towards adopting campus sustainability measures. I have also been instrumental in initiating at-distance collaborative teaching between partners in the alliance, with a pilot course offered by University of Singapore, University of Tokyo and Yale expected in 2008. I have reported progress in the sustainability theme back to ANU faculty and senior administration.

I have twice been nominated for a Vice Chancellor’s teaching award, and student comment on my teaching shows that students have understood my teaching intent:

‘Finally a course that actually made us think rather than told us what to think.’
‘Interesting, inspiring, it has motivated me to make changes in the way I live.’
‘Really gave an idea of how the theoretical stuff actually works in the real world’
‘Encouraged us as a group to take our thinking further and to learn to think ‘outside the square.’
‘Not only was this course incredibly interesting it was the most interactive and informative course I have encountered.’
‘Absolutely awesome inspiring course. Taught me a lot and the level of enjoyment was high. Thank you so much for everything, I walk into class and feel privileged to be there.’

I describe my teaching philosophy as guiding students’ learning as they explore their personal inter-relationships with the ecosystems within which they are embedded in order that they might better understand the problem situations that they will encounter in the future. While I will continually seek better ways to do this I am confident from the recognition of my teaching that I am achieving this.