

Presentation to the 5th World Congress of Environmental Education

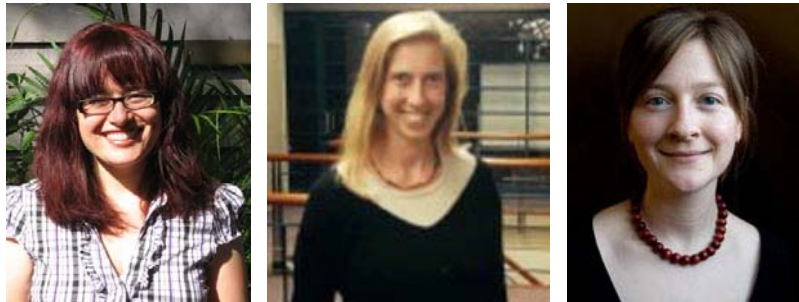
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“Engaging with sustainability in higher education in Australia”

Conference Stream: Integrating sustainability into curriculum

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Abstract

Higher education institutions have an important role to play in shaping society’s response to ecological challenges and critical sustainability issues. Organizational responses are shaped by many dimensions of the institutional environment including the commitment of academics and managers to environmental issues, student interest and activism and perceptions around market demand for engagement with sustainability. In Australian higher education institutions there has been widespread interest in and movement towards engaging with sustainability as a core issue in teaching and learning, research and facilities management. This paper draws on recent research from the Institute for Sustainable Futures within the University of Technology, Sydney undertaken to inform development of a postgraduate transdisciplinary (TD) sustainability program. Using a case study approach, the paper reviews responses from Australian universities to sustainability education and considers how transdisciplinary approaches can inform environmental education at the tertiary level.

Key words: Sustainability, transdisciplinarity, universities, curriculum, facilities,

Presentation outline

Preamble

I'm here representing the work that two colleagues, Juliet Willetts and Naomi Carrard, and myself were involved with, at the University of Technology Sydney (UTS), in facilitating a process to design a transdisciplinary sustainability masters course for our university. This presentation will outline some key learnings for us based on what we set out to do, what we did, what we learnt along the way. It will focus on our specific experience, but be informed by a wider review of approaches internationally and in Australia. It will also highlight some of the key features of the design process that we think are important in designing TD courses for sustainability outcomes.

Why was UTS interested to develop a transdisciplinary sustainability course?

- Introduction
 - University of Technology Sydney is a 20-year old city-based University which focuses on technology and creativity – with strong programs in science, design, journalism, nursing, education and social sciences (among others).
 - The University was exploring a series of new options for TD teaching and learning programs to address areas of growing interest in the student market.
 - Market research suggested that the areas of Global Studies, Digital Media, City Studies and Environmental Studies were key areas to focus on for the future. The University sought to address these areas through developing new subjects or programs at either the undergraduate or postgraduate level.

What role did ISF play in course development?

Our institute, the Institute for Sustainable Futures (ISF), is part of the University, and we were engaged by Senior Management to develop curriculum for the proposed Environmental Studies course area. Our role in undertaking this project was to facilitate a process within the University, to design new course offerings, and consider how these might integrate with existing and future programs.

Who we are – At the Institute we do contract based research for industry, community and government. We also have a popular and growing postgraduate research program in sustainable futures. ISF is within UTS but outside the faculties, instead we sit within the Research and Innovation Office and do not have coursework teaching responsibilities.

Why we did this – We were hired to facilitate this process because of our sustainability expertise, experience running engagement processes, industry knowledge and position as internal to UTS but outside the current Teaching and Learning frameworks and therefore not aligned to any one faculty.

What we hoped to achieve – We took this project on because it seemed like a great opportunity to help affect change within our own organisation, and to create a better conduit between the University's research strengths and teaching and learning offerings.

In a bigger picture sense, we are also passionate about change towards a more sustainable future, and felt that helping the University develop curriculum to better equip students to deal with sustainability was an important project to be involved with.

In brief, what we did was to work with staff from across the university to design a postgraduate course, a "Masters in Sustainability" and begin the accreditation process for this course, over a 12 month period. The end 'product' was the design for a transdisciplinary sustainability Course which has a focus on skills and knowledge and explicitly links learning outcomes to desired graduate attributes and likely graduate employment pathways. The overall course structure allows students different ways to use the course through majors or selection of elective subjects. But in fact the process that we used was also very important, and that's what I will focus on today. The process led to other important outcomes, which I will outline as I go.

Description of the course design process

So now I'd like to share a little bit about our process – how we went about designing curriculum in this area. I've chosen 3 key principles to discuss and share with you today that were important parts of our process from my perspective:

- Participatory process which was also a learning journey
- Aiming for a course that is transdisciplinary and based on research
- Using an adaptive and continuing design and initiation process

Participation was a really important feature of the process – to build ownership of the outcomes, to get a wide range of perspectives, to give us the broad mix of teaching staff needed for a TD course. The initial call was made to all staff across the University, and interested staff came from every faculty of the University. The working group that emerged consisted of 10-15 people who met regularly in facilitated workshops and discussions. The group created and reviewed all course materials that were developed.

Learning took place through the course development process – workshops and other exchanges were designed to allow participating Academics time to reflect, discuss, debate and reconsider. In Environmental Education we talk about the importance of engaging 'Head, heart, and hand' in making change – for us the 'heart' aspect meant allowing space for personal reflection, inspiring stories, reconnecting with the experiences that first motivated people to become engaged with sustainability ideas. contributing to change, as well as developing knowledge

One example of how we factored this in was by organizing a workshop with invited speakers from other Universities who are currently involved in teaching TD courses – on sustainability, systems and

futures. We had already created a discussion paper outlining some of the key learnings from literature, but this gave UTS participants the opportunity to hear about the experiences of existing similar courses and ask specific questions about areas such as graduate profiles, resourcing for cross faculty teaching, how innovative teaching approaches were being managed. In the afternoon following this morning session the working group continued with design work for the course vision, graduate attributes and graduate pathways.

We began with an assumption that **transdisciplinarity (TD)** is an important part of the approach to sustainability teaching and learning in higher education. Moving beyond traditional boundaries is required to tackle real world complex problems. This reflects ISF's approach to research (both consulting research and postgraduate research program), in which the real world sustainability issue or situation is the focus, and a range of disciplinary approaches, types of knowledge and emerging methodologies are applied to develop responses. This principle affected who was involved in the course development. We didn't conceptualize this as an 'environmental management' course, with a focus on science and engineering technical solutions, but instead as a sustainability course which would need equal contributions from social, economic and environmental domains. We also believed that other forms of knowledge (beyond disciplines) were important – for example we sought to draw out expertise that participants had as people and to reflect on what first brought them to thinking about sustainability issues.

A key feature of the course as a result of this approach: exploring the world through a variety of lenses – focused on the intersections between traditional 'bodies of knowledge', focus is on what should we do, what could we do, not just what is.

We **researched** key areas such as existing courses in Australia and teaching and learning approaches used in other successful TD courses. We also did market research into the needs of industry, recent graduates from a wide range of disciplines and people currently employed in environmental or sustainability related roles. What we found was that with the emergence of sustainability as an area of teaching, modes of delivery and the design of courses have also adapted. There has been a shift from content focus through to skills and practice focus, inputs from multiple disciplines, interest in graduate pathways and the role of universities in preparing people for practice, even when the roles are emerging and rapidly changing. A new breed of courses are emerging: which features 'problem' based learning, engaging with communities and industry, embracing complexity, going beyond disciplinary boundaries, a focus on learner-directing knowledge, and recognizing both the personal and professional drivers for people engaging in higher education.

Another area of **research** was about how students best learn for sustainability outcomes – not just what skills they need, and what content they need to know but also what teaching and learning approaches best facilitate these outcomes. Transdisciplinary teaching and learning approaches, focus on PBL, futures perspectives, systems thinking, team teaching and student reflection came through strongly in the research of existing courses as important features of courses working in this area.

The process we used had to be **adaptive**, as, perhaps like any ‘real world’ change process, things don’t stay the same, other factors come up, political, institutional and interpersonal dynamics are in flux, and so our pathway had to be mindful of these and change as needed. What this meant in a practical sense, is keeping up constant lines of communication open with the working group, responding to needs we discovered as we went – and doing things like facilitating meetings between faculties to discuss possible administrative arrangements for the course, and reworking documents – such as the market research findings in different formats for different audiences.

Another example key of the need for an adaptive process is that the University underwent a restructure during the life of this project – with faculties merging and a significant change of staff, including Deans. This made finding a faculty to host the course more challenging, and possibly as a result, this matter has not yet been resolved.

A challenge of being part of an **adaptive** process can be keeping yourself motivated as a change agent – we found it really important to be aware of our own responses to the situation, and found having a team in which we could reflect on our own practice – our expectations, hopes, disappointments and learning – really important for maintaining our own motivation through the process.

This emphasised for us that **change isn’t linear**. In summary our course was not finalized and launched in the timeframes we were aiming for, but there have been other positive outcomes, and the course is still being considered in light of locating the right faculty. We believe the process itself was transformative, and helping to build capacity in teaching and learning approaches, building relationships across faculties, better understanding of the specific institutional structures and their role in change, as well as the tangible needs of a transdisciplinary, cross faculty course.

Administrative issues - The group also identified a range of administrative issues associated with delivering the course and some of the ways these could be addressed, eg.

- Teaching staff would continue to need support (including learning support) through the establishment phase.
- Enrolment targets may need to be staggered to reflect the time needed to grow student numbers, build a reputation and build capacity.
- Processes for continuing cross faculty plus industry and community involvement in review of the course over time.

This process highlights some challenges to TD approaches to course design; because these ideas are fairly new, and not necessarily compatible with existing funding and structures of a university, implementing these ideas is challenging. So while this course will likely be implemented, the process is slow. These are not insurmountable challenges but take time and a collaborative approach to resolve. This can be seen from some of the courses noted above. For example in one case a course is run by a TD institute, owned by one faculty but they are committed to working collaboratively. In another there was understanding of ‘ramp up’ time and support from management even if student

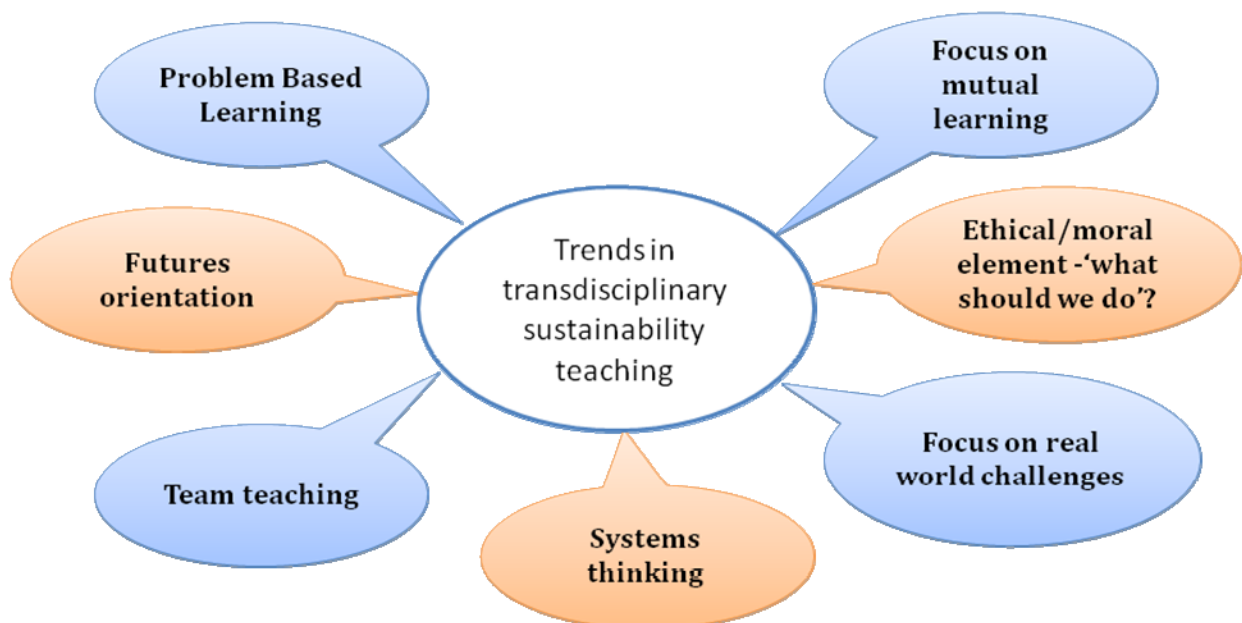
demand was slow at the start. In both cases coordination of and communication between staff has been essential to building successful programs.

Conclusion

So in conclusion, we aimed high, in creating an innovative course based on **research** and **transdisciplinary** inputs, and created a course that we believe will deliver the transdisciplinary perspectives, and graduate attributes that effectively engagement with sustainability challenges.

The course hasn't started yet; we are still working to make it happen, and seeking to be **adaptive** in our approach, including navigating issues of ownership, decision making pathways, and institutional resourcing frameworks. It also reinforces the importance of valuing the full range of outcomes as we seek to make changes towards a more sustainable future, the intermediate steps as well as the final outcomes.

We're continuing to work with this group to help launch this course. In making the process **participatory**, we've achieved a great deal already, including strengthening connections across faculties (identifying champions, building relationships), developing institutional capacity in teaching and learning approaches for sustainability, and creating a space for teaching staff to reflect on their values and world views about sustainability and consider how existing courses can better engage with these ideas.



Further reading:

Willetts, J.R., Carrard, N.R. & Herriman, J. 2009, 'Transdisciplinarity: realising its potential to support effective postgraduate sustainability teaching and learning' in Leal Filho, W. (eds), *Sustainability at Universities - Opportunities, Challenges and Trends*, Peter Lang Publishing Group, Germany, pp. 299-312.