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Environmental and social sustainability impacts of teaching and research: some ideas

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Abstract

”One aim of Australia’s 2009 National Action Plan for Education for Sustainability is to equip all Australians with the awareness, knowledge, skills, values and motivation to live sustainably in order that future generations can meet their needs. Despite the efforts of ECU Green Office Program, their brief is not to address curriculum issues so consequently this paper aims to be a starting point for discussions that examine how we at Edith Cowan University teach and conduct research that considers their environmental, social, cultural and economic implications. This paper focuses on two main issues: how ECU units teach in environmentally sustainable ways and how ECU units teach in socially sustainable ways. This examination of how we currently address issues of sustainability in our practices of teaching and research will enable us to discover gaps and opportunities for further addressing these complex issues in our curriculum and research. The principles of sustainability encompass the notions of many solutions to any problem so we will investigate current good practices with the understanding that “one size does not fit all”. Together we may find exemplars of good practice in another discipline and accept these tips as recommendations for enhancing our own good practice.”

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Introduction

Originally from environmental education in the 1970s, *Education for Sustainability* has grown from an awareness of natural ecosystems and their degradation to equipping all people with the knowledge, skills and understanding necessary to make decisions based upon a consideration of their full environmental, social and economic implications (Department of the Environment, Water, Heritage and Arts, 2009a, b). Australia's first national action plan for Education for Sustainability was released in 2000 (Department of the Environment and Heritage, 2000) and the second (DEWHA, 2009) was released this year.

There are many definitions of sustainability with the best known being from the United Nations: *Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs* (World Commission on Environment and Development, 1987). Sustainability encompasses environmental and social sustainability.

Environmental sustainability includes the issues surrounding transport, energy (electricity, petrol, oil, gas, solar, wind, thermal, coal), water, biodiversity (flora and fauna),

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resources like computers, paper and ink (to reduce their use and their disposal as waste/pollution) and other resources and packaging (being a conscious consumer). Environmental sustainability addresses the issues that environmental education covers and can be summarised as respect for the planet, its' fauna and flora. Yet increasingly, social sustainability has a significant role in the sustainability agenda (Hammond & Churchman, 2008).

Social sustainability can be summarised as respect for people. It includes Corporate Social Responsibility (CSR) and the issues surrounding the well-being of staff and students like workplace health and safety, ethics, inclusive community, interconnectedness, quality of life, democracy, integrity, respect, partnerships as well as the ability to work in teams as an opportunity to listen and understand others' viewpoints. Social sustainability includes cultural sustainability and corporate sustainability and has implications for economic sustainability.

Cultural sustainability includes the issues surrounding diversity of staff and students; equity in recruitment, the workplace and promotion; acceptance of all staff and students; and again, inclusive communities providing a cross-cultural and international outlook. Economic sustainability includes considerations of the short and long-term costs that are not only financial. For any university, economic sustainability specifically means having a viable number of students in each unit or course so that the university is sustainable long-term.

However, like any corporation, the cost of a university maintaining any number of students depends on how the assets and services are managed. Corporate sustainability sees that Edith Cowan University (ECU) is a corporation, with responsibilities to its staff and students ensuring that all staff and students are able to do their job and/or study well with access to training needs and support provided.

ECU, as a corporation committed to sustainability, states in its Sustainable Communities Action Plan 2009 that it aims to develop a set of responsibilities for a sustainable community at ECU, with three broad objectives:

- Developing a heightened awareness and practice of social and environmental sustainability amongst ECU staff, students and communities;
- Embedding the principles of social and environmental sustainability as knowledge and skills into the curriculum and research programs; and
- Continuous improvement in reducing the university's environmental footprint in areas of energy, water, materials, waste, biodiversity and transport.

The ECU Green Office Program, ably run by the Facilities and Services Centre, aims to increase staff awareness and education on the environmental impacts of our daily work practices. This Green Office Program does not, however, address how units or courses are taught at ECU. Hence the need for this paper that focuses how curriculum and research address environmental and social sustainability issues. The EcoECU website provides information and news about environmental policies and planning; initiatives for saving water, environmental purchasing, waste and recycling like the new facilities for the collection of batteries and much more. I recommend that, as ECU staff, we all become familiar with this program and the information on our website. This paper addresses some of the Green Office information in that it relates the initiatives to teaching and research even when such initiatives are general rather than specific to teaching and research.

This paper aims to be a starting point for discussions that examine how we at Edith Cowan University teach and conduct research that considers the environmental, social and cultural implications. Let us examine how we currently address issues of sustainability in our teaching and research practices. This will enable us to discover opportunities for enhancing our teaching and research practices so that they become more aligned to the principles of environmental and social sustainability.

Sustainability is a paradigm that requires us all (educators and students) to examine our own values, hidden assumptions, motivations, beliefs and actions (Holdsworth, Wyborn, Bekessy & Thomas, 2008). As educators, we reflect on how we live, teach and research and how this impacts the environment, economy and others (social and cultural aspects) on local, regional, national and global levels. On an environmental sustainability level, we respect the planet and what it provides to us (as resources, fauna and flora) by conserving and managing resources for present and future generations. On a social sustainability level, we respect people. For example in our teaching and research, we allow and instigate discussions that expose ourselves and students to diverse viewpoints. We accept all staff and students by being inclusive. We teach and research in teams, teaching and learning how to work together across disciplines and other borders.

Teaching and Researching in Environmentally Sustainable Ways

For the purposes of this conference, let us start with a question: how do we teach and research in ways that respect the planet and what it provides to us (as resources, fauna and flora) by conserving and managing resources for present and future generations?
There are many basic ways of reducing our environmental impact that are not special for teaching and research. It is easy to make a list, easy to think of what we all should be doing but not always so easy to actually change our practices every day. A permanent change to our usual practice and the acceptance of that practice by those around us is part of what I am calling normalisation of a practice that may change the culture. Within our discussions of environmentally sustainable practices, this paper begins the discussions to address the issues of transport, energy, water, biodiversity and resources in how we teach and research.

Transport

With regard to transport, can we teach and conduct our research in ways that use less fuel? We can check our own transport arrangements, understanding that they may change daily as our personal and professional needs vary. With Joondalup campus so close to a train station, it is commendable to see many staff and students use this facility, some catching the train with their bicycles. Equally, the bus services to Mount Lawley campus are often convenient. Some people car pool to work or at least to meetings, particularly when meetings are held on another campus. The normalisation and acceptance of car pooling is important. Offering a lift or arranging car pooling normalises car pooling and identifies you as a person who thinks and cares about environmentally sustainable practices. When we have meetings, we could simply add this possibility to our invitations. Car pooling often provides an extra time to talk socially with a colleague or catch up on work discussions during the car journey. There are benefits beyond reducing fuel consumption. Economic benefits include reducing car parking. On an individual level, fewer cars parked may equate to a saving if we don't have to buy a ticket. It also means that we might not have trouble finding a car park! Providing and maintaining a huge space for car parks is a huge cost for ECU. Any cost

saving may mean more finances available for resources that seem more important. ECU fleet vehicles are chosen by Facilities and Services for their energy efficiencies as a major consideration. The normalisation of commuter cycling, providing showers and bike parking facilities are important transport considerations.

Video-conferencing and phone meetings are simple ways to reduce transport needs between campuses and interstate. Planning for several meetings on one campus in a day rather than driving between campuses can also reduce the stresses of being in traffic. The wellness benefit of reducing our travelling is very important as we balance our time and energy. Walking the stairs rather than taking a lift saves energy and gives us some exercise. Electronic meetings may not meet the social needs required so there is not always one solution. Students may need to be on campus for some face to face lectures and tutorials when attendance may be important but this may be reduced.

So to teaching and research specifically, how can we raise awareness and encourage environmentally friendly transport practices with our students and colleagues, both in our teaching and research practices? In what other ways can we reduce our fuel consumption in our teaching and research?

Energy

With regard to energy, can we teach and conduct our research in ways that use less electricity? In the next few years in Western Australia, the cost of electricity could double yet at the same time the government will probably not be increasing our funding to allow for this increase. For our own private home, this may not seem a huge increase in cost but the university's electricity bill may surprise us. Simply, we need to reduce our electricity consumption. An easy way to reduce electricity use is to turn off lights, computers, photocopiers, printers and any other equipment when they are not being used. As we walk out of meetings and lectures, we could turn off the lights and any other equipment. It seems so simple yet there are empty lecture, tutorial and meeting rooms with lights left on every day. So we might need some prompting. Maybe, we could add a quirky design with such an instruction as the last slide of our Powerpoints! Maybe we could suggest that students take the responsibility to remind us or actually turn the lights off. Maybe a sticker near the light switches would prompt us to better practice. Lights that automatically switch off in rooms and corridors where there is no movement detected by sensors may be costly to place in old buildings but may be worth the cost.

When we are not using our computers, they automatically go into sleep mode but we should turn them off when we are not going to use them for a few hours, particularly overnight. Maybe if we are guiding lengthy discussion points from one Powerpoint slide in our lectures and the computer switches off isn't always seen as a perfect solution to the energy problem but one solution doesn't always fit all.

Air conditioning our rooms is another huge energy cost for the university. What are some other ways we can reduce our use of electricity in our workplace, teaching and research?

Water

With regard to water, can we teach and conduct our research in ways that use less water? Most of us don't use much water in our teaching or research. So we simply turn off the tap, turn down the pressure and shorten the time we have water flowing as we have in our homes. We know that some taps and showerheads enable us to use less water and we leave these decisions at university to the Facilities and Services Centre.
For those of us who use water in our teaching and research, the same ideas apply to reduce our use of water. Then we could consider how we could check that our students, in both teaching and research, use as little water as possible and how we could teach and assess good practice. Do we make it clear to our students that conserving water is a personal and professional priority?

Biodiversity

With regard to biodiversity, can we teach and conduct our research in ways that consider our impact on fauna and flora? Again, most of us do not use animals or plants in our teaching and research. We appreciate the native plants and animals roaming our campuses as our grounds are managed with environmentally sustainable practices by Facilities and Services Centre.

For those of us who use plants and animals in our teaching and research, we may teach about the threats posed to native species by their overuse and depletion of habitat. We may involve students in volunteer or workplace integrated learning to further their awareness of natural ecosystems. We would fulfil requirements and complete ethics approval forms if our teaching or research uses any animals. We would care for all animals, plants and their habitat and ensure that our students also learn and conduct their research with similar care.

Resources

With regard to resources, can we teach and conduct our research in ways that reduces our use of resources? We probably should start with procurement. Yet, I wonder that the resources that we use most in our teaching and research are paper and ink. We can easily make a difference to reduce our use of paper and ink and reduce our students' use of paper and ink. So let's start with what we can achieve easily.

We should print less. We need to think before we click that "print" button and nowadays we probably do. We print double-sided only. We don't print emails, photos, in colour, meeting agendas, information in attachments for meetings, minutes of meetings, large documents, assignments or any unnecessary materials. We use small font. We use a signature on our email that is small. If we do print an email we delete all the replies and forwards and we might spend the few minutes to cut and paste what we really need into a small document. We expect similar use of paper from our students in both teaching and research such that our processes recognise that we all need to reduce our use of paper. Do our students print lecture notes, assignments, lecture Powerpoint slides? We then simply transfer the printing from us to our students. If they do, then they are probably printing on small home printers that use only one side of each page. We should teach in ways that demonstrate how to use less paper and ink and we should not expect our students to print from our Blackboard. We should not use coloured or shaded backgrounds that use extra ink. ECU's Centre of Marketing has recently identified that our banners and letterheads can use less ink. So they designed monochrome letterheads and Powerpoint slides with white background that should be used

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for photocopying to reduce our use of ink. In what other ways can we reduce our use of paper and ink?

What other resources can we reduce, recycle or reuse? Let's consider the biggest resource at ECU! Our assets are our buildings. With Churchlands campus no longer used, our use of all resources and our costs decreased dramatically but our number of students actually increased over the same time. As we further increase our number of students, we may not increase our number of buildings. Most of our buildings are used only for a limited number of hours each day and a limited number of weeks each year. Some are used at nights and on weekends by community groups and this has other benefits like increasing security. Let's be thoughtful of ways to increase our use of buildings and rooms, even our offices.

Teaching and Researching in Socially Sustainable Ways

I want to start the discussion of this topic with another question: how do we teach and research in ways that respect people? One of the ECU values is respect; valuing individual differences and diversity. Within our discussions of socially sustainable practices, this paper continues the discussions to address the issues of equity, diversity and inclusivity. For example, in our teaching and research, do we allow and instigate discussions that expose ourselves and students to diverse viewpoints? Do we accept all staff and students by being inclusive? Do we teach and research in teams, teaching and learning how to work together across disciplines and other borders? As educators, we reflect on how we live, teach and research and how this impacts students, staff and other people. This may be confronting and it may also be very affirming.

In our teaching and research at ECU, we recognise that many students may be the first in their family to attend university. Over 60% of ECU students have not completed TEE. Nearly half of our students are mature age and 25% come from culturally and linguistically diverse backgrounds. Clearly, we are not elitist and should aim to ensure that we do not become so. We recognise that these students and colleagues may not have a supportive background so ECU, as an inclusive community, provides the support they require. With or without this assistance, ECU students have proven that they can and will not only pass our courses but become exemplary students and graduates like Rebecca Olsen winning this year's prestigious WA Business Icon™ competition. Out of five ECU entrants, three went on to the final twelve. Ben Hamer also placed in the top four and Bruno Ribeiro won the Best Networking award for this competition in 2009.

Recommendations and Conclusions

This paper has explained how sustainability issues are being addressed by ECU in the greening of campus and office initiatives. It also attempts to create a conversation about how we, as educators, may teach and research in ways that address environmental and social sustainability issues. Recommendations are expected to arise from this conference conversation. This paper has highlighted some of the issues and actions of best practice for environmental and social sustainability in teaching and research at ECU while the conference presentation will initiate discussion and offer opportunities for participants to describe their own good practice.

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