

As if the future matters: Teaching design for sustainable communities

Terry Williamson¹, David Jones², Susan Shannon¹ and Antony Radford¹

¹School of Architecture, Landscape Architecture and Urban Design, The University of Adelaide, Adelaide, Australia

²School of Architecture and Building, Deakin University, Geelong, Australia

ABSTRACT: The paper describes immersive experiential learning in an undergraduate course about designing for more sustainable rural communities in South Australia. It argues that there are benefits for students, local communities and the teaching staff.

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1. INTRODUCTION

Between 2007 and 2010 a series of intensive annual field trips took around 100 predominantly city-based Australian and international students from The University of Adelaide into rural communities (numbers ranged from 82 in 2007 to 105 in 2009). Country areas/towns (rather than the city) were chosen because in them issues of sustainability are 'in your face' and much clearer for students to comprehend than in the city. The trips required co-operation between the respective communities, the School and the students. The organization required for this number of students was time-consuming and prone to disruption, and the series ended when the principal organisers moved on to new positions and the School reverted to less time-costly modes of teaching. This paper provides a retrospective insight into the series of field trips and examines their educational and professional value for the participants – students, staff and communities.



Figure 1: Location of Adelaide and the State of South Australia in Australia, showing the Murray-Darling river system. The country towns chosen for the field trips lie within the hatched area.

We begin by describing the aims of the course and argument for an immersive educational approach, then present the logistics and process for the field trips, discuss the outcomes for the stakeholders, and finally present some conclusions.

2. BACKGROUND AND AIMS

Australia is a relatively wealthy member of the global south, but its wealth is not evenly distributed and rural communities face major problems of sustainability, grappling modes of operation involving huge travel by private vehicle in the absence of public transport, dispersed low density dwelling, and extremes of drought and flood. Such communities are experiencing declining populations due to a lack of employment combined with a widespread sense of missing out on the attractions of urban society that causes the young to leave for education and work.

2.1. Precepts

The course was founded on the following precepts:

1. For a design school, questions of “how do we educate students to design more sustainable buildings or landscape designs” should be placed in the context of answers to the much broader and challenging question of “How might we best educate our students to the importance and opportunities of design for sustainable communities?”
2. Sustainable design relates to the three contexts of ecology, society and economics (in that order because economics is only a means to sustain society, and society itself depends on ecological sustainability).
3. Sustainable designing involves identifying all relevant stakeholders, in particular those that might exist in the future, including non-human stakeholders.
4. Sustainable designing involves dealing with trade-offs related to the context.
5. Design can be framed as (en)visioning and as research.

2.2. Immersive Experiential Learning

The experiential learning method is, quite simply, the process of learning through direct experience of situations (Kolb & Fry 1975: 33). Although it need not be planned by or involve a teacher at all (experiential learning is an inevitable part of everyone’s life), in an education program the learning situation is planned to enable the desired learning to take place.

Kolb & Fry (1975: 35-36) state that in order to gain “new knowledge, skills or attitudes” from an experience, “four different kinds of abilities” are required:

1. *Concrete Experience Abilities*: the learner must be willing to be involved “fully, openly and without bias in new experiences.” Students were motivated by being involved in a proto-real project, after previous ‘pretend’ projects. As well as the inherent interest of a novel challenge and the prospect of assessment and peer competition, there was also a desire for recognition by and approval from the community to which they would present their work
2. *Reflective Observation Abilities*: the learner “must be able to reflect and observe these experiences from many perspectives.” Discussions with peers and tutors promote reflection and building relationships with pre-existing knowledge.
3. *Abstract Conceptualization Abilities*: the learner must possess and use analytical skills to conceptualize the experience “creat[ing] concepts that integrate his observations into logically sound theories”. As final year students in a three-year undergraduate degree, the students enrolled in the course have developed analytical and conceptualization skills, along with the ability to express them.
4. *Active Experimentation Abilities*: the learner must possess decision making and problem solving skills in order “to use these theories to make decisions and solve problems”. The students are familiar with group and individual decision making through multiple experiences of project-based learning in earlier years of the program.

Experiential learning echoes the reflective practice of the future professional (Schön 1983). In education, though, (as Kolb and Fry state about *Concrete Experience Ability*) there is value in the student being forced to step outside professional boundaries of landscape architect, architect, engineer or urban designer. They are then in a position that requires them to make trade-offs and judgements without preference for their own preconceived future professional role.

Immersive experiential learning places the student in a situation where they are enveloped in a relevant learning environment. A field trip removes the student from their normal places of work and recreation. Even the most reluctant student learns from living for a few days in the place that they are examining, experiencing for example the lack of entertainment, limited choices of food and the impact of distance. They are immersed along with their fellow-students, and an important part of experiential learning is learning from peers. The impact of peer learning is well understood and discussed by many authors, including Boud, Cohen & Sampson, who describe successful peer group tutoring of students:

[T]he experience of peer learning is known to be a significant component of a student’s overall academic experience and skills developed from working closely with peers are also considered very relevant preparation for most workplaces. This is especially the case in the project-based work environment of contemporary organizations [such as architectural practice] (Boud, Cohen & Sampson 2001: 10).

Boud asserts that peer learning and peer assessment is beneficial for some aspects of students’ self development. He contends that peer learning is well suited to providing individual students with feedback on task completion clarity and whether tasks have been well communicated, but is poor at aiding students in self-calibration against expert judgment (because very able students are stringent judges of their own, and others’ capacity, whilst poor students are lenient judges of their own and others’ capacity) (Boud 2009; Webster 2009: 67).

3. ORGANISATION AND LOGISTICS

From the student perspective the course unfolded as a series of project or work phases that in part mimicked the stages of a “real” project. In parallel, a sequence of lectures by academic staff and professional guest speakers

reviewed sustainability theories and questions, alternative technologies, ethical issues, across several discipline areas providing contextual and ideation support to student learning.

To commence, expressions of interest were invited from non-metropolitan Councils (local Governments) in South Australia to host the students. Important to this process was personal contact and building relationships of confidence and trust, often achieved through the course coordinator visiting the communities in advance. At that time opportunities were established for students and tutors to meet with and discuss issues with Council officials, elected members, business leaders and community action, interest and service groups. This introductory consultation could be “formal” (for example a focus group event), or “informal” (for example discussions during a BBQ which included students, tutors, and invited members of the community, hosted by a Service club like Lions or Rotary and catered for with food donated by the town butcher and baker).

Four steps followed:

1. **Site Analysis & Community Consultations.** Opinions were sought from residents/traders and local Government office holders about the environment, what makes their town special and what changes they would like to see in the future. For the students this phase of the course involved the preparation and administration of a small questionnaire seeking to test and quantify resident/stakeholder attitudes and values to the issues of sustainability and the environment. In lectures the students were introduced to the theories and practices of community consultation and developed their own survey instrument. This survey encouraged direct community contact and in turn provided input on ideas about possible development projects.
2. **Policy Development & Evaluation.** Having identified a suitable project, this phase involved the compilation of a policy document that contains aims, objectives, and siting and design guidelines together with likely sustainability indicators for the project. At this stage the document was not to be viewed as a final version but was intended to provoke consideration of policy development and future possible directions. The phase was intended to introduce students to policy and planning areas of urban, building and landscape design. It was also intended to provide a charter that informed and directed successive design work.
3. **Preparation of Concept Plans.** This had two phases: submission of a preliminary design proposal for discussion and critique, followed by its development to the stage of an advanced concept. Students were asked to frame the concept in light of its environmental, social & economic sustainability, and to carefully consider the spatial location, servicing and maintenance issues, and the adjacent site implications of its sustainability provisions/services/themes (including overshadowing and shadowing, reflection, noise, power generators, discharge, visual aspects, waste products, etc.)
4. **Business Plan and Economic Feasibility.** Notions of triple bottom line analysis and reporting the environmental, social and economic consequences of a development proposal were considered integral to the feasibility analysis. The economic analysis in particular further informed the further development of the concept plan.

The results were presented to the communities.

4. OUTCOMES

4.1. Student Outcomes

For many students, particularly those from outside Australia, this was a first opportunity to visit and engage with people from outside of the City of Adelaide.

Every year at the end of the course a comprehensive student evaluation was conducted. The results showed that the topic of sustainable design in real communities was welcomed. Students could appreciate the distinction of “working *with* community members to understand more about their area” instead of working at University, distanced from a client, a context and particularly the need to work cooperatively with stakeholders to achieve a sustainable outcome. The holistic and balanced way in which sustainability was taught (using Williamson, Radford & Bennetts, 2003) “*stimulated my interest in sustainable design and gave me a holistic and comprehensive understanding of what it is and how it’s achieved*” (Student comment).

In 2011, 44 students who had taken the course in 2009 completed an additional anonymous, voluntary student evaluation relating to their continued usage of learning from the course.. Four main themes emerged in response to the question “What were the most valuable learning outcomes from Design for Sustainable Communities that you have used subsequently in your studies?”

1. Team work and group work: Students reported that they were advantaged by “getting to know peers” and that the “bonding with classmates during the field trip was beneficial for team work projects in this [their later Masters Program in architecture and/or landscape architecture] course”. Further, students reported that they understood the roles within group work and that “you need to stand up and be a leader to get things completed”. Students felt advantaged by learning how “to work and collaborate in a large group”.
2. Engaging personally with community/Field work/community involvement/ Understanding rural communities/Real world: 28 students felt this was the most valuable learning outcome. The views

expressed at the end of the course were repeated, that it was “good to get on site and experience ‘community involvement’”. Students reported upon reflection about the longer term impact, and career altering perceptions, that the “field work opportunity it provided and the community consultation as well as being able to experience the rural communities; first-hand experience of their lifestyle, issues and values in a township was extremely life changing”.

3. Enhanced knowledge about sustainability and its application to other designs: Students believed that the foundation for their subsequent understanding of sustainable design was developed in this course. “Lots of sustainable knowledge and new stuff – I love it”. “Ability to recognize the factors of sustainability – social, economic and environmental and applying design to a social or regional context” and “thinking about the real impact of design on a community” was the most valuable part of the course that students had subsequently used.
4. Professional Skill Development: Lastly students pointed to their increase in professional skills as the lasting legacy of most value – skills as broad as analyzing both the site and context, conducting surveys, then analyzing data and writing reports. For some improved presentation skills and understanding of the application of design process, as well as expanding their breadth to encompass Master Planning and with that understanding Development Policy and Development Plans in their first urban scale course was notable.

These four themes aligned with the themes from the students evaluation conducted at the conclusion of the course, indicating that the Course Outcomes were well conceived for students’ future studies in graduate programs.

A final question explored the formative legacy of the course “Would you consider working as a design professional or practitioner in rural South Australia in the future? If so, is your reason related to experiences in Design for Sustainable Communities?”

26 respondents (59%) stated that they would consider a career move to rural or regional South Australia, citing that the course and the course coordinator were influential. “The Course Coordinator was very passionate about his work which in turn made me passionate and want to pursue further what was learnt”.

After reflection on what had been learned, and how it could be further applied, as well as the Field Trip role in debunking urban myths about rural communities, many students felt they were willing to consider rural employment: “after discussing and hearing what life is like in a rural council, it gave me some belief & confidence to give it a try despite the distance” and it “showed me an interesting life style that I’m interested in”. The course “gave me the opportunity to go outside my comfort zone to experience a community outside my ordinary involvement”.

For some students with rural origins the course allowed them, for the first time, to see their role in the redevelopment of their own communities: “I grew up in a rural area. One of the most rewarding parts of Design for Sustainable Communities was realising that I can help out in, and make an impact in, rural communities.”

Overall, many students were still thinking about the lessons learned from this course in a life and career challenging way: “This subject is still the course I enjoyed most during my time at University; the connections to rural communities has encouraged me to look at this as a possible career path”. “I am interested in architecture and associated disciplines and the way they can re-imagine, rationalise and reinvent/invigorate current built environments in varied scale/locations both rurally and in an urban context”.

4.2. Community Outcomes

Experiential learning applies to the communities, too. The community gained the opportunity to air and explore ideas outside the normal decision making and political processes. In return for their co-operation the work done by the students was given to the community. This generally took the form of a display of projects (often in the town hall) or a report presented to the Council. The involvement of experienced staff in the projects results in what might be regarded as ‘free consulting’, although no claim is made for this consulting.

The outcomes were not plans or designs in directly realizable form, but a rich variety of ideas, as a prompt for local thinking. Councils and University staff both thought that simply the need to articulate, prioritise and explain local issues to students had value to the communities, and this articulation drove their desire to participate.

The Development Manager from the District Council of Lower Eyre Peninsula wrote about that participation process that

[W]hen Council was approached ...to consider hosting a group of students we were quite excited about the opportunity to have some ‘fresh eyes’ looking at the town from a design/development point of view... In my opinion the outcomes from the course have been extremely exciting for Council. The presentations that were prepared by the students have left Councillors and staff with numerous excellent ideas, many of which will be further investigated for possible implementation.

Indeed, the Eyre Peninsula Local Government Association wrote of their good fortune at attracting this opportunity:

On the [Eyre] Peninsula, we had heard by word of mouth of the positive outcomes of this project which had occurred in the Riverland and upper Mid North, but had never appreciated its immense positive impacts until the students actually arrived. This innovative opportunity has enabled smaller Councils (with very limited resources) to receive a professional viewpoint of the issues facing their development as a community. Students looked at planning, vegetation, resourcing, community and cultural issues, coastal planning issues, development and industry needs and many other local issues of interest to present an integrated approach to sustainable development. ... Councils ... have indicated an intention to use that work with their Councils as a way to stimulate discussion about planning and design frameworks... This project ... was instrumental ... in changing traditional Council and community perspectives about place, community futures, rural township planning, and invigorating community spirit and the need to engage in their town futures ...

4.3. Teacher Outcomes

The course, and the Student Evaluation of Teaching survey results, reinforced the belief that the learning approach applied was relevant and instrumental in informing and challenging student learning processes. Refinements to the course and its learning processes were undertaken each year. They did not compromise the over-arching course strategy but rather sought to include the latest theoretical and practical information, ensuring that the course was professional practice and community relevant.

A philosophical agenda that one of the original course co-ordinators was seeking to instil in the development of this course was to ensure that the students had a solid appreciation of the issues confronting rural and regional Australia, and this mimicked the same issues that were hidden in the urban communities of Australia. This was a key factor behind the strong endorsement and commitment to the project by the South Australian Farmers' Federation; an unlikely partner linked to a design School.

5. CONCLUSION

Without serious consideration being given to the interrelationships between issues of environmental, social and economic sustainability (and the future consequences of planning and design decisions) as part of the normal design process we cannot hope to ensure that our designs will be sustainable. The disconnected manner in which these issues [are typically dealt with (if at all)] will not in general lead to holistic designs that pass the test of responsive cohesion.

Consultative learning *with* a community is at the heart of teaching design as if the future matters. Students acknowledge in their evaluations that their removal from the "real world" also removes enthusiasm and motivation, as well as connection with their professional futures. What we can also see as academic staff members that their engagement with particularly rural communities is very future-focussed, as these communities grapple with their very future survival at a time when Australia's urbanisation is increasing. Decisions made with communities during these courses have set the path for sustainable interventions in townships.

To a large extent the success of the delivery mode established in this course revolves around the cooperation afforded by the local communities, in particular the Local Government or Council. We realise that this type of course could not necessarily be conducted in a different context. After heeding the students' evaluation, we believe that this course's principles of immersive community-focused sustainability learning are transferable to new contexts, much as we have experienced the course in many different host communities.

The benefits to the communities as well as to students can be used to sell this form of community engagement, and variations should be possible through much of the global south (and north).

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