

Engaged Service Learning – Implications for Higher Education

Tony Webb

School of Natural Sciences
University of Western Sydney, AUSTRALIA
tony.webb@uws.edu.au

Shelley Burgin

College of Health and Science
University of Western Sydney, AUSTRALIA
s.burgin@uws.edu.au

Abstract

Dwindling resources for tertiary education, has resulted in reduced emphasis on intensive, small group, staff – student collaborative project-based service learning. However, training scientists to manage significant issues, such as sustainable water use, requires an ability to engage both industry and community stakeholders. This paper describes the results of an ‘action conversations’ approach to explore community perceptions, teach students skills for community engagement, and evaluate their experience of this as a teaching and learning method. It suggests that there are significant parallels between factors contributing to successful community engagement and effective teaching and learning by students.

Keywords

Service learning, staff-student collaborative learning, community engagement, stakeholder engagement.

Introduction

Background to the study

There is dwindling government funding for Australian universities and a subsequent imperative to increase class sizes and reduce face-to-face teaching (e.g., Cairns, 2007; Marks, 2002; Pollard & Chan, 2006). In parallel, there is pressure for education and research to be more ‘relevant’ and engaged with the community (Bridger & Alter, 2006; QUT, 2007). Nowhere are these contradictory drivers more apparent than at the multi-campus University of Western Sydney, with its Mission:

To be a university of international standing and outlook, achieving excellence through scholarship, teaching, learning, research and service to its regional, national and international communities, beginning with the people of Greater Western Sydney (<http://www.uws.edu.au/about/university/mission>).

Within this political context we suggest a major task is to develop the next generation of ‘catalysts’ for change in environmental management in its broadest context (e.g., natural resource management, supply chain management, town planning). The changes require effectively grounded community engagement, the skills for which require an innovative approach to teaching; broader than the traditional ‘talk and chalk’ or the more recently favored web-based learning approaches. In contrast to the current trends in education, teaching and learning for the future

requires understanding processes that enable people to translate scientific/technical learning into community/cultural awareness and action. However, this approach is regarded with suspicion in many universities. For example, Jacoby (2003, pp. 279) suggests that:

Faculty used to content-based teaching often tend to mistrust inductive, process-based teaching - the cycle of action and reflection- that characterizes service-learning, arguing that it is appropriate for co-curricular activities but not rigorous enough to be considered as pedagogy.

Experience-based teaching and learning runs counter to the predominant, deductive modes of teaching on college campuses, which move from theory to practice, teach theory only or, in Paulo Friere's (1970, pp. 57-59) analogy, treat students as passive 'banks' into which the teacher 'deposits' information (whereas service learning places students' interpretation of experience at the centre of teaching).

While it can be difficult to demonstrate that such an approach is an effective education technique, there is a substantial body of praxis that can inform efforts to tackle this problem at the root of developing skills in resource management among university students. Variations on the approach have been variously labeled as 'popular education' (building on the work of Friere, 1970), 'community development', 'social action' (Syme & Nancarrow, 2002), 'participatory action-research' (Kemmis & McTaggart, 1988a; 1988b; McTaggart, 1997; Stapp, Wals & Stankorb, 1996), and 'in-service learning' (Jacoby, 1996; 2003).

While the value of intensive, small group, high staff - student collaborative learning teams in 'experiential education' and project-based 'service learning' is out of fashion within Australian academia, we believe that it is worth revisiting this approach particularly in the context of university 'engagement' and development of skills for managing significant ecological issues. Developing sustainable water use, for example, requires systems/integrated/holistic approaches that go beyond the best scientific/technical solutions. We need to recognize the importance of engaging the community in the process of developing appropriate outcomes and relevant skills for this as part of preparing our students to launch their careers.

This paper outlines the results of a semester long initiative, undertaken at the University of Western Sydney that involved students in developing a methodology to explore the social climate for community engagement, and in the process to become more knowledgeable about social and technical issues associated with water sustainability and its equitable use. We outline the process through which a small collaborative staff - student group developed a program for exploring skills for engagement, describe the development of an 'action-conversations' research methodology (Webb, 2006, based on Hauser and Hauser, 1975) for engaging a broader range of community stakeholders than those usually 'consulted' (Burgin, 2002; Lunney, Dickman & Burgin, 2002; Syme & Nancarrow, 2002), and we also explore the group's analysis of data from these conversations, the implications for community education on sustainable water use issues, and speculate on the parallel implications for tertiary teaching and learning styles where there is congruence between content and process. We then describe how the students applied skills and techniques learnt in the project to their own evaluation of the teaching and learning process, the features they identified as making a significant contribution to this learning process, and parallels between these features and those found in the wider literature on project-based service learning.

Experiential teaching and learning

As indicated above, the structure of Australian universities mitigates against trans-disciplinary, action-research, and experiential service-based teaching and learning of skills for 'knowledge translation' that presents the scientific and technical aspects of real world issues of significance in the language and action-frames of the community. Traditional approaches to university education generally introduce students to knowledge in silos (courses/units). Subsequently, there may be

attempts to build intellectual bridges between these silos and between classroom activities and the community.

The kind of experiential systems-based teaching that we favor involves immersion in real-time issues, and interrogation of the knowledge base for its relevance in terms of 'solutions' that are socially and technically practical (cf. Bawden, 2007; Thompson, 2007). Alongside energy, climate change, and land use, the problem of water futures forms part of an existential imperative: the need to define and achieve sustainability (ecological, social, economic) in Australia. In part we see our purpose as educators being to develop student skills for translating scientific knowledge into community engagement and, specifically, to develop the skills and knowledge to tackle the root problem of getting such engagement. Our approach to developing these skills involves engaging students directly with stakeholders in the community. It involves exploring how we might begin to engage stakeholders in the broader community to search for their own practical solutions (on their own terms) and, in making a difference, knowing what difference they had made and how they had achieved the outcomes.

This seems to us to be a path to teaching and learning worth taking, and documenting the steps. It is participatory action research operating simultaneously at two levels. We explore how to achieve community engagement in the issue of water sustainability where many current and traditional community participation/community development initiatives are failing. We also investigate how we might best teach the skills in this area to students whose current and traditional knowledge silo-based learning provides little opportunity to develop even limited skills in communication beyond the classroom.

A collaborative staff - student 'water futures' action research study

The 'water futures' study reported here shows how a staff - student collaborative group explored these questions. The initial stimulus for the project was a collaboration among seven staff from the School of Natural Sciences (University of Western Sydney) from a range of ecological and agricultural disciplines on a paper for a symposium titled *In the pipeline: new directions in cultural research on water*, hosted by the University of Western Sydney (Burgin, Webb, Maheshwari, Huda, Packham, Parvez & Wallace, 2007). The working hypotheses for this paper were (1) managing water as a sustainable resource from either a scientific or technological viewpoint alone is ineffective because water use and management are strongly connected with social, economic, cultural, spiritual, and political factors; and (2) management and associated research has been fragmented at institutional, regional and national levels resulting in misunderstanding, confusion and conflict at the various levels of government (local, state, federal), academia and community-wide (e.g. primary producers, industry, households) and this has impacted on water sustainability; and (3) the process used to develop options to secure water supplies in the peri-urban landscape, at the community level, are as important as the options themselves. Hence the need to develop a framework for exploring how to manage water use in an equitable and sustainable manner, based on systemic action-research that explored ways to stimulate a debate that facilitates stakeholder participation, and ownership of practical sustainable solutions.

As an outcome of the initial discussions, approaches were made to second and third year undergraduate students inviting their participation in a collaborative staff - student project. This was presented as:

an opportunity to explore ways to get community engagement and ownership of ideas for more sustainable water use and see how we might better translate scientific/academic ideas into the language that can be owned and developed by the community.

Twelve students expressed an interest, eight attended either the first or second meeting in the first week of April 2007, and a core of five students joined the small group of staff and participated in a series of eight three-hour group training/exploration sessions spread over the next 10 weeks. The

'Water futures action-research project' thus ran in the (Australian) autumn semester between April and June 2007.

Learning objectives

The semester long project was an exercise in teaching and learning by staff and students in an alternative mode using alternative (experiential) learning techniques. It focused on the development of a framework for exploring how we might gain broad community stakeholder support for practical activities that could lead to a more sustainable water future. We were interested in exploring how we might stimulate a community-wide dialogue (through action conversations within the community) about the issues. Secondly we were interested to see what practical options might be possible: what the community thought might be needed, and how people thought they might be actively involved. We were also interested in exploring how the group, and the students in particular, evaluated this learning experience. The 'water futures' study reported here shows how a staff - student collaborative group explored these questions.

The learning approach

Within the group, we explored individual and shared concerns about the current unsustainable patterns of water use in Australia and what we thought might be achieved at a practical level to develop more sustainable use-patterns. These were then set aside and an open-ended questioning approach developed and used to investigate how the community saw these issues and what might actually be possible in the local area. This was done by engaging directly with community stakeholders and the results of these 'action conversations' were then analyzed and the implications for community engagement and education on water issues evaluated. Full details of this exploration have been reported in Webb, Burgin & Maheshwari (in press; Webb et al., 2007).

Informing this approach to community engagement was a critical exploration of the problem with traditional approaches to community consultation that start with scientific/technical and professional/managerial options for what needs to be achieved. This critique was informed by ideas from Hauser and Hauser (1975), and community leadership development 'tools for personal and political change' workshop material developed by Webb (2004a). These ideas are premised on the failure of traditional organizing tools to reach more than a small section of the community whose 'indignation' can be aroused over issues of social, political or environmental concern. Much traditional community education not only fails to engage large sections of the population; but the more effective it is in mobilizing the small pool of indignation the more it drives sections of the 'apathetic' population further away¹. An alternative approach to the widespread problems of 'apathy' and alienation of sections of the community from participation in local issues and change processes suggests the need for a more 'Socratic' approach (Hauser & Hauser, 1975). This is based on asking open-ended questions as a way of engaging people in exploring their own ideas, in their own language, on the nature of the issue of concern, what might be done about it, and how this could be achieved. In contrast to providing information (answers) as a way of mobilizing social indignation, asking questions seeks to mobilize interest, curiosity and a sense of ownership of ideas. The art is to find the questions that work to do this. The 'action conversations' approach developed by Webb (2004a; 2006) provides a systemic framework for asking strategic but open-ended questions in a conversational style as the basis for social action. The initial 'concern' of a group is explored in order to identify (and set aside) the starting bias. The group then engages with a cross-sectional sample of the broadly-defined community of stakeholders to both test the climate

¹ 'Apathy' the 'apathetic' and 'alienated' can be problematic terms. There is no doubt that a large section of the community fails to respond to 'activist' ways of seeking engagement but perhaps this 'apathy' is the result of using the wrong tools for engagement of this section of the community. It may be a hard lesson for activists to learn but people in this wider community are critical 'stakeholders' in the outcome, without whose support action is either unlikely, or likely to be actively or passively opposed.

for action and identify the 'questions that work' to create interest, curiosity or engagement in meaningful interpersonal conversations about the issue(s).

A strategic framework of five questions is used to explore:

- How people see the issues of concern?
- Their perceptions on what is being done?
- Their ideas for what should be done?
- What stops these happening?
- What might be the starting points for action?

These are used as the starting point. However, the actual form of these questions, and follow up probe questions that explore a person's perceptions in more detail, builds on the language (cued also by the body language) of the person being 'interviewed'. This approach differs somewhat from some other 'semi-structured interview' processes (see Kemmis & McTaggart, 1988a; 1988b), and particularly the strategic questioning approach of Peavey (1994; Peavey & Hutchinson, 1993) in that the initial 'pre-survey' stage is as much about finding the 'questions that work' as about gathering information from the community. Once the pilot (or 'pre-survey') phase has identified the questions that achieve community engagement, the approach can be expanded to create a community-wide conversation (perhaps using a variety of community-cultural development tools) and build support for specific courses of action the community wishes to develop.

A noticeable feature of the development of skills and techniques within the staff - student collaborative study group was the exploration (and unlearning) of old patterns of (personal and collective/group) thought, feeling and behavior (some reinforced by academic teaching and learning) that inhibit meaningful engagement with community members. The group developed a 'stakeholder matrix' (see Table 1) that included many who are not part of the group of 'usual suspects' (see e.g., Burgin, 2002; Lunney et al., 2002; Syme & Nancarrow, 2002) already committed in some way to social action on water issues. The gradual development of skills in 'conversational style' interviewing led to an appreciation of the role of the strategic questions' framework as a useful guide to 'mapping' the conversation, keeping it 'on track', and locating responses and comments from often 'messy' conversations that followed the stakeholder's interests and ideas. This framework also facilitated note-making after the conversation which allowed the participants to maintain the informal conversational relationship during the interview.

Both within the group, and in the stakeholder conversations, the processes used encouraged development of more 'equal' relationships, rapid building of trust and more open/honest 'real' sharing of ideas. The group gradually appreciated how, important as the strategic questions are, the actual 'questions that work' evolve from listening more deeply to what the community stakeholders are saying. As a critical aspect of this interview-skill development, the group explored how to (1) observe and use body language (mirroring and pacing) as a guide to developing engagement in the conversation; (2) how to use reflection of the other's language and key-words (active listening), and tone/voice inflection to guide the conversation deeper into some areas of interest. This led to an exploration of new, different and more relevant forms of questions that worked; and the importance of attending to and 'capturing' in note form the key words from both the questions and the stakeholder responses.

These action-research tools were trialed, tested, reviewed, and refined in practical conversations, initially within the group and with academic peers (other university staff and students) as community stakeholders in water futures issues. Subsequently, but within the limited time available over the semester, the project was progressively expanded to include a broad cross-sectional sample from the evolving matrix of stakeholders. The weekly meetings reported on progress with the interviews, identifying: 'questions that worked', their form, and the key words that appeared to 'resonate' in conversation with stakeholders (often contrasted with forms that were 'intuitively' chosen based on scientific/technical academic ways of framing the issues and sustainable water options). In particular, the group began to identify 'simple' questions that opened an exploration of 'values' related to lifestyle and world views around water. Reading of the 'interview' notes across the group led to supplementation of the initial notes through action-

conversations within the group that encouraged the interviewer to further recall details from particular conversations by the action-researcher/interviewer who conducted them.

This was followed by multiple ‘coding’ of the recorded data within the group (cf. Glaser, 1992; Glaser & Strauss, 1967) to highlight standout ideas in the words and phrases used by people interviewed; and then the mapping of these coded terms. This initially occurred across small numbers of the notes from the action conversations, and eventually the whole stakeholder sample. Finally group discussion led to an analysis that identified key features and implications for future work in developing community-sustainable water futures.

At the conclusion of the process the students in the group conducted their own action conversations, interviewing each other about their experience of the method in terms of a teaching learning process compared to the more ‘traditionally structured’ university course/unit based learning experience. The results, in terms of both the outcome/learning from the project on water futures issues and the student learning experience, are reported below.

Results

The initial results suggest that the approach has merit in terms of its ability to tap into, and identify cultural elements that can inform further community education, leadership/ownership and capacity building work that might develop ‘grounded’ options for future water use in communities. More important, they suggest that the teaching mode by which students learn how to ‘engage’ the community can be more effective to the extent that it parallels those ‘relational’ elements that are part of the community engagement process.

Community perceptions of water issues

Table 1 shows the preliminary stakeholder map developed by the group and the cross-sectional sample of 30 stakeholders interviewed. A feature of this mapping exercise was a group exploration of who might be potential stakeholders outside of the ‘usual suspects’ that are traditionally identified as appropriate and accessible for such community consultations. It also prompted discussion about how such ‘un-usual’ stakeholders can be approached and their views included in the consultation process.

Table 1 Community stakeholders on issues of water sustainability, identified by a small group collaboration of academics and students developed as part of the process of investigating new ways of teaching skills, and obtaining information on community attitudes to equitable and sustainable water issues.

Category	Potential interviewees	Interviewed
Water-Engaged Professionals	➤ Worker with water supplier	Sewage worker
	➤ Catchment Authority management	
	➤ Sydney Water	
	➤ Bore Owners & users	
	➤ Irrigation suppliers	
	➤ Sewerage worker	
	➤ Department of Primary Industries	
	➤ Farmers/Growers	
Community professionals (not specifically)	○ (multiple subcategories)	Farmer
	➤ Fire fighters	Turf Farmer
	➤ Lawyers	RFS Brigade
	➤ Pubs and clubs	Solicitor

water-engaged)	<ul style="list-style-type: none"> ➤ Hotels motels ➤ GP / Medical ➤ Local Businesses ➤ Recreational owners ➤ Child-care workers ➤ Trades people <ul style="list-style-type: none"> ○ Multiple categories ➤ Media ➤ Others 	<ul style="list-style-type: none"> Businessman Owner Fast food business Trainee child-care worker Garden service person Electrician Journalist (Chinese) Post woman Politician's assistant Capital works Officer
Government	<ul style="list-style-type: none"> ➤ State Politician ➤ Local government officers ➤ Local government councilors 	
Non-Government organizations	<ul style="list-style-type: none"> ➤ Landcare <ul style="list-style-type: none"> ○ Bush regeneration ○ Rivercare ○ Watercare 	
Sports people	<ul style="list-style-type: none"> ➤ Swimmers ➤ Fishermen ➤ Sports players ➤ Recreational users ➤ Grounds keepers 	<ul style="list-style-type: none"> Australian Football League player
Residents	<ul style="list-style-type: none"> ➤ Home owners ➤ Renters Each sub categorize x <ul style="list-style-type: none"> ○ Couples/families ○ Single parents ○ Single alone (young) ○ Single alone (elderly) ○ Working mother ○ 'Housewife' 	<ul style="list-style-type: none"> Single mother Married father Married Mother Mother Hobby Gardener Gardener
Education	<ul style="list-style-type: none"> ➤ Gardeners ➤ Students (university) ➤ Students (school) <ul style="list-style-type: none"> ○ Primary ○ Secondary ➤ School teachers <ul style="list-style-type: none"> ○ Primary ○ Secondary ➤ Water engaged academics <ul style="list-style-type: none"> ○ University ○ TAFE 	<ul style="list-style-type: none"> Student - Arts (2)² Student – science (2) Student - international Primary Teacher TAFE teacher

Data analysis: t-test

In analysing the interview data the group initially took a small test-sample of seven of the 30 pilot interviews. Initial data from these interviews was 'thin'; reflecting the method of note-making after, rather than during the conversations, together with the relative lack of experience of some of the interviewers. To improve the quality of these data, each interviewer was further 'interviewed' by two colleagues who encouraged further identification of the key ideas explored and, particularly, the language used by the interviewed stakeholder. Notes on this secondary conversation, together with the primary notes made by the initial interviewer were then 'coded' by each of three people. This involved highlighting key words, phrases and ideas (in the language

² Multiple student interviews were the result of students interviewing their peers as 'test' interviews – part of the learning process developing skills in this style of interview

used by the interviewee). These coded words were then mapped on a whiteboard into ways people had of seeing/describing (1) the essence of the 'problem' as the interviewee saw it; (2) what they thought was being achieved; (3) what they considered might need to be done about the issue; and (4) obstacles to change. The mapping was then further coded by the group for significant language.

Group discussion of this coding and the context of the identified words in the interviews demonstrate that a major problem with community engagement on water issues was one of communication. The language used was '*too technical/academic*', the issue '*too hard*', there was '*too much information*', people were '*not seeing it*', '*a lot was being said*' but '*little done*'. What stood out for the group was how the words used suggested that the problem was as much with the way that the message about the water issues was being communicated as the scale of the problem; and that part of the problem was the way the public message was couched in the cognitive/verbal, effectively 'auditory' (hearing) mode; rather than the 'visual' (seeing) and 'kinesthetic' (doing) modes.

On the other hand, in discussing the solutions (and obstacles to these) the words used were about '*being shown*', '*seeing*' and '*getting people to see*' the message '*in pictures and diagrams*'; and '*doing things*' (with examples) even down to '*changing old patterns*' and reframing the problem in terms of '*people who do*' and '*those who don't*'. The language here was predominantly about seeing and doing, almost exclusively without reference to the previous verbal/cognitive mode of sharing 'information'.

The implications of this are that, whatever community education programs might be developed in the area, there is a need to focus on all three modes of receiving information and learning (the visual and kinesthetic and the verbal) and perhaps there should be more focus on providing this information visually (through diagrams and pictures), and through practical examples (that can be seen) and practical activities (that can be done). A parallel implication is that the student learning process also needs to involve the same multiple teaching modes of the visual, kinesthetic and verbal that the community stakeholders, at least subliminally, seek. The coding of the language of 'seeing' and 'doing' by the group is a reflection of the significance attached to these terms by the student and staff researchers, as much and perhaps even more so than the community interviewees.

Like most ideas that, in retrospect, can be seen as obvious, this result was not anticipated. The full action conversations process (see Webb, 2006) involves the group in developing and discussing the participants' own ideas (against the action conversations five-question framework outlined previously), and then discussing what they expect to find when having conversations in the field. This 'concern stage' of the process is designed to identify and so guard against bias in the interviewing process. It also helps the group identify new features or 'emergent themes' (Glaser, 1992) that stand-out in the data because they were not obvious in the preparation/planning stage. The emergent feature of the significance of verbal/visual/kinesthetic language as a medium for the message about water futures was not identified at the earlier stage of the process. It emerged from the data. As such it highlights a significant weakness in the conception, planning and management of community education activities and much of the education material produced as part of the water debate to date, and the approach of the more traditional teaching approach of most universities, colleges and schools. How many people have an image/picture or could diagram a desalination plant, or can picture how effluent treatment for recycling of drinking water actually works? In fact, as the group discussion highlighted, much of the 'education' provided by government and media has been in the form of 'talking heads', rather than visual imagery, and such approaches tend to be mirrored in the classroom. If, as we postulated, above a critical challenge is the development of skills for translation of scientific technical ideas into active community engagement with an ownership of these how can we do this without demonstrating (so that students can see) and practicing (so that students can do) those activities that get such engagement?

Lessons from analysis of the full action conversations dataset

Further analysis of the remaining data involved systematic coding for key words and phrases by each of the participating researchers (staff and students) of the notes on each of the 30 interviews in the sample obtained during the semester. From this a list of the key words that ‘stood out’ in the notes was loosely mapped across three categories: technical (words indicating awareness of problems with water use/sustainability), processes (words indicating vehicles for change, for example, education, media, school, government), and cultural (words indicating positive or negative attitudes to vehicles for change). The choice of these initial categories was the result of group discussion and trial mapping to find ways of grouping the coded phrases into general ‘themes’. The interview notes were then scored for frequency of occurrence of these key words and the group discussed the members’ perception of the significance of these frequencies. This involved relating the words to their context in the action conversations, how they might best be grouped and how the grouped frequencies might be interpreted. This dataset, process of analysis, and the conclusions drawn from the frequency analysis have been described in detail in Webb et al., in press; 2007). Table 2 shows the group’s overall interpretation of the data (left hand column). Alongside this we offer our more speculative analysis of parallel implications for the teaching and learning process.

Table 2 General conclusions on community perceptions of water sustainability, and some parallel lessons for student teaching and learning developed during a teaching and learning collaboration between academics and tertiary students.

Community perception	Lessons for student learning
There is general awareness of crisis and need for action	Students share community awareness of sustainability crises – and the desire to be able to tackle these can be a powerful motivator for learning
There is awareness/recognition of the major technical solutions being considered – but also recognition of need for practical household–level solutions	Students have awareness/recognition of and knowledge on the technical issues (may also recognize the ‘social problem’ of community engagement) but see the need for practical application of solutions to these problems as a key part of the teaching/learning process.
Public education is seen as needed (but the role of media is limited)	While information is useful the medium by which the learning process takes place is as important – and traditional formats may not suffice
Government is seen as important in promoting change but not (merely) by regulation or ‘market forces’.	The ‘governed’ processes of higher education, particularly what is taught and the processes of assessment and examination many have a necessary, but arguably not sufficient role in assisting the acquisition of appropriate knowledge about sustainability issues and change processes.
People need to be involved at household level.	Students need to be involved in promoting change through ‘hands-on’ experience of working with issues at a practical level.
People are concerned about costs and time but these are not the major obstacle, rather the obstacles are people’s attitudes and sense of not being personally affected (apathy)	Students face time/cost pressures in their studies, so the opportunity to engage in these practical learning experiences can be assisted where they are integrated into course structures – but the absence of this is not the main barrier

	<p>to student engagement. Changing academic structures is not the immediate solution – rather this should follow initiatives that engage students in tackling the root problem of a culture of apathy by making personal connections with sustainability issues as an integral part of the teaching and learning process.</p>
<p>The problem is not lack of knowledge – rather a sense of being overwhelmed by it.</p>	<p>Teaching and learning in this area needs to develop a sense of empowerment – a well founded sense that students can make a difference – and know how they made it.</p>
<p>Talk is seen as problematic as a way of promoting education on these issues; instead of (or at least alongside) such talk there is a need for practical examples of things that work and activities that engage people in these with a role for more visual forms of presentation of ideas</p>	<p>‘Talking heads’ such as the traditional lecture without opportunities for seeing the ideas in action through community interaction, and practical application that demonstrates student ability to tackle issues, will not stimulate learning to the same degree</p>

Further options for group analysis

The next stage of the analysis could involve the further exploration of the data. We have discussed developing a more quantitative survey (perhaps based on five point scales) using some of the dialectics identified in the action conversations’ data such as: people affected/not affected by water issues; my problem/someone-else’s problem; problem of water use/problem of water supply; people who care/people who don’t care; too much information/not enough information; farmers should have priority/city should have priority; schools should teach water conservation/parents should teach conversation. As well as providing measures of community attitudes, the results could be used to provide a stimulus for community-based individual and group stakeholder discussions. In addition, as with the speculative analysis above, many of these could be explored for parallel lessons in terms of the way we structure teaching and learning experiences for students.

The next stage of the project will involve the initial collaborative group and other staff and students who have expressed interest as a result of the initial reports. It will extend the action conversations approach to explore the scope for practical action with and by groups of community stakeholders in the local area. Some training of the new participants in the group will be undertaken by students involved in the initial phase. Given the evidence from this project on the need for visually and practically-based education, part of the next phase will explore scope for using PhotoVoice (Wang, 2003; Wang & Burris, 1997; Webb, 2004b) to engage the broader community in better ‘seeing’ and ‘hearing’ about both the nature of the problem, and practical ideas for action that community stakeholders might develop on alternatives to using potable water for irrigation. The aim will be to develop university - community collaborative projects that involve all the stakeholders: students, academics and community members, in the process of action-research and engaged learning.

Evaluating the outcome in terms of the student learning experience

As noted above, the same action conversations tools were used by the students in the group to explore their experience of the teaching and learning process. The five students constructed their own framework questions and conducted their own interviews (two separate interviews for each student participant) recording the key data in note form. These 10 sets of interview notes were then de-identified and coded by both the students and academics involved in the project. Analysis was undertaken using the same approach of identifying emergent themes described above. The results

can best be summarized with themes illustrated by the language in which they were expressed as follows:

In terms of *learning* the emergent themes were those of *new and different* ways of finding/gaining information/data/concepts and processes *based on experience*:

- ‘I experienced different ways of gaining information’, and
 - ‘I gained a new concept – which anyone in positions where leadership is required can use’.
- Also *new and better ways of communicating/talking* with people:

- ‘I developed new communication skills’,
- ‘How to talk better’, and
- ‘More confidence in talking and sharing’, and
- ‘I gained experience in the social side of interviews – rather than taking the literal side you take their true understanding’.

In terms of the *perceived benefits* there were few material or academic rewards associated with this but not to be underestimated, the students noted the free *food* (staff shared the cost of local pizza delivery at the commencement of each meeting). While of value to students on limited budgets, we tend to forget how eating together helps develop group processes (e.g., Cossa, 2006; Levine & Morehand, 2006; van der Post & Hogeweg, 2004). Also noted was the benefit of having an ‘office (provided as a base for people working on the project) which was seen as a place to go to learn away from others [students]’.

Other significant benefits included *excitement* and the *opportunity to reflect* on this as part of the process:

- ‘There is excitement and there is excitement in that we analyze our excitement in the project – lots of people get excited about a process but don’t analyze it’.

A key feature was what might be classed as *social learning*. Students reported for example:

- ‘Getting out there, being (having to be) social, it stuck me out there meeting/interviewing people I otherwise never would have thought of’,
- ‘A chance to socialize, exchange ideas and find common indicators in the interviews’,
- ‘Showed me new perspectives from other people’s views’,
- ‘I’m analyzing more now in conversations, getting different ideas - more than {the issue} – (getting) public views of problems and (their) remedies to these’,
- ‘It raised my own awareness [of the issue]’, and
- ‘I’m now more willing to volunteer [for] extra curricular processes and put myself out there’.

Closely related to this they also saw *personal benefits* in terms of their *development and ‘growth’* seen in comments such as:

- ‘More confidence in talking and sharing’,
- ‘More conscious of seeing how I act around people’, and
- ‘Pushed me outside my comfort zone’.

Among the *defects in the process* students identified that the process had *less structure*:

- ‘We can easily be sidetracked’.

And some had difficulties in adapting:

- ‘I’m still trying to adapt to this new method of teaching - it can be a dramatic change’,
- ‘I still prefer the old method of teaching where we are supplied with information to go back over - whereas (this way) provides us with information we cannot always refer back to’,
- ‘These were chaotic processes (that) brought answers - defined answers – but these were against what I was used to - (more) structured’.

Among the stand-out features of *the teaching* students noted the *different structure and/or methods* and consistently noted the different *relationship* with the staff as a whole and the project facilitator. This was characterized by the notion of *equality*:

- ‘We were equal [there was] equality [staff/lecturers & students] a chance to collaborate with lecturers’,
 - ‘It was more a group of people working to a common goal’,
 - ‘Everyone was heard – there was no hierarchy, all equality’,
 - ‘The question: What was good? - To be on *equal terms* - full equal terms with academics - enjoy seeing them in real life conversations’,
 - ‘The teacher was part of the group’,
 - ‘It was nice to see lecturers in their field - with our input’,
 - ‘A relaxed atmosphere with a round-table effect where no one was head of it’.
- The students noted they enjoyed *intimacy*, *comradely*, and *working in small groups*:
- ‘Large classes don’t work, smaller groups working on their own place an interest in contributing to the process which is needed’,
 - ‘I looked forward to the relaxed atmosphere of it’,
 - ‘In small groups - more people are willing to express opinions and therefore have opinions’, and
 - ‘In a small intimate group - intimacy forces response’.

The ‘Socratic’ approach of the action conversations process and the use of this same approach in learning and developing processes for engagement were seen as developing a sense of *ownership* of the process and the outcomes. This can be seen in comments such as:

- ‘We are usually spoon-fed answers - this way we are told the method but had to figure out the answers’,
 - ‘Students...think things out for themselves - more engaged’,
 - ‘It made me feel more valid, in control’,
 - ‘We learn from ourselves - own ideas - own pace’,
 - ‘Our own assessment of what we are doing wrong rather than lecturer’s point of view or input on what is wrong’ and
 - ‘Choice of meeting framework’.
- The project was seen as *having value/use in the future* as:
- ‘A new way of communicating, having conversations’,
 - ‘We can use this – there is a willingness to use it professionally’,
 - ‘A new way of leadership - use it where people are seen as equal’,
 - ‘Continuing with this - it is ‘more a want to, than a have to’,
 - ‘This could gain recognition. If we teach more people, word of this will be spread’,
 - ‘We can improve on this’,
- ‘It is versatile can be used on [other issues]’.

Discussion

The student evaluation of the project lends validity to the idea that there are particular benefits from an experiential approach to teaching and learning. The data suggests that congruence between the internal group teaching/learning process and the open-ended exploratory Socratic process used for exploring community engagement provided a particularly valuable learning experience for students. The ‘leveling’ of status between academics and students in the collaborative exploration also fostered an appreciation of the value of equality which carries over into the conversational interview skills being developed for use in the community. In short, this kind of small-group collaborative ‘experiential’ and ‘service’ learning fosters awareness of the very values that can contribute to the success of action researchers seeking community engagement in issues of social/environmental concern.

The student – staff collaboration suggests that the critical features of internal academic partnerships involving students in service learning are similar to those required of partnerships between the universities and the community. As such the data supports work in this field by Jacoby (2003) and associates, particularly the work of Fisher and Wilson (2003) drawing on work of Torres (2000) and Engstrom (2003). The questions raised by these authors about in-service

learning projects and their internal staff - student partnerships are mirrored to some extent by the collaboration reported here. They include:

- Can in-service learning be grounded in democratic partnerships around shared vision and goals?
- Are there mutual and tangible benefits in terms of unique self interests in addition to the shared interests - which may include, inter-alia, career development opportunities, personal growth, reciprocal learning and skill development, sharing of funds and facilities?
- Do the activities challenge participants' mental maps and develop cross-divisional/interdisciplinary perspectives around shared learning goals?
- Are relationships built on trust, mutual respect, equal voice, shared responsibilities, risks and rewards that forge heightened appreciation of one another's work where there is a belief that each person's contribution can make a significant difference?
- Do people invest time, energy and value/solicit and learn from diverse expertise perspectives?
- Do they create a safe environment to take risks, make mistakes, and share vulnerabilities?
- Do they involve/create forums to support frequent and open communication, clear lines of communication and shared/inclusive decision-making structures?
- Do they embrace multi-dimensional collaborative relationships that can address complex problems both in terms of the external program and the internal development of the project; including, critically, the ability to live with ambiguity and to recognize conflict as a source of learning when dealt with honestly?
- Do they recognize the importance of clear organization and dynamic leadership – developing/devolving partnership within the group? Here Fisher and Wilson (2003) suggest that with an appropriate degree of structure, guidance and clarity of purpose, students in particular, can make powerful contributions and be strong leaders.
- Can these partnerships be sustained over time? To some extent this requires that they be integrated into the institutional mission and that the work of the partnership be spread throughout the institution. So, can we develop a seamless curriculum that supports pedagogies to integrate social, intellectual and affective domains of learning where in, and out of class distinctions are seen as artificial and permeable? Alternatively, do they identify and challenge organizational structures and systems that hinder efforts to develop seamless learning experiences?
- Are these programs evaluated by the students as well as by staff and to what extent does the student evaluation guide future development?

Conclusions

The experiential/service/action-research approach to teaching and learning described here suggests a framework for exploring a broader base of community perceptions about water issues and training future 'managers' in skills for developing community engagement on a range of 'sustainability' issues. The action-conversations framework has potential for building support for practical action. Even with relatively 'thin data' gathered by inexperienced interviewers, the approach can yield useful and significant results. As such the process could be used by engaged community stakeholders giving them a sense of ownership of the outcomes. It might also be taught to engaged stakeholder groups by people with limited but practical experience of the process, including students such as those involved in this project.

In terms of identifying the social climate or culture on water issues, even this one semester long collaboration has uncovered relevant issues relating to community awareness of the problem of water shortage and engagement of the community in developing more sustainable water use activities. Many of the current ideas involving large-scale technological solutions, such as desalination and water recycling, are seen as 'too complicated', falling into the 'too hard' basket. Although there is awareness of the need for small-scale household solutions these are seen as remote and not important for many. A significant part of the problem is community apathy. The project suggests that public/community education may be more effective if based on practical activities and visual communication methods. It suggests a way forward using community-cultural development tools such as PhotoVoice as part of the next stage of the staff – student - community collaboration.

Critically the methods developed in this semester long collaborative project suggest an approach that can be shared with and used to engage inexperienced but interested community stakeholders as full participants in the process of action-researching and building a base of support for practical action within the community. As noted above, this form of engagement of community stakeholders as ‘co-researchers’ will be a part of future collaboration on the extension of the project.

The project also suggests value in teaching and learning based on the same principles and methods as we use for effective community development. This approach, using an action research project as a basis for learning about how we might negotiate the scientific/social interface on critical sustainability issues, pushes the boundary of what is accepted in ‘natural science’ degree courses. However, we think that in its small way this single semester staff – student water futures collaboration project indicates that the challenge of incorporating experiential, service learning for ‘engaged’ science learning is not only attractive to staff and students but amenable to research and evaluation, and an appropriate, if different kind of rigor. Coming from an empirical base it supports aspects of the speculative analysis we offered above for parallels between lessons from community engagement on issues of concern and the processes for teaching of, and learning by students (and staff) engaged in such service-based action-research projects. It also illustrates, in the language of student participants, positive answers to some of the questions raised elsewhere in the literature (e.g. Jacoby 2003; Dewar & Walker, 1999; Kirschner, Sweller & Clark, 2006) on this approach to teaching and learning.

References

- Bawden, R. J. (2007). A paradigm for persistence: a vital challenge for the agricultural academy. *International Journal of Agricultural Sustainability*, 5, 17-24.
- Bridger, J. C., & Alter, T. R. (2006). The engaged university, community development, and public scholarship. *Journal of Higher Education Outreach and Engagement*, 11, 163-178.
- Burgin, S. (2002). Tragic consequences for conservation of mis-defining the term community. In D. Lunney & S. Burgin (Eds.), *A clash of paradigms: community and research-based conservation* (pp. 1-7). Mosman: Royal Zoological Society of New South Wales.
- Burgin, S., Webb, T., Maheshwari, B., Huda, S., Packham, R., Parvez, Q., & Wallace, G. (2007). A systems approach for water use and management in peri-urban landscapes: connecting science and cultural dimensions for sustainability. In *In the pipeline’ symposium*, Centre for Cultural Research, University of Western Sydney, South Penrith (July, 2007).
- Cairns, G. (2007). *Submission on the current discipline groupings and relativities within the cluster funding mechanism* La Trobe University, Melbourne. [Online] <http://www.dest.gov.au/NR/rdonlyres/4FA87BF6-042E-4083-9943-CEF166E4FE27/15876/010CairnsMathematicsSectionLaTrobeUniversity.pdf> (24 June, 2008).
- Cossa, M. (2006). *Rebels with a cause: working with adolescents using action techniques*. Philadelphia: Jessica Kingsley Publishers.
- Dewar, B. J., & Walker, E. (1999). Experiential learning: issues for supervision. *Journal of Advanced Nursing*, 30, 1459-1467.
- Engstrom, C. M. (2003). Developing collaborative student affairs–academic affairs partnerships for service-learning. In B. Jacoby (Ed.), *Building partnerships for service learning* (pp. 65-84). San Francisco: John Wiley & Sons.
- Fisher, I., & Wilson, S. H. (2003). Partnerships with students. In B. Jacoby (Ed.), *Building partnerships for service learning* (pp. 85-105). John Wiley & Sons: San Francisco.
- Friere, P. (1970). *Pedagogy of the oppressed*. (M Ramos trans) New York: Herder and Herder.

- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: strategies for qualitative research*. New York: Aldine de Gruyter.
- Glaser, B. G. (1992). *Basics of grounded theory analysis: emergence vs forcing, basics of grounded theory analysis*. Sociology Press: Mill Valley: California.
- Hauser, R., & Hauser, H. (1975). *Coming of social age*. Centre for Human Rights and Responsibilities, London.
- Jacoby, B. (Ed.) (1996). *Service learning in higher education: concepts and practices* Jossey Bass: San Francisco.
- Jacoby, B. (Ed.) (2003). *Building partnerships for service learning*. John Wiley & Sons: San Francisco.
- Kemmis, S., & McTaggart, R. (eds.) (1988a). *The action research reader*. Melbourne: Waurm Ponds, Deakin University Press.
- Kemmis, S., & McTaggart, R. (1988b). *The action research planner*. Melbourne: Waurm Ponds, Deakin University Press.
- Kirschner, P. A., Sweller, J., & Clark, R. E. (2006). Why minimal guidance during instruction does not work: an analysis of the failure of constructivist, discovery, problem-based, experiential, and inquiry-based teaching. *Educational Psychologist*, 14, 75-86.
- Levine, J. M., & Morehand, P. L. (2006). *Small groups: key readings*. New York: Psychology Press.
- Lunney, D., Dickman, C., & Burgin, S. (2002). A bizarre and threatening process: bypassing ecological research when tackling environmental issues. In D. Lunney, C. Dickman & S. Burgin (Eds.), *A clash of paradigms: community and research-based conservation* (pp. 97-101). Mosman: Transactions of the Royal Zoological Society of New South Wales.
- Maheshwari, B. (2004). Urban irrigation: understanding issues and research needs, in *Proceedings of the national workshop on role of irrigation in urban water conservation – opportunities and challenges* (pp. 15-18). Toowoomba: Cooperative Research Centre for Irrigation Futures.
- Maheshwari, B.L., & Simmons, B. (2003). Issues, challenges and opportunities for water reuse and management in Sydney, Australia. In R. Devi & N. Ashan (Eds.), *Water and wastewater: perspectives of developing countries* (pp. 73-80). London: Water and Environmental Management Series, IWA Publishing, International Water Association.
- Marks, R. (2002). Corporate governance or where does ownership lie? *Australian Journal of Management*, 27, 1-6.
- McTaggart, R. (1997). *Participatory action research: international contexts and consequences*. Albany: State University of New York Press.
- Peavey, F. (1994). *By life's grace: musings on the essence of social change*. Philadelphia: New Society Publishers.
- Peavey, F., & Hutchinson, V. (1993). *Strategic questioning for personal and social change*. San Francisco: Fran Peavey.
- Pollard, C., & Chan, E. S. K. (2006). A review of information systems programs in universities in Victoria *Australasian Journal of Information Systems*, 14: 231-247.
- QUT (Queensland University of Technology) (2007). *Engagement projects*
<http://www.qut.edu.au/commun/combusgov/projects.jsp>. (24 June 2008)
- Stapp, W. B., Wals, A. E. J., & Stankorb, S. L. 1996. *Environmental education for empowerment: action research and community problem solving*. Dubuque, Iowa: Kendall/Hunt Publishing Company.

- Syme, G. J., & Nancarrow, B. E. (2002). Evaluation of public involvement programs: measuring justice and process criteria *Water*, 29, 18-24.
- Thompson, P.B. (2007). Agricultural sustainability: what it is and what it is not *International Journal of Agricultural Sustainability*, 5, 5-16.
- Torres, J. (ed.) (2000). *Benchmarks for campus/community partnerships*. Compact: Providence R.I. Campus.
- Van der Post, D. J., & Hogeweg, P. (2004). Learning what to eat: studying inter-relations between learning, grouping, and environmental conditions in an artificial world. In P. M. A. Sloot, B. Chopard & A. G. Hoekstra (Eds.), *Cellular automata: 6th international conference on cellular automata for research and industry*. Amsterdam: Springer.
- Wang, C. C. (2003). Using photovoice as a participatory assessment and issue selection tool: a case study with the homeless, Ann Arbor. In M. Minkler & N. Wallerstein (Ed.), *Community based participatory research for health* (pp. 179-196). San Francisco: Jossey Bass.
- Wang, C. C., & Burris, M. A. (1997). Photovoice: concept, methodology, and use for participatory needs assessment *Health Education and Behavior*, 24, 369-387.
- Webb, T., (2004a). *A popular educator's toolbox for social change*. Sydney: Centre for Popular Education, University of Technology Sydney [Online].
<http://www.cpe.uts.edu.au/publications/toolbox.html> (24 June 2008).
- Webb, T. (2004b). Photovoice - as a tool for making visible and heard the voices of people who are invisible in the community. In *A popular educator's toolbox for social change*. Sydney: Centre for Popular Education, University of Technology [Online].
<http://www.cpe.uts.edu.au/publications/toolbox.html> (24 June 2008).
- Webb, T. (2006). Action conversations: asking strategic questions in conversational style as a 'tool' for developing community and social action projects, and the evaluation of these projects. In *A popular educator's toolbox for social change*. Sydney: Centre for Popular Education, University of Technology [Online].
<http://www.cpe.uts.edu.au/publications/toolbox.html> (24 June 2008).
- Webb, T., Burgin, S., & Maheshwari, B. (in press). Talking past each other – professional and community stakeholder languages of water in the context of developing sustainable water futures. *Systemic Practice and Action Research*.
- Webb, T., Burgin, S., Maheshwari, B., Huda, S., Wallace, G., Parvez, Q., Packham, R. Lowe, S., Hens, J., Calthorpe, T., Bryson, G., & White, J. (2007). *Towards sustainable water futures in Western Sydney: a report on a pilot action-research initiative by a collaborative group of undergraduate students and staff from the School of Natural Sciences*. University of Western Sydney. Internal report, Penrith South: University of Western Sydney.

Acknowledgements

We wish to acknowledge the input of students Sam Lowe, Jen Hens, Tom Calthorpe, Graham Bryson, and Joshua White, and colleagues Samsul Huda, Gary Wallace, Basant Maheshwari and Qaiyum Parvez.

© Copyright Tony Webb and Shelley Burgin [2009].

Please cite as: Webb, T. & Burgin, S. (2009). Engaged service learning – implications for higher education. *Journal of Learning Design*, 3(1), 41-56. <http://www.jld.qut.edu.au>