

The *Landcare for Teachers Program*: Learning and Teaching for the Environment

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Introduction

The development of an innovative environmental education program for teachers was the direct outcome of a doctoral study of land degradation in Australia (Stadler 1989). The *Landcare for Teachers Program* arose from my research into the issue of land degradation within an historical and policy context and found a need for knowledge and understanding among the wider population. The thesis argued for the role of education as a positive long-term strategy to change the attitudes and behaviour of the Australian community towards the environment.

Landcare for Teachers was developed at the University of Tasmania by the author in 1990 with National Landcare Program (NLP) funding. It has operated there successfully since and has been extended to other states from 1993. Teachers are a key target group due to their ability to transfer their knowledge and skills to the next generation of land managers and decision makers and to their multiplier effect. Yet while their work has become more demanding and complex, morale among teachers is low and the profession has poor community support (Schools Council 1990, p. 3). The educational program described in this paper was designed to provide teachers with little or no background in science with a basic understanding of the need to care for the environment and the skills and confidence to pass that understanding on to their own students.

Background: Setting Landcare into context

That land degradation is Australia's major environmental problem was recognised by the Commonwealth Government's establishment of the National Soil Conservation Program in 1983. It was re-affirmed in 1989, with its declaration of the 1990s as the Decade of Landcare of which the major aim is to achieve sustainable land use in Australia by the year 2000 (Commonwealth Government 1991). At the first National Landcare Conference, Australia's Ambassador for the Environment described landcare as 'one of the world's most comprehensive, practical and advanced long-term programs of action to implement sustainable resource use practices on a community-wide basis' (Wensley 1994). Yet, until recently there was little awareness or understanding of the problem by the wider Australian community.

Although land degradation in Australia has been perceived as a problem since European settlement, it only became a 'vote-catching' issue during the 1980s (Stadler 1989, pp. 195-197). Growing environmental awareness and the advent of an 'issue community' brought about by the collaboration of the Australian Conservation Foundation and the National Farmers Federation put the issue firmly onto the political agenda in the late 1980s (Farley and Toyne 1989). The pressure exerted jointly on the Commonwealth Government by these two previously polarised interest groups proved far more effective than any of the previous efforts to influence the government each organisation had made individually.

Earlier attempts to deal with land degradation in Australia had largely been unsuccessful. Although agricultural scientists, farmers and those working in soil conservation agencies were aware of the problems, the lack of information disseminated to the wider community resulted in low levels of understanding and commitment to solving them. In the past, more emphasis was given to technical and scientific aspects but it is now widely accepted that social factors must also be taken into consideration. The National Landcare Program acknowledges the pivotal role of education and the importance of inter-generational issues of sustainable land use while emphasising the role of individuals and their communities. The aims include the need to change attitudes, knowledge and behaviour, raise community awareness and understanding of the need for sustainable land use and integrate landcare principles into education curricula at all levels (Australian Soil Conservation Council, n.d.). Landcare is about 'the direct involvement of local people in seeking better ways of managing the natural resources on which they depend and in which they live' (Campbell 1994, p. 98). Education provides a valuable and long-term strategy to involve more of the community in making better decisions about how to manage their natural resources.

Landcare education

My research alerted me to the need for an education response to the problem of land degradation and an article in the United States Soil Conservation Journal (Meyers *et al.* 1987) provided a timely example of a program aimed at teachers. A proposal to the then National Soil Conservation Program (later renamed National Landcare Program) to support the development of a landcare education initiative aimed at teachers K-12 was successful. The *Landcare for Teachers Program* began at the University of Tasmania in 1990 with a view to it being a pilot program for other states.

Recent major reports have argued the value of education, particularly the need to educate and empower teachers. These include the Brundtland report of the World Commission on Environment and Development (Our Common Future) which stated that 'the world's

teachers have ... a crucial role to play' in helping to bring about 'the extensive social changes' needed for sustainable development (WCED 1987, p. xiv). Chapter 36 in *Agenda 21*, which deals with environmental education and sustainability, asserts that education is 'critical for achieving environmental awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decisionmaking' (UNCED 1992, Chapter 36, p. 1).

In the introduction to *Teaching for a Sustainable World*, Fien emphasises the important role that education plays in 'motivating and empowering people to participate in environmental improvement and protection' (1993a, p. 6). But we must keep in mind the caution that it is not enough just to change attitudes or increase awareness (Schreuder 1994, p. 36). While education is pivotal to societal change, by itself is not enough; other measures including economic and legislative initiatives are also necessary to bring about the required changes (Stadler 1989).

Landcare education has been defined as:

... the process that will enable teachers and students to move from accumulating knowledge, to developing an understanding of and respect for the land; to accepting responsibility for an active involvement in land management practice and strategies (Dröge, in Hobson and Stadler 1992).

This definition highlights several important points: the first being the link between awareness, attitudes and action. Teaching *for* as well as *in* and *about* the environment is, or should be, a key feature of landcare education. Unlike many mainstream school subjects, a landcare approach encourages and includes an action component. The second important point is that teachers are just as involved in the active learning process as are their students. Landcare is not a single discipline but a framework for a number of related but usually separate curriculum areas. For primary teachers, the integration of a landcare perspective across the curriculum is relatively easy; for secondary teachers the process is more difficult with the stricter demarcation between subjects and time constraints. However, useful guides to assist secondary schools develop a coherent environmental/landcare education program are available (see Gough 1992).

A more comprehensive definition of landcare education would include 'the wider community' in addition to 'teachers and students' as it is important that an understanding of landcare reaches all sectors of the community and that landcare education becomes part of the non-formal as well as the formal education system. If the aims of the Decade of Landcare are to be realised, the whole community needs an understanding

of why landcare is necessary. It is not enough to see landcare as 'just a rural issue' as it concerns all Australians, urban as well as rural. For this reason, the major barrier to achieving sustainable land use is social, rather than technical.

The definition above also foreshadows the need for an ethic of responsibility for the land, otherwise known as a 'land' or 'landcare' ethic. Writers such as Aldo Leopold in the 1940s have written of the need to develop 'a land ethic' which 'simply enlarges the boundaries of the community to include soils, waters, plants, and animals, or collectively, the land' (1981, p. 204). In the Australian context, Brian Roberts has consistently called for a land ethic to be developed as 'a necessary addition to Australian values' pointing out that 'the most important contribution which ecological education can make is the development of what we may term the *ethic of responsibility*' (Roberts 1984 p. 14, see also Roberts 1989, 1991 *inter alia*). Campbell (1994, p. 99) sees a land ethic as a 'foundation stone' of sustainable land management. According to Campbell, the concept of being able to 'read the land' or 'land literacy' provides the link between the ethic and the action.

Teachers who have participated in the education program state that a landcare approach is an effective means of introducing students to controversial environmental topics which they may otherwise find difficult to broach. It can always be pointed out that the goal of 'sustainable land use' is shared by both the National Farmers Federation and the Australian Conservation Foundation (Farley and Toyne 1989).

Gough (1992, p. 18) conceptualises eight 'model principles' for environmental education as: thinking globally, acting locally, making personal connections, developing values and citizenship, developing a sense of both place and time and using exemplary practice. Fien (1993) states that education *for* the environment:

- Builds on education *in* and *about* the environment
- Develops an informed concern and sense of responsibility for the environment
- Develops an environmental ethic
- Develops the motivation and skills to participate in environmental improvement
- Promotes a willingness and ability to adopt lifestyles compatible with the wise use of environmental resources (Fien 1993 b, p. 13).

The *Landcare for Teachers Program* was developed on principles of environmental education very similar to those enunciated above.

The Landcare for Teachers Program

Aim and objectives

The main aim of the program is to provide primary and secondary school teachers with a broad understanding of the importance of soil, water and

other natural resources and the need for sustainable resource use. Objectives include presenting landcare in an accessible, interesting and relevant way for teachers, while making it as easy as possible for them to take their newly acquired understanding and knowledge back to their own students. It was always intended to be practical and applied so that teachers would feel that the ideas and activities were relevant to their teaching situation. Emphasis is placed on providing ready access to available resources, such as books, videos and other materials as well as introducing the participants to the resource people in the local community who are able to help them develop their own school landcare programs.

Program outline

The program provides teachers (pre-service and in-service) with theory and applied skills in a series of seminars, practical activities and field trips to places of landcare interest such as farms, urban bushland areas and community landcare groups. General areas covered include soils, geology and landforms, vegetation, biodiversity, the water cycle, catchment management, schoolground planning, composting principles and techniques, recycling and waste management programs for schools and landcare in urban and coastal situations. The aim of the program is to link all these separate elements into a holistic and easily understood framework. The concept of 'land literacy' a term coined by Terry White in 1992, is integral to the *Landcare for Teachers Program*. It can be explained as learning to 'read the land' thus learning to understand the complexity of ecological interactions. The program aims to provide teachers with a clear understanding of what landcare is and how to relate it to their own teaching situations, by making it accessible to teachers at all levels and with varying degrees of knowledge of science or agriculture.

Course content

The program acknowledges the problems of land degradation in Australia, but instead of dwelling on the negative aspects, it has a positive message to transmit: individuals can and do make a difference. The content consists of a series of lectures, practical activities and excursions which cover a number of core topics such as soils, water management, vegetation, developing schoolground plans, catchment issues, recycling, waste minimisation, composting, earthworms, bio-diversity and introducing landcare into the K-12 curriculum. As the Decade of Landcare unfolds, there are increasing numbers of educational programs such as Wormwatch, Saltwatch, Pasturewatch and Junior Landcare to draw upon as models for teachers to integrate into their own programs (Hobson and Stadler 1992).

Topics

Topics fall into two categories: background and applied. Many of the teachers doing a landcare course will have had little or no scientific or agricultural training. Consequently, they need to have some basic information on topics such as soil formation, the water cycle, the concept of a catchment and the role of vegetation. The second category of topics is based on the assumption that teachers have some understanding of the complexity of links between soil, water, vegetation and fauna. Under this heading are included ideas for creating habitats for microfauna and earthworms and planning for more environmentally-friendly schoolgrounds.

Seminar leaders

Seminar leaders are selected not just for their specialist knowledge, but for their ability to translate their knowledge in an enthusiastic way. Most have formal qualifications in their area of expertise and all have had many years of field experience and a great commitment to and enthusiasm for their subject. Many are employed in government agencies (education, agriculture and forestry) while others are from non-government organisations such as Greening Australia and local environment centres. Teachers often comment on the commitment and enthusiasm of the leaders as one of the positive features of the program.

Target audience: Teachers K-12 (in-service) and students (pre-service)

Since the inception of the program in 1990, over 200 people, mainly teachers and student teachers from K-12, have completed a 36 hour course. The distribution between primary and secondary is relatively even, if slightly weighted towards primary. At the secondary level, all areas, including art, TESL, physical education and drama are represented but particularly science and social studies.

Resources

The program draws upon a large stock of existing landcare-related educational resources, such as books, kits and videos. Many of these are currently under-used because teachers are either unaware of their existence or simply lacking in the confidence to use them effectively. One of the original aims of the program was to show teachers what resources were already available, as well as to introduce them to relevant resources from other states. Perhaps the most important resources for the participants are people working in landcare, such as the seminar leaders, who are often able to assist in school-based landcare projects.

Organisation

The *Landcare for Teachers Program* was established initially with

practising teachers in mind. Consequently it was originally designed as a Bachelor of Education in-service 3-point unit in a subject called *Topics in Science* in the Faculty of Education at the University of Tasmania. The program is equivalent to 10% of the Diploma of Education requirements. Since the beginning of 1995, *Landcare for Teachers* has been offered at Masters level as part of the University of Tasmania's Graduate Certificate of Education Studies, constituting one third of the requirements for a Masters degree.

Weekly sessions run over a period of ten weeks in after-school hours, plus two weekend excursions during which every opportunity is taken to provide 'hands-on' experiences. As well as showing teachers examples of land degradation and landcare solutions, these excursions familiarise teachers with suitable sites to take their own students. Alternatively, teachers can attend an intensive five day Landcare Summer School, during which they participate in the same variety of seminars, activities and field trips. The week is followed up late in first term by a session to share ideas and report back on progress made during the term. The majority of teachers enrol in the course for professional development reasons rather than to obtain qualifications. Therefore, the retention rate of over 90% is very high considering the fact that participating teachers give up their holidays, weekends or after-school time to attend.

Funding

The Tasmanian *Landcare for Teachers Program* has been funded since 1990 by the NLP, providing teachers with the opportunity for free professional development. If practising teachers wish to obtain accreditation towards a Bachelor of Education or Graduate Certificate (in-service) or if students wish to count it as part of their Diploma of Education (pre-service), the normal Higher Education Contribution Scheme (HECS) fee applies.

Evaluation

The *Landcare for Teachers* courses are evaluated on an on-going informal basis by means of post-course questionnaires. Participating teachers were also surveyed more formally as part of a Masters thesis at the University of Tasmania in 1994. Results of the survey were very positive. The most common reasons for teachers participating in the *Landcare for Teachers Program* were: wanting to find out more about landcare, concern about the environment and wanting to increase their confidence in teaching landcare issues. Ninety three per cent of the respondents said that their expectations of the course were realised (Chen 1994, pp. 34-35).

Transferability of the Landcare for Teachers Program

The *Landcare for Teachers Program* was the first landcare education program aimed at the professional development of teachers in any Australian university and remained so until 1993. There are certain general principles and common strands which remain the same, but programs offered elsewhere vary according to local landcare issues and solutions. Similarly, organisational details differ according to the individual requirements of other universities.

In July 1993, the Landcare for Educators program was trialled as part of the Masters of Environmental Education program at Griffith University in Queensland (Stadler 1993). It was renamed and modified to provide a wider appeal to students with interests in community education. The course had a substantial input from the Queensland Department of Primary Industries. The pilot program was considered successful and the program continued in 1994 with approximately 50 students (Heck 1994).

A one-week Summer School program was held at the University of Technology Sydney (Kuring-gai) in January 1994 for which teachers were charged \$350 with accreditation to the Bachelor of Education Seminar leaders came from various government departments such as Conservation and Land Management (CaLM), Water Resources and other organisation such as Greening Australia and the Calmsley Hill City Farm. In this case, there was input from local government, the Kuring-gai Council, which provided access to areas such as Lane Cove River National Park and the Kuring-gai Wildflower Garden.

The *Catchments, Corridors and Coasts* program (a National Professional Development Program with funding from the Department of Employment, Education and Training (DEET)) is based on the original *Landcare for Teachers Program* and was offered in Tasmania, Western Australia and South Australia in 1994-95. Plans are underway for similar landcare teacher professional development programs in Victoria. In summary, a program designed to help teachers find a way into landcare education, has now been successfully adapted for use in most Australian states.

Conclusion

The *Landcare for Teachers Program* continues to be successful in its aims of 'teaching the teachers' about the need for landcare in Australia, providing them with opportunities for professional development and accreditation in an area of great relevance. Participating teachers are part of a growing number across the country who are transmitting their knowledge to students at all levels and across the curriculum. The *Landcare for Teachers Program* fulfils the criteria of environmental education as demonstrated earlier. It is also an important means of promoting environmental education in Australia by reaching many

teachers who ordinarily would not consider themselves to be 'environmental educators'.

Education is recognised as a long-term strategy for social change. The Commonwealth Government is to be acknowledged for taking a leadership role in this area as part of its commitment to the Decade of Landcare. However, as funding from the Commonwealth sector for education has dwindled, the responsibility to fund landcare education programs is not being taken up by state governments. The trend to fee-paying courses for practising teachers is becoming increasingly obvious but it would be unfortunate if this was the only option available in future. The importance of a landcare approach in education is such that it should be included on the curriculum of all teacher training and professional development institutions in Australia.

The *Landcare for Teachers Program* was developed at the University of Tasmania in the early 90s as an innovative and timely response to a long-standing environmental problem in Australia. It has been successful in reaching its initial target group of educators and will continue to be adapted to meet the needs of the wider community, such as those working in natural resource management agencies or private industry. Landcare education has a contribution to make at a national and even international scale.

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