

Use of National Parks for Outdoor Environmental Education:

An Australian case Study.

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Abstract

The need for environmental education through outdoor education experiences is becoming increasingly evident in outdoor education theory and practice. In Australia, this environmental focus is reflected in recent outdoor education curriculum documents, particularly in the Victorian Certificate of Education (VCE). For many outdoor education teachers who do not have expertise in environmental education, this curriculum development presents a challenge. Outdoor education teachers frequently use National Parks to help them address this challenge.

The study examined the educational objectives and roles of teachers and park staff involved in environmental education through outdoor education in National Parks in Victoria, Australia. This paper discusses findings related to the teachers' educational objectives and roles while those of the park staff are examined in a separate paper. The findings indicate that the teachers often lack the environmental knowledge and skills needed to teach some aspects of the curriculum thus making the role of the park ranger or education officer particularly significant in educating teachers as well as students. Issues are raised about the training of outdoor education teachers and of park rangers to meet the environmental education needs of outdoor education students. Questions are also raised about the appropriateness of using National Parks for outdoor education purposes.

Introduction

The impetus for conducting outdoor education field trips in National Parks is significant in Victoria, Australia, where the Victorian Certificate of Education (VCE) curriculum emphasises environmental education through experiences in predominantly natural environments. The nature of the experience in the park is influenced by: curriculum and assessment demands, by teacher and student knowledge and skills and by the educational capacities of park staff who are often involved in the teaching and learning process.

Studies of school visits to National Parks from the perspective of those shaping the educational experience (rather than on student learning outcomes) are limited. Beckman's (1988) evaluation of a school visit to a National Park during which interpretive activities were provided by rangers, was conducted from the point of view of the park managers but not in relation to the educational objectives of the curriculum, teachers or students. Crocker (1991) however asserted that for effective environmental education to occur a park visit must be a two-way process — carefully planned by the teacher and the park staff, taking into account the needs of the students, the knowledge of the teacher and of the park staff. She identified the importance of follow up and evaluation of the program in facilitating attitudinal change in students.

The study we report on here, focuses on the interface between the teachers and the park staff in facilitating environmental education through the VCE Outdoor Education curriculum. It explores: (a) why the teachers chose to visit a national park, (b) the extent to which the aims of the visit were clear to the teachers and the park staff (c) how the teachers and the park staff approached the facilitation of student learning in the park setting and, (d) factors that limit the environmental education process during the outdoor education experience in the park. In this paper we report on the *teacher* perspectives on the park visit and their efforts to maximise the environmental education learning opportunities available on visits to National Parks in Victoria. Another paper (Slattery and Lugg, 2002) focuses on the role of the ranger and education officer in this process.

Environmental Education Through Outdoor Education

Palmer (1998: 22) uses the analogy of “a stream with many tributaries” to describe the development of environmental education which, as a field of study and action, has been influenced by diverse ideologies and practices. The objectives of environmental education programs therefore depend on which model is valued by the program leader. These objectives may be seen as shaped by three “characterisations of environmental education”, an applied science approach which typically develops knowledge *about* the environment, a practical–interpretive approach which emphasises experiential learning *in* the environment and a socially critical perspective which advocates action *for* the environment (Fien, 1993:61; Payne, 2002:16). Some researchers argue that in the face of global environmental problems, only the latter characterisation is an adequate justification for educational practice. Hungerford & Volk (1991) argue that environmental education worldwide has been limited in its effectiveness because of an emphasis on teaching *about* rather than *in* and *for* the environment. They challenge the idea that simply acquiring more knowledge about the environment, or even spending more time in it, will necessarily lead to an adequate response, defined by them as “responsible citizenship behaviour”. In Australia the socially critical perspective has a strong voice which shapes environmental education curriculum in schools and tertiary institutions alongside a more scientific approach (Rowbottom in Palmer 1998).

Experiential approaches

Outdoor and adventure education have incorporated environmental education mainly within a “practical–interpretive” paradigm: they “... provide opportunities that encourage enjoyment, appreciation and awareness of the environment” (Palmer, 1998: 28). It is therefore vulnerable to criticism on the grounds described by Hungerford and Volk (1991): that time spent in this way will not automatically lead to more responsible citizenship behaviour. As Palmberg and Kuru’s Finnish study (in Palmer, 1998) asserts, outdoor experiences do not, on their own, promote environmental *action* (behaviour that promotes or manifests in environmental conservation, restoration or advocacy). Thus the experiential approach to environmental learning through traditional outdoor activities may be limited to learning *in* and possibly *about* the environment, while more socially

critical environmental educators argue that the emphasis should be on education *for* or *with* the environment (Huckle in Fien, 1993; Gough in Palmer, 1998).

To an extent the limited environmental education outcomes from outdoor activities may be explained by the nature of traditional approaches to outdoor education. Historically a dominant liberal educational ideology has focused outdoor educators on achieving personal and social development objectives through adventure pursuits (Neill & Richards, 1998; Cook, 2001). Lugg and Martin's, 2001 study of outdoor education teachers and principals in secondary schools in Victoria, indicates that this personal development focus is still dominant. Content has tended to focus on outdoor activity skills, safety management, bush camping and outdoor survival skills, personal and group development skills and leadership development. Environmental education is mainly limited to developing skills in minimum impact behaviour or encouraging aesthetic appreciation of outdoor environments (Drasdo, 1973; Ewert, 1996). The outdoor environments themselves have been enjoyed largely as a spectacular and/or rugged backdrop for human adventure activity (Hogan, 1991; Cooper 1997; Slattery, 2001) with an occasional emphasis on field studies with an environmental science or nature studies focus (McRae, 1990).

Transformative approaches

While such approaches to outdoor education may promote change within the *individual* they do not educate for deeper *societal* change which, according to Australian environmental educators such as Fien (1993), and Gough (1987), is essential for sustainability. Within the outdoor education discourse, Brookes (1993), Martin (1999) and Humberstone (2000) adopt a similar transformative approach, asserting the potential for outdoor education to promote change in social structures and cultural values. These authors argue for paying closer attention to the long term consequences of our current patterns of life and to ways in which our experiences of the natural world are culturally constructed,

For many, outdoor recreation and outdoor education are the main way they have contact with the land. At the same time, it is in the cities where many

of the decisions will be made that write the next chapter in the history of the Australian ecology. I think we can understand the ignorance of the first colonists. But today we cannot justify treating the question of how we relate to and understand the land as a matter of personal preference ("today I am focussing on personal development, not environment") or as something which can be taken care of by minimum impact practices and the right attitude. (Brookes, 1998: 11)

Brookes' argument suggests an inescapable practical and moral need for outdoor educators to educate people *about* and *for* the outdoor environments they inhabit.

The Local Curriculum Background

Outdoor education curriculum in Victoria has moved towards environmental education objectives: for outdoor educators to educate *for* as well as *in* and *about* the environments in which they teach (Martin, 1998; Lugg, 1999). The VCE was established as the senior secondary (final two years of schooling – age group 16–18 years) curriculum framework in Victorian schools in 1991 and determines students' tertiary entrance scores. The initial content and processes of VCE Outdoor Education demonstrated a significant shift away from the *personal* development objectives towards a more critical examination of *human* development and relationships with non-human nature (Martin, 1998; Lugg, 1999). A recent review of the VCE has further developed this shift, with the merging of VCE Outdoor Education with the social and cultural aspects of VCE Environmental Studies, to form a new subject titled Outdoor and Environmental Studies. Introduced in 2001, this subject is being taught in approximately one third of Victoria's secondary schools (VCAA, 2001).

Hence the VCE Outdoor and Environmental Studies curriculum is now primarily concerned with studying human–nature relationships and environmental impacts from social, cultural and ecological perspectives. While outdoor recreation and adventure are important aspects of this study, *they are not the main focus*. Rather they are used as a

vehicle for developing an understanding of the natural environments visited and of the ways in which people relate to them:

Outdoor recreation activities are undertaken to create learning experiences which enable students to understand how human–nature relationships have, over time, been constructed. (Board of Studies, 2000: 7)

These curriculum developments bring into focus the skills and interests of the outdoor education teacher which should extend to environmental knowledge. This point is particularly significant because the majority (76%) of outdoor education teachers in Victorian secondary schools do not have any formal tertiary training in outdoor education and, of these, forty percent of outdoor education teachers have physical education qualifications (Lugg & Martin, 2001). That most outdoor education teachers in Victoria are unlikely to have specific knowledge of ecology or environmental education, suggests significant implications for their professional development and training. Exploring the significance of the teacher’s understanding of ecology, environmental management issues and the purposes and functions of National Parks, was a major purpose of this research.

National Parks

National Parks in Australia have been established to preserve and protect predominantly natural landscapes with significant ecological and cultural value. Community education about and for National Parks is an objective of the National Parks Act (1975) in Victoria¹. The Act emphasises the subordination of human activities to natural processes and defines the types of experience that people might have in parks.

National Parks are popular venues for school visits in Victoria (Department of Natural Resources and Environment, 1999). For outdoor education programs they offer

¹ In Australia, the constitutional structure of federation in 1901 provided for land management to remain as a responsibility of state governments. As a result, the title of “National Park” is somewhat confusing, as Australia has 8 different national park systems, only one of which is managed by the Federal Government. Nevertheless, such parks are national in their significance and generally, in their perceived purpose.

physically challenging settings for adventure activities and self-reliant recreation. As “natural” areas they also allow observation of ecological processes and human impacts on those processes, thus lending themselves to a range of environmental education objectives. They are also venues where information, resources and community education tools such as management plans, interpretation centres, conservation strategies and codes of ethics are available. This increases their attractiveness to teachers for VCE Outdoor and Environmental Studies field experiences.

Method

This study investigates the environmental education objectives of selected outdoor education teachers and National Park staff involved in park visits for VCE Outdoor Education. It focuses on the educational intentions of the staff involved in facilitating the learning process rather than evaluation of student learning. The research identifies issues for this particular group of people and explores possibilities for enhancing the environmental education process, which may have wider implications for outdoor education teachers and National Park staff. Although this study is bounded by time, place and “actors”, some “petite generalisations” (Stake, 1995: 7) are identified which may be relevant to the broader outdoor and environmental education field.

Four secondary school visits of two to four days for VCE Outdoor Education² were investigated. Teachers’ objectives included environmental education objectives (analysis of impacts of human use and land management issues) and outdoor recreation activities (bushwalking, navigation or cross-country skiing), to meet the purposes of the relevant VCE unit. Students gather both primary and secondary data at school and in the outdoor location on past and current uses (including traditional Aboriginal and early European) of the area that they visit. Their report, on these land uses and related issues, is assessed according to established criteria (referred to as a Common Assessment Task or CAT).

Teachers were selected on the basis that they intended to use park staff as part of the

² This investigation occurred in 2000 – prior to the introduction of VCE Outdoor and Environmental studies.

teaching and learning process. Only one of the four teachers had any formal outdoor education training (Teacher 1). The other three teachers had physical education backgrounds and some personal outdoor recreation experience. The park staff involved were two rangers and an education officer (the same person for two school visits). The latter is a particular role that exists at only two parks in the state where teachers are seconded from the classroom to support, or replace, the role of the ranger in providing face-to-face encounters for school groups. In each instance the park staff member spent approximately two hours with the school group. The two rangers gave talks (one with accompanying slides) on the key purposes and management issues of their park. The education officer conducted interactive activities with the students, walked with them to different sites to explain issues and environmental management processes and, in one instance, involved students in a weed eradication program.

The methods of obtaining data were,

1. Semi structured interviews with teachers and park staff before and after the park visit. The interviews were taped and transcribed.
2. Observation of the group during time spent with both the teacher and the ranger.
3. Analysis of teacher documentation relating to the education aims and processes of the park visit.

Although the interviews were the primary form of data collection, field observation and analysis of documentation were incorporated as a form of triangulation. This means of enriching and cross checking interpretation of primary data increases the depth and validity of the findings (Patton, 1990: 187).

Data were coded according to themes emerging from each interview. Common and contrasting themes were identified for both teachers and park staff and checked against field observations and documentation provided. The perspectives of the teachers, rangers and education officer were examined in relation to key objectives and problems. This paper reports on the teachers' perspectives. Individual teachers are identified in the findings according to a number (1, 2, 3 or 4).

Findings

The data obtained are wide ranging and raise many issues and opportunities for further research. Here we describe the key findings that relate to *teachers' objectives* in visiting the National Parks and to their environmental knowledge relevant to the curriculum and the parks visited. In a further section of the paper we discuss key issues emerging from these findings.

Teachers' Objectives

To some extent the findings support Palmer's (1998) and Hungerford and Volk's (1991) assertions that much environmental education through outdoor education occurs mainly in the practical–interpretive paradigm. Teachers in this study had two main objectives for this field trip in the national park: (1) for students to gather first hand data and personal experience of the place to meet the VCE curriculum requirements, and (2) for students to enjoy the park experience through participating in outdoor and group activities,

Well I guess this trip has been built completely around 70% getting information for CAT 2 of VCE. The only other thing is build in some fun things and hope the kids get something out of that and develop as a group.

(OE Teacher 3)

Therefore the immediate purpose of the field trip is on learning *in* and *about* the park. However it is important to remember that the park visit is but one component of a continuing educational process and that critical analysis of the experience and information gathered *may* take place in the classroom (or elsewhere) after the park visit.

(i) Learning *in* and *about* the environment

A key curriculum aim for the field trip is to gain direct experience of land use and impacts and knowledge of the natural and cultural history of the park to meet the criteria for the CAT. Three teachers saw this as the main objective for the park visit and used outdoor activities as a way of exploring the area to obtain information. One teacher outlines this process,

Tomorrow they are going cross-country for a day tour and on Thursday they are going to do down hill skiing and hopefully have a look at the resort and the types of infrastructure and maybe the attitudes that are there... They've also constructed a survey and they need to try and split it so they survey about five people in the park and five people that work in the resort ... They are asking questions like why people are here how they got here and where they are staying, where they are going what are they are doing, the activities that have an impact on the environment...

(OE Teacher 1)

This teacher also understood the value for students of immersion *in* an environment in order to learn more effectively *about* that place. She recognised that direct experience with the place enhances meaning through personal identification,

They've done a lot of reading and ... often talking in the classroom ... it's really abstract. It is like trying to teach the weather or navigation, it's quite abstract when we are talking about an alpine environment and we live in one of the flattest places in Victoria with irrigation channels — it is quite meaningless to them ... one of the great things about PAKS [field] trips is it is really solid for a time and they can really focus.

(OE Teacher 1)

Although all the teachers clearly understand the value of direct learning in the outdoor environment for enhancing students' understanding of the environmental *content* some teachers also consider personal experience in the environment to be essential in developing environmental *concern* through a sense of connection with that place, for example,

Not just their understanding of it but also their connection with the whole area, we've been here a few times this year. For different activities each time you can see there is more connection with it.

(OE Teacher 3)

This concept of interconnections or relationships between all things is crucial to the notion of sustainability and the development of an environmentally sensitive ethic (Orr, 1992; Fien, 1993). Development of a personal connection with a place through physical

interaction in that environment is a compelling rationale for environmental education through outdoor education (Higgins, 1996; Dahlgren & Szczepanski, 1998; Martin, 1999; Slattery, 2001). However this sense of connection is a starting point for environmental action. It does not *in itself* ensure that any positive action *for* the environment will occur (Hungerford and Volk, 1991; Palmberg and Kuru, in Palmer 1998).

(ii) Learning *for* the environment

The VCE Outdoor Education unit which shapes the field trip for three of the four teachers states explicitly that students should be enabled to; “develop a framework for critical analysis of attitudes and behaviour related to the outdoors” (Board of Studies, 1994: 34). This suggests a more socially critical approach to learning as advocated by Gough (1987), Brookes (1993), Fien (1993) and Martin (1999). This study revealed limited evidence that teachers were aware of this intent except that all teachers included the discussion of environmental issues relevant to the park in their objectives for the trip,

And actually the timber cutting is an interesting issue because when they originally came here they cut all the trees... they grew back then they came down and cut them again. So there is an issue in terms of can nature basically sustain itself no matter what man [sic] does? Or does man need to manage it? Can you just walk away from something where you have cut everything down and let nature just regenerate itself? Or do things come back, like the coastal Banksia and take over everything, like the grasslands where they have to slash everything because there is no firestick burning³ down here any more. (OE Teacher 2)

In discussing this environmental issue this teacher is raising both ecological and ethical questions about human–nature relationships. He suggests that this is an issue that he would discuss with his students when they reach a particular area during their bushwalk, thus engaging students in some degree of critical thinking.

³ A land management strategy used by Aboriginal people pre–European settlement, to clear bush for hunting and plant regeneration purposes.

This awareness raising process in the outdoor setting can be seen as teaching *for* the environment in that students' understanding of environmental issues and underlying societal values may be increased and attitudinal change *may* occur but it still doesn't guarantee positive environmental action. One teacher however did build environmental action (weed eradication) into the park visit as a way of enhancing student learning and making a positive contribution to the park and park management,

Because we have always been talking about conservation and a lot of the kids have chosen outdoor education because they know there is a big environmental aspect to the subject ... rather than just talking about it is better for them to get involved ... and get a "hands on" experience with the conservation programs so they can have a bit more of a connection. (OE Teacher 3)

Despite constituting environmental action, an activity such as this does not, in itself, constitute socially critical teaching and learning since *it depends on how it is facilitated* by the education officer and the teacher. As an activity it has considerable potential for instigating learning about ecology and land management practices as well as how social and cultural values shape those concepts and practices.

Why a national park?

The gathering of information about the environment being studied is an important factor in the teachers' choice of a National Park as a venue. All four teachers saw the park as providing essential support to help supplement their limited environmental knowledge and resources relevant to the curriculum. Clearly this places a particular onus on the park in shaping the experience for the group. Two of the teachers had experience in teaching VCE Outdoor Education and some environmental knowledge. They visited the park with specific activities and purposes in mind, knowing what they wanted from the park staff. For the less experienced outdoor education teachers however, the demands of the curriculum and assessment tasks are daunting, particularly the content requiring environmental knowledge and in this context, the national park staff are invaluable,

To give us some facts about the area, what they do, how they manage it, why

they are managing it in the particular way that they are, and give the kids a different view from mine ... I have an overall perspective of National Parks but individual park managers have more specific information ... (OE Teacher 4)

Irrespective of the teachers' level of experience and expertise, student contact with park staff provided more specific information and access to some resources and activities that may be otherwise unavailable. Teachers also understood the students' perception of authenticity in the park staff who have local, working knowledge of the place. They saw this knowledge as independent of their own, contributing equally to the education process and more important than abstract, theoretical knowledge,

The rangers have so much knowledge about the place and they are there all the time ... and with some kids those people have got more credence than I have – that's what they do for a job— I spend a lot of the time in the classroom. (OE Teacher 1)

This is a clear acknowledgement of the value of personal experience in the education and knowledge building process.

Another significant reason for choosing a National Park for the field trip relates to the notion of being in a wilderness or pristine environment. To some extent this choice is curriculum driven. As one teacher points out, the VCE curriculum document states that teachers should endeavour to take students to "... natural environments in which they encounter minimal influence of humans and which represent a contrast to everyday living environments" (Board of Studies, 1994: 5). A more affective rationale provided by some teachers is that they want their students to enjoy the experience and feel that this is more likely in places that are aesthetically appealing and remote where human impacts are less obvious,

I think they won't get the full effect unless they camp in somewhere that's of minimal impact, see the scenery, see how beautiful it is, where they can enjoy the scenery, enjoy the experience. Take them to somewhere where there's maximum impact and ask them to camp there... no satisfaction.

(OE Teacher 4)

This perception that outdoor education experiences are more fulfilling in pristine environments raises several issues which are discussed later in this paper.

Teacher Knowledge

The teachers involved in this study have sound knowledge and skills in group management and outdoor activity teaching and some have good personal knowledge of the geography of the park. Although most of the teachers have understood environmental issues from a general social and perhaps cultural perspective, they do not have a strong understanding of ecological, political and management aspects of issues over land use. They did not often appreciate the subtleties involved in the study of many “issues” and “problems” which are often the product of the fact that the National Park is designated primarily for nature conservation.

Some examples of significant “gaps” in knowledge relate to the roles of the National Park itself, the land management agency, Parks Victoria, and the chief citizens’ environmental lobby group, the Victorian National Parks Association (VNPA). For example, some teachers chose a particular park because an issue had arisen there, providing good “fodder” for meeting the curriculum requirements. As far as these teachers are concerned, the status and characteristics of National Parks have little relationship with the issues,

I don’t think it was because it was a National Park it was because it was a big issue in the media at the time, and because it was local and all of that. If it wasn’t a National Park, lets say this area was a State Park and they were still having the same sort of issues, I still probably would have chosen this area.

(OE Teacher 3)

This ignores the politics and ecological significance of National Parks since the issue to which the teacher refers arose *because* the area was a long-standing National Park. A further example occurred where one teacher thought that the only problem with multiple

campfires was the aesthetic impact of fire scars. He did not understand the role of fallen logs and timber in offering shelter and habitat to invertebrates and in returning nutrients to the soil. This lack of knowledge of ecological processes necessarily limited his understanding of this management issue and, possibly, his ability to facilitate critical thinking in the students.

These matters are not necessarily part of the teacher's training or personal experience. The VCE Outdoor Education curriculum has added to the disciplinary knowledge and range of skills required of outdoor education teachers, involving significant extra knowledge for which most in this study had limited academic or practical experience. Importantly the teachers involved in this study were either aware, or became aware, of their lack of environmental education knowledge and skills, hence their reliance upon the park staff as a teaching resource. The teachers appreciated the value of the encounter with the park staff in helping them to learn about ecology and land management and, significantly, *to realise how much they don't know*, for example,

I learnt a bit about the plants and ... where the plants grow. So that's why now, I've got a bit more ambition to learn more. I probably don't know anywhere near what I thought I did. (OE Teacher 4)

Although the transmission of this science based environmental knowledge has been criticised as having limited educational effectiveness (Gough, 1987; Brookes 1993) it is the way in which students *use* this information that matters. If the information gathered is merely accepted at face value rather than compared, questioned and challenged, students' environmental education may be limited. Student learning from the experience is therefore crucially *shaped or limited by the teacher's expertise and knowledge about the curriculum content and the place being studied*.

Teaching the teachers

The rangers involved in the study have little understanding of the specific environmental knowledge of the teachers or of the curriculum requirements. Further, it is beyond their

own role or expertise to make up any perceived deficit in these areas. Therefore a “gap” exists between the skills and knowledge of rangers and teachers which may limit the learning outcomes of students. In one instance the teacher recognises that his own lack of knowledge about the park and the limited communication between himself and the ranger prior to the visit have minimised rather than maximised learning,

It [the talk by the ranger] was possibly a little bit shallow ... because I didn't get a copy of that book until a day before and there was no time for me to read up on it, but I would have assumed he would have known a bit more about it ... but I needed to be more prepared so that when [he] got stuck I could help him out.

(OE Teacher 4)

In this instance the teacher appears to have depended entirely on the ranger to make up for his own lack of knowledge. However he has now learned how to prepare and what to expect in future, thus increasing his skills and reducing his reliance on the ranger.

Despite the evident “gap” between teacher and ranger knowledge and skills, both teachers and students appeared to benefit from their interaction with the rangers. Inadvertently the rangers were increasing the environmental awareness of the teachers as well as the students. The benefits of this learning for both students and teacher enhances the educational process while helping to support park management,

When we first would have come here hiking along the trail, if there was a shortcut I'm sure a number of them would have been up that short cut. Whereas now we've been here and we've seen the signs and we've talked with the rangers and understand needing to stick to the trails and how certain areas are now fenced off for regeneration ... they [students] ... discuss and debate the need for that trail and whether they got it right and whether they actually need it there. (OE Teacher 3)

While learning did occur for both teachers and students through interaction with the rangers, the unique role and value of the education officer is evident. He straddled the two worlds in a way that a ranger cannot, drawing from detailed

knowledge of ecology, the place and the curriculum, and using educational skills to offer students and teachers valuable learning experiences. The education officer specifically aimed to teach the teachers as well as the students: a form of tacit professional development for the teacher. As recommended by Crocker (1991), in organising for the visit, he questions the teacher closely about his/her curriculum purpose, with specific knowledge of both the assessment task and how the park and its places and programs could match this,

I try to run them [sessions] at two levels, so one level is the student level which is to try to give them basic information and give them some reference points that the teachers can then use later on. The second level is that I'm actually teaching the teacher so the teacher is up to speed on what is going on and then they can draw upon those reference points later on so their understanding and knowledge has increased and ... so they can draw upon them post visit as well. (Education Officer)

This strategy serves several purposes: it increases student and teacher knowledge of key environmental issues, management strategies and codes of conduct for the park, it also allows the teacher to better assist students after the park visit thus enhancing their learning on a longer term basis. The long term advantages of this strategy are evident in the comments of one of the teachers involved who now feels empowered to conduct a similar program himself,

He [the education officer] knew what was happening in the park and what was needed in the park and he knew what sort of information was going to be beneficial for the kids ... Definitely I'd be able, ... one of the things I'd do when I'd plan a trip anywhere else is to think about how I could run a program similar to what we had today. (OE Teacher 3)

The program referred to here involved students in an environmental conservation activity thus the benefits of this educational process are two-way since it also supports park staff in their conservation management efforts.

Discussion

These findings highlight the importance of effective professional development in environmental education for outdoor education teachers. As Fien (1993: viii) points out, "... the attitudes and skills of teachers are central in determining the mix of different knowledge, skills and affective objectives in environmental education programs and the social and political interests they serve." Hungerford and Volk (1991) also argue strongly for teaching and role modelling that is focussed on environmental issues, empowerment and action. Similarly Ewert (1996) contends that outdoor education is a powerful medium for developing environmental awareness and empathy but challenges the outdoor/experiential education profession to be more proactive in empowering people to take environmental action. What are some implications for outdoor education with a greater emphasis and skill level in environmental education?

VCE Outdoor Education teachers need training in socially critical environmental education in addition to knowledge of ecology and land management. There is no evidence in this case study that any of the teachers felt a need to develop the more socially critical knowledge implicit in the VCE Outdoor Education curriculum, even though, as Brookes (1993, 1999/2000) contends, in accepting the parks service point of view on contentious issues they were receiving a set of dominant assumptions about environmental knowledge and management,

... the idea that National Parks provide sites for research (knowledge production) and interpretation (knowledge reproduction) is based on an inadequate understanding of the role of education in knowledge production. The generation and regeneration of worldviews or mindsets is probably more important than the transmission of scientific knowledge emphasised in park interpretation. Insofar as environmental problems are the result of widely held beliefs as much as deliberate decisions by experts, it is important that we have ways for ordinary people to understand alternative world views." (Brookes, 1993: 15)

This apparent lack of concern about acquiring socially critical knowledge and skills may be attributed to Carr and Kemmis' (1986: 42) assertion that critical analysis is only likely when theory and practice is recognised as problematic and open to reconstruction. Teachers who do not have an understanding of critical theory may not recognise the potential for its application in the curriculum. Additionally if much of the environmental knowledge is new to the teachers as found in this study, and if park staff offer a positivistic perspective as Brookes (1993) asserts, it is less likely that teachers will be able to readily critique ecological and land management theory and practice. There may therefore be a need for teachers to be trained in both scientific and socially critical approaches to environmental education in order to effectively teach VCE Outdoor Education. Whether or not the acquisition of propositional knowledge should precede socially critical learning is a pedagogical issue which is beyond the scope of this study and warrants further research.

Use of National Parks or local places?

At present outdoor education teachers may choose to use National Parks for their available resources and/or their perceived pristine, remote and challenging nature, thus overlooking the more subtle but relevant learning opportunities closer to home. Apart from the obvious availability of ecological and environmental management information, teachers choose the park experience because they understand that students value the authenticity of rangers' local knowledge developed through "hands on experience". The valuing of practical, localised knowledge can be a significant aspect of outdoor education but at present is a rather undervalued one (Brookes, 1994; Dahlgren & Szczepanski, 1998; Slattery, 2001). Local knowledge developed through experience is particular rather than generalised and can provide a depth of understanding of the natural and cultural history of the landscape that is less likely to be achieved through vicarious learning processes. If teachers choose to conduct outdoor education experiences in places with which they are unfamiliar, they are more dependent on the input of those who have local knowledge. However if they choose sites that are local to the school, teachers *and students* may themselves become more "authentic" knowers since they are working in

their own “backyard” thus having more personal experience of that environment and the issues relating to it.

This issue is perhaps exacerbated by the fact that some teachers take students to a National Park rather than other natural settings because the park is perceived as “pristine”. In terms of environmental education this view suggests that students might not appreciate less “natural” environments and therefore not learn as much from an experience in such settings. Hungerford and Volk (1991) would support this practice, asserting that spending lengths of time in relatively pristine environments increases environmental sensitivity. However Slattery (2001) argues that this desire for a “wilderness experience” ignores important aspects of Australia’s natural and cultural history and devalues more “ordinary” local environments from which much can be learned. She proposes that it also strengthens images of outdoor education as being best conducted in a separate world, divorced from obvious environmental problems, hardly an idea conducive to transfer of critical thinking about the “ordinary” places where the majority spend most time,

Outdoor education tends to emphasise and develop relationships with “pristine” places, those where the impress of human presence is less obvious. Not only does this emphasis compound the lie that was “terra nullius” by tempting us to imagine that the landscape we have inherited was a wilderness ... it also denies us pleasure and participation in the “ordinary” landscape: the places developed by our own ancestors that is a cultural artefact of European settlement.

(Slattery, 2001:31)

This argument presents a dilemma for the teacher who has limited environmental education knowledge and skills. Should they use National Parks with their plentiful natural and human resources, or could environmental education be more potent through outdoor education experience in environments that are local and part of the daily lives of the students and teachers? Hogan (1991) suggests that students should have to “earn” their right to go to more pristine areas by first spending time in more local, human impacted areas. This however suggests a hierarchy of environments – the wilderness

setting being the most ideal – which offers a very different philosophical standpoint to Slattery's. Ewert (1996) argues that because of the dramatic increase in impacts on wilderness areas often caused through outdoor education programs, curricula should be redesigned to utilise places that are ontologically and geographically closer to home. This issue raises many questions around how environments are valued in outdoor education and suggests a need for considerable rethinking amongst outdoor educators about the implications of choosing particular types of environments over others.

Conclusion

Although several issues raised in this case study are specific to the Victorian and Australian context, the broader questions may be relevant to the international outdoor education community. The study suggests a need for significant professional development in environmental education for outdoor education teachers, particularly where centralised curriculum or programs demand such knowledge and skills. This study identified that training is particularly needed in relation to ecological processes, land management practices and critical analysis of environmental issues and practices. With a greater understanding of such principles, practices and pedagogy, teachers will be more able to make informed decisions about the most appropriate locations and activities for the outdoor education experiences.

Education is one of the key roles of a National Park and there appears to be considerable benefit for outdoor education students and teachers from the park experience, therefore joint programs and events between park management agencies and schools seem called for. An encouraging initiative from Parks Victoria has recently established a joint project with the Victorian Outdoor Education Association to provide professional development for park rangers working with school groups in parks, thus potentially reducing the knowledge “gap” between land managers and school educators. Education officers clearly have an invaluable part to play in the education process and both National Parks and schools would benefit by the expansion of this role.

A joint approach to the professional development process can only be beneficial for all involved. It would address the need for outdoor education teachers to recognise that parks are a specific kind of experience requiring particular reasons for their choice as venues and place an onus of personal responsibility in developing knowledge and understanding. It would also promote a sense of environmental education as a community responsibility rather than the preserve of schools or land managers in isolation. Enhanced environmental education for outdoor education teachers has the potential to transform the practice of outdoor education by enabling students to celebrate more fully the wonders of the environment of which they are a part.

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