

Promoting Learning for Sustainability: Principals' Perceptions of the Role of Outdoor and Environmental Education Centres

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Abstract

Outdoor and Environmental Education Centres provide programs that are designed to address a range of environmental education aims, and contribute broadly to student learning for sustainability. This paper examines the roles such Centres can play, and how they might contribute to the Australian Government's initiative in relation to sustainable schools. Interviews with the principals of 23 such Centres in Queensland revealed three roles or models under which they operate: the destination model; the expert/advisor model; and the partnership model. Principals' understandings of these roles are discussed and the factors that support or hinder their implementation are identified. It is concluded that while the provision of programs *in* the environment is still a vital role of outdoor and environmental education centres, these can also be seen as a point of entry to long-term partnerships with whole school communities.

Introduction

Research evidence suggests that learning in the natural environment is potentially a powerful medium for developing students' environmental sensitivity, bringing about concrete understandings of environmental issues, and engaging students actively with ecological issues. For example, Ballantyne and Packer (2002) reported that directly viewing the negative environmental consequences of human impacts on wildlife is a powerful catalyst for student learning. In a study that traced the critical incidents and formative experiences of environmental activists, Chawla (1999) found that direct experiences of environmental destruction, and childhood experiences in natural areas are influential in developing environmental sensitivity. Numerous other studies have linked learning experiences in the natural environment to the development of environmental knowledge, attitudes and pro-environmental behaviour (Ballantyne & Uzzell, 1994; Ballantyne, Connell & Fien, 1998; Ballantyne, Fien & Packer, 2001a, 2001b; Bogner, 1998; Lai, 1999; Palmer, 1999; Rickinson, 2001; Tanner, 2001). Similarly, environmental education programs *in* the environment have been shown to be more effective in attaining the aims of influencing students' environmental attitudes and reported behaviour than in-class programs (Dettmann-Easler & Pease, 1999; Mittelstaedt, Sanker & VanderVeer, 1999).

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In Queensland, Outdoor and Environmental Education Centres provide opportunities for school students throughout the state to engage in learning experiences *in* the environment. The provision of such centres within the formal education system varies considerably across Australia, with Queensland and New South Wales being the only states with government funded Environmental Education Centres (Tilbury & Cooke, 2005). Environmental education generally has a presence in school policy frameworks as a cross-curricular theme, with the main opportunity for implementation being in the Key Learning Area of the Studies of Society and Environment (Tilbury, 2004).

In Queensland, where this study took place, twenty-five Outdoor and Environmental Education Centres have been established by the State education authority to support the Queensland Government's Departmental Policy on Environmental Education (Education Queensland, 2005). These centres are situated in a range of environments including forest, beach, outback, estuarine and freshwater habitats. They are responsible for developing, promoting, and delivering outdoor and environmental education programs for schools and the community, and provide professional development for teachers (State of Queensland Department of Education and the Arts, 2003). Programs for school students are curriculum-based and cover a wide range of topics and themes that relate to Key Learning Areas in Science, English, Mathematics, Health and Physical Education, Studies of Society and the Environment (SOSE) and the Arts.

Of the twenty-five centres, twenty-one are "Environmental Education Centres" which address a broad range of environmental issues, including the use of land, water, mineral and energy resources, and aim to enhance students' understanding of various environmental systems. Environmental Education Centre programs incorporate a number of specialised strategies, including archaeology and heritage interpretation, environmental arts, urban renewal, Waterwatch programs and environmental investigation (Education Queensland, 2005). Four centres are "Outdoor Education Centres", which aim to develop students' individual and interpersonal capabilities through providing programs that are socially, emotionally and physically challenging. These programs are designed to extend students' individual capabilities and develop team building and leadership skills, as well as addressing environmental education aims (Education Queensland, 2005). In both types of centre, programs may include day and residential programs, programs targeting different content areas and age groups, and programs employing drama, environmental investigations, didactic presentations, nature experiences and emotional appeals.

It is clear that Outdoor and Environmental Education Centres are well placed to provide powerful learning experiences that develop students' environmental knowledge, sensitivity and skills, as well as the motivation and capacity to engage in pro-environmental actions. However, a major review of environmental education programs across Australia (Tilbury & Cooke, 2005) found few environmental education programs that focus on or promote learning for sustainability. Given the growing interest in learning for sustainability over recent years, it would seem to be timely to re-examine the potential contribution of Outdoor and Environmental Education centres to this endeavour.

Learning for sustainability focuses on equipping learners with the skills to take positive action to address a range of sustainability issues. It aims to go beyond individual behaviour change and seeks to implement systemic change within the community, institutions, government and industry (Tilbury & Cooke, 2005). The Australian Sustainable Schools Initiative is one way in which the Australian Government is attempting to involve whole school communities not only in learning for sustainability, but also in the sustainable management of schools. It is not clear, however, how Environmental Education Centres might contribute to this process.

This paper explores the roles of Outdoor and Environmental Education Centres in relation to learning for sustainability. Outdoor and Environmental Education Centres (O&EECs) in Queensland are managed by a Principal and supported by teachers and ancillary staff (Education Queensland, 2005). Principals play a leading role in determining the nature and quality of environmental education programs in their centres. They are responsible for long-term strategic planning and work with Centre staff, teachers and school students to implement environmental education programs. O&EEC Principals are thus well-positioned to provide an informed and unique perspective on the various roles such Centres can and do play in addressing student learning for sustainability.

Specifically, the aims of this research are to:

- (a) Document principals' perceptions regarding their Centre's role in promoting learning for sustainability;
- (b) Identify the factors that support and/or hinder the Centre's contribution to learning for sustainability; and
- (c) On the basis of the above, draw conclusions regarding the most effective ways in which Environmental Education Centres in general might contribute to learning for sustainability throughout the school system.

Method

Principals from 23 of the 25 O&EECs in Queensland (20 EECs and 3 OECs) each participated in a 30-minute telephone interview designed to identify and investigate their perceptions of the roles of O&EECs, the factors they believe contribute to and/or hinder effective teaching and learning for sustainability, and the ways in which O&EECs contribute to promoting learning for sustainability. (One principal declined to be interviewed and one was unavailable during the interview period.) Interview questions covered issues such as how Centre programs contribute to learning for sustainability; how Centre programs are integrated with the school curriculum; elements of success for school-Centre partnerships; barriers or challenges Centres and staff face associated with teaching and learning for sustainability; and desired outcomes for students and classroom teachers as a result of their participation in the programs.

Interviews were audio-recorded and transcribed verbatim. Principals' responses to the interview questions were analysed qualitatively, using procedures similar to those suggested by Patton (1990) and Silverman (2001). Responses were pooled across questions and across participants, and were grouped according to common ideas or themes using an iterative process of reading and re-reading the transcripts. The common themes were described, analysed and interpreted in relation to (A) the roles of O&EECs in promoting learning for sustainability and (B) the factors that support and hinder these roles. Finally conclusions were drawn regarding (C) the most effective ways in which Environmental Education Centres in general might contribute to learning for sustainability throughout the school system.

Results and Discussion

Roles of O&EECs in Promoting Learning for Sustainability

The roles that principals envisaged for their Centres fell into three main categories:

1. Conducting short-term or one-off programs for students (destination model¹);
2. Modelling sustainable practice (expert/advisor model); and
3. Engaging in long-term, whole-school approaches (partnership model).

Principals elaborated their understanding of these three roles. The analysis of their understandings is presented below and illustrated with a sample of excerpts from the transcribed interviews. Each excerpt is labelled with a participant code number to provide an indication of the breadth of sources and the range of participant views being expressed, while maintaining participant confidentiality. These citations are not intended to provide quantitative information about the prevalence of different perspectives, but to enrich and support the analysis of themes emerging from the interviews.

The Destination Model

O&EEC principals widely agreed that their Centres offer a specialised service to schools that complements and enhances the school curriculum, and provides experiences that are not available within a school setting. This specialised service includes both their unique location in the environment and the specialised expertise of their staff.

Centre programs are usually developed in conjunction with curriculum requirements to meet the needs of client schools. An inventory of environmental education programs of the 23 O&EECs in this study lists some 340 programs across the State. There is variation in the duration of the site-based component of programs, which may range from a few hours to extended camps, field trips and trekking up to two or three weeks. Many programs are designed thematically around the environments surrounding the Centres (e.g., coastal and marine studies, dry forest studies, rainforest habitats, dry/arid climate studies, studies of built environment, sustainable land uses and practices). The settings in which O&EECs are located, and the facilities they offer, enable students to participate in learning activities that they are unable to experience at school, such as residential camps, wilderness treks, reef and marine studies. Programs are based *in* the environment rather than in school or classroom settings:

We can go up the creek and see crocodiles in the wild only ten minutes from [the Centre]. They can get into activities like mangrove mud, do a ropes course, which again challenges them personally. (P17)

The fact that we are in a semi-rural, semi-remote environment, we're out of the students' comfort zone. ...It's foreign to them yet at the same time it's delightful, it's colourful, it's active, it's dynamic, it can be cold, it can be hot, it can be beautiful, it can be dirty and dusty. (P13)

Our role here is to provide educational experiences for students that can't be provided in school settings. We've got a unique local environment ... there's quite a lot of history, human impact on the environment here, so we see our role as providing kids learning experiences out there, mainly looking at how humans have interacted with the environment for the last several thousand years. (P23)

By providing a short term intensive focussed learning experience we provide lots of opportunities for the children which you would not be able to duplicate within the school situation. (P21)

Staff use a wide range of pedagogical approaches, such as experiential learning, active engagement, narrative approaches, drama, fieldwork, wilderness treks, bush camps and investigative studies. Such active, experiential learning approaches are considered by principals to have a positive effect on student learning and motivation:

By offering programs across the curriculum that are real life, lifelike or hands on and experientially based for the students, quite often they're being engaged in learning activities that they see are primarily fun and they don't necessarily see that they're actually learning and developing as they're going through the activities. (P12)

Everything we do is getting them out in the bush so our programs have culled anything that's not hands-on in the bush ... we've probably tried to instil a sense of wonder, special places, opportunities to explore. (P23)

We deal with a lot of high school students and we find that high school students are a bit disenchanted with classroom work, they don't get out in the field very often, so being able to come to us we have a chance to really inspire them and enthuse them about that subject so they reconnect with that subject, and we have a good chance then of connecting with the students and inspiring them about education. (P4)

Through providing specialised services to teach and encourage sustainability values and practices, O&EECs are able to offer not only activities, but also staff expertise, that is not normally available in school settings.

Delivering a level of expertise and experience that the schools feel that they can't deliver. (P8)

We offer activities that schools can't offer. In other words, the uniqueness of the place, uniqueness of the environment, the uniqueness of the staff and their particular skills. So all of those things contribute to schools saying, 'well we can't do any of those things, that's why we come to you.' (P17)

In general, principals indicated that their programs aim to develop students' knowledge, understanding, appreciation and commitment to take action towards a sustainable future. Several principals also commented on the capacity of programs to contribute to students' personal and social development, such as developing respect for self, others, and the environment and to be able to apply these values at school and elsewhere. Engagement in the outdoor or the natural environment was considered an important means of improving teacher-student relationships, and generating renewed energy and enthusiasm for students' capabilities. Principals observed that working with students in an alternative setting to the classroom often gives the classroom teacher the opportunity to see the students in a "*different light*" and "*to see more of their positive abilities*". They report:

We have often heard from teachers saying, watch out for this child or watch out for that person. This one's not going to learn here and it turns out that they do because they're in a different setting. (P23)

Probably every second camp we'll have one of the teachers say to us, "I didn't realise that Mathew had some ability. I'm going to refocus what I'm doing and the way I'm doing it in the class room with him now". A lot of our stuff is hands on and these kids that are challenges in the classroom or the kids that don't focus in the classroom and lose their concentration tend to do really well here in the centre. (P4)

The destination model, which provides environmental education experiences at a site or Centre removed from the everyday school or classroom environment, thus appears to have some advantages that would be difficult to replicate within the school environment. Hands-on pedagogical approaches, supported by staff with an intimate knowledge of the specific local environment provide learning opportunities that are different from the everyday classroom routine, and so have a special appeal to a broad range of students. There are a number of disadvantages associated with this approach, however, which are discussed further in Section B below.

The Expert/Advisor Model

Many of the principals interviewed said that Centres were exemplars or models of sustainable practices in terms of building design and facilities. Such practices included, for example, their use of solar power and waste water management systems, and their attention to recycling, composting, and energy efficient practices. Centre facilities, design and practices are often an integral part of the environmental education learning program. For instance, students might be involved in learning how to compost organic waste or monitor energy usage.

Our centre is looking at sustainability through an energy efficiency program. ... We have solar panels on our school roof and [we're] looking at alternative energy. ... Most of our grounds are set up to minimise water use, so we're looking at water conservation. ... Everything on site looks at waste minimisation, water minimisation, power minimisation. (P23)

We are looking at centre practice as more or less an exemplar of what should be happening. (P14)

Principals also indicated that through their involvement in the planning and delivery of O&EEC programs, classroom teachers gain the skills to develop and implement environmental education programs when they return to their schools. For example, if the focus is catchment management, teachers might be inspired to develop an action program at school to improve water quality in their local catchment.

So, ideally, it's getting programs happening back in the local areas surrounding the schools because that's the best way of achieving long-term outcomes. (P10)

A little bit of school support, classroom support for teachers to design programs ... there's a little bit of planning that we get involved in at the school situation and we in a sense are service providers for them in the school setting ... I suppose with the classroom teachers, it is the modelling of the teaching strategies we use. So, lots of little activities that they can implement back in their own setting. (P23)

I can see immediate benefits for the teachers of the students working with us because of our expertise and equipment and knowledge and organisation and so on in outdoor settings ... I always like to see class teachers come away with a sense that perhaps if they followed a lot of the sorts of directions or behaviours that the centre staff exemplify, then they would feel comfortable [to] conduct their own program down the track. (P14)

Ideally, I'd like teachers to go away saying "Gee, you know, I wonder whether I could kind of apply some of that myself?" (P8)

Classroom teacher involvement in Centre programs may also encourage them to develop a more integrated approach to environmental education within the school. For example, maths or languages could be taught using an environmental focus on sustainable practices such as recycling, energy efficiency or bush revegetation.

I would like to see them recognise that an excursion such as this is not just achieving the learning outcomes as mentioned in the science syllabus but it's a key opportunity to achieve and reinforce learning outcomes as described in SOSE, language, maths, etc ... using real life experiences is a great integrating device. (P3)

In the planning, it's probably the integrated nature of our programs - letting them know that here's an opportunity for maths, here's an opportunity for language, so basically looking at how you can use the environment very much more in school settings as a context, a way of learning. (P23)

Principals believed that experiences at O&EECs would help teachers increase their knowledge and understanding of sustainability issues; learn new teaching strategies; see the potential for using environmental issues as a powerful tool for teaching and learning; increase their appreciation of the educational value of teaching in the natural environment; and contribute to a better understanding of the role and function of O&EECs.

Most teacher learning occurs through modelling, demonstration, direct experience or immersion in the program itself, rather than formal training. However, several principals suggested that classroom teachers would benefit from a more formal process of professional development. Some Centres do in fact provide such formalised training through pre-program visits, workshops, and online courses. Centre staff are also available to provide expert advice and assistance to class teachers on request.

We support classroom teachers at different levels, and in different ways, depending on their level of commitment or where they're going as a school. ... They can be involved in on-line courses which are designed to help them be reflective on what they've been through ... [some] schools want to pay us to come and work in their context to do more in-depth workshops and work with classroom teachers in terms of pushing ideas further. (P8)

So you've got a teacher who came to you in first term when they were doing the marine environment and in third term they ring you up and say, "Hey, we're not doing marine environments any more but we thought you might be able to give us some help or some information on solar energy." ... So they see you as a person who can continue to support them across a raft of other areas. (P11)

The main advantage of the expert/advisor model then is in equipping and empowering classroom teachers to take students' learning a step beyond what can be achieved at the Centre. Thus students can be encouraged to apply what they have learned, and to integrate their understanding across different content areas. In this way, the effectiveness of Centre programs can be significantly enhanced and extended.

The Partnership Model

Principals' responses about the role of O&EECs reflected the emerging trend away from "stand alone" programs, and towards approaches that are integrated with the school curriculum. In other words, the on-site program is one component of a much broader experience. Adopting a collaborative approach to planning was seen by a number of O&EEC principals as a key factor in developing Centre-school partnerships. These principals talked about the importance of Centres and schools having a shared understanding, a shared vision, a shared responsibility for program implementation, and being "on the same wavelength". Some principals also envisaged an outreach role for O&EECs, involving long-term partnerships with whole school communities. From this perspective, O&EEC programs provide a point of entry, rather than a final destination.

We have partnerships established with a number of local schools where we are having a deep and meaningful involvement with those schools and that's resulting in significant professional involvement in environmental education to the staff of that school. (P3)

We've had partnerships with local schools where we've helped them develop their own school-based environmental education program. We have maintained those partnerships over the years. ... We've also been involved in developing landscapes at some schools. (P4)

The traditional emphasis has been students visiting the site, the location, the field experience and that's it ... We want to go beyond that and say how can you use that as a stimulus, as a point of entry then to go to the next dimension, that is, actually looking at the whole school ... to go into the school and work within the culture of the school community, its local context, its regional variations ... supporting schools to become more environmentally sustainable ... looking at a more sustainable future for the school through their curriculum and whole school planning process ... more of a systems approach within the school. (P20)

We are trying to escape [the idea] that we're an excursion centre that people are coming to. What I've been pushing is that we're an extended campus of the school that's using us ... Not in a way that they duplicate what we're doing because they don't actually want to duplicate it ... the whole idea of using this Centre as a catalyst for change in a school, and using the programs as levers. On one level people will come and do the programs and at the next level we use those as levers to start shifting perception ... I believe these Centres have the ability to shift perception and give power to teachers and communities in schools. (P8)

From this perspective, the most important role that O&EECs can play is to leverage change within whole school communities. This involves building a long-term two-way relationship between Centres and Schools. Adopting this role is seen as an extension of, rather than an alternative to the destination and expert/adviser models.

The three models described here are seen as a hierarchy of responses, each building on and extending the one before, rather than as three discrete approaches. At the lowest level is the destination model, where students come in to the Centre for on-site programs. At the second level is the expert-advisor model, where Centre staff make their expertise available to classroom teachers, in order to extend the Centre's

influence beyond their on-site programs. At the third level is the partnership model, where Centres and whole school communities work together in the long term.

Factors that Support and Hinder the Roles of O&EECs

Principals were asked to identify success factors, and to describe any challenges or barriers that they or their staff faced in relation to the roles of O&EECs. The issues they raised focused on resource issues, staff expertise, partnerships with classroom teachers, and partnerships with schools. These issues highlight some of the limitations and challenges associated with the approaches discussed above.

Resource Issues

Travel costs

Centres located in rural and regional areas often reported their physical remoteness as a major barrier they faced in working with schools. The lack of resources to travel large distances often results in fewer opportunities for classroom teachers to make pre-program visits or for Centre staff to visit schools. For Centres located in rural areas, telephone and email are the prime means of pre-program communication. While Centre staff and classroom teacher communication via email, telephone and web-based information address this issue in part, these methods are not always considered an adequate substitute for face-to-face contact.

I think you need face-to-face to see the kids, to see what's happening in the school, so the distance between us and the school groups makes it difficult ... Our isolation is our biggest problem ... We do attempt to visit every school prior to coming to camp to meet the children, to work with the teacher, but that's becoming more streamlined through the use of technology, emails, our web page ... It is very difficult to plan over a phone or via email. (P23)

Having to travel large distances also increases the costs of transport for students, with the result that some students can not afford to participate in the on-site program at all.

We only have a very small client base really in terms of the population that can access our Centre without them having to travel an extended amount of distance, which of course as well, increases the costs for coming here. (P12)

When demand exceeds supply

Many principals commented on the number of schools wanting to be involved in their programs. Waiting lists were common and in some instances Centres were simply unable to accommodate all groups who applied to participate.

We are inundated. We are overwhelmed with demand and that's always a problem. (P4)

Invariably we have a waiting list ... We will try to accommodate those people next year but that doesn't always happen. So staffing is a real issue. (P14)

Achieving a balance in the quantity and quality of programs offered was a major challenge. Several principals suggested that the quality of teaching and learning may be compromised because of the pressure to take too many classes, this pressure being due not only to the number of classes wanting to participate in programs, but also to Departmental expectations of high student numbers. According to principals, these

pressures not only impacted on the quality of programs offered by the Centre, but also hindered the Centre's involvement in expert/advisor and partnership roles.

We've got a growing demand – for our excursions yes, but also we've got now growing demands for us to be empowering schools. So the biggest challenge we face is how do I balance the demands of keeping this Centre functioning and revving at a really high level, pouring kids through here, because that's important, it's all we're here for, but then also be out there doing support consultancies and doing a whole lot of stuff in schools to take the experience they have and make it go a hundred times further. That's the challenge. (P8)

We are up to what I call the optimum capacity of service delivery, so we are up to a level that is sort of sustainable without burning out our staff and burning out the environment or stretching ourselves to the limit there. (P20)

Understaffing

Many principals identified that the number of staff allocated to Centres was insufficient to meet the demands of delivering high volumes of programs. Centre staff often had to deal with large groups of students, for example when schools send two classes simultaneously to reduce transport costs. In one residential program, staff numbers were insufficient to manage overnight shifts. In residential programs, it was sometimes difficult for staff to undertake pre-program visits to schools.

We need a supply teacher to come in to run some of the work overnight so we don't have to be trying to manage our families, run the camp all day and then be there overnight. (P6)

We just don't have the staff to be able to keep going and doing those things, and providing the resource base that teachers are really wanting to see. (P2)

The only limitations are staff availability to deliver programs. (P20)

Because we are in a marine environment where risk management and safety are core foundations of all the programs that we do, we've got to make sure we have appropriate staffing. (P4)

Facilities

Insufficient resourcing for the acquisition and maintenance of facilities was a concern raised by several principals. This included concerns about basic accommodation in residential centres and needs for expensive equipment such as boats. In some cases, principals had raised funds independently of the Department to meet these needs.

Most of our facilities have been done by our own funds or we put in for grants. When you get a grant, you get half of what you need, so there's a lot of tail chasing of facilities. (P6)

Expertise of Centre Staff

Principals acknowledged that the commitment and expertise of staff were vital in their Centre's capacity to provide high quality specialised environmental and outdoor education experiences.

You need to have excellent teachers who are personally committed, not just to education but to environmental education. They might not have the immense knowledge background and foundation but they need to be committed. (P4)

As well as having a strong commitment to the goals of environmental education, Centre staff need professional skills and personal attributes that enable them to be flexible in their teaching-learning strategies, work with both small and large groups of students, respond to a wide range of student learning needs, engage students actively in learning experiences and encourage students to learn reflectively. This often involved working effectively with a wide range of students and programs under varying conditions.

Our range of students is from preschool through to university undergraduates, so there is a very broad “ask” of our particular skills. (P14)

Our skills in our setting means that we can turn programs around and just take a different approach ... that’s what has made a lot of our programs more successful - flexibility and opportunities to plan ... We are very flexible in our teaching strategies. We will certainly drop our major focus on content if the kids aren’t getting along socially and that’s impacting on the delivery of the program, the outcomes. We would do our back-up programs that enable us to focus more on that initially and then we work gradually into our program. (P23)

Our exposure to the students is like the blink of an eye lid. We’ve got to have something with a wow factor, with the magic, with the real emotive connectiveness, something that moves them beyond just “I saw that” to “Now I feel that, I understand that”. We want to get that deeper and higher level sort of thinking and a deeper level of connectedness to whatever is going to motivate an individual towards a more sustainable future - that’s our challenge. (P20)

We use a reflective experiential approach ... while the activity is being conducted, and at its completion of course, we reflect upon the students’ individual and group progress to ensure we’re drawing out those learnings. (P12)

We make sure that our staff have the appropriate skills, and that comes right down to the initial selection of staff. We have a very personable staff here who get on well with everyone and are keen to work with the schools ... you’ve got to be able to encourage the visiting teacher and not rub them up the wrong way. (P4)

Partnerships with Classroom Teachers

Principals perceived that Centre programs are more effective when classroom teachers are interested and willing to be actively involved. Teachers who are interested and committed to the program are more likely to prepare students for the visit and contribute to the planning and delivery of the program. Such teachers are also more willing to take risks in their teaching or try a new approach, thus developing skills that they can adapt and apply back in the classroom. Conversely, disinterest or a lack of commitment by classroom teachers was identified as a challenge.

We can tell the quantum difference between those teachers that are not engaging in the prior learning, to those that are really engaged, those that

come out for the pre-visit who really unpack all the resources we have collated for them, to get the rich learning experience for the students. We can see a quantum difference in levels of outcomes and the two engagement levels of the teachers. (P20)

The teachers that are coming, some of them are active, some of them are passive, some of them know the deal and get in and do things, others sit back and are quite content for you to do everything, some don't get anything achieved because they don't know why they are here. (P6)

The teacher is absolutely vital. They are not our children, we don't know them. In our pre-excursion planning process we rely on the teacher to be heavily involved. (P21)

One of the big problems we have had over a long period of time is the motivation of the teachers and why they are coming... there are quite a few teachers that look at coming here as a time out of the classroom. This is why again the model has been set up to try and focus on why they are here and put subtle pressure on them to do the pre-visit activities. (P17)

Although close partnerships with classroom teachers are considered the ideal, the expectations and requirements of classroom teachers vary considerably across Centres and programs. For example, in some Centres, teachers are required to attend a single briefing session of one or two hours. Other programs offer classroom teachers extended training prior to the on-site program. The lead-up to the on-site visit is considered to be essential in identifying student needs and developing teachers' capacity to participate in the program. Pre-program visits are generally encouraged, and in some cases, are a mandatory condition of acceptance into a Centre's program.

There is a familiarisation day process where for two days in the year, teachers who have not been to a Centre for the previous two years come in and spend a day pre-visiting and planning. We pre-visit the schools, usually for a couple of hours to a half day. (P6)

It is also considered important that classroom teachers receive and read information from the O&EEC about the role, purpose and value of the Centre, program, and environmental education in general. Principals believed that classroom teachers need to have a clear understanding of the purpose and content of the program and approaches used; a shared understanding of the roles and responsibilities of classroom teachers and Centre staff prior to, during and following the program; and health and safety aspects of the program.

It's just the preconceived ideas that schools and staff have about what the Centre has done in the past and therefore, that's what limits it at the moment. That would be the biggest stumbling block I have, that people are just astounded that the Centre's resources and expertise has expanded so greatly, that they could do programs here across the curriculum that were never possible before. (P12)

Collaborating with teachers in the planning-implementation-follow-up cycle is also considered necessary in order to build a sense of ownership of the process and to ensure that the demands of the program match curricular needs, student abilities and interests. Lack of preparedness on the part of the students or the classroom

teacher severely limits the potential for learning. Students' pre-visit knowledge of, and expectations regarding the program will influence their motivation, interest and capacity for learning during the program.

Engaging in the very beginning in the whole cycle with the teacher: that is critical ... they are partner to the whole owning of the program. They are not just standing on the sideline; they are actually in there, boots and all. (P20)

The most important element I suppose is keeping open lines of communication between our clients and the staff here, so that we're always constantly talking with our clients and making sure that what we're doing and what we're wanting to do is exactly what is required to meet the service delivery needs of their site. (P12)

We make sure we have this personalised communication with the school, especially in the pre-visit and any discussion coming up to their visit. There is always that personalised communication so they know who they are dealing with, they've spoken to that person at length, they've had meetings with that person and then they can do emails and everything else. (P4)

Partnerships with Schools

Although many of the Centres' strengths in terms of staff expertise and opportunities for field-based experiential learning arose from their location outside of the formal school system, principals acknowledge that this separation also entails some limitations. As Centre programs are relatively short in duration, from a few hours through to a few weeks, principals acknowledge that the impact of their programs is likely to be limited in comparison with students' overall experience of schooling and education. Principals also acknowledge that they have little control over students' learning and participation in follow-up activities when they return to the school environment. Building good relationships with schools as well as individual teachers is considered to be an important success factor because an ongoing connection between the Centres and the school facilitates the continuity of environmental education programs in the school environment.

I guess more than anything, we are looking for a change in culture, within particular schools from the point of view of sustainable practices and environmental awareness and empathy. I have had that reported to me from people in schools that the centre has been working with over a period of ten years or more, that that appears to be one of the positive spin offs. (P14)

Principals are optimistic that developing partnerships with schools can increase their Centre's level of influence in the school and reinforce the place of environmental education within the school curriculum. The third model outlined above, whereby Centres and schools work together in the adoption of sustainability initiatives at the whole school level, was seen as a promising way of overcoming the limitations inherent in the destination and expert/advisor models.

Conclusion

Outdoor and Environmental Education Centres in Queensland use a wide range of programs and pedagogies that are supported by staff with high levels of expertise and commitment to environmental education and its goals. Their programs are designed to achieve learning outcomes that include increasing students' knowledge of natural

systems, environmental issues and human impacts, fostering an environmental ethic, developing an understanding of sustainability, and promoting an action orientation to address environmental problems.

However, principals of these Centres recognise the limitations of a destination model of service provision, whereby their programs are confined within the boundaries of their own Centre, which students ‘visit’ for a short period. Principals envisage a broader role for O&EECs that includes promoting and advocating for environmental education; developing the professional capacity of classroom teachers to integrate environmental education into the school curriculum; and developing whole-school partnerships to ensure the continuity of environmental learning experiences in all aspects of school life. Several Centres already actively support whole-school approaches to environmental education and on-ground programs in the school environment (e.g., energy efficiency, recycling, water conservation, revegetation work).

These findings are consistent with the recent national review of environmental education in Australia (Tilbury & Cooke, 2005), which identifies the emergence of Centre-school partnerships, and the changing role of Centres in contributing to the professional development of classroom teachers and supporting and advising schools on environmental and sustainability matters. Adopting these roles will enable Outdoor and Environmental Education Centres to address some of the challenges they face in providing programs that are effective in bringing about student environmental learning, while at the same time contributing to a wider school awareness and action in relation to environmental sustainability. These broader roles do not negate the need for ‘destination’-type programs, but rather build upon and extend the outcomes already being achieved in this way.

Further research is needed to examine some of the issues raised by principals in relation to their implementation of the three roles or models of outdoor and environmental education discussed in this paper. For example, what learning outcomes are associated with different teaching approaches and strategies currently being used by O&EECs? To what extent are classroom teachers able to apply such approaches and strategies within the school or classroom setting? What impact does participation in an environmental education program have on students, teachers and whole schools? What strategies have been used in developing whole-school partnership approaches, and what outcomes have been achieved?

By addressing these issues, researchers can assist outdoor and environmental education centre principals to overcome some of the barriers they have identified and build on the success that has already been achieved in developing Centre-school partnerships that facilitate learning for sustainability.

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Keywords: Learning for sustainability; Environmental education centres; Environmental partnerships; Sustainable schools; Environmental sustainability.

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Endnotes

1. The term ‘destination model’ was originally used by Ron Tooth, Principal of Pullenvale Environmental Education Centre, Queensland.

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