From Rhetoric to Practice:

Integrating Sustainability

with

Tasmania's

Essential Learnings Framework

Kristin Pedersen

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School of Geography and Environmental Studies

University of Tasmania

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Kristin Pedersen
University of Tasmania

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Abstract

With reference to Tasmania's new state curriculum - the Essential Learnings Framework (ELs) – this research explores the merits and practical relevance of Education for Sustainability (EfS). The work considers the contextual nature of sustainability in the application of an integrative approach to EfS in two public primary schools. The first section identifies EfS as an integrative educational principle that is conceptualised at the global level, yet accessed through very specific means of delivery at the local scale. Particular attention is given to the potential for place-based education, school/community partnerships and collaborative leadership to facilitate the shift from EfS as a global ideal to a powerful local practice in individual schools. I examine the strategies through which architects of the Australian education system translate the global demands of EfS into educational policy and curriculum standards. The ELs framework is then explored to map its conceptual foundations as an integrative approach to learning and its links to the principles of EfS. The second section reports on case studies from two primary school communities attempting to implement EfS through the ELs framework in specific practical projects. Using a mixed method investigation inspired by a whole systems methodology, each case study was explored through adaptive and locally grounded investigations. The case studies reveal that EfS is subject to individual and group interpretations, local community politics, and different capacities, all of which affect the extent to which EfS can be successfully translated through the ELs. I discuss the varied interpretations of sustainability exhibited by stakeholders in each case study, and consider the parameters these place upon school communities attempting to integrate curriculum, place, partnerships and leadership through a common curriculum framework. The research suggests that in order to maximise the potential for the ELs framework to address EfS through integrative learning approaches, individual school communities must engage in open and responsive debates about what it means to create a sustainable future.

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CHAPTER ONE

INTRODUCTION

'How do you say sustainable development?'

An internet based questionnaire on a website for the United Nations Educational, Scientific and Cultural Organisation (UNESCO) asks visitors to answer the question 'How do you say sustainable development in your country?' (UNESCO, 1995-2006b, np). By asking this question, UNESCO suggests that sustainable development is a global concern potentially interpreted in many ways. UNESCO's question emphasises the point that a global discourse of sustainability is one in which contextualisation and local interpretations are crucial (Harris & Robottom, 1997; Harvey, 1995; S. B. Hill, 2004; Houghton, 2005; Robottom, 2004b; UNECE, 2005; UNESCO, 2003; United Nations, 1992a). The purpose of my research is to explore the complexities of this contextualisation when individuals and small organisations attempt to translate political commitments for sustainable development into educational practice.

This research is particularly concerned with the devolution of sustainability education policy through the formal schooling system in Tasmania, Australia. It explores how devolution affects the ability of individual school communities to contribute to transformations in social practice that foster sustainability. Through local empirical investigations, this research advances understandings of whether, how and to what extent the overarching principles of sustainability are readily translated to local communities of place and interest. These principles include, *inter alia*, the conservation of species, bio- and geo-diversity, landscape integrity and

cultural diversity; the creation and maintenance of structures and processes of social

justice and intra- and inter-generational equity; the development and perpetuation of

fair systems of economic exchange; and the implementation of systems of good

governance predicated on democratic participation (Dresner, 2002; IUCN, UNEP, &

WWF, 1991; McKeown, 2002; UNECE, 2005; UNESCO, 1995-2006a, 2002; United

Nations, 1992b).

A problem of acknowledgement – a problem for education

The full scope of this research, including its specific aims and objectives will be

addressed later in this chapter. First, however, I offer a brief background to growing

global concerns of the importance of education for sustainability, or EfS as it will be

referred to hereafter. The aspiration to create a sustainable future presents humankind

with a two-step challenge. The first step is to determine the difference between the

causes and the symptoms of what has come to be recognised as unsustainable

development (Tilbury & Wortman, 2004). The second challenge is to develop

different strategies for both, ensuring that long-term and deep mechanisms of social

change, such as education, are primarily directed at tackling causal problems (Fien,

2001; Hill, 1999; Orr, 1992; Rawson, 2000; Sterling, 2001; UNESCO, 1997, 2002).

A significant number of international and national reports identify climate change,

species extinction, habitat loss and overpopulation as symptomatic of

unsustainability (Ecologically Sustainable Development Steering Committee, 1992;

IUCN, UNEP, & WWF, 1980; Kendall, 1992; United Nations, 1992b, 2002). While

the need to deal with these symptoms is apparent, it is imperative to recognise an

additional and fundamental underlying cause in a cumulative way of life that may

(however problematically) be described as Western market capitalism (Doyle, 1998; Nath, 2003).

Environmental degradation, social inequality and economic injustice are occurring across the globe as a result of human impacts (Kendall, 1992; United Nations, 1992b, 2002). These impacts on the planet are a product of diverse politics, values, economies and cultural beliefs (Munson, 1994; Orr, 1990b, 1992, 1994; Saul, 2000; Tilbury & Wortman, 2004). On one hand, choosing to address the symptoms of unsustainability might allow individuals and communities, governments and industry, to accept their responsibilities via social, bureaucratic or technological solutions (Nath, 2003). However, alleviating the symptoms without addressing their causes will inevitably transfer further problems onto future generations[1] (Sterling, 2004). On the other hand, choosing to address the causes of unsustainability will inevitably require a shift in the way that all contemporary (and future) individuals, communities and global societies live, think and learn (Dale, 1994; Hill, 1999; IUCN et al., 1991; Rawson, 2000; Saul, 2000; Sterling, 2001; Tilbury, 2005; Tilbury & Goldstein, 2003).

Advocates for sustainability maintain that addressing the problems of unsustainability requires commitment across a range of scales from the global to local (Fien, 2001; McKeown, 2002; Parliamentary Commissioner for the Environment, 2004; Sterling, 2001; UNECE, 2005; UNESCO, 2002, 2003). Committing to a sustainable future at the global level assumes that the goals of economic integrity, social equality and living within the means of the planet are defined and accepted on a global scale (Bell & Morse, 2005; Doyle, 1998; Jickling,

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[1] Considering and caring for the needs of future generations are basic tenets of creating a sustainable future, which renders this choice to address only the symptoms of the problem, one which could contribute to unsustainable development (Environment Australia, 2000b; World Commission on Environment and Development, 1987).

1994; Stables & Scott, 2002) . This position seems to suggest a shared commitment by the members of **all** countries, states and communities to acknowledge and participate in a common goal for a sustainable future. Such a global ideal has been partially[2] recognised by a number of nation-states and non-government organisations in international documents such as *Caring for the Earth: A Strategy for Sustainable Living* (1991); *Local Agenda 21* (1992); and the *Johannesburg Declaration on Sustainable Development* (2002). As stated in Section 1.1. of the Preamble to the United Nations' Local Agenda 21:

> Humanity stands at a defining moment in history. We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being. However, integration of environment and development concerns and greater attention to them will lead to the fulfilment of basic needs, improved living standards for all, better protected and managed ecosystems and a safer, more prosperous future. *No nation can achieve this on its own; but together we can - in a global partnership for sustainable development* (United Nations, 1992a, np, emphasis added).

These documents tend to suggest that in order to achieve global sustainable development, sufficient capacity building and action must occur at local, communal and individual levels, and must be supported by all sectors of government, industry and society (UNESCO, 2002). It is also contended that such capacity building and empowerment for action is necessary for education systems in the twenty-first

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[2] I recognise that these documents do not encompass the unanimous support of all governments, communities and individuals across the globe and without such inclusion cannot be considered a truly 'global' ideal.

century (McKeown, 2002; Parliamentary Commissioner for the Environment, 2004; Sustainable Development Education Panel, 2003).

Education is recognised in many international agreements as *the key to informing and empowering people with the knowledge and capacity to improve the planet's cumulative quality of life* (ECOSOC, 2005; IUCN et al., 1991; UNECE, 2005; UNESCO, 1992, 2003). However, the efficacy of current educational systems has been questioned for its compliance with tendencies in modernity to perpetuate reductionist, linear models for comprehending the world (Orr, 1992; Sterling, 2004; Tilbury & Cooke, 2005). Such models are centred on values of specialisation, segregation of topics, standardisation and fixed knowledge (Sterling, 2001, 2004). These models do not fairly represent the interconnectedness and complexity of natural and social worlds, and thus are insufficient to engage in processes to create a sustainable future (Capra, 1996; Sterling, 2001).

Linear models of education address the symptoms of unsustainable development merely by contributing to knowledge *about* environmental and social degradation, while doing little to empower and build the capacity of individuals and communities to deal with causal factors (Sterling, 2001; Tilbury & Cooke, 2005). Those who challenge this linear model propose instead a more constructivist educational approach that addresses the cause of unsustainability by directly engaging individuals, communities and governments in *an action-centred commitment to learning for sustainable change* (NSW Council on Environmental Education, 2002; Parliamentary Commissioner for the Environment, 2004; Sustainable Development Education Panel, 2003; Tilbury & Wortman, 2004). Encompassing a whole-systems model, the term EfS aptly describes this non-linear approach to education, as

follows:

> a dynamic concept that utilizes all aspects of public awareness, education and
>
> training to create or enhance an understanding of the linkages among the
>
> issues of sustainable development and to develop the knowledge, skills,
>
> perspectives and values which will empower people of all ages to assume
>
> responsibility for creating and enjoying a sustainable future (UNESCO, 2003,
>
> pg 1-2).

Advocates for EfS emphasise that learning is a *life-long and life-wide process* that

cuts across those domains usually labelled environmental, social, economic, political

and cultural (Fien, 2001; IUCN Commission on Education and Communication,

2002; UNECE, 2005; UNESCO, 2002, 2003). It is intended to value and reflect the

integrative nature of complex systems in the real world by promoting an interrelated

approach to learning that integrates conceptual knowledge, learning processes and

practical experience, and builds the capacity of learners to understand and respond to

complex situations (Sterling, 2001; Tilbury & Cooke, 2005; Tilbury & Wortman,

2004). Ultimately, EfS is about embracing an action-centred understanding of

environmental and social degradation to enable people and groups to participate in

processes of sustainable change (Australian National Commission for UNESCO,

2005; Fien, 2001; Sterling, 2001; Tilbury, 2004; Woods, 2005).

Significance of the research

EfS has been affirmed as an international objective by the United Nations Decade

(2005-2014) of Education for Sustainable Development (DESD)[3]. The DESD was adopted by the UN General Assembly in 2002 after delegates recognised that knowledge and awareness-raising about environmental issues was not achieving the measurable outcomes necessary to reverse deleterious human impacts on the planet (Tilbury, 2004; UNESCO, 2002, 2003)[4]. The DESD 'aims to promote education as the basis for a more sustainable human society' by moving beyond the spheres of basic education and awareness raising (UNESCO, 2003, pg 1). The primary distinction between the Decade and previous international commitments to environmental education is the shift in both the language and purpose of education to embrace the larger scope of sustainability and actively engage people in learning for sustainable change (Tilbury, 2004; Tilbury, 2005). The focus of the Decade is on the critical role of education in empowering people at every level of society to *participate* in achieving greater sustainability (UNESCO, 2003). To support the applicability of this objective in relation to the DESD, UNESCO emphasises that:

> there is no universal model of education for sustainable development. While there will be overall agreement on the concept, there will be nuanced differences according to local contexts, priorities and approaches. Each country has to define its own priorities and actions. The goals, emphases and processes must, therefore, be locally defined to meet the local environmental, social and economic conditions in culturally appropriate ways (UNESCO, 2003, pg 2).

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[3] The designation of the Decade was preceded by almost thirty years of growing international acknowledgement of the role of education in promoting awareness of environmental problems through environmental education (see Intergovernmental Conference on Environmental Education (UNESCO, 1977); the Belgrade Charter: A framework for environmental education (UNESCO, 1975); International Strategy for Action in the field of Environmental Education and Training for the 1990s (UNESCO & UNEP, 1987); and Local Agenda 21 (United Nations, 1992a)).
[4] See also (Smyth, Blackmore, & Harvey, 1997; Young, 2000).

The DESD thus provides a point of departure from which individuals and communities can interpret EfS in local ways and participate in the larger agenda of global sustainability (McKeown, 2002; Tilbury, 2005). It is from an interest in embeddedness and the inter-scalar dimensions of EfS that this research has grown. In what follows, then, I seek to understand the global ideal of EfS and focus on two school communities in Tasmania in order to consider how the global ideal of sustainable change is accessed, understood, interpreted and enacted at the local scale.

Putting forward local strategies – three themes for the present work

A number of strategies have been proposed for implementing EfS at the local level[5]. These encompass learning experiences across the formal, informal and non-formal education sectors[6] (Tilbury & Cooke, 2005; UNESCO, 2003). This research focused on the formal schooling sector, which is recognised as 'one of the most effective means for addressing the challenge of sustainability' (Woods, 2005, np) because of its emphasis on developing young people's cognitive abilities, confidence, and perceptions of the world around them (Chapman & Sharma, 2001; Fien, Poh, Yencken, Sykes, & Treagust, 2002; McKeown, 2002; UNESCO, 2002; United Nations, 1992a). Formal schooling is often also an individual's introduction to social education that extends beyond familial influence, and so provides opportunities to encounter alternative perspectives and world views, themselves critical elements in

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[5] See (Australian National Commission for UNESCO, 2005; NSW Council on Environmental Education, 2002; Parliamentary Commissioner for the Environment, 2004).

[6] Formal education includes study in formal education institutions such as schools, universities and technical colleges where there is defined curriculum, and students are directed towards obtaining a qualification. Informal education is based on learning from experience and is not influenced by formal teaching. Non-formal education consists of one-off systematic instruction where learning is the means to an end, but is not orchestrated for the purposes of obtaining a qualification (Foley, 2000).

fostering sustainability's goals for social justice and intra- and inter-generational equity (Saul, 2000).

Based on the empirical investigations of this research, the present work is concerned with three of the strategies suggested for implementing EfS in formal schooling. These are place-based education, school/community partnerships and internal collaborative leadership. Place-based education is defined as:

> the process of using the local community and environment as a starting point to teach concepts in language arts, mathematics, social studies, science and other subjects across the curriculum. Emphasizing hands-on, real world learning experiences, this approach to education increases academic achievement, helps students develop stronger ties to their community, enhances students' appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens. Community vitality and environmental quality are improved through the active engagement of local citizens, community organizations, and environmental resources in the life of the school (Sobel, 2004, pg 7).

Place-based education approaches use the local environment as an integrative learning tool through which the social and natural processes of a particular place can be studied in relation to one another (Orr, 1990b). This method encourages students and communities to learn about, with and for, their local environments in a contextualised way (G. A. Smith, 2002; Sobel, 1998). The value of place-based education for EfS is seen in the ability of students to become aware of their place within a larger community, and to respond to this awareness with a commitment to inhabit and participate in fostering the sustainability of that place (Orr, 1992). The

promotion of experiential and relevant learning in the place-based approach is largely founded on the philosophies of John Dewey who noted that formal learning was too often disconnected from students' everyday lives and experiences (Dewey, 1907). Place-based education approaches have been used by schools to address issues of significance to their surrounding communities (G. A. Smith, 2002; G. A. Smith & Williams, 1999, offers a collection of essays on such experiences). These approaches often draw on support from the establishment of school/community partnerships, emphasising the importance of both people and places in the process (Sobel, 2004).

Establishing school/community partnerships is a key strategy 'for enhancing engagement with authentic, real-world learning' (Department of Education Tasmania, 2003b, pg 7), and it corresponds to the objectives of a place-based approach (Sobel, 2004). Partnerships have capacity to join 'efforts, resources and talents in an ongoing relationship to achieve essential changes for sustainability' (Chodkiewicz & Flowers, 2005, pg 49; Tilbury, 2004; UNESCO, 2003). In particular, school/community partnerships are a basis for contextualising EfS in the formal schooling system (Keifer & Kemple, 1999).

Literature about school/community partnerships stresses the point that socio-spatial diversity amongst communities will necessarily affect the sorts of relationships established, and the depth of interactions that then are fostered through these relationships; in short, they are affected by age, class, race and ethnicity, location, and so forth (Chodkiewicz & Flowers, 2005; Epstein, 1995). The needs and perspectives of particular communities and schools also influence the establishment of partnerships (Kilpatrick, Johns, Mulford, Falk, & Prescott, 2002; PIRSA

Sustainable Resources Group, 2000). Chodkiewicz and Flowers (2005) suggest that these influences will result in the development of school/community partnerships that range from highly informal to highly formal collaborations. Informal school/community partnerships are often characterised by project-based collaborations where one or more partners commit to specific activities in a loose agreement. While these partnerships can contribute to local sustainability outcomes by addressing contextualised needs through place-based activities, a lack of formal commitment results in weak sustainability because 'the relationships between the school and community ... [exist] only as long as the [particular] project' at hand (Chodkiewicz & Flowers, 2005, pg 27). More formal partnerships identify and share goals, roles and expected outcomes of the collaboration through formal agreements established at the outset of the relationship (Martin, 1995; UNESCO, 1995-2006a). This agreement fosters achievements and challenges that can be monitored and evaluated, and that can encourage the creation of new relationships and commitments. Case studies highlighting examples of each type of partnership show that more formal arrangements (for example, where a common goal is identified and targets and benchmarks are set and assessed) often lead to longevity in partnerships (Kilpatrick et al., 2002; Miller, 1995; PIRSA Sustainable Resources Group, 2000).

One consistent feature of school/community partnerships is the need for strong and transformational leaders to maintain these relationships (Duffy, 2004; Johns, 2003). While partnerships are about sharing roles, resources and responsibilities (Davies, 2002), it is only through collaboration and shared leadership that mutual accountability and involvement can take place (Franz, 2003). Transformative leadership promotes transformative learning, which occurs when people move from awareness to knowledge to action for sustainable change (Sterling, 2001).

Transformative leadership in a collaborative learning environment is a key mechanism through which capacity building for transformative learning takes place and empowerment results (Anderson, 1992). In the formal school settings, transformational leaders are needed to 'promote an atmosphere of care and trust within the school community, setting the tone for mutually respectful relationships' (Department of Education Tasmania, 2002c, np). Collaborative learning partnerships formed from respectful relationships within a school community are the foundation for professional development in EfS. Through shared responsibility and collaborative learning, transformational leadership creates a space for professional, individual and organisational change (Franz, 2003).

One strategy that attempts to draw on collaboration, transformative leadership, school/community partnerships and a grounding in place-based education is a whole-school approach to sustainability, which incorporates:

> all elements of school life such as school governance, pedagogical approaches, curriculum, resource management, school operations and grounds. Whole school approaches can [also] imply links and/or partnerships with the local community (Henderson & Tilbury, 2004, pg 9).

A whole-school approach to EfS consists of school communities embodying and enacting the principles and processes of sustainability including participation, integration, partnerships and leadership to plan and achieve measurable outcomes for sustainable development in schools and surrounding communities. Although a relatively new approach, this method is now being trialed both internationally and in Australia (Department of the Environment and Heritage, 2006; Henderson &

Tilbury, 2004; Sustainable Development Education Liaison Group, 2005; Ward & Schnack, 2003).

Henderson and Tilbury (2004) conducted an international review of whole-school sustainability programs to identify the 'critical success factors' for such programs. Their work illustrated the programs of Enviroschools from New Zealand; the Green School Award from Sweden, the Green School Project in China; and the international affiliates of FEE-Eco-Schools and ENSI (Henderson & Tilbury, 2004). Other notable international programs include the New Jersey Sustainable Schools Network in America (Global Learning Inc., 2003), the Environmental Certification System for Schools (SNCAE) in Chile (Regional Bureau for Education in Latin America and the Caribbean, nd); and the Sustainable Schools Program by the Hampshire County Council in the UK (Hampshire County Council, 2006). In all of these programs, the strategies of place-based education, school/community partnerships and transformative leadership were crucial in achieving whole-school sustainability outcomes.

The present work: scope, questions and aims

The scale of exploration

Given the background above, this work is a study of the manifestation of global sustainability in Tasmania among school communities that participated in the Department of Education Tasmania's (DoET) *Sustainable Schools* pilot project during the period from 2004-2005. That project was meant to advance elements of

the new state-wide curriculum, the Essential Learnings Framework[7], described in more detail in Chapter Two.

Of the three schools originally involved in the DoET's pilot project, one was a metropolitan girl's secondary school located in the capital city of Hobart. Staff at that high school decided to focus their project on a school ground greening scheme funded through a landscaping grant they had received from the DoET. Because they had received a large boost in financial assistance to focus their project on one particular area and had not committed to a whole-school EfS initiative, I did not feel an exploration of their efforts in the pilot project would meet the objectives of my research. I was more interested in the perceptions and active interpretations of the concepts of EfS through the state curriculum in a whole-school approach.

The other participants in the pilot study, Molesworth Primary School and New Norfolk Primary School, were semi-rural co-educational primary schools from the Derwent River Cluster and the Derwent Local Government Area north of Hobart (Figure 1). Both schools cater to students from Kindergarten to Grade 6, and operate under the Tasmanian education system, which is described in Chapter Two. They share a comparable numbers of teachers and students, and draw their complement of both populations from neighbouring communities. Staff at both schools planned to implement a whole-school sustainability program in the year of the pilot project, 2004.

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[7] Since the completion and initial write-up of this work, Tasmania's new Minister for Education has changed the name of this curriculum to *Tasmania's Curriculum* and an overhaul of the structure and assessment of the original Essential Learnings is pending. This research is based on the two years (2004-2005) that the Essential Learnings was actively implemented in Tasmanian public schools, and will therefore retain its commitment to explore the Essential Learnings in its original form.
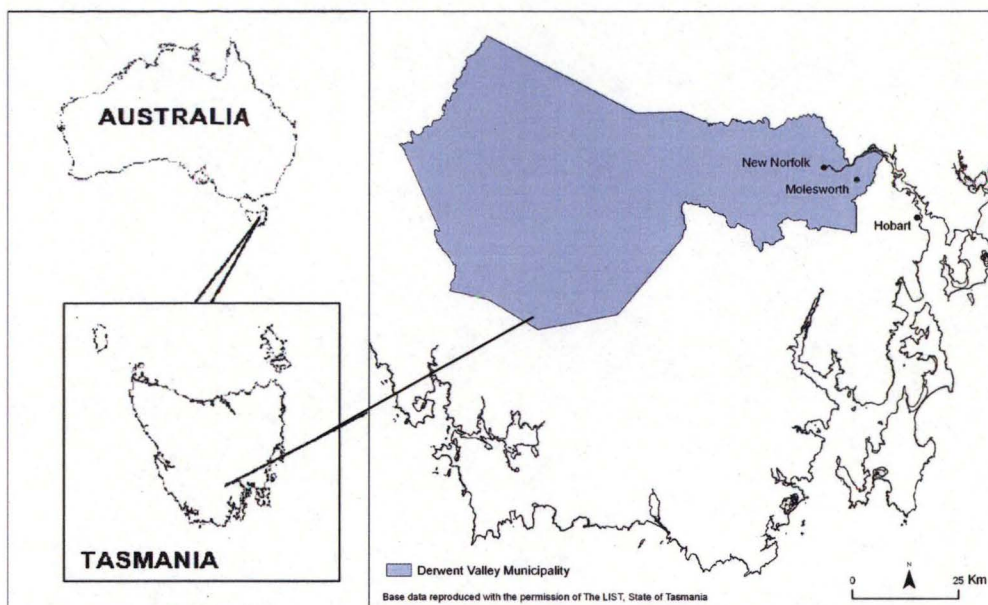
Figure 1. The Derwent Valley Cluster and Municipality in Tasmania, Australia

Source: (Anders, 2006; Armstrong & Stratford, 2004)

This research was most concerned with the different discourses of sustainability exemplified at these two primary schools, and particularly with how these might affect the implementation of EfS by each school community. Molesworth Primary School has a long history of implementing environmental education[8] and a school ethos of sustainability recognised by the school and surrounding communities. The DoET operates its only Environment Centre on the school grounds of Molesworth Primary School, and both the school and the local communities contribute to the management of the Centre. New Norfolk Primary School is located in a small town community largely dependent on resource extractive industries such as forestry and timber processing. A prevailing reaction to the discourses of sustainability has been one of hostility towards conservation, which has hindered the ability of the school's

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[8] In this work I adopt the position taken by McKeown and Hopkins (2003) that the practical implementation of environmental education and EfS in the local setting is more important than a rhetorical debate over the correct terminology to determine their difference. I use the terms interchangeably in this work in the knowledge that in practice they necessarily inform and influence one another (McKeown & Hopkins, 2003).

leaders to decide on a practical ethos on teaching and learning for sustainability. The similarities in educational structure and policy, along with the variations in their respective approaches to sustainability makes these two schools intrinsically interesting case studies for exploring how the global agenda for EfS comes to be embraced and implemented in local communities. These case studies will be described in greater detail in Chapters Three and Four.

Guiding questions and goals

Three specific research questions guide this work. *First*, how is EfS translated down through international, national and local commitments? This question will engage with the devolution of EfS policy down channels of the DESD, the Australian Government, the Essential Learnings Framework and administrators and educators at Molesworth and New Norfolk Primary Schools. *Second*, what strategies are used by each school community in taking up the challenge of sustainability? In addressing this question, I explore different whole-school approaches to sustainability and how place-based education, partnerships and collaborative leadership are affected by the local interpretation of EfS given community context and the imposition of a particular curriculum. *Third*, I will ask whether, how and to what extent the experience of these two school communities might inform the national and international commitments to EfS (Figure 2).

Research design

At the outset of this work, a preliminary consideration was made about my own perceptions and understandings of sustainability, EfS and education (Mason, 2002).

Global Ideal – DESD

**Global Action – ideal achieved
through collective local action**
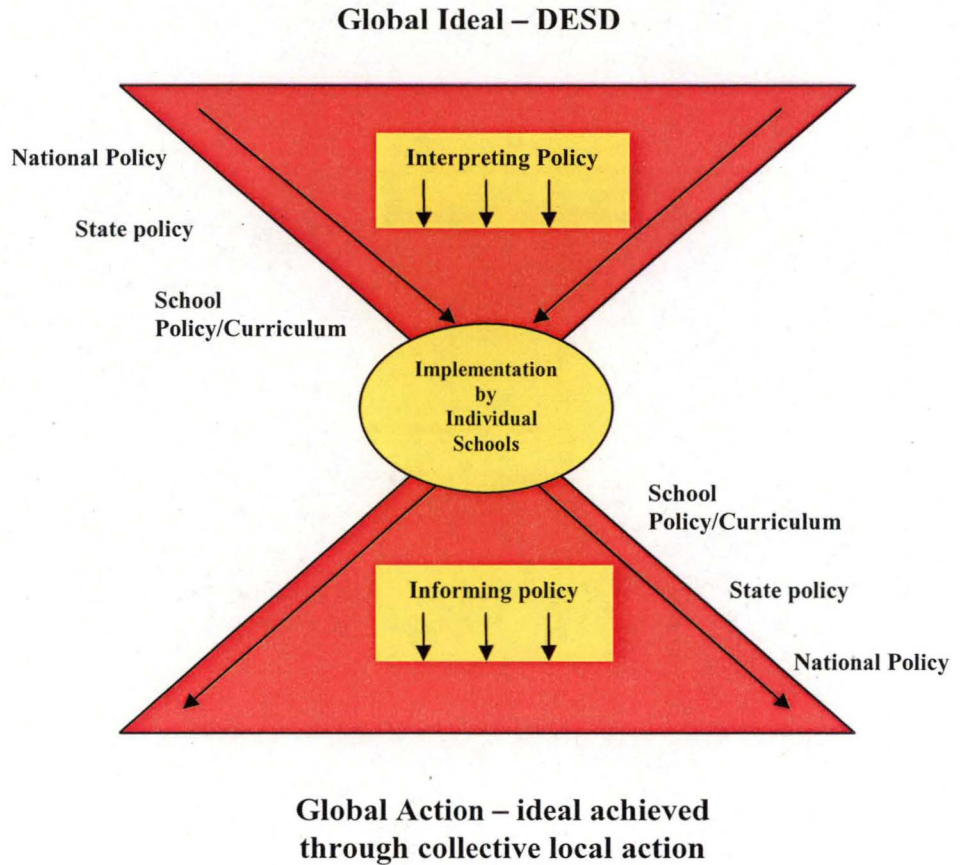
Figure 2. Through the lens of implementation

The research design grew out of my epistemological position and ontological

commitment to sustainability, and from my understanding that my learning and the

creation of knowledge through this work is participatory, contributing to, and

inclusive of, the global ideals of sustainability and EfS (Dale, 1994; Mortensen,

2000; Schon, 1995). This commitment was also nested within, and informed by the

philosophical and technical attributes of qualitative research, enabling an integrative

approach to sustainability and research, facilitated by the processes of participation,

partnerships, collaboration and action (Figure 3).

My own
ontological
commitment to
sustainability

Qualitative
research
methods

EfS,
environmental
education and
sustainable
development

Sustainability –
participation, partnerships, collaboration,
contribution
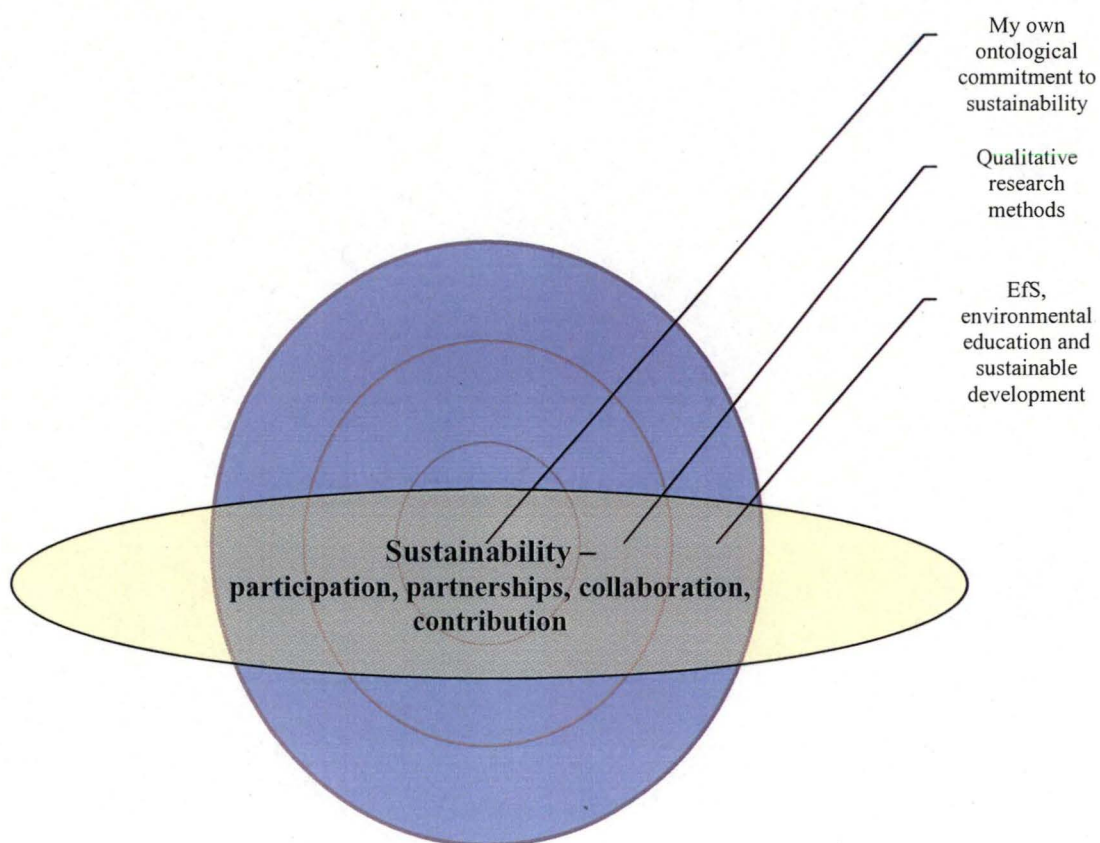
Figure 3. Research design

This work is based on the premise that integrative learning approaches and

qualitative research are evolving and complex learning processes (Arhar, Holly, &

Kasten, 2001; Dowling, 2005; Lincoln & Guba, 2000; Tilbury & Cooke, 2005). My

work was approved by both the University of Tasmania's Human Research Ethics

Committee and the DoET's Office for Educational Review, and constituted an

evolving research design and emergent methods of inquiry which allowed me to

respond to the settings under investigation. I used a bricolage method of

incorporating a variety of research tools and techniques to connect evolving and diverse data (Kincheloe, 2001). Like an integrative learning approach, which acknowledges and reflects complex processes and a unified whole (Capra, 1996), through a bricologe approach qualitative research attempts to bring 'unity to an interpretive experience', by incorporating diverse responses to a particular topic or setting into one shared, interpreted space (Denzin & Lincoln, 2000, pg 5). Interpretive research recognises that any particular phenomenon may have a variety of interpretations and meanings assigned to it (Myers, 1997). Therefore, the bricolage method allows interpretive researchers to gain understanding of a particular phenomenon through investigating and bringing together the different meanings, perspectives and social constructs that have been attributed to it.

It was my intention to engage an ethnographic approach by ensuring that the research design, empirical exploration, analysis of results, and write-up of the work served as mutually informing components grounded in, and contributing to, an understanding of the contextual settings of the work (Tedlock, 2000). However, as the empirical investigation progressed, I recognised a shift in my epistemological understandings, which ultimately re-directed my work towards action research (Schon, 1995). This shift was influenced and informed by my experiences at New Norfolk Primary School. As I will elaborate in Chapter Four, it was the emerging realisation of certain shared, developing interpretations of EfS that led to the action research approach. Inspired by the DESD, the rhetoric of which contends that every individual is a partner in the advancement and empowerment of collective learning for a sustainable future (UNESCO, 2003), I was motivated to accept a more active role within the research process in order to respond, as a partner in learning, to the

developing needs of the school's community (Harris & Robottom, 1997; Nicholls, 1997; Romme, 2004).

Because action research is based on a continuous process of critical reflection as both an influence on and outcome of the research process, it enabled a responsive, adaptive and subjective approach to evolve (Kemmis & McTaggart, 1988; Tilbury, Podger, & Reid, 2004). It allowed the research process to more actively incorporate the principles of participation, partnership, collaboration and life-wide learning, and encouraged me to contribute to capacity building for EfS in the New Norfolk research community (Arhar et al., 2001; Elden & Taylor, 1983; Nicholls, 1997; Packham & Sriskandarajah, 2005; Romme, 2004; Tanna, 2005; Tilbury et al., 2004). The approach permitted me to maintain the bricolage design by drawing together my research experiences with the lived experiences and emerging themes of research participants and the contextualised case study settings (Kincheloe, 2001).

This work thus used a mixed method approach, which drew upon various research tools to explore the manifold processes and many people that affected and were relevant to the research at hand (Denzin & Lincoln, 2000; Flick, 1998; Mason, 2002). I was careful to consider and develop rigorous methods relevant to the aims of the research, among them seeking out and including a variety of perspectives from my own intellectual communities - including my supervisors and colleagues - and the participants included in the empirical investigations of this work (Mason, 2002). I also ensured the use of member-checking, multiple methods of inquiry, repetition, and reference to a wide literature (Bradshaw & Stratford, 2005; Kincheloe, 2001). I made every attempt through such means to ensure the validity of my work by combining, comparing and reflecting on the diversity of insights gained through each

research method (Denzin & Lincoln, 2000). Table 1 describes these methods, and thereafter I elaborate on the met-methodological approach to the whole work, namely the case study.

Table 1. A mixed bag of research tools

Participant Observation	
What	A research method that involves observing individuals, groups, cultures or events in order to understand, describe, explain, and interpret meaning from their actions. Aimed at gaining intimate knowledge and familiarity with observed group, it often involves observing people and events in their natural environment, and sometimes incorporates methods to include the research and researcher as a participant in the group (Nicholls, 1997; Schwartzman, 1993).
Who	The participant observation in this work involved students, teachers, general staff, administrators, parents, and community members from each case study school. This method also involved employees from the DoET. Participant observation exists in a context of collaboration and dialogue between the researcher and the research community, therefore the method is conducted based on the researcher's 'decision to take part in the social setting rather than react passively to a position assigned by others' (Angrosino & Mays de Perez, 2000, pg 678). Considering the nature of participant observation, my own perspectives and actions were considered relevant to the observations and interpretations made in each case study setting.
When	This method was used throughout the course of the pilot year and following school year and was employed as often as possible in order to validate my understanding of the processes at each school and to develop trust and a rapport with each of my research communities (Angrosino & Mays de Perez, 2000). Prolonged interaction within a research community helps the researcher to gain a better understanding of the research setting (Tedlock, 2000).
Where	Date was recorded at daily school activities; in classrooms and hallways; at recess and lunch; before and after school; in playgrounds; during class excursions; at staff meetings teacher professional development workshops and community events; and at School Council and Parent/Community meetings. Participant observation can occur in a multitude of settings that the researcher identifies as relevant (Mason, 2002).
How	By immersing myself as a participant within each research setting, I was able to observe and document occurrences and events in each case study setting. Documentation occurred in the form of note taking, picture taking; a personal journal; and the collection of materials emerging from each setting (i.e. flyers, posters, essays, artistic creations). 'All observation is participant observation', therefore my own participation, influence and interpretation of these events was active in the creation of understanding and knowledge within each setting (Dowling, 2005, pg 192). My participation ranged from complete observer to complete participant in response to the setting at hand (Kearns, 2005).

Why	Data generated from participant observation offer a detailed, rounded and contextual picture specific to each case study setting (Mason, 2002). Participant observation allows researchers to observe and document a 'geography of everyday experience' (Kearns, 2005, pg 195), which was necessary for observing the implementation of EfS as an everyday school behaviour.
Challenges	I was often invited to observe the settings each school community perceived as the most relevant to my research (i.e. tree plantings and environmental classroom units). I had to make a conscious effort to direct my gaze at other areas and activities in order to gain a fair and well-rounded understanding of how the themes of EfS were being integrated throughout each school (Mason, 2002). Immersing oneself within a research setting has emotional and ethical considerations that had to be constantly addressed through a process of critical reflexivity (Behar, 1996; Mason, 2002). Considering the level that my interpretation of events played in the creation of knowledge from this method, I had to confront issues of power relations between myself and my community (Angrosino & Mays de Perez, 2000; Dowling, 2005; Mason, 2002). Ultimately it was this confrontation that led to the collaborative action research approach applied at New Norfolk Primary School[9].

Focus Groups

What	A research method where a small group of people are asked to discuss their perspectives, attitudes and understandings of a concept or idea (Gibbs, 1997). 'Focus groups are a form of group interview that capitalises on communication between research participants in order to generate data' (Kitzinger, 1995, np). Focus groups have also been defined as a 'carefully planned discussion designed to obtain perceptions in a defined area of interest in a permissive, non-threatening environment' (Krueger, 1988, pg 18).
Who	Four focus groups were used in this study in each of the case study schools. (Group 1) Teachers; (Group 2) Parents; (Group 3) Parents, Teachers, Administrators and Community Members; (Group 4) Students. Individual responses were coded to protect the anonymity of participant. The coding scheme for this work can be seen in Table 8.
When	Focus groups were delivered in relaxed settings that were comfortable and convenient to each group (Kitzinger, 1995), usually during scheduled meetings that participants would already be attending. A number of focus groups were run in order to validate the findings and document the development of perspectives throughout the progression of the respective EfS programs. (Group 1) during staff meetings (3 in each school each year); (Group 2) during Parent Committee meetings (1 at the conclusion of the pilot year); (Group 3) during School Council Committee meetings (one mid-way through the pilot year and one at the conclusion of the pilot year); (Group 4) during the daily school day, sometimes during group activities (3 throughout each year of the research)
Where	The focus groups took place at each school in the regular meeting areas of each group. (Groups 1-3) -- where regular meetings were held (i.e. staff room and library); (Group 4) -- various locations including art room, playground and classrooms that EfS activities were taking place.
How	Each focus group was designed to respond to the particular project at each school. The questions focused on the themes of sustainability, education, integration and partnerships and the group discussions developed out the interpretations of these themes particular to each group. Data were recorded through note-taking, and notes were analysed according to

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[9] The action research methodology will be discussed in Chapter Four.

	repeated and unique phrases illustrating the spectrum of interpretations given to the themes discusses. In addressing specific interpretations of the ELs Framework and its conceptual connection to EfS, I used a standard survey in the last focus group conducted with Groups 1-3 (See Appendix 1). Each group was asked to individually rate its interpretation and value of each of the key elemental outcomes and their applicability to 'creating sustainable futures'. Respondents were also asked to discuss these individual interpretations as a group. The data were coded according to the ratings given in the individual responses to the survey, as well as through note taking of the phrases used in the accompanying group discussion.
Why	Focus groups are useful in exploring the construction of theoretical knowledge amongst a particular community in regards to a particular topic or process (Lunt & Livingstone, 1996). Focus groups enable a process of interactive collaboration and learning, which reveals the diversity of perspectives that socially construct knowledge within that group (Cameron, 2005; Gibbs, 1997). Focus groups are helpful for exploring diverse perspectives and open-ended research questions by encouraging participants 'to explore the issues of importance to them, in their own vocabulary, generating their own questions and pursuing their own priorities' (Kitzinger, 1995, np). Considering the open dialogue, action research on which this work was based, focus groups were also a method through which I could promote discussion and the development of perspectives in the research community regarding the research questions and topics discussed (Cameron, 2005; Kitzinger, 1995).
Challenges	Because peer pressure and conformity sometimes influence focus group responses (Cameron, 2005), there were challenges in making each individual feel comfortable expressing their own opinion within this familiar group of colleagues. The use of individual surveys helped to relieve anxiety among individual respondents who could discuss the topic openly on one level and clarify their opinion in confidence with the survey. The survey also helped in keeping each group on task with the research objectives, which is sometimes a challenge to open discussion (Kitzinger, 1995).

Interviews

What	'A face-to-face verbal interchange in which one person, the interviewer, attempts to elicit information or expressions of opinion of belief from another person or persons' (Maccoby & Maccoby, 1954, pg 499).
Who	Informants were chosen because of their role in the EfS programs particular to each setting (Minichiello, Aroni, Timewell, & Alexander, 1995). In each setting members of the steering committees were the first informants chosen. These individuals and the principals from each school were interviewed on a casual basis throughout the development of the projects. The interview design was dynamic and evolved with each research setting (Tremblay, 1982), and this tendency was reflected in the evolving choice of interview respondents who emerged as relevant respondents to each particular setting. Within each setting teachers, students, parents and community members all served as interview respondents throughout the course of the work.
When	Interviews were conducted with the steering committee teachers at the start (March 2004), middle (July/August 2004), completion (November/December 2004), and one term subsequent (February-April 2005) to the EfS pilot projects. Other informants were interviewed as opportunities arose, such as community events for community members, School Council meetings for community members and parents, and daily school activities such as recess and lunch time for teachers.

How	The interviews conducted in this work were unstructured or semi-structured and used conversation as a method to uncover informant understandings, perspectives, insights, and interpretations of EfS and its application in each case study setting. I used an interview guide to address relevant themes (Dunn, 2005); however there was significant flexibility in each interview to allow for the emergence of personal stories and an unstructured interview design. Secondary questions were used to prompt discussion based on the particular stories that emerged. Respondents with whom I did not have frequent contact were recorded in the interview process to ensure the valid recording of the discussion (Whyte, 1989), and note-taking was used to record data for more frequent, informal interviews (i.e. a case of multiple interviews with one person) (Douglas, 1985). These notes were transcribed (Minichiello et al., 1995) and coded to identify similar and contrasting vocabulary used by informants, which allowed for latent content analysis of the emerging themes discussed (Dunn, 2005). Transcriptions were also used to identify individual phrases and language that would allow personal stories to emerge from the work.
Why	Interviews 'allow you to discover what is relevant to the informant' and allows you to check, verify and validate your opinions, assumptions and conclusions in research (Dunn, 2005, pg 80).
Challenges	The researcher must recognise data gathered in an interview are merely the opinions and perspectives of informants and do not represent a unanimous opinion of a research community (Dunn, 2005), which was a critical consideration to be made in my own coding and interpretations of the data. The relationship between interviewer and respondent is an important consideration in interview design, and establishing rapport and trust played a critical role in this work as a result of my own developing role within my research community (Douglas, 1985; Dunn, 2005).

Case studies

Case studies draw out lived experiences, which are needed for the advancement of understanding of EfS (Robottom, 2005; Tilbury, Coleman, & Garlick, 2005). They also offer richly descriptive pictures of settings under investigation (Mason, 2002; Platt, 1988). Illuminating lived experiences to advance understanding of particular cases highlights each case's *inherent* value (Platt, 1988; Stake, 2000). Therefore, describing the varied experiences of each school advances the overall objectives of this research by illustrating the varying strategies embodied by different school communities in their implementation of EfS through a whole-school approach to curriculum.

Given my intention to offer a level of transferability from these case studies to the creation of knowledge relevant to the Tasmanian education system as a whole, the research also placed an instrumental value on each of the case studies used in this work. As Stake points out, 'because the researcher simultaneously has several interests, particular and general, there is no line distinguishing intrinsic case study from instrumental' (Stake, 2000, pg 437). However he warns that in comparing two or more cases for instrumental purposes, the contextual uniqueness of each case may be lost in the comparison of similarity. Taking note of this caution, in Chapters Three and Four I give thick descriptions of each case study, before discussing their differences and similarities in Chapter Five. While it is not my intention to compare the implementation of EfS in ways that rank the two schools, I recognise that through comparison, I risk overshadowing their intrinsic value; this, however, is not my intention. Instead, through a discussion of comparisons I hope to illuminate the potential for different stories to emerge from a reading of similar policy rhetoric in order to explore how interpretations and applications of EfS might be highly variable between different communities, a step that is particularly important in addressing my third research question noted above and pertaining to how variability might contribute to a broader discourse in state, national and global EfS policy.

Finally, while the literature on EfS and whole-school sustainability recognises that longitudinal case studies are needed to assess the success and 'sustainability' of EfS programs in formal schooling (Henderson & Tilbury, 2004; Daniella Tilbury et al., 2005), my ability to conduct longitudinal studies in either school was limited due to the time frame allocated for my research and the *Sustainable Schools* pilot project under investigation. Therefore, these stories contribute a *starting point* from which others can be inspired to add to the advancement of EfS in Tasmania, thereby

signifying the commitment of this research to contribute to the global ideal of learning for sustainability.

Enrolling participants

Once the case studies had been selected, I needed to enrol and engage a set of participants from each. Mason notes that the selection of participants should be an 'organic practice, in the sense that it is something which grows and develops throughout the research process, in ways that are crucially related to the emerging shape of the research' (Mason, 2002, pg 127). This method of being responsive to shifts in the shape of the research and deliberately selecting participants for a study is called 'purposive sampling' (Patton, 1990). Purposive sampling selects participants because of their relationship to or experience with the research topic in its grounded setting (Patton, 1990; Robinson, 1998). Unlike representative sampling which uses random selection of participants to gain an idea of typical or extensive characteristics of larger populations, purposive sampling seeks to gather rich or intensive data to address the qualitative research questions in a deeply theoretical way (Mason, 2002).

My first points of contact for each of the case study schools were the steering committees[10], with whom I began to explore the visions and plans for implementing EfS in each school setting. From these visions and plans, the process of selecting other participants evolved to respond to the direction of each school's EfS program. For instance, at Molesworth Primary School the EfS program had a strong focus on the local community. The inclusion of local community members in the delivery of

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[10] Each school assembled a steering committee of 2-3 teachers at the start of the *Sustainable Schools* pilot project in 2004. This group was responsible for planning, implementing, monitoring and evaluating the *Sustainable Schools* program at their school. The steering committee was also responsible for reporting their successes and challenges in the project to the DoET throughout and at the conclusion of the pilot year. The roles of each steering committee will be addressed in Chapters Three and Four of this work.

EfS at that school inspired me to seek their involvement as participants in my research. New Norfolk Primary School, however, was guided more by connections with external organisations and partners, thereby encouraging the selection of participants in this case study to proceed differently. Because each staff group intended to implement the *Sustainable Schools* project through a whole-school approach, I felt it necessary to include the perspectives of every teacher in each school as well as those students, parents and community members involved in planning and implementation of the EfS process. However, as the following chapters reveal, the level to which EfS was integrated varied across and throughout each case study school, and thus purposive sampling of relevant perspectives also varied. Table 2 outlines the coding scheme of individual participant responses from each school and participating group used to inform this work.

Table 2. Coding scheme for individual participant responses

Molesworth Primary School	Steering Committee: MPS-sc1; MPS-sc2, etc... Principal: MPS principal Teachers: MPS-t1, MPS-t2, etc... Students: MPS-st1, MPS-st2, etc... Parents: MPS-pt1, MPS-pt2, etc... Community members: MPS-comm1, MPS-comm2, etc...
New Norfolk Primary School	Steering Committee: NNPS-sc1; NNPS-sc2, etc... Principal: NNPS principal Teachers: NNPS-t1, NNPS-t2, etc... Students: NNPS-st1, NNPS-st2, etc... Parents: NNPS-pt1, NNPS-pt2, etc... Community members: NNPS-comm1, NNPS-comm2, etc...
DoET	DoET-1, DoET-2, etc...
Other respondents	Local Council Member 1, Local Council Member 2, etc...

The road ahead

The final section of this Introduction is intended to provide the reader with an overview of the following chapters. Chapter Two is designed to set the context for the remaining empirical work of this research. This chapter first gives a brief overview of the Australian Government and identifies education as a shared duty and responsibility of the State/Territory and Federal Governments. I then discuss the incorporation of EfS into federal education policy and the most recent EfS initiatives aimed at addressing the objectives of the DESD. This chapter also describes the Tasmanian education system and the development and implementation of the Essential Learnings Framework, with an aim to illustrate how this curriculum framework might deliver the internationally defined objectives of EfS. Particular attention is given to how the Essential Learnings Framework supports an integrative, partners-based approach to education using facilitative leadership and cooperation.

Following Chapter Two the reader will discern a noticeable change in the language of the work. This is intentional inasmuch as I am hoping to give a more personal voice to the lived experiences of the case study communities. Chapter Three describes the state of environmental education at Molesworth Primary School and how this school community interpreted the Essential Learnings Framework and used it as a tool to shift its education focus from environmental education and awareness raising to the broader concept of EfS through capacity building and empowerment. This chapter is the first of two 'local' examples of how the whole-school model was used to promote sustainable change. Chapter Four describes the interpretation and uptake of EfS through the Essential Learnings Framework at New Norfolk Primary School, which was this school community's introduction to EfS. Particular attention

is given to the roles of collaborative leadership and partnership and how these affect the integration of EfS throughout the curriculum and culture of this school. The end of Chapters Three and Four include a picture montage of each case study school, adding a more complete picture of each school community while not disturbing the flow of the text.

In Chapter Five I will discuss the comparative themes revealed from the case study chapters. This chapter focuses on how these two school communities and individuals within each community, held different interpretations of sustainability, which affected each school's EfS strategy to build partnerships, and support collaboration and transformative leadership amongst staff and surrounding communities. This chapter will discuss how individual perceptions are nested within, and affect, the perceptions of the surrounding community, the state, the nation and ultimately, the international commitment to sustainability. The discussion aims to highlight the potential for the Essential Learnings Framework to contribute to the global ideal of the DESD; however I will stress the need for open discourse at the local level and flexible rhetoric at the policy level to accommodate these contextual interpretations.

CHAPTER TWO

SETTING THE SCENE

Australia's future depends on a high quality and dynamic school education system to provide students with foundation skills, values, knowledge and understanding necessary for lifelong learning, employment and full participation in society (Department of Education Science and Training, 2005, np).

This chapter focuses on the role of the Australian education system in engaging students in EfS. By presenting this education system as it is embodied through policy, curriculum and formal schooling institutions, the chapter will set the context for the case studies that follow. I first give a brief overview of the Australian Government structure, highlighting how education policy and curriculum are shaped and delivered through the different levels of government and into individual schools in Tasmania, Australia. Included is a description of the development and structure of the Tasmanian education system and its curriculum, the Essential Learnings Framework. Through a commitment to the original language of the Essential Learnings Framework, I present the reader with an insider's view of how the curriculum policy delivers a political discourse of EfS that is nested within the values and systems of Tasmania, the federation of Australia and the larger context of global sustainability. This work will advance the overall aims of the research by identifying the potential for the Australian education system and the Essential Learnings Framework, to contribute to the delivery of EfS policy at the local level.

The Australian Government – a brief overview

The Commonwealth of Australia comprises the six States of Queensland, New South Wales, Victoria, Tasmania, South Australia and Western Australia, and two Territories, the Northern Territory and the Australian Capital Territory (Figure 4). An additional eight dependencies are offshore from the mainland, and are also referred to as territories[11]. Governmental powers are distributed over three levels: federal, state/territory and local. The federal level is commonly referred to as the Australian Government and receives its powers under the *Australian Constitution Act, 1901* (Australian Government, 2001a).
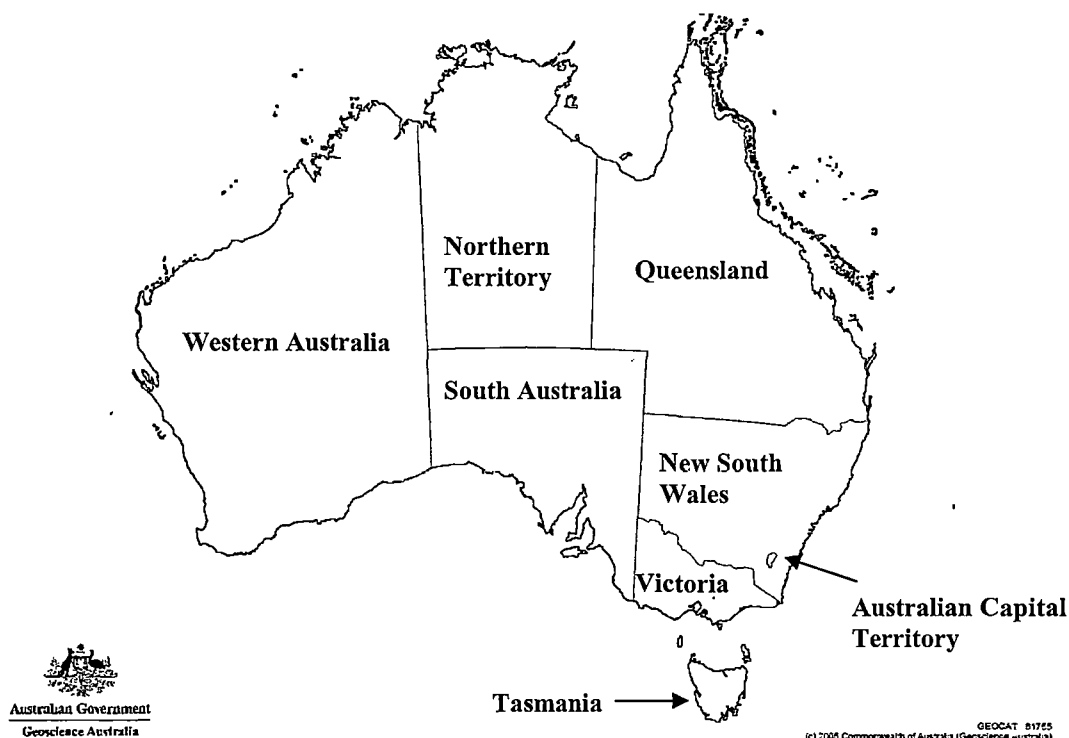
Figure 4. The States and mainland Territories of the Australian Commonwealth
Source: (Geosciences Australia, 2005a)

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[11] Norfolk Island is self-governing; and Ashmore and Cartier Islands, the Australian Antarctic Territory, Christmas Island, Cocos (Keeling) Islands, Coral Sea Islands, Jervis Bay Territory, and the Territory of Heard Island and McDonald Islands are managed by the Australian Government.

Under Section 51 of the *Australian Constitution Act, 1901*, individual State and Territory Governments preserve the right to create and maintain their own constitutions, and to make, uphold and enforce their own laws over issues not designated to the Australian Government (Australian Government, 2001b). Local Governments exist only in the six states and the Northern Territory (Australian Government, 2001c). Their powers are designated by individual State/Territory legislation and they are primarily responsible for the provision of community services. Local governments are often referred to as local councils, and so will be in the remainder of this work.

Education in Australia - a shared responsibility

Under the Australian Constitution, education is a responsibility shared among the Australian Government and the State/Territory Governments (Figure 5). Each of the latter is responsible for the administration of educational services under their respective Departments of Education (Department of Education Science and Training, 2005). These services include the development and implementation of curricula, based on national priorities for education and eight Key Learning Areas[12] identified by the Australian Government's Department of Education, Science and Training (DEST). The DEST is responsible for developing national education policies and strategies and also shares financial responsibilities with the states/territories in the implementation of national programs.

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[12] The eight Key Learning Areas are: 'English, Mathematics, Studies of Society and the Environment, Science, Arts, Languages Other Than English, Technology and Personal Development, Health and Physical Education' (Australian Education International, 2006, np).
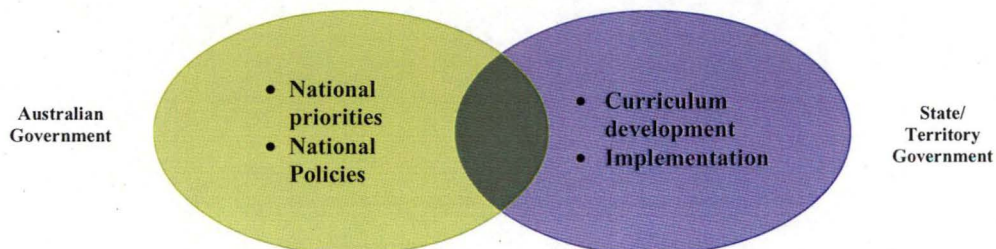
Figure 5. Education as a shared government responsibility

The DEST works closely with State/Territory Governments to identify and advance national priorities for education. Consistency and relevance are sought in the development of education policy, and considerations are made for local, state, national and global contexts. Because sustainable development is recognised by the Australian Government as a matter of concern affecting the entire local to global spectrum, education policy and national priorities for education have begun to reflect this concern (Australian National Commission for UNESCO, 2005; Ecologically Sustainable Development Steering Committee, 1992; Daniella Tilbury et al., 2005). As a result, both a shifting language and an evolving commitment to education for sustainability have begun to emerge in Australian education policy.

EfS – an emerging commitment in Australian Government policy

In 1999, the Ministers of Education from the State/Territory and Australian Governments signed the *Adelaide Declaration on National Goals for Schooling in the Twenty-first Century*. This declaration states that:

> Common and agreed goals for schooling establish a foundation for action among State and Territory governments with their constitutional responsibility for schooling … The achievement of the national goals for schooling will assist young people to contribute to Australia's social, cultural and economic development in local and global contexts. Their achievement will also assist young people to develop a disposition towards learning throughout their lives so that they can exercise their rights and responsibilities as citizens of Australia (Department of Education, Science and Training 2005, np).

Among the goals stated in this declaration is one for students to:

> have an understanding of, and concern for, stewardship of the natural environment, and the knowledge and skills to contribute to ecologically sustainable development (MCEETYA, 1999. np).

This goal signifies rhetorical recognition by the Australian Government of the merits and applicability of sustainable development to the Australian education system. Prior to this environmental education was often only linked to subjects 'such as science and geography, where social and political values were not critically

examined' (Fien, 2001, pg 7). Oftentimes, environmental education activities would only result from the efforts and commitments of individual teachers with a passion to teach about environmental issues (Environment Australia, 1999). The explicit enunciation of an identified national goal for Australian education to contribute to an understanding of ecologically sustainable development confidently suggests both the value of environmental education in the formal schooling curriculum and also a broader scope for environmental education to encompass the larger context of sustainability (Fien, 2001).

In the same year that the Adelaide Declaration was signed, the Federal Minister for the Environment and Heritage issued the discussion paper *Today Shapes Tomorrow: Environmental Education for a Sustainable Future*. This paper and its subsequent *National Action Plan for Environmental Education for a Sustainable Future* (2000) emphasise that environmental education needs to extend beyond knowledge and awareness raising to embrace action-oriented approaches that empower people to achieve measurable outcomes that advance sustainability. These documents suggest that formal schooling environmental education be viewed as holistic and interdisciplinary, relevant to all Key Learning Areas and curricular subjects.

Five years later, the Australian Government's Minister for the Environment and Heritage along with the Minister for Education, Science and Technology released *Educating for a Sustainable Future – A National Environmental Education Statement for Australian Schools* (2005). This joint statement addresses the purpose and objectives of EfS in Australian formal schooling, and is directly intended for the architects and providers of formal schooling curriculum. Stressing the concepts of learning for action and learning for change, the national statement for formal

schooling recognises the important role of schools in teaching Australians to participate in sustainable change. It also highlights the need for EfS to be acknowledged throughout 'all aspects of the school operations, curriculum, teaching and learning, physical surroundings and relationships with the local community' (Department of the Environment and Heritage, 2005, pg 7).

The release of the national statement by both the Australian Government's Department of the Environment and Heritage (DEH) and the DEST suggests a move to deliver sustainability education in Australia across agencies (Woods, 2005). Such collaboration emphasises the Australian Government's developing acknowledgement of the interdisciplinary and intergenerational role of EfS – its life-wide and life-long characteristics. However, with the inclusion of only two agencies in this initiative, it does not yet represent a 'whole-of-government' approach.

The national statement for environmental education was released the same year as the DESD and highlights Australia's commitment to this international initiative (Australian National Commission for UNESCO, 2005; Department of the Environment and Heritage, 2005). Figure 6 illustrates a number of DEH national projects intended to support EfS in Australia, including a partnership with Macquarie University to fund an Australian Research Institute in Education for Sustainability (ARIES) to conduct action-oriented research programs that inform environmental education policies and programs across Australia. In 2005, ARIES completed *A National Review of Environmental Education and its Contribution to Sustainability in Australia,* published as five volumes addressing *Frameworks for Sustainability* (Tilbury & Cooke, 2005); *School Education* (Daniella Tilbury et al., 2005);
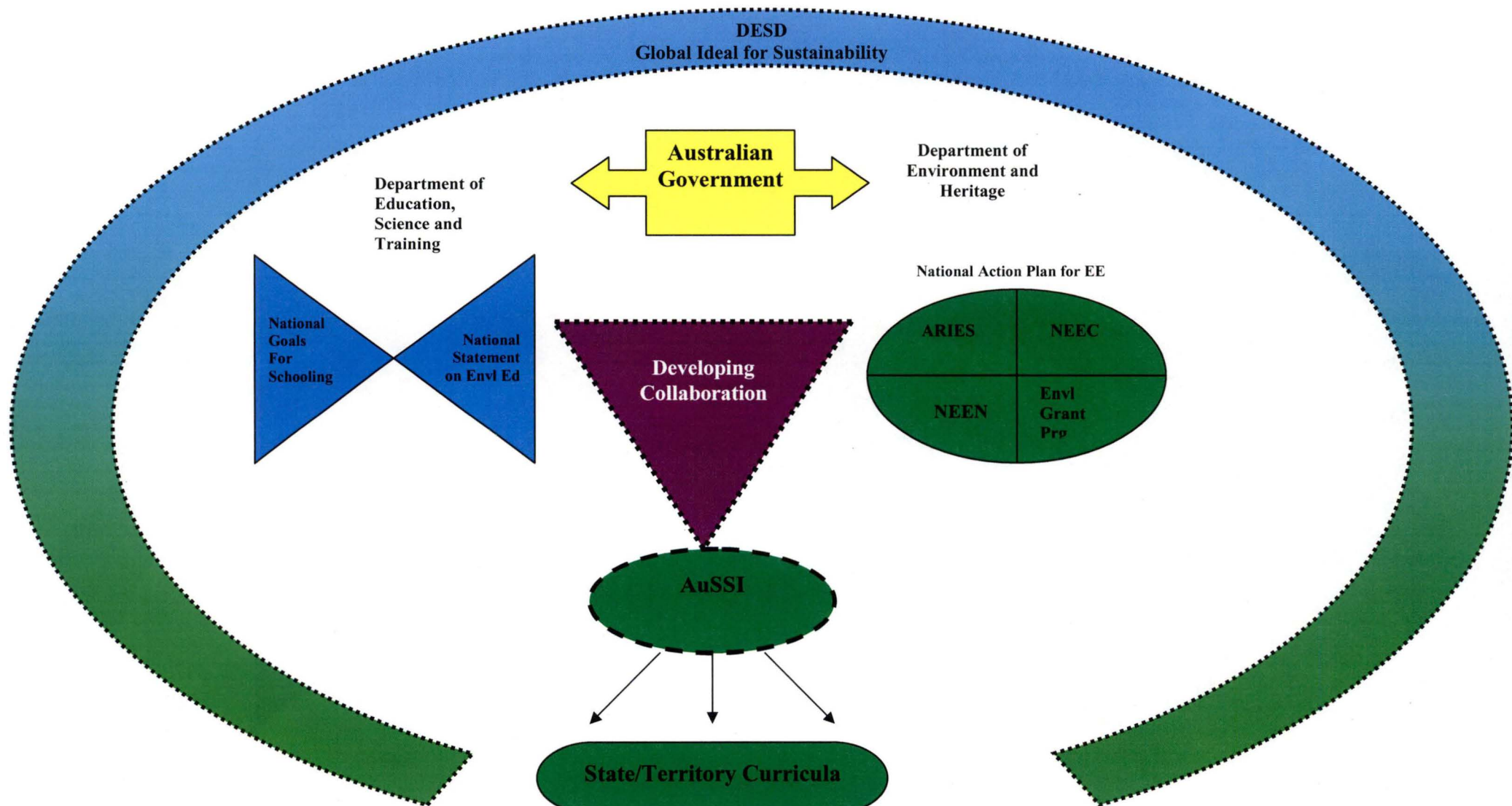
Figure 6. Australia's collaborative commitment to the DESD

The diagram contains the following labeled elements:

DESD
Global Ideal for Sustainability

Australian Government

Department of Education, Science and Training

Department of Environment and Heritage

National Goals For Schooling

National Statement on Envl Ed

Developing Collaboration

National Action Plan for EE

ARIES

NEEC

NEEN

Envl Grant Pro

AuSSI

State/Territory Curricula

Community Education (Tilbury, Coleman, Jones, & MacMaster, 2005); *Business and Industry Education* (Tilbury, Adams, & Keogh, 2005); *and Further and Higher Education* (Tilbury, Keogh, Leighton, & Kent, 2005). These and other ARIES research outcomes will help inform the DEH's Environmental Education Grants Program to fund community activities for environmental education. The objectives for national environmental education are outlined in the *National Action Plan for Environmental Education for a Sustainable Future* (2000), which states that environmental education 'must involve everyone; must be life-long; must be holistic and about connections; must be practical; and must be in harmony with social and economic goals and accorded equal priority' (Environment Australia, 2000a, pg 3-4). The *National Action Plan for Environmental Education for a Sustainable Future* also initiated the development of the National Environmental Education Council (NEEC) and the National Environmental Education Network (NEEN). The NEEC was established to 'raise the profile of environmental education [across Australia] and provide expert advice to the Australian Government on environmental education issues' (Department of Environment and Heritage, 2006a, np). Through the establishment of a number of working groups that focus on specific sectors of Australian education, the NEEC works closely with the State/Territory Governments and strives for collaboration between the respective Departments of Education. The NEEN was established by the DEH 'to improve inter-governmental coordination of the delivery of environmental education, promoting more efficient use of resources and better outcomes' (Department of Environment and Heritage, 2006b, np). The NEEN's chief objective is to coordinate efforts between the State/Territory and Australian Government Departments of Environment and Education. To date, the primary focus of the NEEN has been the development of a working group aimed

at promoting whole-school sustainability through the Australian Sustainable Schools Initiative (AuSSI), described below.

Australian Sustainable Schools Initiative (AuSSI)

The AuSSI is an Australian Government initiative encouraging 'schools to achieve measurable social, environmental, educational and economic outcomes' that contribute to the goals of sustainability (Department of the Environment and Heritage, 2006, np). Promoting a whole-school approach to sustainability, the project was initiated by a series of pilot *Sustainable Schools* projects trialed by the Departments of Education in New South Wales and Victoria in 2002 (Australian National Commission for UNESCO, 2005). Inspired by the different approaches taken in these two state projects[13], the AuSSI is an attempt to form an overarching structure that will support various approaches by states and territories in implementing EfS in the formal school sector. Reflecting the Australian federalist system, the AuSSI respects the autonomy of each jurisdiction to promote locally relevant EfS programs, with the overarching structure based around 'Common Elements' that underscore certain basic principles (Figure 7). These common elements 'guide the development of the initiative around the country [by] allow[ing] sufficient flexibility for each state and territory to meet the requirements of their own jurisdiction, while also ensuring an appropriate level of consistency' (Department of the Environment and Heritage, 2006, np).

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[13] This research does not analyse the *Sustainable Schools* projects of Victoria, New South Wales or any other State/Territory in the Commonwealth of Australia. See the AuSSI national website http://www.deh.gov.au/education/sustainable-schools/ for information on these cases.
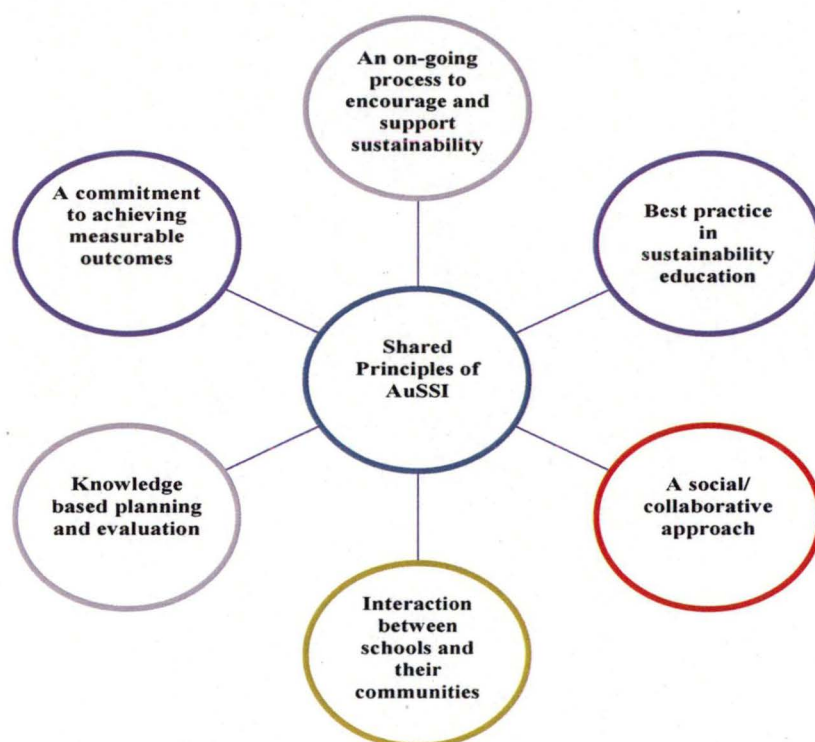
Figure 7. Shared principles of the AuSSI
Source: (Adapted from (National Environmental Education Network, 2004a))

The AuSSI appears to be a leading example of reciprocal learning and two-way communications that can, and should, inform EfS in Australia (Figure 8). In order to support a diversity of approaches to whole-school EfS, the program necessarily responds to the contextual and localised needs of the individual curricular frameworks from across the states and territories. The program also reflects national sustainability goals and the objectives of the DESD, and draws on experiences and input from other international whole-school programs for EfS (Henderson & Tilbury, 2004). Through its trilateral links with each of the State/Territory Governments, the Australian Government's DEH and the DESD, the AuSSI influences and is influenced by the development of EfS across the local to global spectrum.
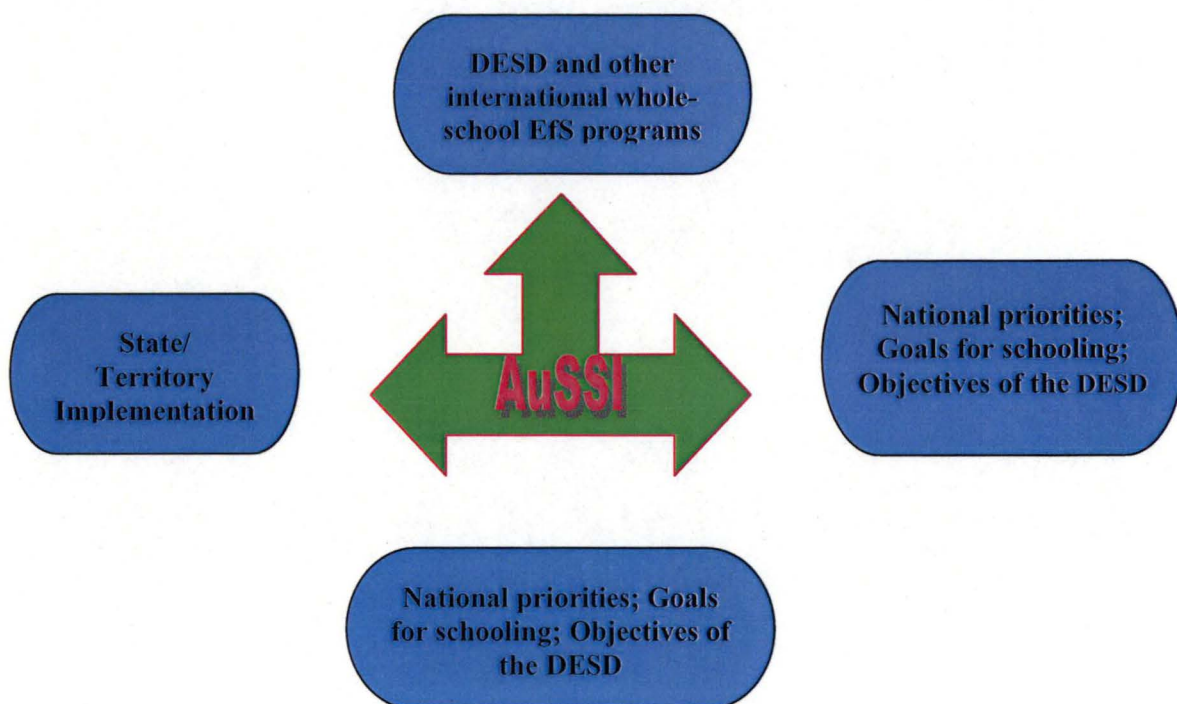
Figure 8. Reciprocal communications of the AuSSI

Education at the state level – Tasmania

The present work is specifically concerned with how intergovernmental programs

such as the AuSSI influence the uptake of EfS in Tasmania, and how EfS in

Tasmania might influence future understandings and applications of the AuSSI and

Australia's commitment to such global ideals as the DESD. This focus is based on

the significant role of the AuSSI in instigating the pilot project in Tasmania to

address whole-school sustainability strategies through the state's new curriculum

(DoET -2, 2004). This pilot project will be explored later in this chapter after I

provide a brief background on the Tasmanian education system and how EfS was

given its first political recognition in the state through the creation of the Essential

Learnings Framework.

Located more than 250 kilometres off the south-western edge of mainland Australia, Tasmania is the country's only island state (Figure 9). Tasmania has a population of around 480,000 people, more than half of which reside in the capital of Hobart and its surrounding regions (Australian Bureau of Statistics, 2006). Just under half of the State's schools are located in this south-western region of Tasmania, and at least 75% of them are managed by the State Government. The other 25% are non-government schools run by various interest groups and organisations including religious and vocational affiliates[14].

Five types of learning institutions characterise the Tasmanian pre-tertiary education system (Department of Education Tasmania, 2002e). These are designed to cater to the diverse needs of individual students and communities. Primary schools provide schooling for students in Kindergarten to Grade 6; secondary schools for Grades 7-10 and senior secondary colleges for Grades 11 and 12. There are also a number of district high schools, which combine the primary and secondary schooling years[15], as well as a few specialty schools catering to children with disabilities. Students must start school by the age of five, and must remain in school until age 16. From 2008, students will be required to continue their schooling until the age of 17. The education year in Tasmania begins in the autumn (February) and ends in the summer (December) and is divided over three semesters.

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[14] Both government (public) and non-government (private) schools are a financial and administrative responsibility of State/Territory Governments in Australia (Australian Bureau of Statistics, 2006). Although non-government schools are not required to implement government curriculum, government funding is provided to non-government schools, requiring them to abide by a number of standards and credentials outlined by the state or territory's education legislation. State/Territory Governments applying to participate in the AuSSI must include non-governmental schools in their prospective plan for *Sustainable Schools* implementation (National Environmental Education Network, 2004b).
[15] Such combined learning institutions often provide education for rural communities with smaller student populations.
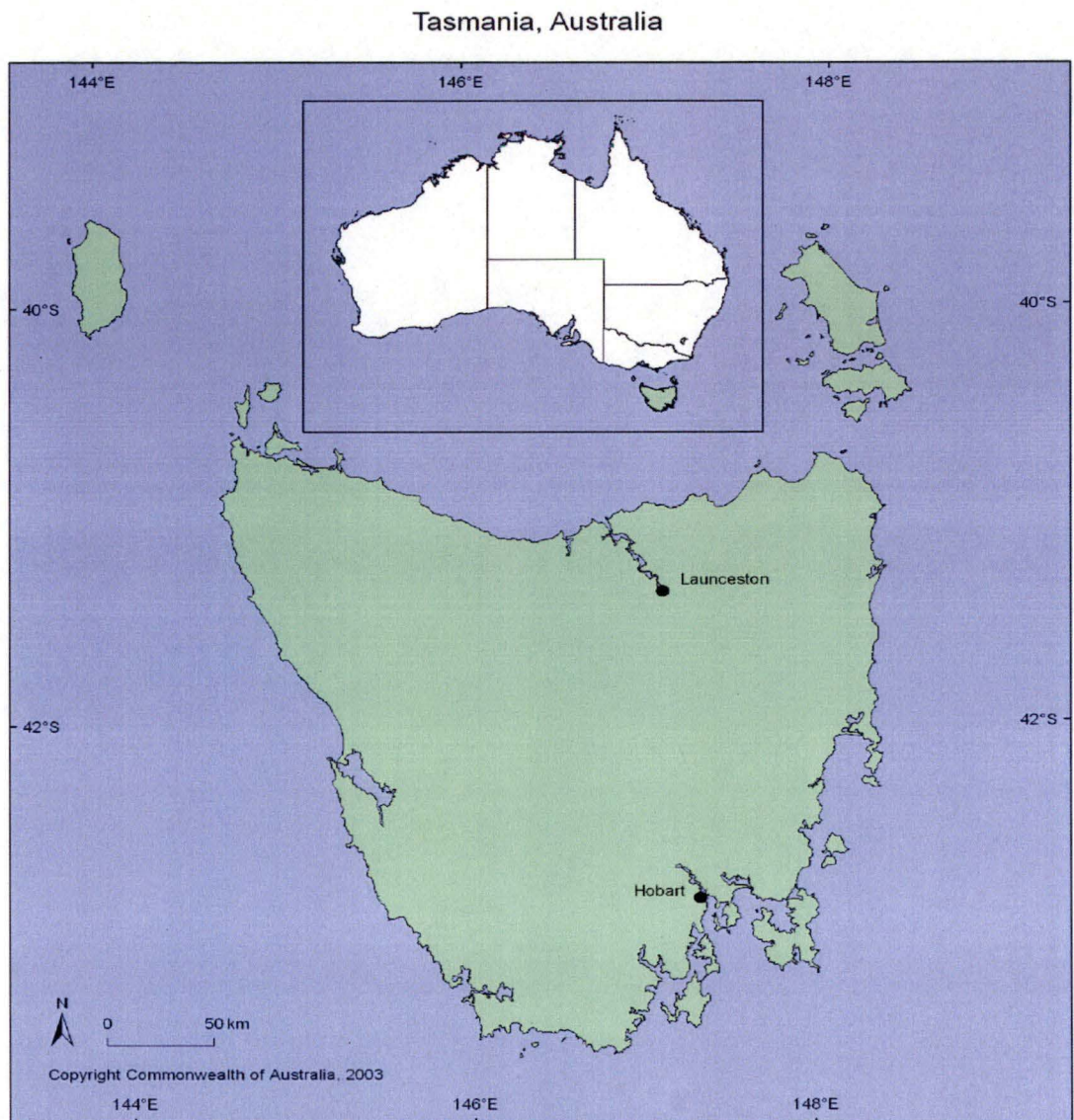
Figure 9. Map of the island state Tasmania in relation to mainland Australia
Source: (Geosciences Australia, 2005b)

While the Tasmanian education system is designed to provide students with an

education in their local community, parents may choose to send their children to any

government school. However, requests for relocation must be made by the parent to

the DoET, and are accepted based on the child's academic merit, the reason for

request - such as one's local school cannot provide necessary services - and the

availability of space in the desired school.

All government schools in the Tasmanian education system are required to implement and report on outcomes of the curriculum designed by the DoET, which is based on national and state education policy. The most recent curriculum framework designed for implementation in Tasmania, is the Essential Learnings Framework, which was developed from 2001-2004 and begun implementation in 2005. This curriculum is based on the *National Goals for Schooling in the 21st Century,* the eight Key Learning Areas for education, and two recent strategies developed by the Tasmanian government entitled, *Tasmania Together* and *The Learning Together Strategy* (Figure 10). Besides providing the Essential Learnings Framework with a relevant state context, *Tasmania Together* and *The Learning Together Strategy* are intended to assist curriculum architects to identify and achieve the visions, goals and values of the Tasmanian community through a whole-of government, life-wide learning approach. These two documents and there influence and connection to the Essential Learnings Framework are described below.
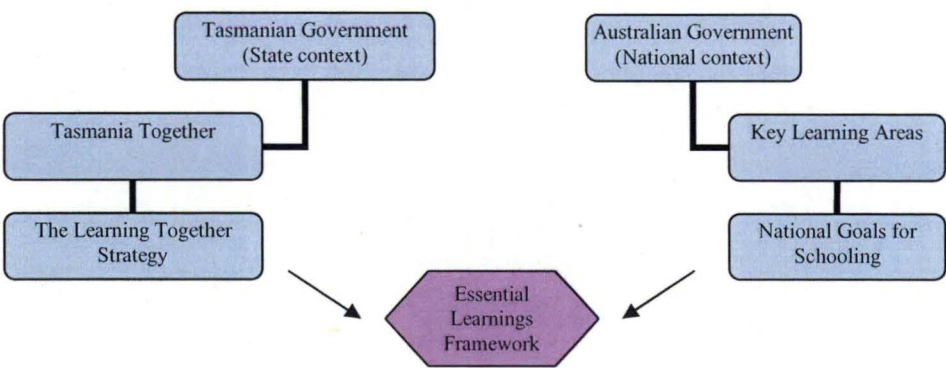
Figure 10. Informing the Essential Learnings Framework

Tasmania Together - Learning Together

In 2001, a large community consultation process[16] informed the development of a state-wide, 20-year strategic plan called *Tasmania Together* (Community Leaders Group, 2001). The document describes the vision, goals and challenges of the Tasmanian community into the year 2020. *Tasmania Together* is a framework structured around a set 24 goals and 212 benchmarks designed to help Tasmanians achieve a common mission: 'Together we will make Tasmania an icon for the rest of the world by creating a proud and confident society where our people live in harmony and prosperity' (Community Leaders Group, 2001, pg 1).

Tasmania Together recognises that the achievement of this vision will necessitate the cooperation of all people and communities in the State, and will also rely on a whole-of-government, collaborative approach to implement and achieve its listed goals. The proposal for such broad participation is similar to the whole-of government approach recognised to support life-wide EfS (NSW Council on Environmental Education, 2002; Parliamentary Commissioner for the Environment, 2004; Tilbury, 2004; UNESCO, 1995-2006a, 2002). *Tasmania Together* also recognises the need to participate in sustainable change at the local level, and like its national and international counterparts, promotes a life-long and life-wide educational approach to address this challenge (Community Leaders Group, 2001).

Numerous *Tasmania Together* targets and benchmarks directly and indirectly challenge the structure and effectiveness of formal schooling in Tasmania[17]. In

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[16] The community consultation for *Tasmania Together* included over 60 public meetings; consultation with more than 100 community organisations; more than 160 written submissions from industry, government and individuals; as well as over 4000 comment sheets, 6200 website messages and 2500 postcards returned as a result of a state-wide send out requesting individual and organisation input (Tasmania Together Progress Board, 2005).

[17] See http://www.tasmaniatogether.tas.gov.au/__data/assets/dpac_file_desc/7349/complete_pub.pdf

response to them, the DoET embarked on a further community consultation to identify a state-wide vision for education, which led to the development of *The Learning Together Strategy* stating that 'Tasmania will have a world-class education, training and information system which matches the best anywhere' (Department of Education Tasmania, 2000b, pg 8). The goals of the *Learning Together Strategy* assert that the state's education system will:

> ensure all Tasmanians develop the knowledge, skills and confidence they need; enable people to work effectively and participate in society; encourage and support participation in learning throughout life; and [make sure] everyone has the opportunity to participate in, and contribute to, a healthy democracy and a prosperous society (Department of Education Tasmania, 2000b, pg 10).

The Learning Together Strategy stresses the merits and necessity of life-long learning opportunities and interconnected learning processes to achieve the visions of *Tasmania Together*. A set of visions, goals and strategies were outlined to enhance life-long learning opportunities in the formal, informal and non-formal education sectors. This educational strategy also promoted the development of the Essential Learnings Framework, a curriculum that was intended as a launching pad for the life-long learning journey of all Tasmanians.

The Essential Learnings Framework

The Essential Learnings Framework (hereafter referred to as the 'ELs') was implemented from 2005 as a state-wide curriculum for public schools. The DoET promoted the framework as a cutting edge and innovative curriculum that enacted the

vision of *The Learning Together Strategy,* through its mission to make Tasmania a world leader in integrative, inclusive and relevant education (Department of Education Tasmania, 2000b; Department of Education Tasmania, 2002b). The curriculum is intended to respond to the demands and circumstances of the next century.

> The beginning of the 21st century is an opportune time to examine the curriculum in the light of significant changes in society ... It is vital that the education we provide will prepare learners for this changing world ... The Essential Learnings Framework is a positive response to a worldwide call for curriculum that engages all learners ... and which results in deep-understanding about important, life-related matters (Department of Education Tasmania, 2002b, pg 5).

The ELs Framework is designed to support schools to ensure a relevant, locally based education that draws links between and among school, home and community life (Department of Education Tasmania, 2002b, 2003b).

> In this fast-changing world, there is little doubt that educational institutions have become one of the prime agents for contributing to a better future ... However, education cannot work alone on such vital matters. To be effective, education needs strong connections with the families and communities in which children live and learn (Department of Education Tasmania, 2003b, pg 3).

The rhetoric of the ELs Framework maintains that family and community partnerships foster for students a sense of belonging in their own communities, and

support communities in developing a sense of stewardship of local education providers (Department of Education Tasmania, 2003b). Therefore, the ELs Framework recognises that partnerships are inherently reciprocal, and necessary if the Tasmanian education system is going to fulfil its role of motivating and providing opportunities for life-long learning across all age groups and sectors of society (Department of Education Tasmania, 2000b).

The provision of life-long learning opportunities results from collaborative planning and critical reflection on the state education process across individual, organisational and community levels (Department of Education Tasmania, 2003b). This cooperative approach to defining and delivering the ELs is based on the establishment and maintenance of 'purposeful learning communities', to give schools a role in the education of the entire community, and to enable communities a role in the education of school age students (Department of Education Tasmania, 2003b, pg 30). The framework identifies the function and life of the school, in both physical and social senses, as inherently linked to the physical and social life of the wider community. To recognise that the school is a learning centre for the larger community is to see formal schooling as one participant in the larger scheme of life-long learning (Department of Education Tasmania, 2000b). Thus,

> educational institutions become the core of learning communities with a network of learners of all ages, with multiple options for learning and a plurality of providers, formal and informal. 'School' is no longer 'isolated', but interacts with clusters of compatible enterprises and shares its facilities and physical space (Department of Education Tasmania, 2003b, pg 31-32).

To reflect this notion of purposeful communities working together to define and participate in life-long, relevant learning, the ELs Framework was founded on the values and purposes for education (Table 3) as determined from a co-consultation with the Tasmanian community. The voices incorporated in this co-consultation included teachers, administrators, students, parents and guardians, business people and community members from around the State. The resulting curriculum is based on the core values and purposes of education they defined, and is structured around five 'essential learnings'. These essential learnings are *Thinking, Communicating, Personal Futures, Social Responsibility* and *World Futures* (Department of Education Tasmania, 2002b) (Figure 11). They are meant to form an integrative focus for teaching and learning, and address 'a growing national and international trend to organise curriculum around constructs designed to meet current educational needs by making legitimate connections between disciplines' (Department of Education Tasmania, 2002b, pg 11).

Table 3. The values and purposes of education in Tasmania

We are guided by this core set of values:	We share the purposes of ensuring our children and students are:
• connectedness • resilience • achievement • creativity • integrity • responsibility • equity	• learning to relate, participate and care • learning to live full healthy lives • learning to create purposeful futures • learning to act ethically • learning to learn • learning to think, know and understand

Source: (Department of Education Tasmania, 2002b, pg 7)
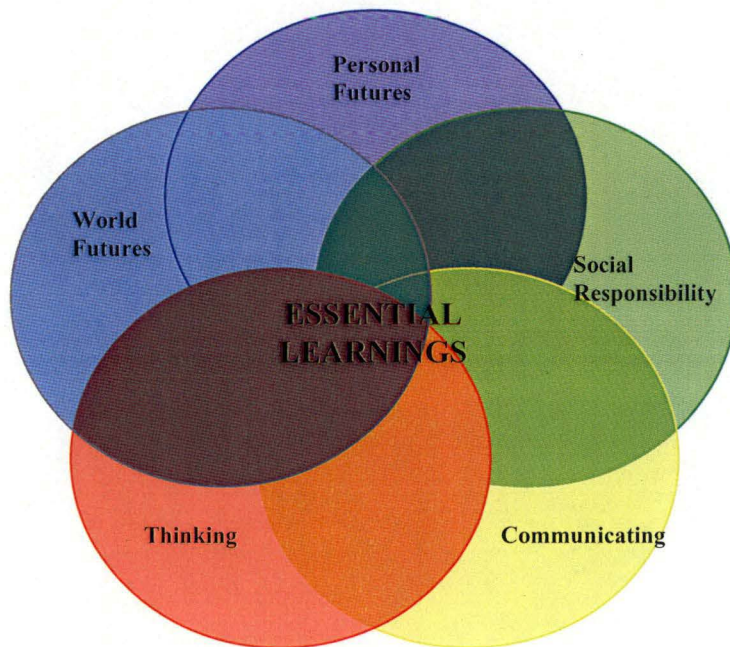
Figure 11. Five integrated Essential Learnings
Source: adapted from (Department of Education Tasmania, 2002b, pg.7)

For each theme a list of 'culminating outcomes … describe a small set of valued

learning performances [which] … represent the teaching and learning goals towards

which education is working' (Department of Education Tasmania, 2002b, pg 40).

These outcomes are supported by 18 'key elemental outcomes' that describe the

intended understandings to result from an ELs education (Figure 12). Each key

elemental outcome describes 'a goal for learning towards which the five standards

are focused' and to which the 'essential learnings' are conceptually linked

(Department of Education Tasmania, 2003a, pg 5).

ESSENTIAL LEARNINGS	CULMINATING OUTCOMES We want our students to be:	KEY ELEMENT OUTCOMES
THINKING	**Inquiring and reflective thinkers** able to reason, question, make decisions and solve complex problems. As reflective thinkers, they will be empathetic and able to make ethical decisions about issues, events and actions.	**Inquiry** Understands the process of inquiry and uses appropriate techniques for posing questions, defining problems, processing and evaluating data, drawing conclusions and flexibly applying findings to further learning and to creating new solutions. **Reflective thinking** Understands that reflective thinking is a deliberate process, affected by emotions and motivations, and that it is used to develop and refine ideas and beliefs and to explore different and new perceptions.
COMMUNICATING	**Effective communicators** able to create, communicate and convey ideas clearly and confidently, using the full range of symbolic systems. They will interact critically with communications created by others, interpreting linguistic, numerical and graphic information with judgement and discernment.	**Being literate** Understands, uses and critically evaluates non-verbal, spoken, visual and print communication practices of the world in which they live. **Being numerate** Understands and has the confidence and disposition to use the mathematical concepts and skills required to meet the demands of life. **Being information literate** Understands how to effectively access, interpret, transform, create, communicate, evaluate and manage information in ethical ways using a range of sources. **Being arts literate** Understands the purposes and uses of a range of arts forms – visual arts, media, dance, music, drama and literature, and how to make and share meaning from and through them. Uses with confidence and skill the codes and conventions of the art form best suited to their expressive needs.
PERSONAL FUTURES	**Self-directed and ethical people** having a positive vision for themselves and their future, acting with moral autonomy and contributing to constructive futures for themselves and others.	**Building and maintaining identity and relationships** Understands the ways in which heredity, culture, community and personal choice shape identity and relationships and is able to build and maintain resilient, productive relationships. **Maintaining wellbeing** Understands the interdependence of the physical, mental, emotional, social and spiritual dimensions of wellbeing and knows how to make wise choices and contribute positively to the overall wellbeing of self and others. **Being ethical** Understands that to be ethical requires caring about the consequences of actions of self and others and that the quality of ethical judgments is based upon reasoning and the application of ethical principles. **Creating and pursuing goals** Understands how to create, set and review goals for life and how to work with others to achieve own and shared goals.
SOCIAL RESPONSIBILITY	**Responsible citizens** prepared to participate actively in a democratic community, valuing diversity and acting for a just and equitable society.	**Building social capital** Understands the interdependence of individuals, groups and social organisations and participates positively in the building of 'good and just' communities. **Valuing diversity** Understands the interdependence of our world, values its diversity and acts for a more inclusive society. **Acting democratically** Understands and participates effectively in democratic decision-making processes and civic life. **Understanding the past and creating preferred futures** Understands that investigating the past and reflecting on the present are essential to understanding self and others and creating preferred futures.
WORLD FUTURES	**World contributors** willing to consider the consequences of scientific and technological innovations, make thoughtful decisions about their application, and act to maintain, protect and enhance local and global environments.	**Investigating the natural and constructed world** Understands how to scientifically investigate the natural and constructed world, appreciating the tentative nature of knowledge and the value of creative, imaginative and speculative thinking. **Understanding systems** Understands that the social, natural and constructed world is made up of a complex web of relationships or systems. **Designing and evaluating technological solutions** Understands how to design, make and critically evaluate products and processes in response to human needs and challenges. **Creating sustainable futures** Understands the environmental principles and ethical issues involved in creating and working towards sustainable futures.

Figure 12. Essential Learnings, Culminating Outcomes, and Key Elemental Outcomes
Source: (Department of Education Tasmania, 2003a, pg 5-6)

To observe and assess individual student achievement of these learning outcomes,

the ELs Framework proposes a set of outcomes-based standards for each of the key

elemental outcomes dispersed over five levels (Table 4) that describe 'what students

should know, understand and be able to do' throughout the period of their formal

schooling years (Department of Education Tasmania, 2003a, pg 7). This scale of

standards is meant to recognise that individual student development can vary greatly.

Therefore, the development of understanding in the concepts outlined in the ELs is

not tied to one specific grade level or age. Instead, the development of

understanding reflects a range of ages and is to be fostered through a teaching and

learning method that provides different learning experiences and environments to

diverse groups of students.

Table 4. ELs standards and age group breakdown

Standard	Approximate Age level	Approximate Grade
1	2-4	End of kindergarten
2	5-7	End of year two
3	8-10	End of year five
4	11-13	End of year eight
5	14-16	End of year ten

Source: (Department of Education Tasmania, 2003a, pg 8)

Within each of the standards is a set of 'performance guidelines [that] identify the significant aspects of learning covered by the key outcome' (Department of Education Tasmania, 2003a, pg 7). These are further supported by 'illustrative examples of performance' meant to exemplify certain behaviours in learning that students might exhibit at each standard level. These performance guidelines and illustrative behaviours are meant to help teachers make observations about individual student performance and help them with the assessment of individual student learning. Figure 13 shows examples of these supports, taken from the key elemental outcome 'Understanding the past and creating preferred futures', which falls under the theme of *Social Responsibility*.

The aim of this key outcome is for students to understand 'that investigating the past and reflecting on the present are essential to understanding self and others and creating preferred futures' (Department of Education Tasmania, 2003c, pg 13). The specific standard in Figure 13 is aimed at assessing student performance from around Year 2 to the end of Year 5. The illustrative behaviours suggest that students in the upper primary school level should be able to incorporate temporal knowledge with goal making and have an understanding of the existence of complex and varied perspectives that may accompany a historical, present or future issue.

A closer look at the expected performance guidelines of this key element reveals that the ELs Framework promotes an action-oriented process of integrative learning; this can be seen in the expected outcomes of individual student behaviour, which are described as action specific and notably draw on a variety of disciplines. As shown in Figure 13, the standards for this key elemental outcome imply that observing individual student behaviours, responses and actions to integrative learning

experiences can help to determine how an individual student creates meaning out of this 'essential learning'.

To support such pedagogy, the ELs Framework relies on Blythe's theory of knowledge, which maintains that 'understanding means being able to do a variety of thought-provoking things with a topic - like explaining, finding evidence and examples, generalising, applying, analogising and representing the topic in a new way' (Blythe & al, 1988) as cited in (Department of Education Tasmania, 2003b, pg 21). Such pedagogy acknowledges that teaching and learning are active processes of negotiation between the abstract and the practical settings in which learning is placed.

In order to engage all students and teachers in this process of negotiated learning, the ELs Framework is outlined by a set of teaching and learning principles which are meant to 'articulate a set of beliefs that inform pedagogical thinking, choice and action' (Department of Education Tasmania, 2002b, pg 41). The learning principles include the 'beliefs' that:

> learning is an innate and life-long process; learning is a process of making meaning in the world; learning depends on being able to connect prior knowledge, perceptions or patterns of experience to new experience or new information and contexts; learning is profoundly about social relationships; learning is more effective when information is embedded in purposeful and meaningful experiences; and learning occurs all the time and is complex and non-linear (Department of Education Tasmania, 2002b, pg 42-9).

STANDARD 3

Understands the value of evidence and uses a range of perspectives to gain insights into the past and present, and to make predictions for the future.

Illustrative examples of performance

Students demonstrate aspects of this learning when they:

- Sequence events using a given time scale: e.g. construct a timeline of life, family or local history.

- Understand the importance of the historical context of a local issue being investigated: e.g. historical origins of a current environmental issue.

- Interpret primary and secondary source evidence provided: e.g. explore the division of work based on gender (from a directory or electoral roll).

- Articulate more than one perspective on a subject: e.g. a farmer and conservationist on an environmental issue.

- Develop a plan for the future, recognising the successes and failures of the past: e.g. list pros and cons of past use of land in the local area.

- Organise and plan for their own immediate future: e.g. prioritise homework and leisure time.

SOCIAL RESPONSIBILITY
Understanding the Past and Creating Preferred Futures
Performance Guidelines

Students who understand the past and create preferred futures:

- *Use concepts and language of time and causal relationships to explain continuity and change.*

- *Use the methodologies of the discipline of history to investigate past events.*

- *Reflect on the values of the past in understanding the present.*

- *Make predictions based on an understanding of past and present contexts.*

- *Make choices and take actions that contribute to preferred futures.*

Figure 13. Performance guidelines and Standard 3 for *understanding the past and creating preferred futures*

Source: (Department of Education Tasmania, 2003c, pg 13)

The teaching principles to support these beliefs include the need for teachers to 'design learning sequences that explicitly support the transfer of learning to new problems and settings' and to relate 'what is being taught [the abstract] to learners' experiences and interests [the practical]' (Department of Education Tasmania, 2002b, pg 47-9). Through the designation of these principles, the ELs Framework emphasises that the delivery of relevant learning is based on the integration of

55

curriculum through an active process in which both students and teachers make links between subjects, and relate classroom learning to their day-to-day living through practical experience.

Pedagogy of integration and relevance in Tasmania – a chance for EfS?

The present work is specifically concerned with how the ELs Framework, through its promotion of a pedagogy of relevant, practical and integrative learning, might help Tasmanian school communities contribute to local, state, national and global objectives for sustainability. The DoET is committed to such a contribution in its designation of the key elemental outcome 'creating sustainable futures' (as listed in Figure 12). This key outcome intends that students will understand 'the environmental principles and ethical issues involved in creating and working towards sustainable futures' (Department of Education Tasmania, 2003c, pg 18).

The inclusion of this outcome for sustainability in the ELs Framework signifies that EfS has been formally recognised in Tasmanian curriculum policy, previously having been delivered through project-specific, extra-curricular activities, supported by individual teachers and/or government and non-government groups[18]. This recognition, along with the assertion that the ELs Framework is an integrative curriculum has been recognised by a few of Tasmania's existing environmental educators as a long-awaited opportunity for Tasmania to make visible and valuable contributions to the global ideal of EfS (DoET-1; MPS-sc2, 2004).

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[18] Such programs have included Adopt-A-Patch, coordinated by Greening Australia (Department of Education Tasmania, 2002a); Waterwatch, coordinated by the Department of Primary, Industries, Water and the Environment (Department of Education Tasmania, 2000c); Leap Frog coordinated by the DoET (Department of Education Tasmania, 2002d); and Landcare for teachers coordinated by the University of Tasmania (Department of Education Tasmania, 2000a).

Figure 14 shows the rhetorical commitment of the ELs Framework to assess

successes in 'creating sustainable futures' through an attention to local

understandings and actions for sustainability. It is through this contextualisation that

the ELs Framework purports Tasmanian schools will be able to contribute to the

global ideal of sustainability. The illustrative examples of performance listed for

'Standard 3' of this key outcome emphasise the importance of localised learning,

active contributions and collaboration, all of which are intended to enable students to

integrate topical knowledge with practical experience that results in learning for, and

participating in, sustainable change.

World Futures – Tasmania's contribution to global EfS

'Creating sustainable futures' has been identified by the DoET as part of the *World*

Futures theme of the ELs Framework, and is positioned alongside 'investigating the

natural and constructed world ... understanding systems ... [and] evaluating

technological solutions' (Department of Education Tasmania, 2002b, np; 2003c). The

expected culminating outcome of these four key foci states that students will be:

> World Contributors willing to consider the consequences of scientific and
>
> technological innovations, make thoughtful decisions about their application,
>
> and act to maintain, protect and enhance *local and global environments*
>
> (Department of Education Tasmania, 2002b, pg 40, emphasis added).

The integration of 'creating sustainable futures' with the other outcomes listed in this

World Futures theme initiated a consideration by the DoET to explore how an

integrative learning approach such as the AuSSI's whole-school sustainability

program, might implement this, and other essential learnings in the ELs Framework

(DoET-2, 2004). In 2004, the DoET initiated five pilot projects across the state to trial each of the five themes of the ELs Framework. The intention of these pilot projects was for a select number of schools to trial the curriculum through a whole-school integrative approach, which would provide examples to other schools in the state-wide uptake of the ELs in the following year.

STANDARD 3

Understands the uniqueness of local ecosystems and takes responsible action to sustain them.

Students who understand what is involved in creating sustainable futures:

- *Understand the interdependence of all life on the planet (local and global).*

- *Collaborate in making decisions for local action that contribute to environmental sustainability.*

- *Understand the forces that affect sustainable development (economic, political, social, cultural, technological and natural).*

- *Have a sense of place around own locality, based on an understanding of biodiversity, interconnectedness, cycle and change.*

- *Identify possible and preferred futures as goals for sustainability.*

- *Consider cross-cultural perspectives, including Indigenous ways of knowing, when determining appropriate actions.*

Illustrative examples of performance

Students demonstrate aspects of this learning when they:

- Describe the uniqueness of local biodiversity in relation to different ecosystem types: e.g. woodland, grassland, rainforest.

- Investigate the impact of environmental changes on native plants and animals – such as feral animals and plants, or pollution of river systems.

- Investigate endangered and extinct animals from a local focus.

- Work with others to take action to highlight and address environmental issues: e.g. put signs on stormwater drains, participate in a Landcare project.

- Investigate how different cultures express their relationship with the environment.

Figure 14. Performance guidelines and Standard 3 for *creating sustainable futures*
Source: (Department of Education Tasmania, 2003c, pg 18).

While the ELs Framework is touted as an integrative and interdisciplinary curriculum (Department of Education Tasmania, 2002b), the schools participating in the pilot projects were each asked to focus their attentions on *one* specific theme (Figure 15). Except for the *World Futures* pilot project, whose specific focus on whole-school EfS will be described below, every other project required participating schools to choose their own focus, and particular key elemental outcome for implementing the other four themes of the curriculum. One of the schools that informs the present work, New Norfolk Primary School, participated in two of the pilot projects for the ELs, focusing on the themes of *Thinking* and *World Futures*. As Chapter Four reveals, the New Norfolk Primary School community decided to focus on handwriting through 'inquiry' for their contribution to the *Thinking* pilot project, and did not incorporate the planning or implementation of this handwriting project with their participation in the *World Futures* theme.

The *World Futures* pilot project was specifically intended to explore how a whole-school approach to sustainability might be 'embedded' within an integrative delivery of the ELs Framework (DoET- 2, 2004). This project required all three participating schools to focus on the planning and implementation of a whole-school sustainability program to help inform Tasmania's potential participation in the AuSSI. Although it was intended that the school's examine the project through an integrative approach to the entire curriculum, the *Sustainable Schools* pilot project in Tasmania was focused on the prospects and potentials of the key outcome 'creating sustainable futures'.
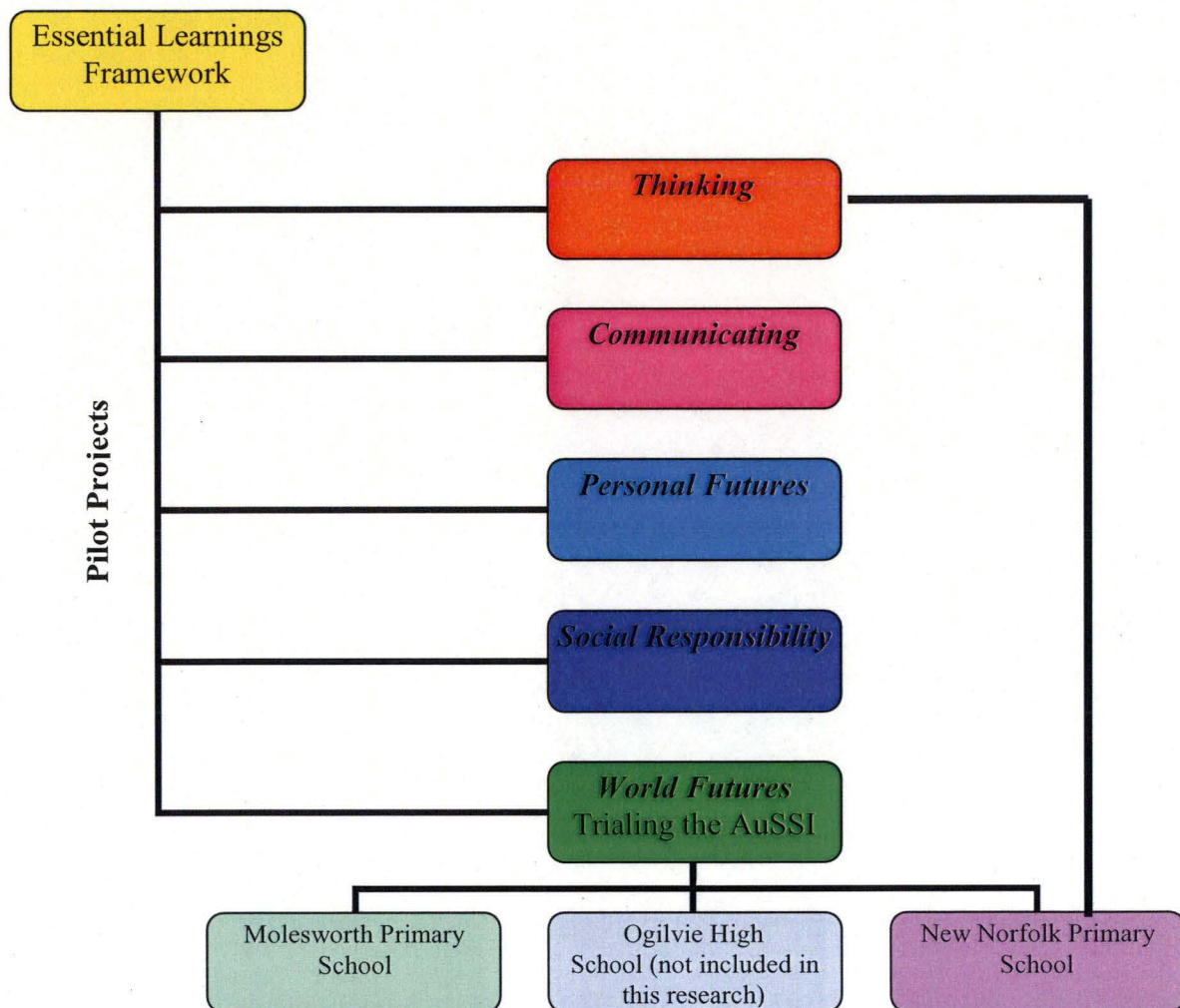
Figure 15. Pilot projects for the ELs Framework – a divided approach to an integrative curriculum

The three school communities participating in the pilot study were asked to plan,

implement, evaluate and report on a whole-school sustainability program that

focused on 'creating sustainable futures' and delivered the intended outcomes of the

AuSSI (Figure 16). Each established a steering committee of teachers who were

responsible for the planning, implementation and reporting of the program. The tasks

required of each committee included developing a school environmental

management plan, conducting environmental audits of their school's current

behaviours, planning and implementing school behaviour changes to respond to these

initial audits, and creating an evaluation and accreditation plan to monitor their

school's success in achieving measurable outcomes for sustainability. While the

focus on actions and changes for sustainable behaviour where intended to inform the

DoET on how to consider their participation in the AuSSI, the primary objective of

this pilot project was to explore how a planned program concentrating on EfS could

deliver an integrative ELs Framework. It is this latter objective that forms the

exploratory focus of the next two case study chapters.
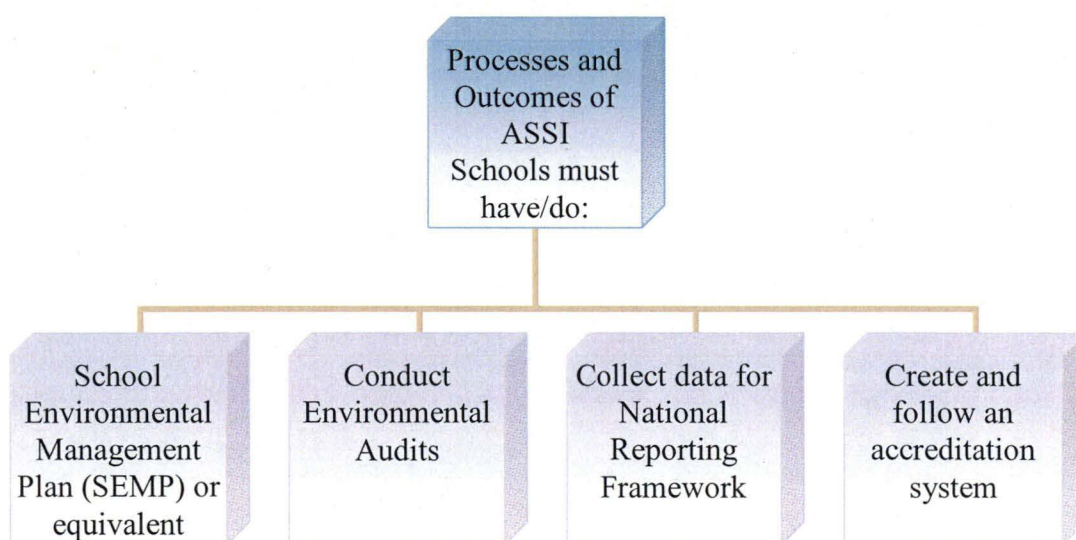
Figure 16. Proposed outcomes of schools participating in the AuSSI.
Source: (Adapted from (National Environmental Education Network, 2004a, np))

Summary

This chapter has focused on the evolution and devolution of EfS through Australian

and Tasmanian educational policy. This exploration culminated in identifying the

potential for the ELs Framework to assist Tasmanian schools to participate in sustainable change through a whole-school sustainability approach. With commitments to embody a relevant, experiential and integrative approach to curriculum, the ELs Framework emerged as a curriculum policy that could potentially benefit from many of the methods attributed to EfS in Chapter One.

Promoting such ideals as locally relevant learning, the establishment of school/community partnerships, and the need for innovative and integrative teaching, the rhetoric of the ELs Framework reveals a potential connection between its strategies of implementation and those proposed to deliver a local application of EfS. Considering their shared commitment to motivating and providing life-long learning opportunities, these two integrative learning approaches reveal similar conceptual foundations and objectives for learning.

The following Chapters consider this rhetorical compatibility through an exploration of how the Molesworth Primary School and New Norfolk Primary School communities used the ELs Framework to implement whole-school sustainability programs, and how and to what extent these programs contributed to state, national and global sustainable change. It is to their stories that I now turn.

CHAPTER THREE

MOLESWORTH PRIMARY SCHOOL

Look how beautiful our school is ... There is nothing to see here but nature,

all around ... All you hear is the birds and all you see is nature ... We are

really very lucky to go to school here. We must be the best school in

Tasmania (MPS-st1, 2004).

The purpose of this chapter is to focus on Molesworth Primary School's EfS program and consider whether, how and to what extent sustainability education has been utilised as an integrative, whole-school learning approach. This chapter will advance the overall aims of this work by revealing the strategies used by one Tasmanian public school to interpret and implement EfS through an ELs Framework. I will illustrate how the EfS program at Molesworth Primary School functions as an ongoing learning process rooted in community participation and involvement at a number of levels, and over a period of time that pre-dates the pilot project and speculate on how that might have affected its embrace of EfS through the ELs.

The first part of this chapter describes Molesworth Primary School's ethos of sustainability, to which the elements of EfS and the ELs Framework are woven in as they emerge relevant to the case study setting. In this work I stress the following themes: the pedagogy of placed-based education in the development of an EfS program; the 'people-centred' approach to place-based education that is taken by Molesworth Primary School; and the significant role that community members play

in the education and decision-making operations of the school. Molesworth Primary School's current EfS practices, challenges, and visions for sustainable education will also be examined in light of its participation in the DoET's *Sustainable Schools* pilot project.

A Day at Molesworth Primary School – a first hand view

My first visit to Molesworth Primary School (MPS) took place in March of 2004, in the middle of the first term of the school year. The purpose of that visit was two-fold. While observing the school community and its setting was one intention of the visit, I also met a group of students from my other case study school, New Norfolk Primary School, who were visiting MPS as part of an excursion to gather inspiration for their own school's participation in the DoET's *Sustainable Schools* pilot project. My introduction to the students and staff of New Norfolk Primary School, and the significance of this meeting, will be addressed in greater depth in the next Chapter.

I arrived at MPS at recess time and most of the students were outside engaging in various activities around the school grounds. In one section of the schoolyard, a designated playground area with a timber constructed climbing frame, was the site of play for a few 'superheroes' who were dangling from its bridges and calling out from its castle towers. While this scene looked much like a typical schoolyard playground at break time, my eye was drawn to the distinctly different scenes being played out in the more unique locations of the MPS school grounds[19]. There were a number of children excitedly pointing at discoveries in a small pond at the front entrance to the school. Towards the back of the playground a small group of older children were

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[19] My determination of these spaces as unique was based on previous research findings showing the limited use of school grounds as spaces for environmental learning (Dyment & Reid, 2005; Malone & Tranter, 2003).

mixing up what looked to be a large container of compost. In a small shed at the centre of the school a number of children were helping to move a collection of seedlings out of the shed and across the schoolyard to a greenhouse. There were also groups of students sitting in what appeared to be an outdoor wooden amphitheatre set in the shade of a cluster of trees.

As is the protocol in all Tasmanian government schools, my first stop as a visitor to the school grounds was the front office so that I could sign in. When I entered the waiting area I encountered a collection of student art works displayed around the front office. These projects included recycled paper bowls accompanied by descriptions of the artistic and inspirational process that students engaged with to create their works. There were also recycled greeting cards made by students at the school, which were on sale in the office as a small-scale fundraiser.

Along one wall of the office was a collaborative student collage of Sorell Creek, depicting wildlife, riparian vegetation, and the flow of the river. Accompanying the mural was a brochure entitled 'What's special about our creek?' The brochure described the MPS community's participation in the celebration of the 2003 International Year of Freshwater exploring its backyard waterway through the arts. The activities were funded by the DoET and supported by visiting artists, teachers, parents and the community. The brochure explains the school's participation in this project, including an array of presentations in the visual arts, performance arts, and outdoor explorations within the landscape provided by Sorell Creek. The largest section of the brochure depicted a collage of the students' visual, literal and performed artistic creations inspired by the creek.

After briefly meeting with the principal of MPS, I left the office to meet with the

group from New Norfolk Primary School outside of the Molesworth Environment

Centre[20], located on the school grounds next to the playground. We were greeted by

the *Sustainable Schools* resource teacher from MPS and two students from the MPS

Environmental Leaders Program[21]. Guided by this group of three, we made our way

around the school, touring the different facilities and functions that characterised

MPS' school-wide program for EfS. At each site, students from the Environmental

Leaders Program demonstrated different EfS activities in which the school was

involved. Our tour included demonstrations of the wormery, the composting station,

the propagating shed, the recycling art centre, the frog pond, the community

recycling station, the ropes course, Sorell Creek, and the Molesworth Environment

Centre.

Throughout the tour there seemed to be few identifiable or outlined boundaries

between the school and the community. In the physical sense, there was an enclosed

area of the school; however, it appears that its primary function was to block the

schoolyard's small occupants from accessing the main road that meandered around

the east side of the school grounds. The remainder of the schoolyard was not so

easily defined by distinct physical boundaries. Towards the back of the school is a

natural boundary carved out by Sorell Creek. Yet with the construction of a rope

bridge, and the comfort that the students showed in climbing through and across the

river to the other side of the bank, this boundary seemed to indicate no more than

possible areas for dry (and wet!) riverside explorations. While the western side of the

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[20] The Molesworth Environment Centre is the Environmental Education Centre operated by the DoET that was referenced in Chapter One. The function of the centre and its relationship with MPS will be described in greater detail later in this chapter.
[21] The MPS Environmental Leaders Program is an educational initiative for students in the Grade 5/6 class at MPS. The program attempts to promote leadership in environmental awareness and behaviour through local community actions and partnerships. This program will be addressed in greater detail in the following sections of this chapter.

school's boundaries *seemed* to run alongside the creek, there was no clear distinction showing where the schoolyard ended and where the adjacent property began.

Our tour continued along the western section of the creek and we were shown where the school had participated in a creek clean-up and tree planting. While we were technically on private land, land partnership agreements with surrounding landowners gave the school access to this property, allowing students to participate in activities of stewardship and learning within these areas. The existence of such community agreements and partnerships seemed to indicate that, like the physical boundaries between the school and its surrounding community, the social boundaries were also quite flexible. In many of the locations we were shown, there was a clear implication that the boundaries between MPS and its surrounding community were not socially defined by the static borders named by land titles and deeds. Instead, the school and surrounding communities seemed to engage in a process of active negotiation about social and physical shared spaces.

An example of this reciprocity was evident in the community's recycling centre. The centre, which is run by the school and students, was established in direct response to the need for recycling facilities in the local community. Because there is no curb-side recycling or rubbish pick-up in Molesworth, residents of the community must drive their rubbish and recycling to the nearest tip or waste management site, which is located 15 kilometres away in the neighbouring town of New Norfolk. The establishment of the Molesworth recycling centre has made waste minimisation more convenient and enhanced the benefits of maintaining partnerships between the school and wider community. Other activities between the school and community focused on cleaning up Sorell Creek as well as planting trees and identifying weeds along the

catchment. In these events the local environment was interwoven throughout the subjects of the curriculum, bringing together theoretical classroom learning with practical and locally relevant applications. Such events have helped the establishment of educational practices in the school reflecting the environmental concerns of the entire Molesworth community, emphasising the significant role of the surrounding community in the place-based approach to education at MPS.

A place, a town, a school ... a community

Molesworth is set in the eastern foothills of the Wellington Ranges. A dominant feature of this landscape is Sorell Creek, which carves a path through the town, flows down from the hills, meandering through the valley and continues out to the east where it empties into the Derwent River. The path of the creek is similar to the commuter route taken from Molesworth to the state capital of Hobart, which is located 36 kilometres away. This route is travelled, sometimes daily, for the purposes of work and recreation by many of the residents of Molesworth who also live throughout the hills and valley that make up the town's catchment.

Molesworth's proximity to Hobart provides increased employment opportunities and access to higher education for many of the residents of Molesworth. This is arguably the reason that Molesworth residents enjoy a higher socio-economic status and maintain a more educated demographic population than residents of other semi-rural communities in Tasmania (Australian Bureau of Statistics, 2006). Unlike other semi-rural townships in the state, Molesworth residents do not depend on local industry or infrastructure for employment, which is both a cause and consequence of the urban influence that Hobart has on both the economics and societal context of this

community.

While the natural environment of Molesworth is characterised by open space, trees, paddocks and Sorell Creek, the built environment simply consists of widely spaced homes, a service station/general store, a community centre that is currently under construction, and MPS with its accompanying Environment Centre. Exempting the necessary upgrade of roads and building requirements, not much has changed in the way of infrastructure within the communally shared, built environment of Molesworth in the past hundred years. Unlike neighbouring communities, Molesworth does not have a local take-away shop, chemist, hotel, or restaurant. In the face of global pressures for growth and competition, Molesworth has maintained an 'old world' and 'country' style of living. One of the most prominent characteristics that reveal this small town manner is the central role that the local school plays in the life of the community.

Currently utilised as a space for town meetings and gatherings while the community centre is under construction MPS is a focal point for the surrounding community.

> *If you want to know what is happening in Molesworth, you go to the school to find out* (MPS-comm4, 2004).

While the completion of the community centre will expand community activities beyond the local school, the school community plans to continue to share its buildings and location as a space to promote community engagement and involvement in school activities. According to the current school principal, MPS plays a significant role in bringing the community together for community learning and social interactions.

The community is very spread out with not much local activity to connect them ... Now that new people are moving into the community they are looking for ways to connect ... I see the role of the school as a facilitator of that connection ... but I would like to see the community grow to assume parts of that role (MPS principal, 2004).

Taking on the role of 'community facilitator', MPS has instigated a number of whole-school programs addressing locally relevant subjects. Particular programs run by the school have focused on such topics as the 'History of Molesworth', which utilise local knowledge and celebrate a common history held between residents of the area. These programs are shared at community-wide celebrations and events to promote communication and learning about, and throughout, the community. These celebrations are important for maintaining a strong relationship between the school and its surrounding community, and for ensuring that the community feels a sense of ownership in the educational activities of the school (Sobel, 2004).

Other community learning activities encouraged by the school's teachers and administrators include native garden and tree plantings, landscape restoration and community clean-ups of the local area. These programs have facilitated active collaborations between the school and the surrounding community and led to tangible improvements in the physical and social landscape of Molesworth. Such visible results have helped strengthen school/community ties by showing the benefits of partnerships to all involved (Sanders & Lewis, 2005).

Educational directions - a community vision

With a local community focus in its delivery of integrative educational programs,

educators at MPS do not overlook the significant contributions brought to a child's education by the local members of the wider community. The active involvement of community members in the educational program of a school can support improvement for individual students, parents, the school and community learning (Miller, 1995; Sanders & Lewis, 2005). The relationship shared between MPS and the Molesworth community extends even into the decision-making processes and educational programs delivered in the school. Through the active participation of community members in the administrative and decision-making bodies of MPS, the values and visions of the Molesworth community are included and reflected in the school's educational, environmental and social functions.

Each Tasmanian school has a School Association made up of the principal, select teachers, staff, parents and community members (Department of Education Tasmania, 2005). 'Such diverse membership ensures that partnership activities [emerging from the decisions made in amongst this group] will take into account the various needs, interests and talents' of everyone involved (Epstein, 1995; PIRSA Sustainable Resources Group, 2000). At MPS, there are two groups under the School Association: the Parents and Friends Association, and the School Council.

The current contributing members of the MPS Parents and Friends Association consist of a dedicated group of parents who organise and perform many of the school activities that relate to fundraising, canteens and special projects. The School Council, which is composed of elected representatives from staff, parents, and the surrounding community, is the higher decision-making body of the two groups. The School Council discusses with, and advises, the principal on matters relating directly to the educational operations and social actions taken by the school. It is in School

Council that widely constituted participation has reaped the most reciprocal benefits for MPS and the community of Molesworth (MPS principal; MPS-t2; MPS-t3; MPS-pt1; MPS-comm2, 2004).

Inclusion in the processes of MPS is important to some members of the Molesworth community who sometimes feel neglected by their Local Government Municipality the Derwent Valley Council.

> *The community of Molesworth is the forgotten township of the Derwent Valley Council ... we are the in-between area that is on the cusp of Glenorchy and the Derwent Valley ... when we have a problem, we don't get very fast responses from our Council, so we are forced to look inward to alleviate our own problems* (MPS-pt2, 2004).

This commitment to personal and community responsibility has developed a sense of pride among residents of Molesworth in their ability to facilitate development and the preservation of a particular way of life, including communal interest in the education of young people[22]. Out of necessity, members of the community of Molesworth recognise that they must 'build from within ... and celebrate what we have' (MPS-pt3, 2004).

Inspired by these notions of 'building from within' and 'celebrating the community of Molesworth', the School Council of MPS is able to draw upon the bonds held between the school and the Molesworth community. The issues addressed at an MPS School Council meeting focus on more than school-related issues. Community matters are also relevant subjects of discussion; they include visions for community

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[22] Gill (2002) and James (2004) note how communities can become involved in youth education to maintain cultural traditions and particular ways of life.

growth and well-being, as well as visions for the educational futures of the students
at MPS. Through communication and inclusion, such visions become motivation for
the methods and values employed by the school. This process of a values-based
education centred on community ideals reiterates the rhetoric of the ELs Framework,
which drew its values and visions for life-long learning in Tasmania from a process
of community consultation (Department of Education Tasmania, 2000b, 2002b).
Such a focus on the local is also consistent with an EfS, whole school approach
which values community input and vision for the promotion of life-long community
learning (Chodkiewicz & Flowers, 2005; Davis, 1997; Henderson & Tilbury, 2004;
Tilbury & Wortman, 2004).

An education of local relevance – learning to inhabit

The relationship between MPS and the Molesworth community is based on
communal responsibility and the role that education has in fostering an appreciation
for this responsibility however, it is also based on a shared location and sense of
place. Because Molesworth is a rural community, there are many lifestyle
behaviours affecting the physical and social environment that must be considered by
residents and the school community alike (Kilpatrick et al., 2002; Miller, 1995).
Through a dedicated relationship to community and place, educators at MPS
consider these local, environmental issues to be an educational opportunity for new
members of the community to learn how to *inhabit*[23] this shared place.

For example, one issue facing the inhabitants of Molesworth is water use and
conservation. Like residential neighbours who collect water from their own

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[23] Orr (1992) distinguishes between a *resident* who can exist in any given environment in a state of
naivety that disregards their place within the natural and social processes of that environment, and an
inhabitant who lives within their community as an aware and respondent member of a working system
that incorporates the natural and social environment in which they are inherently included.

properties, MPS draws its drinking and cleaning water from holding tanks located on the school grounds. This form of water access highlights a necessity for community members and school members alike to be aware of, and to behave according to, the conservation needs of tank water use. Unlike many of their city counterparts who have access to city supplied potable water, water use and conservation for the students and staff of MPS, become social and therefore educational responsibilities shared by the entire community.

Students of MPS are taught from the earliest age that as members of the school they are also members of the Molesworth community and water conservation is a behaviour in which everyone shares responsibility. Students are shown that the school is as much a participant within the social and physical environment as any other space within the community, and they therefore need to be aware of their own actions and influence on the processes that occur within this space (Orr, 1990b).

Reflecting on the conceptual framework of place-based education approaches, this evidence shows that through a focus on community needs and values, students of MPS are being educated to inhabit their place within Molesworth. Because students are guided to be aware, understand, and be responsive to the environmental and social consequences of living with tank water, they are educated to understand water as a system that is part of an interconnected ecological process including where it comes from, how it is collected, used and wasted, and what role individuals and communities play within the entire process (Orr, 1990b). Furthermore, because these lessons link directly with those issues faced by the Molesworth community, the students of MPS gain an understanding of what it means to inhabit a place within their own community, which ultimately teaches them to inhabit their place in the

world (Orr, 1992).

This example of tank water conservation is one example of the mutual dedication to environmental awareness and sustainable living that exists at MPS and within its surrounding community. By recognising the mutual responsibilities that the school and the community share in inhabiting the same place, a dynamic relationship has evolved between MPS and its community, which supports the preservation of a lifestyle and accompanying education that promotes sustainable living within the local environment (James & Lahti, 2004). The value that learning for sustainability has within this community can be witnessed in such things as the waste management operations of the school, the promotion of environmental education, and the partnerships that are maintained throughout the community. The best example of how environmental education at MPS is valued for its ability to create awareness, change, and spaces for community participation can be seen in the story of saving the Molesworth Environment Centre.

The Environment Centre – a learning vision for the Molesworth community

Established in 1977, the Molesworth Environment Centre is a colourful building decorated with artwork, writings, and the creative visions of both students from MPS and students from visiting schools (Molesworth Primary School, 2005). The Environment Centre hosts approximately 4000 students each year from around Tasmania to participate in a number of outdoor, environmental and social activities. The Environment Centre offers programs that cater to the ELs Framework and include activities such as bushwalking, team building, survival skills, sustainable

living workshops, and freshwater pond investigations. Also serving as a resource centre, staff members of the Environment Centre create resource toolkits for teachers that accompany each of the activities in which visiting students participate during their learning excursion. The purpose of distributing toolkits is to encourage visiting teachers to expand upon their Environment Centre visit by continuing the lessons in their own learning environments and classrooms. Teachers from MPS and other schools around the state can also access additional resources on environmental education and activities by requesting assistance from the Environment Centre staff.

The Environment Centre, which is managed by the DoET, is officially separate from MPS. However, the proximity to MPS and a shared focus on environmental education makes the Centre an ideal neighbour and partner in education to the MPS community, and students of MPS receive additional opportunities to access the facilities and expertise of the Centre and its staff[24]. Through recently introduced programs at MPS, students also get to participate in the Environment Centre's various activities through a number of leadership and stewardship roles. These increased opportunities include participating in community environmental projects and acting as guides for visiting groups to the Environment Centre.

Today the Environment Centre stands as a symbol that represents the Molesworth community's dedication to environmental awareness and localised education for its young community members. In 1992 the DoET raised the possibility of having to shut down the Environment Centre to cut costs across the State budget. Other school environment centres across the State were shut down for similar reasons, but due to the formation of a local community action group (Friends of the Molesworth

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[24] The value of close partnerships between schools and environmental education centres is well documented in the literature of EfS (Environment Australia, 2000a; Enviroschools Foundation, 2004; NSW Council on Environmental Education, 2002).

Environment Centre) which challenged the closure, the Molesworth Environment Centre remained open (Volta, 1993). The outspoken resolve of the local community to support the preservation of the Environment Centre demonstrates the community's awareness and appreciation for the Centre as an educational resource for both the school, and the community. With such local support for the continuation of the Centre, the local community voiced not only a support for environmental education, but for a particular type of environmental education that was aware of, and responsive to, the physical and social spaces in which it is taught[25].

Places and people in placed-based education

Based on a shared value of locally relevant, environmental education, additional partnerships between the school and the wider community have developed to help further support this vision. In the 2003 annual report outlining the goals for MPS to 2006, the importance of community partnerships and the value of locally based EfS were highlighted in a number of targets and benchmarks for school improvement (Molesworth Primary School, 2003). This inclusion reflects outcomes in research showing that community input and partnerships in policy goals for school improvement, positively affects the educational focus of a school and the direction it will take with its partnerships with the local community (Sanders, 2001).

Partnership goals for MPS stress the importance of maintaining a constant process of cooperative communication between the school and its community partners. The goal of communication is to allow for both the community and the school to voice their opinions and concerns, which creates a sense of reciprocal ownership within the partnership (Sanders & Lewis, 2005). The success of school/community

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[25] Williams and Taylor (1999) have documented a similar case in the United States.

partnerships is reliant on this dialogue as well as a framework which will allow for reciprocal benefits to emerge for all parties involved in the collaboration (Epstein, 1995). Recent partnership initiatives that have emerged between MPS and its surrounding community attempt to exemplify the benefits of school/community partnerships as outlined in the school improvement goals of the annual report. Two of these initiatives that have had significant successes are the development of land partnerships between the school and landowners in the surrounding areas of the school grounds, and the establishment of the Environmental Leaders Program.

Land partnerships

Within the MPS place-based educational pedagogy the physical 'space' of the school grounds was smaller than the 'place' that MPS occupied within the wider community. The school community's desire to teach through a more whole-systems approach which would identify MPS as an integrated and integral part of the wider community led to an expansion of the school's educational methods to incorporate the community in both its physical and social structure. In order to enable the full spectrum of learning opportunities available throughout the Molesworth community an initiative was instigated to include community spaces in the educational methods of the Environment Centre[26]. With such natural features as Sorrell Creek and the Wellington Ranges, teachers and staff at MPS and the Environment Centre recognised that the ability to teach ecological sustainability and environmental education was hindered by the inability to explore the natural environment of Molesworth in a complete and holistic way. In an effort to provide students with educational opportunities which better reflect the whole ecological environment of

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[26]David Sobel has written extensively on the value of expanding learning beyond the school grounds to develop in students, a sense of place, stewardship and community inclusion (Sobel, 1996, 1998, 2004).

the Molesworth community, MPS entered into a number of partnerships with surrounding landowners in the Molesworth community that would extend the potential for exploration into the natural environment that was until then located beyond the boundaries of the school grounds[27]. As part of this partnership, surrounding landowners are offered an insurance package[28] and all access to their land is supervised.

The partnership agreements include opportunities for students from MPS and visiting schools to explore and map the surrounding land, discovering different natural features such as freshwater ponds and sandstone caves[29]. One of the most significant aspects of this partnership is the ability for students to study Sorell Creek as a community water catchment that affects, and is affected, by the community in a number of ways, in a multitude of locations. Research indicates that such school/community partnerships which enable learning opportunities for students outside of the classroom environment offer an integrated understanding of local environmental issues not as easily taught through the abstract structure of the curriculum (G. A. Smith & Williams, 1999/2000; Daniella Tilbury et al., 2005). This increasing local knowledge is, in turn, empowering students to recognise the valuable contributions that they, as individuals and as part of a school group, can make to the well-being of their community (Sanders & Lewis, 2005; Shumer, 1994; G. A. Smith & Williams, 1999/2000; Sobel, 1996, 2004).

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[27] Dyment (2005) and Tranter and Malone (2004) also note the value for school grounds and surrounds to contribute to environmental and experiential learning.
[28] The insurance package offered to participating landowners insures against public liability for access, accidents and damage that may occur as a result of school excursions. Individual students are also covered by the DoET's school excursion insurance.
[29] Such activities have been noted by Gurevitz (2000), Matthews (1995) and Sobel (1998) to contribute to students' environmental learning and a building a sense of place.

To preserve the notion that MPS provides a space for the community to come together and share in a sense of ownership over their local education methods, participating landowners are also asked to partake in annual landowners meetings, which involve them in the decision-making process of environmental education occurring as a result of these partnerships. There are also a number of social events, in which landowners are invited to participate, that showcase the opportunities made available by these partnerships. Some of these events include slide shows, tree plantings and backyard macro-invertebrate education workshops.

The landowner partnerships are initiated and maintained by staff at the Environment Centre and they create a framework for school/community partnerships that benefit the school, the Environment Centre, and the surrounding community. In describing this dynamic relationship, the director of the Environment Centre stated,

> *I don't think that I've ever seen such a school/community partnership ... the*
> *school acts as a community drawcard for Environment Centre activities, and*
> *the school has greater access to the community as a result of the Centre*
> (MPS-sc3, 2004).

Further enhancing the opportunities enabled by this well-established network of partners, MPS and its community partners have also initiated complementary learning programs for school students in which the members of the surrounding community play a significant role. One such initiative that directly contributes to the educational outcomes of MPS is the Environmental Leaders Program.

The Environmental Leaders Program

The Environmental Leaders Program at MPS was created in 2002 as an opportunity

for students in the Grade 5/6 class to participate in group and individual projects with adult mentors from their community (MPS principal, 2004). The creation of this program is supported by research that indicates mentoring programs can have a positive effect on student performance, as well as on student and teacher attitudes toward the subjects being tutored (Sanders, 2001; Shumer, 1994). Furthermore, the pedagogy of the ELs Framework recognises that mentoring programs give support to students' individual interests and promote a positive increase in their motivations for learning (Department of Education Tasmania, 2003b). The Environmental Leaders Program was designed to celebrate the distinctive character of the Molesworth community and was intended to demonstrate to young students the diversity of talents, perspectives and skills that the people of the surrounding community possessed. Placing value on the *people* within a place emphasises the social aspects inherent in a pedagogy of place-based education (Sobel, 2004).

The Environmental Leaders Program was developed to link students with members of the local community who share common interests and can offer potential learning opportunities for students to develop certain skills seen as valuable to the local community. The program was first introduced to MPS, when the current principal aimed to respond to increasing problems with outward migration of young, skilled community members to Hobart and other mainland cities of Australia[30]. Her objective was to showcase the talents of people in the area to the students in way that empowered young people to appreciate their own potential to exhibit their skills within their local communities, and to avoid feeling that they had to migrate out of the local area for work or to fulfil their life's goals. Establishing close links between school students and local community members can encourage students to value their

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[30] Jones (1999) notes that youth disillusionment can result in problems of outward migration of young people from rural communities.

own contributions to their local community, in both the present and the future (Hren & Birney, 2004; Sanders & Lewis, 2005; G. A. Smith & Williams, 1999/2000; S. Smith, 2004).

When the Program began, people from the local community were contacted as possible mentors and partners. Efforts were made to link individual and group student's interests with the skills and interests of local community mentors. Through the identification of mentors and community interests, the strong link between the environmental philosophies of the school and community became apparent and EfS emerged as the most likely focus of the mentoring program.

After the initial promotion of the program, the school principal indicated that the majority of interest expressed by both students and mentors highlighted the conviction of the community to focus on issues surrounding environmental awareness and action within their local area (MPS principal, 2004). Therefore, the resulting program aims at promoting an awareness and appreciation of the local physical environment through the means of the unique social environment that is characteristic of the Molesworth community, which further highlights the connection between people and place in place-based education. The participation of community members in the environmental education of the students has helped to improve the ability and confidence of both students and teachers to participate in outdoor environmental activities. Furthermore, the success of the program has helped to further promote the participation of community members in contributing their own personal and professional skills to the activities of the school. This linking of schools and communities for the educational and social benefit of students is also achieving a key aspect of the ELs Framework, noted in Chapter Two (Department of

Education Tasmania, 2003b).

All students in the Grade 5/6 class at MPS are eligible to participate in the
Environmental Leaders Program. In the past three years (2002-2004) that the
program has been running, the Environmental Leaders have participated in a number
of activities around the school and the local community, and many of these programs
have involved the Environment Centre. Activities include the establishment and
maintenance of the school worm farm, propagating native seeds, designing and
building a frog pond for frog conservation in the local area, and the design and
rehabilitation of native vegetation around the school and Sorell Creek (Table 5).
Throughout these activities, Environmental Leaders are given ample opportunities to
expand their knowledge and experience through contact with community mentors.
The developing skills of students are then utilised in demonstrations and assistance
with student groups from visiting schools.

A focus on leadership opportunities for older primary school students is central to the
Environmental Leaders Program. Participating students are given opportunities to
develop individual skills in the areas in which they are interested, and to cultivate
their skills as team members and leaders within their fields of interest. Opportunities
to work in teams on projects around the school as well as with community members
in planning and taking actions for environmental rehabilitation are a primary focus of
the program. These activities can range from planting a small vegetable patch with a
younger group of students, to participating in a school-wide tree-planting day along
Sorell Creek. The Environmental Leaders Program runs in conjunction with the
standard classroom procedures of the Grade 5/6 class. With the instigation of the
ELs Framework the Program is able to make relevant curricular links between

practical experience and classroom learning. As a classroom unit, the Grade 5/6

class covers sustainability as an educational topic. In this unit, the practical

applications used in the Environmental Leaders Program are used as a foundation to

discuss and consider theoretical issues in the creation of sustainable futures.

Throughout the topics covered in this class, continuous links are made to the

Molesworth community in an effort to ground students' learning in a locally relevant

way. Figure 17 shows a list of the units covered, and their links to the ELs.

Table 5. The many roles of the Environmental Leaders

Site	Function for school and/or community	Environmental Leaders' roles and responsibilities
Composting station and wormery	Composts food and green waste; produces fertiliser and mulch	Feed worms; turn compost; drain liquid fertiliser; look after site
Propagating shed	Propagates seedlings for school yard and community	Watering plants; fertilising plants;
Recycling art centre	Serves as art centre for school, recycling centre for waste and paper products	Collect products for use; create recycled masterpieces
Frog pond	Frog habitat; conservation; education;	Design, construction and maintenance
Community recycling station	Only recycling facility for Molesworth community and school	Separate community and school recycling; construct signage for use;
Ropes course	Team building; survival skills; used by Environment Centre groups	Participate in team building and survival skills for students from MPS and visiting schools
Creek studies	Catchment for school and community;	Catchment investigations; weed identification; micro-invertebrate collections; Clean-up waterway events
Environment Centre	Environmental Education Centre for MPS, Tasmanian schools and surrounding community	Decorate Centre; participate in centre activities; assist with visiting schools in their excursion activities

What's so special about
Sorell Creek?

- Exploring local community for species audit (look for endangered species)
- Consider human affects on these species both positive and negative and think of ways students and community members can help them survive

ELs outcomes
- Inquiry
- Reflective thinking
- Being literate
- Creating and pursuing goals
- Valuing diversity
- Understanding the past and creating preferred futures
- Investigating the natural world
- Understanding systems

- Looking at plastics and their affect on the community
- Looking at the quality of different plastics
- Creating rubbish jewellery and clothing
- Developing information pamphlets for the community about the affects of plastics on native animals

Exploring Sorell Creek to identify aquatic life
- Researching uses and users of the creek – past, present and future
- Understanding the properties of water
- Creating visual and literal artistic

Why conserve resources?

How do species survive?

Figure 17. Placed-based education - learning links in Grade 5/6 class

As Figure 17 shows, a place-based education approach allows MPS to achieve a number of integrated ELs outcomes through a locally grounded education that is based on the needs and inclusion of the local environment and community. By connecting the inside, abstract, learning environment of the classroom with the outside physical and social environment of the school and greater community, classroom-learning is given a more relevant focus concentrating on students' everyday lives and allowing students to participate in matters affecting their communities (Lewis & James, 1995; G. A. Smith & Williams, 1999/2000; Sobel, 1996, 2004). The aim in delivering such a locally relevant education is to empower students to utilise their learning throughout their lives, which is another key aspect of the ELs Framework and its emphasis on community partnerships and life-long learning (Department of Education Tasmania, 2003b). This potential to instigate change towards more sustainable forms of living in the everyday lives of young students is central to the motivation of the teachers at MPS.

> *I hope they transfer this kind of learning to their lives at home ... I really think they do ... They are really proud of themselves when they do things like come to school with a sensibly packed lunch* (MPS-sc1, 2004).

While the outdoor and community environment promotes a sense of place for learning, the classroom environment provides an opportunity to further develop these concepts of environmental and social education through links to the ELs Framework. This integrated learning is enabled through discussion and sharing of perspectives, all of which inform the many practical and social skills developed in the Environmental Leaders Program.

The Environmental Leaders in action

In late 2004 I was invited to participate in the planting of a native garden at the front of the school that had evolved from a mulch pile to a daffodil garden and was now in its next stage of evolution. A local community member was leading the project in which a group of six Environmental Leaders were planning and planting the new native garden. The project attempted to tie together classroom and outdoor learning in a way that utilised a number of different key elements of the ELs Framework including 'being literate', 'building and maintaining relationships', 'valuing diversity', 'investigating the natural and constructed world' and 'understanding systems'. Figure 18 is a diagmatic representation of the learning outcomes of this placed-based activity as identified by teachers and participating community mentors at MPS. The diagram shows the links between the activity and the ELs Framework identified in focus groups and surveys with respondents from each research group. As Figure 18 reveals, this project was another example of MPS' focus on creating sustainable futures through the use of a place-based education approach that incorporated the different areas of the curriculum.

The students were asked to research and plan a native garden through an investigation of why and how they would use native plants to replant the daffodil garden currently there. This exploration included research into specific plants endemic to the area; the water requirements of native plants compared to the water necessary to sustain the present daffodils; and the height and growth rate of different native plants, which would help to design the structure of the garden. As one student told me when showing me his garden design, 'Well, we can't plant big trees down the front or else you wouldn't be able to see the other trees in the back' (MPS-st2,

2004). It was quite obvious in observing this integrative, place-based activity that many skills emphasised by the ELs Framework, such as 'reflective thinking', were consistently emerging through the delivery of this locally grounded learning activity. Many aspects of this practical lesson also required the students to draw upon abstract

Social
Responsibility

World Futures

Personal
Futures

Group work:
- **Understanding the past and creating preferred futures**

Investigation, systems thinking, design:
- **Investigating the natural and constructed world**
- **Understanding systems**
- **Designing and evaluating technological solutions**

Place-based education

Integration

Creating sustainable futures

Group work:
- **Building and maintaining relationships**
- **Creating and pursuing goals**

Research and design:
- **Being literate (including arts, numerate, information**

Research, investigation, planning and design:
- **Inquiry**
- **Reflective thinking**

Thinking

Communicating

Figure 18. Emerging themes of the ELs Framework in a place-based education activity

learning and problem solving skills apparent in classroom based learning as well as the real-life, contextual learning promoted through the ELs Framework and whole school EfS.

At the end of the planting activity, the community mentor brought the entire group together and conducted a question time. He asked each of the students a few questions about what they had learned that day, and then proceeded to prompt the students to ask him questions as well. Most of the questions were about the day's activities and about activities that were going to take place in the future. During this question and answer time, the students were given the opportunity to work out any difficulties that might have arisen that day, to discuss concepts that they might not have understood, and most importantly to inquire about the future and the role they would have in continuing this relationship and contribution to their community. The most distinguishing feature of this activity was the unquestioned teaching role taken on by a member of the community. This community mentor was not merely a classroom helper or disciplinarian. Assuming a guiding role like that of the students' classroom teacher, this community mentor was helping to reinforce the idea that learning can extend across the school and community. This questioning activity, engaged the students within a learning process that emphasised not only their own roles within the learning process, but also the role of the community within this process. Both the students and the community mentor were visibly identified as crucial participants in enabling a strong overlapping between the 'spheres of influence' in this approach to education (Epstein, 1995, np).

After the activity ended I conducted an interview with the community mentor from the project. He confirmed my speculation that his role within the education of the

students was much greater than simply that of a volunteer assistant. He mentioned that the activities that he participated in with the students operate over a large range of educational subjects including collecting forest data by measuring such things as litter, plants, tree height; sampling and testing soil and water; going to the library to read about the plants that they are studying; and, much to the dismay of the students, he even occasionally gives them homework.

An interesting aspect of the partnership entailed the community mentor's connection with the local University, and the opportunities this connection created for MPS. As a current PhD student in Environmental Studies, he has access to a broad range of contacts and resources, both human and physical that could be made available to MPS and its many educational projects. One resource in particular that he frequently called upon was asking other PhD students and academics from the University to speak at MPS, or participate in an activity with the Environmental Leaders. Recent projects introduced the Environmental Leaders to the variety of passions and foci of the participating professionals and included a mushroom hunt, a moss and mice identification workshop and a talk on butterflies. This primary school lecture/workshop series offered an opportunity to showcase the University while also demonstrating to the Environmental Leaders the diverse range of applications and life-long learning opportunities in environmental education[31].

Maintaining EfS in a whole-school setting

Many of the established EfS programs at MPS highlight environmental education as a significant aspect of the educational methods employed at MPS. It is because of these trials and successes that MPS was accepted as one of the schools to participate

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[31] The role of Universities and University professionals has been recognised in the United Nations DESD as critical to promoting life-long learning opportunities for EfS (UNESCO, 2003).

within the DoET's *Sustainable Schools* pilot project in 2004 (DoET-2, 2004). The hope of the DoET was that MPS would offer insights as to how a school would establish and maintain a level of commitment to EfS and how such a program could contribute to the delivery of the new ELs curriculum.

As the sections above highlight, the critical factors in *instigating* EfS at MPS are a strong focus on placed-based education and the value of community partnerships. However, the *maintenance* and *sustainability* of this pedagogy of local relevance and inclusion implies the necessity for MPS to be able to adapt to change and respond to new situations through facilitative leadership[32]. Highlighting the notion that EfS is ultimately a learning process, the structure and function of that process at MPS was the focus of this research during MPS' participation in the *Sustainable Schools* pilot project. In what follows, I elaborate on the maintenance of EfS at MPS by giving attention to what were identified as the key elements to the structure and function of the program: leadership, learning and progress.

Leadership – a necessary and collaborative effort

MPS has full-time, part-time and speciality teachers, as well as general staff and administrators. While many schools in Tasmania have similar structures, MPS is the only school in the State with a *Sustainable Schools* resource teacher. The principal of the school acknowledges that having a person specifically dedicated to this role is critical to the success of the EfS program (MPS principal, 2004). The designation and recognition accorded to this specific role illuminates the necessity for leadership in promoting and maintaining EfS within a whole-school setting (Australian Association for Environmental Education Inc., 1996; Gough, 2005).

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[32] As emphasised in the literature on whole-school EfS (Henderson & Tilbury, 2004; Sustainable Development Education Liaison Group, 2005).

At MPS the *Sustainable Schools* resource teacher works in conjunction with the other teachers, the Environment Centre staff, the general staff, parents and community members sharing the roles and responsibilities of running the EfS program in the school. This leadership role is crucial to the development, maintenance and evaluation of the partnerships that characterise the MPS method of EfS. It is from this leadership that many ideas are developed, communicated and shared throughout the network of the school (Gould League & CERES for the Sustainable Schools program, 2002; NSW Department of Education and Training, 2003).

The *Sustainable Schools* resource teacher has instigated many of the current projects that take place at MPS today. This teacher also assumes a teaching role within the school by working with teachers and students to incorporate sustainability into classroom lessons and across the ELs. Such activities include professional development days for teachers, community tree planting days and underlying classroom activities promoting EfS.

In the 'History of Molesworth' school-wide project, the *Sustainable Schools* resource teacher acted as the integrating impetus, assisting students and teachers in its implementation. By being integrated into lessons across the curriculum and across the school community the project emphasised both environmental sustainability in its use of sustainable resources, and social sustainability through its use of group work and community inclusion. One example of this underlying notion of sustainability was the creation of a loom by a number of students completing different tasks to assist in its construction. While one student was not particularly interested in the weaving aspect of the art project, he did enjoy the measurement and building

required during the design phase. His participation, which emphasised his strengths and preference for maths, design, construction, and motor skills, was shared with other students. This student's loom construction was passed to another student who investigated how certain materials might be reused within the weaving operation of the loom. Once the loom and its functions were established, the task of weaving could be shared by any number of interested students, producing an array of woven creations.

The loom project revealed an excellent example of the ELs Framework's promotion of learning activities that cater to a diverse group of students with different needs and abilities (see Chapter Two). Through an environmental lesson designed to promote the reuse of art materials, individual student strengths emerged in maths, art, and history such that the outcome was integrative of academic skills, as well as social and environmental sustainability. The important aspect of this project, in regard to EfS, is that although there is a shift in focus from environmental education to social education, the awareness and existence of sustainable behaviour is not lost. The lesson in this activity stressed that environmental education does not have to stop when maths, art, history, or social education are being taught. In fact, environmental education does not always have to be the focus of an EfS program; it can merely be the underpinning concept through which the project is conducted.

The ability to have small groups of students working together on such projects under the close guidance of one teacher has been viewed by teachers and parents at MPS as an indispensable aspect of promoting EfS within the school (MPS-sc1; MPS-sc2; MPS-sc3; MPS principal, 2004). Small group projects that allow for the incorporation of formal and informal learning experiences are seen to contribute to

developing a sense of inclusion and community among the students involved (G. A. Smith & Williams, 1999/2000). Not only does this one-on-one learning allow students to take on a leadership role within their project, but the *Sustainable Schools* resource teacher can promote a number of different EfS underlying lessons across the curriculum and throughout the classrooms in the school. When a teacher sees what one student has done in his/her time with the *Sustainable Schools* resource teacher working on a particular project, they can request a similar lesson be taught by that resource teacher to their whole classroom; thus teaching the individual begins to lead towards teaching the community.

Although the contributions of this single leader within the EfS program do not go unnoticed, it is also strongly recognised within the school that 'one person cannot create a lasting, comprehensive program' (Epstein, 1995, np). In striving to become a *Sustainable School*, the participants in the MPS program recognise that it is necessary to share and develop leadership roles throughout the school and the community in order for the program itself to be sustainable (MPS-sc1; MPS-sc2, 2004). The *Sustainable School's* resource teacher believes sharing leadership is important on a number of levels; however, the delegation of responsibility is not always easy (MPS-sc2, 2004). She recognises that in order for the program to be sustainable, adaptive and progressive, it is necessary for others to 'step-up and take over' many of the projects conducted at the school, but when one individual has established and developed a project over time, sometimes it is hard to hand over the steering wheel (MPS-sc2, 2004). Such dedication to a particular project suggests that in order to promote a wider school ownership of a project, both the adopting, and the relinquishing, of leadership roles are important skills for supporting

collaborative, sustainable projects.

Leadership roles at MPS are shared between a number of individuals who contribute to the broad range of tasks and responsibilities necessary to coordinate and maintain the program. These shared responsibilities include fostering the links across the ELs and between the school and the surrounding community. Considering the hefty task of coordinating the Environmental Leaders Program and the community land partnerships, an active and effective leadership team is necessary to maintain stamina for a program that encompasses such an extensive network (Sanders, 2001).

Among the participants who share these leadership roles are the Environment Centre staff, the teachers and staff of MPS, and the community members who participate as landowners, mentors, and/or School Council members. Central to the success of teamwork throughout this group is communication, participation and professional development (Sanders & Lewis, 2005). As noted in Chapter One, when MPS signed on to participate in the DoET's *Sustainable School* pilot project, a steering committee was chosen to represent the diversity of the network promoting EfS in the school. This central steering committee reports back to the remaining teachers, parents and the School Council, which is an important aspect of maintaining partnerships between stakeholders in the program (Epstein, 1995). The steering committee of the MPS *Sustainable Schools* pilot project consists of the coordinator of activities of the Environment Centre, the MPS *Sustainable Schools* resource teacher and the teacher from the Grade 5/6 class of Environmental Leaders.

Through the existence of this strong leadership team at MPS, the school is able to extend its teaching methods outside of the influence of its own school and, in so doing, increase support for its internal efforts and increase leadership opportunities

for Environmental Leaders. Two of the MPS teachers who are recognised leaders in the school's quest to support EfS are frequently asked to give workshops and professional development sessions to students and staff at other schools in Tasmania. Sometimes this work entails a visit to the school. At other times participants come to MPS and the Environment Centre to discover the unique educational methods employed at MPS. While the steering committee recognises this aspect of teaching outreach as extending the school's sphere of influence, they are also aware that these workshops are often embodied in only a once-off session. As a result, the teaching and follow through for other schools is never fully realised. For this reason, the steering committee hopes to establish, through its connection with the Environment Centre, a new system of external teaching offering better support and feedback to its additional school partners.

The steering committee envisages further opportunities to expand its sphere of influence through its close working relationship with the Environment Centre. Every year students from across Tasmania visit the Environment Centre. During these visits MPS, and especially the Environmental Leaders Program, have the opportunity to showcase their EfS activities and highlight the potential for place-based approaches to education to be used as an integrative tool to deliver the ELs Framework. Such ongoing programs as the recycled art centre and the wormery, draw attention to the opportunities to use the environment as artistic, scientific and practical inspiration, and how the outside 'real' world can be brought into the classroom in a fun and inclusive way. While staff of the Environment Centre gives tours of the facilities at MPS, visiting students and teachers get a chance to see and participate in many of the activities that characterise an education received at MPS.

The recycled art centre is deliberately decorated with many different projects linking subjects across the ELs through sustainability and the Arts. Such decorations include, weed weavings hung from the ceiling that enable observers to identify weeds found along the creek. There is also a decorated information board about the affects of plastics on the environment and the methods of reducing, reusing, and recycling. In an attempt to go beyond awareness raising, this information board also highlights direct actions a person can take to reduce, reuse and recycle through an Arts medium. Art projects such as the weed identification weaving and the plastic information and activity board are all created by students, during programs run at MPS. These creations are displayed to show students and teachers from visiting schools that recycling art can be done in a number of ways that extend beyond the activity they have come to participate in on their one day's excursion to MPS.

This opportunity to showcase the EfS programs at MPS also assists to increase internal support within the school itself. When visiting schools express admiration at the methods of education occurring at MPS, this feedback extends to the students, teachers and parents of the MPS community. Especially relevant to the Environmental Leaders is the ability to demonstrate their growing knowledge of sustainability issues while gaining experience through leadership and social opportunities when they are asked to assist with visiting school groups. The opportunity for Environmental Leaders to showcase their knowledge seems to be significant in keeping up internal momentum and interest in the EfS focus at MPS. Encouraged by their community to continue to learn and to communicate their knowledge, the students of MPS realise there is something special about their learning when they hear teachers and members from other visiting schools say, 'you

are being a leader, because not everyone knows this sort of thing' (MPS-sc2, 2004).

Another aspect of this leadership team that cannot go unnoticed is the support of the principal at MPS. As instigator of a number of projects, among them the Environmental Leaders Program, the principal at MPS acts as a central figure in the communication and networking of the EfS program. As the key person in the school's dealings with the DoET, parents and the community, it is vital for the principal of the school to share in the vision for EfS in order for the program to succeed (Gough, 2005). In the case of MPS, the principal's support for EfS is strong and pro-active. New teachers to the school are told by the principal from the start of their employment that, 'We are a *Sustainable School*, and this is the way that we do things' (MPS-sc1, 2004). The educational methods and philosophy of the school are supported by the principal and have been commended in many Environmental Education awards[33], which emphasises that this pattern of leadership and support is delivering a valuable form of EfS to this school community (MPS principal, 2004).

Trial and error – the learning cycle of EfS

Another important aspect of the sustainability of the MPS program is its adaptability. One of the most important aspects of this ability has to do with learning from past mistakes to rethinking current and future practices (Arhar et al., 2001; Kemmis & McTaggart, 1988; McKenzie-Mohr & Smith, 1999). Leaders and instigators of the EfS programs at MPS are the first to admit that some of their attempts to promote environmental awareness and behaviour change within the school are unsuccessful in achieving the level of change hoped for (MPSsc-1; MPS-sc2; MPS-sc3; MPS-pt1,

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[33]MPS Environmental Awards include the DoET's Commitment to Environmental Education Award (2001); VISY Schools Challenge (2003); funding from the VISY Green Schools Competition (2002 and 2003); the Hands on Habitat Award (2005).

2004). Even with strong community partnerships there are times when partnership interactions may lead to debate, questions or even conflict (Epstein, 1995).

In the last few years there have been instances where planned community planting days have seen only one member from the community show up. Other school-wide disappointments have occurred, such as the initiative to have rubbish free lunches, which caused a backlash from parents who were upset about their children bringing their lunch rubbish back home in their school bags. Within the day-to-day activities of the school, there is sometimes disagreement or resistance from teachers within the school asked to participate in different forms of waste recycling within their classrooms. Some teachers don't necessarily reinforce the tenets of 'reduce, reuse, and recycle' throughout every subject taught in their classroom. There is also resistance from some teachers to taking students out of classroom reading time activities to participate in outdoor environmental education on the grounds that is an extracurricular activity.

While many of these events could be viewed as a failure of the EfS program at MPS, the learning foundation of sustainability education instead views these circumstances as yet another learning scenario for the instigators and educators within the program. Life-long learning implies that teachers and students are joined as learners (Arhar et al., 2001). When learning is recognised as a continuing and reciprocal process, the modelling of learning by teachers can be very powerful for students and their understanding of the life-long learning concept (Department of Education Tasmania, 2002b). Likewise, a characteristic of a good partnership framework is one that can withstand such problems, and through reflection learn from the process in a way that enables changes to progress the initial program (Epstein, 1995). This is an

important factor of the EfS program at MPS, because it identifies both educators and students as partners in the learning process.

Members of the MPS community motivated to promote EfS within their school consider such instances of conflict to be opportunities for addressing EfS in a new and inclusive way. The leaders of EfS within the school see these circumstances as challenges to the planning and implementation of their ideas, which enables them to readdress these issues in a way that acknowledges the suggestions and concerns of other members of the school. This method of approaching challenges is an important part of the learning process for a team of motivators within an EfS program that relies on school/community partnerships (Kemmis & McTaggart, 1988; McKenzie-Mohr & Smith, 1999). The team of actors within these leadership roles must 'work to improve and systemize' the patterns being implemented amongst other members of the EfS program (Epstein, 1995, np).

Inspired by McKenzie-Mohr and Smith's (1999) marketing strategy for promoting change towards more sustainable behaviour[34], the leaders of EfS at MPS utilise a system of identifying barriers and benefits to sustainable behaviour change in their school. Through this process of identification and planning, they instigate new actions and practices by which to respond to these barriers by adapting their advocacy of the EfS program.

At the start of the *Sustainable Schools* pilot project, the steering committee from MPS embarked on an assessment of their current situation as a precursor to envisioning and planning a direction for the future. This thinking process involved

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[34] McKenzie-Mohr and Smith (1999) believe that the first step to promoting group and organisational behaviour change is to identify the benefits to instigating the change as well as the potential barriers that may cause individuals to resist the change. The idea is to find alternatives to the barriers and promote the alternatives along with the benefits, thereby increasing the marketability of the behaviour change.

looking at the barriers and the benefits to their proposed visions for change. Within this process, the steering committee gave attention to a 'big picture' vision of the future, and much of this big picture included the outspoken vision of the community of Molesworth, as expressed at School Council meetings[35]. A representation of this imaginative visioning exercise taken out by the MPS steering committee is shown in Figure 19. Although this pilot project was not the MPS community's introduction to EfS, this information gathering exercise enabled the MPS steering committee to critically reflect on their current situation and commence a thought process that would empower them to progress their EfS program through an action plan based on a well-defined collaborative vision (Epstein, 1995; Kemmis & McTaggart, 1988; Tilbury & Wortman, 2004).

Within the vision of the MPS steering committee, the group was able to recognise their achievements in EfS, but they also acknowledged there were many areas in which improvements could be made. These areas included, a necessity to shift the learning focus of the school from that of 'environmental' education, to 'sustainability' education; a greater extension of their partnerships with the surrounding community; and a broadening of the school's 'sphere of influence,' or ability to influence learning for sustainability beyond the classroom and students within the school.

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[35] In their work on greening school grounds, Dyment and Reid (2005) note that a broad vision for environmental education will help to ensure whole-school support for such things as curriculum integration, timetabling and financial backing.

Big picture:
- Zero waste policy
- Environment Centre to become 'best practices model'
- EFS to be ongoing, to grow and change, not to stay the same
- Work in liaison with cluster schools

Barriers:

- Resources - human and financial

- Inexperienced staff

Possible solutions:

- Funding *Sustainable Schools* resource teacher 1 day per week

- Staff professional development opportunities

Current activities:
- Environmental Leaders Program
- Wormery
- Paper recycling
- Plastic recycling;
- Waterwatch
- Weather
- Woodworking

Possible new direction:
- Energy use – heating; lights; water;
- Identify more community mentors
- Increase community education opportunities
- Weed control

Small steps:
- Recycling in all classrooms
- Paper wise program – boxes; bowls; cards; paper
- Gardening group for design of native school grounds;
- Clean-up Australia Day

Figure 19. Steering committee vision for MPS

From 'environmental' to 'sustainable' – shifting focus and making progress

In relation to the current programs being implemented within the school, such as those that concentrate on Sorell Creek, the wormery, and plastics recycling, the steering committee recognised that these programs were too highly focused on the environmental aspects of EfS. The strong environmental focus of the MPS EfS program was noted by the steering committee to potentially overshadow the social and economic aspects inherent in sustainability, thereby diluting student understandings of holistic EfS. They articulated the need to broaden their EfS focus if the students are going to gain a more robust understanding of sustainability and what it means to 'create a sustainable future:

> *We come from a background of environmental education, which can be witnessed through the Environment Centre, so we [MPS] are focused on practical Environmental Education ... we [MPS] now need to look more at whether or not they [students and community members] are aware of the concept of sustainability* (MPS-sc2, 2004).

> *They seem to have a clear idea of why we do the things that we do, but tying in the concept of sustainability is not there yet* (MPS-sc1, 2004).

> *We need to shift to a new language of sustainability* (MPS-sc2, 2004).

Members of the group did recognise that the programs implemented at MPS were an excellent foundation on which such a shift in focus could be based.

> *Wherever we can, we will link in the programs that we already operate ...*

We've established these programs that are now routine, but we now need to

back it up with the curriculum ... the curriculum is what brings you up to a

change in knowledge (MPS-sc2, 2004).

This aspect of building on what is already there is an important element in

progressing an EfS program (Department of the Environment and Heritage, 2006).

Bringing together already established resources and networks can greatly contribute

to the advancement of a vision for sustainability (Gould League & CERES for the

Sustainable Schools program, 2002; NSW Council on Environmental Education,

2002). It was also acknowledged that the students of MPS had an advantage over

other schools in Tasmania when it came to reinforcing the lessons of sustainable

living taught through the Environment Centre, but that there still had to be a more

holistic emphasis given to the notion of sustainability.

The good thing about MPS is that we [the teachers] know they have a follow-

up to what is learned during excursions and activities at the Environment

Centre, which is different to the students from other schools that visit the

Centre. However, we have to keep revisiting the issue of 'sustainability' ...

The kids [from MPS] need to keep being told that this is the way we [at MPS]

think and do things ... even with the learning and the school motto, the

students don't seem to act sustainably all the time ... I show them that I use

scrap paper to write my notes and I don't need a clean sheet of paper every

time, but that doesn't stop them from continuing to use a clean sheet of paper

to write one-line on before throwing it in the recycling bin ... You really need

a commitment from all of the teachers in the school that they will continue to

revisit the issues that are taught here [the Environment Centre] (MPS-sc3,

2004).

The steering committee was excited about the opportunities created by the instigation of the ELs Framework, and most particularly, the inclusion of sustainability education as part of the recognised curriculum. The MPS steering committee believes that the potential to make links between the ELs and their existent environmental programs will advance appreciation for EfS within the school community.

This new curriculum will move the environmental education programs that we [MPS] and the Environment Centre run, into the main credited curriculum (MPS-sc1, 2004).

The current environmental programs:

will no longer be seen [by teachers and parents] as extra-curricular programs just hanging out on their own, which teacher's either utilise or see as an nuisance ... now these programs will be considered real educational tools that contribute to the new curriculum (MPS-sc2, 2004).

Among the fundamental aspects of the MPS program that will benefit from a linking with the ELs is the value placed on the inclusion of partnerships in the education of students. Geared toward improving student success within the new curriculum, such initiatives as the Environmental Leaders Program highlight the important role of place-based education and the contribution of community members in formal schooling. Additionally, once participation in the current outdoor environmental

programs is recognised by teachers as relevant to other topics in classroom learning, the opportunity for students to participate in these and other activities within the regular school day is expected to increase (MPS-sc2, 2004). The steering committee hopes that through the support of the ELs Framework, teachers will realise that students can leave the classroom during what is presently designated as 'reading' time, because the outdoor 'environmental stuff' also contributes to, and can be integrated throughout, the learnings presented in the ELs Framework.

One problem that must be addressed in the push to increase the integration of EfS within the school curriculum is the perception of EfS that is held by students, teachers and parents. In my discussions with the Environmental Leaders there was an observable discrepancy in their perceptions of how EfS related to their school life, as compared to their daily life. The students seemed to link EfS with real life and personal futures, while at the same time, they did not believe that the programs instigated through the Environmental Leaders program were representative of 'real' school. The following statements come from a collection of three focus group meetings with different Environmental Leaders.

> *This [the Environmental Leaders program] isn't like school ... it is just, like people working together* (MPS-st3, 2004).

> *It [the Environmental Leaders program] doesn't feel like real school, it feels like they [the teachers and community mentors] are making school more fun and we get to help out the environment* (MPS-st4, 2004).

> *Here [at MPS] we get to learn things that help us, like at home ... like when you go to recycle something then you will know where it goes* (MPS-st5,

2004).

I really like learning about reduce, reuse, recycle ... and I really like working in the worm farm and doing paper recycling ... I like it because it is fun and if I can do it at home too (MPS-st2, 2004).

These [Environmental Leaders projects] give us a good education and they will help us to get a good job (MPS-st6, 2004).

This is not like real school, because it is fun (MPS-st3, 2004).

The interesting insight provided here is that students in the Environmental Leaders Program saw the linking of EfS to real life and the community, but not the linking of 'real' school and 'real' life. This suggests that the new goal for educators who try to promote EfS as an integrative educational tool for an ELs education is to create a system where the three realms - school, real life and learning for sustainability - are seen to be integrated smoothly by the entire learning community (Orr, 1992; Sobel, 2004; Sterling, 2001).

The steering committee recognises that, the contribution of EfS is already appreciated by many of the teachers and students who reinforce and promote environmental activities at MPS and the Environment Centre. However, it is the contention of the steering committee that only once proper links are established throughout the entire curriculum and activities of the school will the holistic, integrated and sustainable focus of EfS allow MPS to truly become a *Sustainable School*. According to the steering committee, the MPS school slogan, which asserts

that 'We are a *Sustainable School*,' can be clearly linked with the ELs theme *World Futures* and becomes a foundational base from which the school can than incorporate the entire curriculum.

> *Using a holistic paradigm of EfS, we can begin here [as a Sustainable School] and then focus on the other host essentials through the Sustainable Schools lens ... by using the environment as a tool to look at other things* (MPS-sc2, 2004).

The method of learning outlined in the vision of the MPS steering committee hopes to see EfS woven throughout other subjects of the ELs. The steering committee acknowledges that in some ways, this integration is already occurring, especially in regards to projects that utilise the recycled art room. Some of these projects are instigated as environmental education projects and have environmental awareness and behaviour change as their primary goal. Other projects have a different focus. However, through their use of the recycled art centre, the themes of sustainable resource use necessarily underlie these projects. For example, in 2004 the Grade 3-4 class at MPS was having problems with social bonding and harmony within the classroom. According to the classroom teachers and principal, the students in the class did not get along very well (MPS-sc2, 2004). In order to address the need for better social cohesion the teachers asked the class to make friendship journals. The project invited each student to pick a new friend and ask them a series of questions aimed at getting to know that person a bit better. Using recycled paper, the students then made their friendship journals which addressed and revealed their new knowledge about their new friends in the form of pictures and short statements. The journals were constructed to fold around the students' hands, which they could then

unfold in a small game to reveal all they had discovered about their new friend.

Besides highlighting the notion that environmental awareness and education can underlie all learning without necessarily being the direct focus of a classroom unit, the friendship journal project also signified the use of the ELs to broaden the scope of EfS at MPS to include components of social sustainability. The project had a strong focus on building relationships, tolerance, respecting diversity and social harmony, all of which are highlighted in the ELs Framework and recognised as important elements in creating sustainable futures (Fien, 1999/2000; UNESCO, 2003). Furthermore, this project was strongly grounded in an integrative EfS approach to learning due to its consistent attention to environmental awareness and responsible behaviour. Students were taught to remain aware, and be responsible for, their environmental impacts in every aspect of this project. While the primary lesson was about friendship and mutual respect, the other underlying lesson was that even when making friends, one's responsibility as an individual within their environment cannot be disregarded.

MPS hopes to utilise a method of teaching throughout its implementation of the ELs that emphasises the notion that environmental education is the foundation of all education. This is similar to David Orr's theory that every aspect of education teaches students to respond to their environment in one way or another (Orr, 1990a). They can either learn to ignore it, or learn to acknowledge, but either way they are learning how to behave in respect to their natural and social surroundings. The vision for MPS then is for the students to learn to be aware, and responsive, of their surroundings in every aspect of their learning and their lives.

Broadening the sphere of influence – community learning and educational partnerships

The MPS steering committee presumes there to be many common elements between the educational paradigms of EfS and the ELs Framework (MPS-sc1; MPS-sc2; MPS-sc3; MPS principal, 2004). These connections include an emphasis on life-long learning; integration of subjects and everyday life; community inclusion; and the maximising of shared learning facilities. Because of this common learning paradigm the school has identified between EfS and the ELs, the steering committee believes the ELs curriculum presents an opportunity for MPS 'to be made a *Sustainable School* on various levels' (MPS-sc2, 2004).

Akin to the ELs' aim to promote and enable life-long learning opportunities for all Tasmanians, the MPS *Sustainable School* vision includes the learning and sustainable development of not only the school, but also the community to which it is so closely linked (Department of Education Tasmania, 2003b). The MPS steering committee hopes to broaden its ability to educate the surrounding community by expanding the school's sphere of influence through the ELs and EfS. Empowered by an interactive and integrative curriculum, the MPS steering committee views the ELs as an opportunity to extend the education of its students out into the community.

> *We teach the individual and they go home and teach the family ... this is how you bring about major change in a community, and in the world* (MPS-sc2, 2004).

This notion of affecting an outward ripple of change into the community is a tenet of place-based education that maintains a school-instigated, sustainability initiative can

generate acceptance and support from the community through the processes of local focus and participation (Sobel, 2004). Empowered by a place-based EfS approach and supported by the ELs, the strong school/community partnerships between MPS and its surrounding community could offer both short term and future opportunities for both young students and adult community members to contribute to creating a sustainable future for Molesworth (Chodkiewicz & Flowers, 2005; Sanders & Lewis, 2005; Tilbury & Wortman, 2004).

This idea of community inclusion also responds to recent community requests to utilise the facilities and learning opportunities within the school in a way that would establish the Molesworth community as a model for best practice environmental education within a community. The community has requested that learning opportunities currently provided to students in the school be extended into the larger community to include learning opportunities for professionals, parents and teachers in such areas as adult education, local environmental activities and forums, and professional development on themes relevant to the school and the community.

The concept of community learning enabled through a community school is one that has re-emerged in recent decades. Epstein (1995) calls these 'community-minded' schools. Based on strong school/community partnerships and characterised by two-way communication, shared space and links made between community contributions and school improvement policy, community-minded schools create a space where the spheres of influence apparent within a community can overlap and interact within a strong learning bond. It is in answering these requests from the surrounding community calling for greater links with MPS, that the steering committee for *Sustainable Schools* sees a new direction to bring the EfS program into the future,

and most importantly, to see it continue.

Empowered by the potential of the new ELs Framework, a supportive community, and a willingness to deal with challenges through an adaptive learning framework, the EfS program at MPS incorporates a pedagogical program for sustainability that integrates not only the subjects across a curriculum but also the natural and social landscape of which it is recognisably a part. Through a focus on local relevance, EfS at MPS has a strong grounding in place-based education, and locally defined educational values. All of these aspects of the MPS EfS program will play a significant contributing role in the continued development and sustainability at MPS and the surrounding Molesworth community.
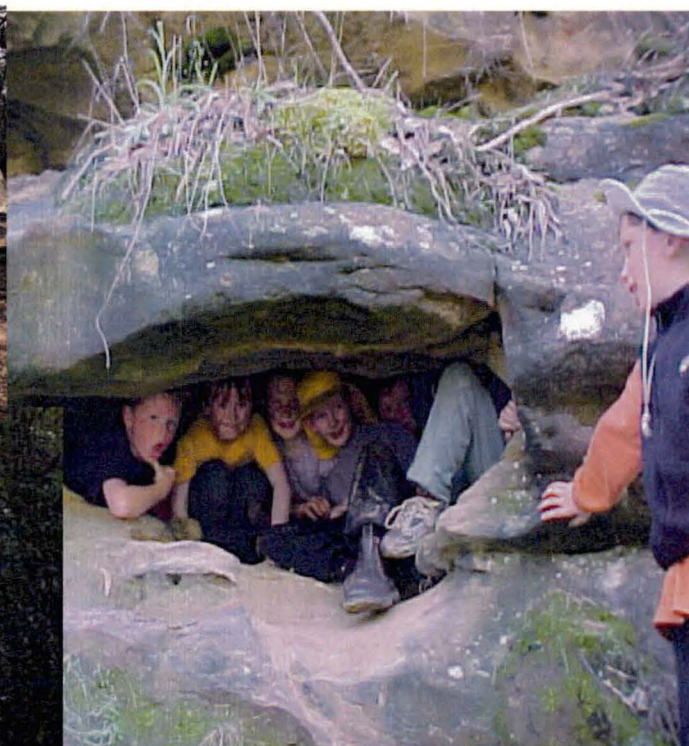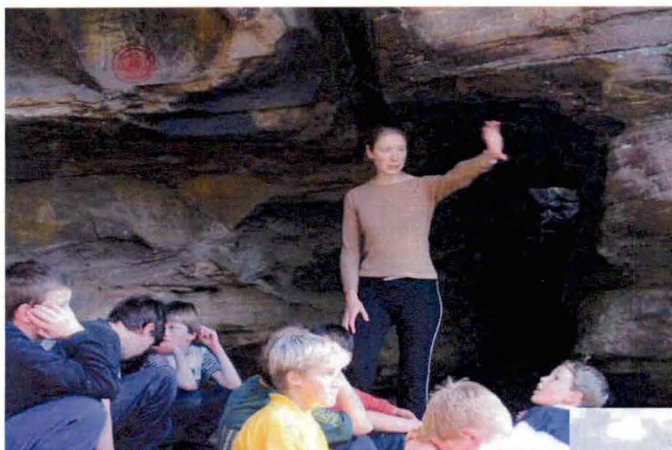
CHAPTER FOUR

NEW NORFOLK PRIMARY SCHOOL

This chapter describes the methods used by New Norfolk Primary School (NNPS) in developing and implementing an EfS program through the ELs Framework, which will provide this work with a second perspective on how EfS might be translated in a locally contextualised formal school setting. Specific attention is given to the challenges and opportunities encountered by program participants throughout the development of the EfS program. The pilot year of the DoET's *Sustainable Schools* project was NNPS' introduction to EfS. As a result, the launch, adoption and development of the program by the school community, serve as important indicators of the potential for introducing EfS through the ELs on a state-wide level. In light of these points, the purpose of this chapter is to outline the situation at NNPS in regard to environmental education at the start of the pilot project; explore the approaches taken by the staff to introduce EfS at the whole-school level; highlight both the challenges and opportunities encountered in implementing these approaches; and report on the results of the program in the pilot year. Like the previous chapter, a detailed description will be given about New Norfolk Primary School before the reader will notice an emergence of the ELs and EfS as themes revealed in this case study. The results from this chapter contribute to the overall objectives of this research by outlining an example of how EfS is interpreted and applied into practice in one Tasmanian public school.

New Norfolk Primary School – observations of the pre-project setting

When I arrived in New Norfolk in early 2004, for my first view of the NNPS school grounds, I was met by the teacher responsible for running the *Sustainable Schools* project and we joined the small group of children who had enlisted as the youth task force for the project. The members of this young group gave me a tour of their school grounds which focused primarily on the outside features of their learning environment. The physical environment at NNPS in early 2004, was dominated by concreted landscapes, plastic play equipment and a grassy sports ground. The grounds had some remnant bushland; however most of this space was designated off-limits to students who were not under adult supervision. This restricted access area included the front garden of the school, which serves as the front entrance to the main school building. Decorated with introduced grasses, flowers and bushes, this area is unavailable to students' playtime explorations because of its location around the front end of the school building making it out-of-view to teachers supervising students in the common recreation area.

On our tour the students indicated other off-limits areas within the play spaces of their school and surrounding community[36]. These areas include a garden bank on the eastern side of the school grounds. Technically owned and managed by the Derwent Valley Council, this garden is separated from the school grounds by a 1.5 metre tall metal fence. The distinction between NNPS land and Council land was one indication that the physical and social boundaries between NNPS and its surrounding community are strongly recognisable. Almost every side of the school is fenced in to

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[36] Matthews (1995, pg 456) suggests that restricting children's play to playgrounds and school grounds excludes them from the surrounding community and leads to what he calls 'childhood ghettoization'.

distinguish the school grounds as separate from neighbours. These boundaries signify the spaces students can occupy during school hours as well as the spaces of the school that are off-limits to the surrounding community. These defined boundaries also signify a stark separation between where the school and its activities end, and where the community begins.

The Council's garden bank is the most significant example of the sharp boundaries between the school and community. Located next to a community-accessed footpath following the southern perimeter of the school, the garden bank is long with European grasses and bushes unmanaged by either the Council or the school. Broken bricks outline where the garden meets the footpath, although weeds have broken through this boundary. The garden sits on a slope backing onto the school grounds where a fence designates the exact space the school grounds end and the block of Council land begins. The fence is located less than 1.5 metres from the main school building.

The children were adamant about this garden bank being their least favourite part in terms of their school's appearance. They said the bank was 'ugly' and thought it a 'shame' that when people came to their school this 'weedy' garden bank was the first thing they would see (NNPS-st1; NNPS-st2; NNPS-st3; NNPS-st4, 2004). The students were hopeful that through NNPS' quest to become a *Sustainable School*, they could improve the aesthetic quality of this and other spaces around their school 'by making it more beautiful' and a 'place they could be proud of' (NNPS-st2; NNPS-st3; 2004).

A desire to make changes to the visible appearance of NNPS arose throughout the tour. It was interesting to note the scale of change the students wanted, and the

reasons why they wanted it; some areas of the school were even referred to as 'all dark and gloomy' (NNPS-st1, 2004). As part of their mission as the NNPS environmental task force, these students wanted to make their school more visually pleasing and increase NNPS' ability to create more sustainable futures.

Considering that this group had only recently visited the other case study school in this research, MPS, many of the ideas for change appear to have been based on the practices and programs they had observed at MPS. The students wanted to start a wormery, plant a native garden and collect their waste paper for recycling art projects to display around the school (NNPS-st3; NNPS-st2; NNPS-st6; NNPS-st7, NNPS-st8; NNPS-st9; NNPS-st10; NNPS-st11, 2004). These visions and ideas, which were inspired by MPS, fostered the course of NNPS' participation in the DoET's *Sustainable Schools* pilot project in 2004, a matter to which I now turn.

Starting from scratch – NNPS joins the *Sustainable Schools* pilot project

NNPS was motivated to participate in the DoET' *Sustainable Schools* pilot project when the need to implement the ELs Framework across government schools in Tasmania arose. In 2003, the principal of NNPS nominated the school to participate in two of the DoET's pilot projects trialling two themes of the ELs Framework: *Thinking* and *World Futures*. Although this participation was supported by a few members of the teaching staff, interest in participating in these projects was not unanimous (NNPS-sc1; NNPS-sc1; NNPS-t1, NNPS-t4; NNPS-t5; NNPS-t8, 2004). Furthermore, the particular roles individual teachers would assume in these projects were undecided when the principal applied to participate. It was only after the DoET

had accepted NNPS as a participant in these two pilot projects that steering committees were assembled for each theme area.

Two NNPS teachers comprised the steering committee assigned to the *Sustainable Schools* project for the *World Futures* theme of the ELs. Both were full time, each with a full classroom load to maintain. One (Teacher A) was employed in a permanent position within the school; the other (Teacher B) had an employment contract that was up for renegotiation at the end of the 2004 school year. Juggling a full time teaching load and an insecure employment placement, Teacher B was limited in the amount of time available to plan and implement the *Sustainable Schools* project. As a result, Teacher A took on a strong leadership role in this project. The principal of NNPS appointed Teacher A as the temporary Vice Principal for the first term of school in 2004. This new position reduced Teacher A's classroom load, and freed up time for the planning and implementation of the new EfS program.

I first met the two teachers of the steering committee at a group meeting with people from other schools participating in the DoET's *Sustainable School* pilot project. The steering committee at NNPS identified themselves at this meeting as the novices of the pilot project (NNPS-sc1; NNPS-sc2, 2004). They made it quite clear they would be building their project from the bottom up, as EfS and whole-school sustainability had never been tested at their school. Furthermore, they had no previous exposure to the theories or practices of whole-school EfS. Needless to say, they were both feeling a bit overwhelmed at the prospect of managing the task before them.

Adding to the challenges of planning and implementing a new program based on an approach with which they had little experience, the steering committee also faced

the ordeal of introducing to their school a topic considered controversial to many

members of the local community of New Norfolk (NNPS –sc1, NNPS-sc2, 2004).

Indeed, because of the polarised, political climate existing in New Norfolk around

questions of 'sustainability', NNPS had never attempted to implement a whole-

school sustainability strategy and had avoided the inclusion of such ecological

programs in the curriculum. The reasons for this perceived division are explained

below.

New Norfolk- a town divided

Located 36 kilometres from Hobart, New Norfolk is the central town centre for the

Derwent River Valley and is the home base of the Derwent Valley Council, the local

government of New Norfolk and surrounding areas. The Derwent River Valley sits

next to what is arguably one of Tasmania's most controversial logging sites, the Styx

Valley (Law, 2003). As the gatekeepers to this disputed area, the residents of New

Norfolk encounter timber workers on their way to and from work, as well as tree-

dwelling environmental activists on their way to and from the most recent tree-sit. On

the one hand, a local branch of the state's environmental party, The Greens, is located

in New Norfolk. On the other hand, the town is also the location of one of the state's

biggest logging events, Log-A-Load for Kids. Attempting to represent both sides of the

forestry debate, the township of New Norfolk is characterised by a mixture of visual

and cultural symbols depicting the polarised sides of this conflict.

The effects of this explicitly divided population have trickled down into the local

school. With MPS located only 15 minutes from NNPS, many parents with a strong

support for the 'Green' side of sustainability send their children to MPS in order to

equip them with opportunities for environmental education provided by MPS

(MPS-p4; MPS-p5; MPS-p6; MPS-p7, 2004). As a result, in the face of implementing an EfS program at NNPS, the steering committee recognised they were faced with a school community that might not be as supportive of the environmentalist interpretations of sustainability (NNPS-sc1; NNPS-sc2, 2004).

One of two primary schools in the township, the other being a private Catholic school, NNPS is located one street off the centre of town. The school's 310 students reside throughout the New Norfolk area. Some are bussed into school everyday from up to 20 kilometres away. Catering to a diverse student population, staff members have apprehensively approached the issue of sustainability as a classroom topic. Not wanting the school to become a battle ground for community debate about environmental sustainability, many of the teachers at NNPS avoid addressing the subject at all (NNPS-t1; NNPS-t2; NNPS-t3; NNPS-t4, 2004) and remain inexperienced in the area of environmental education. Therefore they have felt unprepared to teach, and respond to, the implementation of an EfS program (NNPS-sc1; NNPS-t4; NNPS-t8, 2004).

Passionate people required – no experience necessary

An important task for any program manager or group promoting sustainability is identifying and overcoming barriers to participation (McKenzie-Mohr & Smith, 1999). From the outset, the majority of teachers and staff at NNPS showed a lack of interest in participating in the planning and implementation of an EfS program (NNPSsc-1; NNPS-sc2, 2004). Considering that the NNPS program was in its infancy, the steering committee felt its initial successes would determine any future acceptance of the program. Therefore, only willing participants were sought for

initial membership to launch this attempt.

The steering committee also recognised that it was important for students of the school to be involved in the project and to feel a sense of ownership over the project from the beginning (NNPS-sc1; NNPS-sc2, 2004). The importance of promoting student ownership and involvement from the commencement of an EfS project is supported by other examples of whole-school EfS programs (Enviroschools Foundation, 2004; Gould League & CERES for the Sustainable Schools program, 2002; S. Smith, nd). The steering committee hoped to start with a group of students who had a passion to see the program succeed. Following initial success, they believed that interest in the program would increase and the vision for EfS at NNPS would grow to incorporate greater whole-school support.

At the start of the school year, the NNPS steering committee sent out a call for applications from school students in Grades 3 to 6 interested in becoming part of an environmental youth task force to assist the steering committee with the development of a *Sustainable Schools* program. Students were asked to outline the reasons why they wanted to be part of this group. Twelve students out of approximately one hundred and fifty, applied to participate in the project. All were accepted in the initial intake of volunteers.

Members of the group consisted primarily of students from the classrooms of the steering committee teachers. This was in part due to convenience and in part due to the limited school-wide support for the project. While the principal had committed the whole-school to participate in the *implementation* of a *Sustainable Schools* program, the *planning* of the program was left up to the small number of volunteers. As a result, the planning of the *Sustainable Schools* project was considered by

most of the school community to be an extracurricular activity. This meant that participating students would need to be excused from 'regular' class time, or forgo their recess and lunch breaks, to participate in project activities. Being that the steering committee teachers, who also had to give up their own lunch and recess breaks, showed the least resistance to devoting classroom time and students to this extracurricular activity, the greatest interest to participate in the project came from their two classrooms. .

The first task of the new 'Eco Geckos' (the self-chosen name for this youth task force) was to develop a mission statement for their EfS program. After much brainstorming it was decided that 'NNPS would become a *Sustainable School* by doing everything we can to minimise our impact on the environment and improve our surroundings' (Eco Geckos, 2004). While the Eco Geckos and the steering committee wanted to make sweeping changes throughout the school, the small number of participants and limited time frame, led them to decide it was important to begin with a modest goal focusing on achieving visible change in one area of their school[37]. In their mission to make NNPS a *Sustainable School*, the Eco Geckos decided waste was a primary concern and was therefore where their efforts for change should be targeted.

When discussing issues of waste management at school, students spoke of being disenchanted by the amount of rubbish left lying around the schoolyard after recess and lunch (NNPS-st2; NNPS-st3; NNPS-st5; NNPS-st9, 2004). After a couple of weeks collecting rubbish in the schoolyard the students were shocked to discover how much waste was created. They became interested in investigating how much of

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[37] 'Schools that are beginning programs should not expect to *conquer mountains* in the first couple of years, but should work on achievable targets' (PIRSA Sustainable Resources Group, 2000, pg 2).

the rubbish could be recycled. To help the Eco Geckos explore this question, the steering committee enlisted the school in the Southern Schools Waste Challenge (SSWC)[38]. The steering committee felt this structured program was a useful starting point for the Eco Geckos' project because competition guidelines offered them a framework through which to plan, observe and monitor their own successes and challenges throughout the pilot year.

'Waste'ing time

NNPS enrolled in the SSWC with the intention of instigating whole-school participation in the challenge. The steering committee and the Eco Geckos established a worm farm; distributed food waste collection buckets to each classroom; and conducted the initial collection and separation of the school's waste to record the first audit. Each classroom teacher was told about the project and asked to assist their students to separate classroom waste into paper recyclables, plastic recyclables, food compost and non-recyclable rubbish. To help launch the project, the Eco Geckos held a school-wide competition in which each class was asked to design and make a paper-recycling bin for their classroom. The Eco Geckos ranked the classroom creations based on their creativity and visual recycling message and the 'best' class was awarded with an afternoon tea party.

Collaborative planning exercises involving teachers from across the school developed classroom waste units to accompany the Eco Geckos' waste challenge. In

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[38] The Southern Schools Waste Challenge, now called the Collex Recycling Clean Schools Challenge, is run by the Southern Waste Strategy Authority as an initiative of the southern municipal governments of Tasmania (Southern Waste Strategy Authority, 2006). This competition is open to all schools in Southern Tasmania. In the competition, school communities audit their waste practices; set goals to improve their waste behaviours; attempt to change waste behaviours in the school; and document the changes that occur. The challenge of the competition is to increase a school's reusable and recyclable material and decrease the amount of waste sent to the tip.

this planning exercise most of the classroom units addressed abstract 'awareness raising' as opposed to the promotion of a change in waste behaviour (Table 6).

Many comments in the planning exercise expressed a lack of regard for participating in classroom and individual behaviour change. Similar to the 'Not in My Backyard' syndrome where despite a consensus that change is needed, there is not a willingness to share the responsibility of instigating change (Burgess, 1988), most of the teachers assumed a 'Not in My Classroom' approach to implementing school-wide, waste behaviour change.

Table 6. Classroom waste units planned to link the ELs to the SSWC

	Essential Learning theme	
Grade level	Literacy	Numeracy
Group 1 (Grades Prep-1)	Keeping a diary of individual rubbish collected in one week	Graphing rubbish collected in one week
Group 2 (Grades 1-3)	Writing persuasive brochures about reducing, reusing, recycling	Surveying recycling practices at home
Group 3 (Grades 3-6)	Writing story about reducing, reusing, Recycling	Graphing decomposition rates of different waste

	Essential Learning theme	
Grade level	Thinking	Numeracy
Group 1 (Grades Prep-1)	Answer set of questions about waste behaviour before and after graphing activity	Draw a picture of a rubbish free lunch box
Group 2 (Grades 1-3)	Developing survey questions	Surveying recycling practices at school, in the classroom and in the community
Group 3 (Grades 3-6)	Collecting and recording information on different waste and using data gathering techniques	Conduct waste audit, before during and after the SSWC

Despite an initial goal to secure whole-school support for the SSWC, participation was strictly limited to direct involvement mandated from senior management. Because NNPS was enlisted in the *Sustainable Schools* pilot project, the principal was clear that the *entire* school would address EfS through the ELs. He stressed the school's commitment to the *Sustainable Schools* program and the importance of self-assessment and behaviour change to support this commitment. However, much less consideration was given to the methods through which this commitment and change were to occur[39].

From the outset, it was the steering committee of the *Sustainable Schools* project and the Eco Geckos who determined the interpretation and design of EfS at NNPS. While other teachers were willing to accept the Eco Geckos' decision to focus on waste, they were not given the opportunity to choose alternative foci for their own classroom units, thereby limiting the collaborative vision for EfS in the school (Tilbury & Wortman, 2004). Furthermore, the planning directive from the principal to address this waste issue did not extend much further than the implementation of a two-week classroom learning unit. This combination of a lack of whole-school ownership and directive about how whole-school behaviour change would be achieved, led to the Eco Geckos and the steering committee assuming entire responsibility for collecting, sorting, measuring and disposing of the school's waste.

In the end, the Eco Geckos completed every waste collection and audit for the length of the SSWC. Whole-school units on waste management planned for the first two weeks of the third term failed to eventuate and less than half of the teachers in the school addressed the waste issue in theoretical or practical form. School-wide

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[39] Gough (2005) recognises that principals must provide support and security to sustain change and promote wide ownership of EfS to the whole-school community.

participation in the project tapered off until only the classrooms of the steering committee teachers were participating. Despite the lack of whole-school participation in the SSWC, NNPS won the competition for their division. While this small win was important for building the confidence of the Eco Geckos[40] realising the achievement could not be shared with the remainder of the school limited their celebrations.

Not wanting to be discouraged from their mission by a lack of whole-school support for the *Sustainable Schools* project, the steering committee and the Eco Geckos decided to search for support and build partnerships outside of their immediate school community. Their hope was to build partnerships with people and organisations who could help them create the visible changes the steering committee believed would eventually improve support within the school. The steering committee was especially interested in building partnerships that would promote whole-school understanding of the theoretical aspects of EfS to advance a greater appreciation of the integrative potentials of this learning paradigm. Ultimately, it was this desire to enlist partners with an experience in the theory of EfS that changed the research focus of this case study and enabled my own role to reflect the methodology of action research.

Participant observation to action research – a changing role for EfS

Action research begins when the researcher(s) join a group of people who are concerned about improving their situation (Packham & Sriskandarajah, 2005, 124).

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[40] Ward and Schnack (2003) regard recognition of achievements as an important motivator for teachers and students often working in isolation on environmental school projects.

In order to best understand how action research was used in this case study, it is important to return to my first encounter with the Eco Geckos during their field excursion to MPS, an encounter I described in the last chapter. Prior to this meeting I intended to engage with this group through the method of participant observation. The plan was to conduct simultaneous observations of the MPS school setting as well as the social interactions and reactions of the Eco Geckos. However, because the Eco Geckos and I had assumed a shared visitor role at MPS, I found myself immersed in a process of collaborative learning (Kemmis & McTaggart, 1988). During our shared experience at MPS, the Eco Geckos, the NNPS steering committee and I collectively comprised a group interested in learning for sustainability. Our intention was to observe how the methods applied by the MPS EfS program would help to inform other schools in Tasmania, including NNPS about how an EfS program could be implemented through the ELs Framework. It was at this point that my research 'engagement' with NNPS began to shift from participant observation to action research.

Figure 20 shows the changing mode of my participation in each of my case study settings. The circles indicate that my participation at each school existed on a spectrum between an observatory role and a participatory role in each research setting. Circles have been used to indicate my position, because depending on the circumstances at hand, my participation could circle back into observation, or circle forward into participation. As the figure reveals, at MPS I was more of an observer of the school setting because I had little direct influence on this setting. However, at NNPS my role in the research setting was more participatory due to my extensive involvement and influence on the EfS program at this school, a matter to which I

now turn.

In my initial encounter with NNPS, it was obvious the steering committee and Eco Geckos were feeling apprehensive and unprepared to plan and implement a whole-school EfS program with little previous knowledge or internal support. They expressed the hope that I would enlist as a learning partner in their mission to make NNPS a *Sustainable School*. They thought my research could help them make links between their own practices and the theories of EfS through active collaboration with the research process itself.

MPS	NNPS
Observer	Participant
I observed this setting from a distance, with limited participation when invited; my direct influence on the setting was low	I observed collaborative events which included my input and participation; my direct influence on the setting, events and occurrences was high
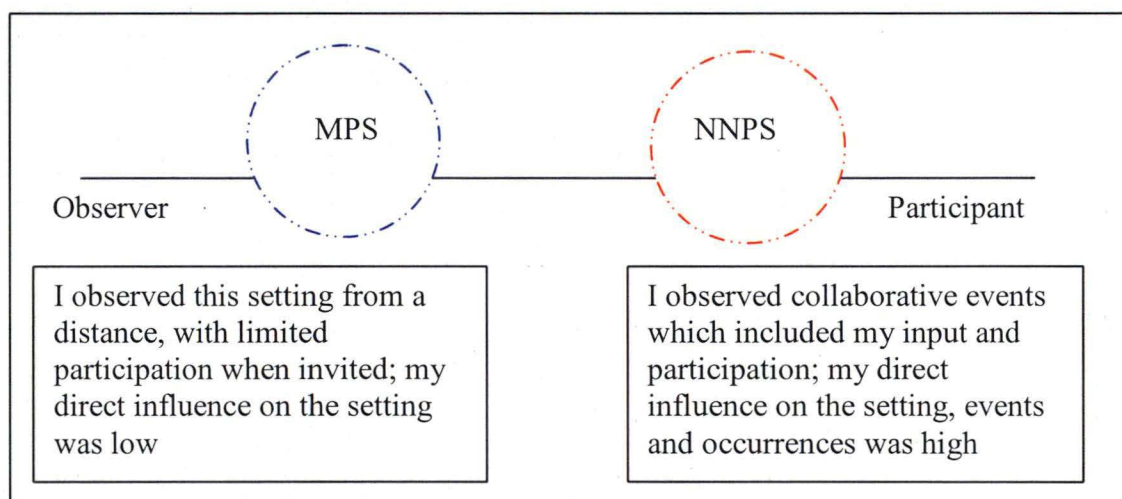
Figure 20. Shifting participation – from complete observer to complete participant

At the start of my research, I was not exactly sure where this challenge would lead. I perceived a developing tension between my role as a researcher/observer and my role as a partner in theoretical exploration of learning for sustainability. I realised that by drawing conclusions of NNPS' successes and challenges in implementing whole-school sustainability based on external criteria, my external observations could potentially undermine this school's learning experience (Packham & Sriskandarajah,

2005). Knowing I did not want my research to exploit or undermine the goals and aspirations of this small but passionate group, I began to more thoroughly explore the learning aspects linking EfS at NNPS with my own research methodology (S. Hill, 2004; Löfman, Pelkonen, & Pietilä, 2004; Schon, 1995). Once I began to immerse myself within the physical and social setting of the NNPS *Sustainable Schools* pilot project, it was the theories of collaboration and partnership inherent in EfS and sustainability that enabled me to understand and articulate the new direction my research would take.

My motivation as a researcher reflected a core objective of the DESD: namely that, 'everyone is a stakeholder in education for sustainable development... All of us will feel the impact of its relative success or failure, and all of us affect the impact of ecologically sustainable development by our behaviour which may be supportive or undermining' (UNESCO, 2005, np). Once learning was recognised as the primary and shared goal between my own research and the NNPS community, I decided action research could be used to encourage and empower progressive learning through collaboration and active partnerships (Arhar et al., 2001; Harris & Robottom, 1997; Romme, 2004; Schon, 1995; Tanna, 2005). In action research, as in EfS, the process of learning and the creation of knowledge through collaborative reflection is perceived as more important and relevant to overall learning than the 'produced' outcomes of a study, practice or education activity (S. Hill, 2004; Packham & Sriskandarajah, 2005; Romme, 2004; Sterling, 2001). Through a collaborative learning partnership established between my research community, and myself, action research emerged as the new research design through which this case study would be approached.

Planning, acting, observing, reflecting – the action research process begins

Motivated by our shared goal of exploring EfS within the NNPS setting, the Eco Geckos, the steering committee and I developed a collaboration engaging us in a learning process aimed at improving both practice and understanding within that setting (Kemmis & McTaggart, 1988; Packham & Sriskandarajah, 2005). This collaboration between research and practice was enabled by the spiralling steps of action research, first designed by Kurt Lewin in 1946. Action research is characterised by a series of progressive learning stages based on a constant attention to self and group, critical reflection (Tilbury et al., 2004). An action research process progresses through an awareness of what has happened in the past, what is happening in the present, and what is hoped to be happening in the future. The process can be modelled in the form of a spiral, which moves forward, circles back, and moves forward again (Kemmis & McTaggart, 1988; Lewin, 1946; Tanna, 2005). This spiralling process occurs in four steps that take into account 1) a vision and plan for change; 2) an action to achieve that change; 3) an observation of the action occurring; and 4) a reflection of the process, to reinform the vision (Figure 21).

The planning phase – spiral 1 – a visioning exercise

Building on the initial intention of the NNPS steering committee for the EfS program to be student-centred, the collaborative action research project involved the Eco Geckos at every stage. In order to develop a sense of where we were starting and where we wanted to go, we combined a visioning activity with an audit of the current situation of the school (Tilbury & Wortman, 2004). Based on the initial tour given

by the Eco Geckos, the school grounds were divided into five separate sections: the
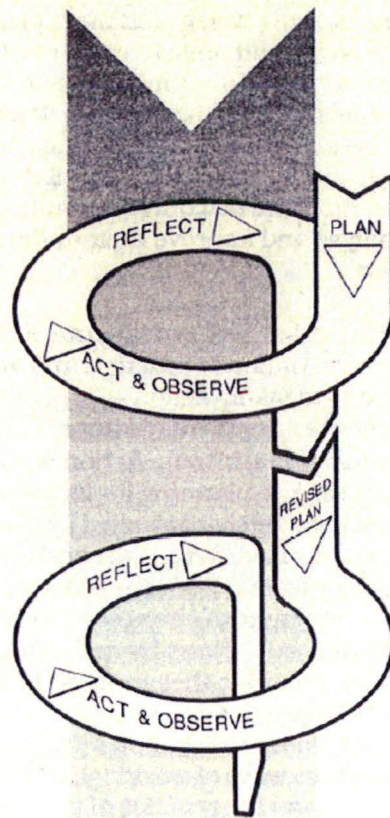
Source (Kemmis & McTaggart, 1988)

Figure 21. The action research spiral

sports oval; the young children's play and shade area; the front garden; the Council

bank; and the concrete play areas. The Eco Geckos were divided into groups and

each chose a location they were interested in. They were sent to these areas armed

with large sheets of butcher's paper and a packet of coloured marker pens. Their

task was to draw their specific areas as they currently saw them, and then draw the

area as they would like to see it; keeping in mind their collaborative mission to make

NNPS a *Sustainable School.*

Such collaborative visioning and planning activities are recognised in the literature to have beneficial learning outcomes for students and contribute to the creation of a collaborative vision for EfS (James & Lahti, 2004; PIRSA Sustainable Resources Group, 2000; Tilbury & Wortman, 2004). However, the amount of time to work on these planning projects was limited because some teachers believed students were missing 'real' class time to participate in these projects. Therefore to meet these time constraints, groups were not rotated around the different areas, which would have helped us develop a clearer and more consensual vision of change for the school. Instead, each small group presented their findings and visions back to the whole group. We then discussed the possibilities of each vision and the Eco Geckos were encouraged to make comments, ask questions or offer suggestions to the discussion. This method encouraged discussion about sustainability and what becoming a *Sustainable School* meant to each of the students in the group (Tilbury & Wortman, 2004). The students were required to reflect critically on their own ideas and consider the suggestions and comments of others. In this exercise the students were asked to think like a community (Strike, 2004). They were also exposed to the value of group work attempting to correlate a number of visions and methods into a collaborative plan. The students were thus engaging in a number of the processes promoted by the ELs Framework including 'inquiry'; 'reflective thinking'; 'communicating'; 'valuing diversity'; 'acting democratically'; 'creating and pursuing goals'; as well as 'creating sustainable futures'.

In the end, a group vote decided five ideas for change the students were most interested in pursuing for their school. Within this voting process students were asked to take into consideration the suggestions and discussion of the entire group. The five projects the Eco Geckos decided on were to re-establish the Council

garden bank into a native garden; plant a vegetable garden on the school grounds; build an outdoor classroom; paint an art mural depicting their vision of sustainability; and build a nature walk around the outer perimeter of the sports oval. Armed with a vision, we then moved into the planning phase of our project.

Moving forward - introducing theory to practice

Although the steering committee realised it could not complete all of the chosen five projects in the pilot year, it was important for the students to go through with the activity of visioning and planning for each of the possibilities (Tilbury & Wortman, 2004). Planning these activities ensured students felt a sense of ownership and responsibility for their ideas and highlighted that many curricular links could be made to this broad range of activities (Henderson & Tilbury, 2004). Supported by the strategies of other national and international *Sustainable Schools* programs (Enviroschools Foundation, 2004; Foundation for Environmental Education, 2004; Gould League & CERES for the Sustainable Schools program, 2002; Hampshire County Council, 2006; Mason, 2002; S. Smith, nd), the steering committee felt making strong curricular links between the actions and abstract learnings of the project would enable the students (and teachers) to make connections between the practical experience and over-all theories of EfS (NNPS-sc1; NNPS-sc2, 2004).

At the start of the planning phase for the projects our group received a boost of confidence when a number of new students enlisted in the Eco Geckos' mission. The steering committee was approached by a number of students asking to join the environmental task force because they heard the Eco Geckos were going to be involved in major change. It seemed as though the steering committee's initial promotion plan was already working. Not wanting to hamper this increased

support, every new student was permitted to join and the number of Eco Geckos

jumped to more than 30 in the second term of the project. This new group was

divided into five project teams and each developed an action plan for one of the five

projects planning change to the school grounds. The five project teams were asked

to address a series of questions dealing with their particular project (Table 7).

Table 7. Planning for change – some issues to consider

• How will this project make our school more sustainable?
• What will this change look like?
• What will we learn from this project?
• What items do we need to complete this project?
• What items do we already have?
• How do we get the things that we need?
• Who can help us with this project?

Over the next few weeks, I worked with each of the five groups to develop a detailed

action plan for each project. Students were asked to participate in information-

gathering activities such as taking pictures of their project areas; drawing plans of

how the change may look; writing letters to community members, councils and

parents to ask for assistance in implementing their projects; developing necessary

items lists and working out budgets for each of the items needed; and discussing

sustainable behaviours changes the school community might consider to

accommodate these new ideas. I then helped the students organise their findings into

a one-page proposal, which were presented to the rest of the school (see Appendix

2). While all of the plans had merit and stirred interest from various members of the

school, verbal support continued to outweigh actual enrolment and participation in any of the projects.

Reflecting, responding, reacting and replanning – spiral 2

Background investigations into previous uses of the Derwent Valley Council's garden bank revealed that Council had previously allowed NNPS access to the area to establish a more attractive garden. Motivated by this news, one of the teachers from the steering committee contacted the Council, which offered to give the school $250 as well as an in-kind contribution of landscaping rocks and eucalypt bark if the school agreed to re-establish and maintain a native garden on the area. Inspired by this funding opportunity, the principal at NNPS lent his support to the project, emphasising that the current state of the bank was an 'eye-sore' and an unattractive first site for families and visitors to the school (NNPS principal, 2004). With their hands-on environmental focus, the Eco Geckos were eligible to apply for further funding from an environmental grant sponsored by a local hardware store. A teacher from the steering committee wrote an application for this plan and was granted a further $500 with which to implement the actions outlined by the Eco Geckos. Due to our collaborative partnership our accessible network of partners began to increase (Davies, 2002) and a number of University contacts were made available to this project. This increased network included two University students and the Green Corp, who all were interested in participating in a school ground greening project.

Making educational links – EfS through the ELs

Encouraged by the principal's support, an increased budget, and the enlistment of new partners, the action plan for re-establishing the front garden bank of the school

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as a native garden began to take shape as a NNPS *Sustainable Schools* effort. In order to increase whole-school support for the project, the steering committee hoped to highlight how EfS activities could be used as a way to integrate and implement the ELs Framework. Therefore, we attempted to link the ELs into every possible aspect of the planning and implementation of this EfS project. The first column in Table 8 shows a list of tasks that were used in the planning of the native garden project. The second column shows the roles that the Eco Geckos played in each of the tasks. These tasks were grounded in a place-based education approach using the local setting as a contextual tool to incorporate the various key outcomes of the ELs Framework (depicted in the third column of Table 8). Of the 18 key elemental outcomes listed in ELs Framework, the planning of the native garden project incorporated 17 of these[41].

Into the action phase – spiral 3

The planting of the native garden took place over two full days in the third term of the school year. A number of principles were embodied in this project, reflecting the ideals of EfS. These principles included promoting whole-school ownership of the project (Gough, 2005); empowering a sense of environmental leadership for students (Henderson & Tilbury, 2004; Hren & Birney, 2004); and establishing and fostering partnerships throughout the project (Davis, 1997; Environment Australia, 2000a; Henderson & Tilbury, 2004; UNESCO, 2003). While these principles were addressed in both the planning and the practice of the planting event, the extent to which they succeeded, and in turn influenced the uptake of EfS at NNPS was varied and will be discussed later in this chapter.

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[41] The opportunity to make curricular links to school ground greening initiatives is highly documented in the EfS literature (Dyment, 2005; Dyment & Reid, 2005; Henderson & Tilbury, 2004; Malone & Tranter, 2003; SEEDS Foundation, 2004; Sobel, 2004; Tranter & Malone, 2004).

Table 8. School ground greening and curricular links

Task	Student role	ELs key elemental Outcomes
Assessing present condition of front garden bank	Investigate previous uses of the area – previous plants/methods of care Identify weeds Investigate alternative weed management approaches	Inquiry; Reflective thinking; Understanding the past and creating preferred futures; Investigating the natural world; Creating sustainable futures
Visioning a future for native garden	Discuss what method of care will we use considering past and present uses and care of the land; garden design	Reflective thinking; Being ethical; Creating and pursuing goals; Understanding the past and creating preferred futures; Designing and evaluating technological solutions; creating sustainable futures
Organising necessary items for planting	List items Budget for items needed Source items from suppliers/volunteers	Being numerate; Being information literate; Designing and evaluating technological solutions;
Gathering funding/donations	Write to suppliers, parents, Council, community for donations and funding	Reflective thinking; Being literate; Building and maintaining identity and relationships; Building social capital;
Designing the native garden	Take/record measurements Research sloped area conditions Research native plants (i.e. local plants; plant height and width growth potential; preferred soil conditions; water needs; compatible species) Draw scale of garden and placing pictures of purchased plants into a garden design based on previous research	Being numerate; Being information literate; inquiry; Reflective thinking; Investigating the natural world; Understanding the past and creating preferred futures; Being art literate; Designing and evaluating technological solutions; Valuing diversity; Understanding systems; Creating sustainable futures;
Ordering plants	Correlate budget with plants desired	Being numerate; Being information literate
Considering social aspects	Consider vandalism and how to deter Write letter to parents and community inviting volunteers	Reflective thinking; Being literate; Building and maintaining identity and relationships; Building social capital; Valuing diversity; Acting democratically; Creating and pursuing goals; Being ethical; Creating sustainable futures;

Sowing the seeds of whole-school sustainability through whole-school ownership

The steering committee and the principal of NNPS presented the planting project as an opportunity for all students at NNPS to participate in creating visible changes to the school and surrounding community. We wanted every teacher and student in the school to feel a sense of ownership in the planting project and assume responsibility in caring for the garden after it was established (Gould League & CERES for the Sustainable Schools program, 2002; Hren & Birney, 2004). We also wanted to promote a sense of pride and accomplishment throughout the school, and show the teachers and students they were each capable of making positive changes to their learning environment.

Every student from Kindergarten to Grade 6 was asked to participate in one of the two planting days. The two days worked on a rotation of activities, in which each classroom was first given a presentation about the reasons behind the planting project as established by the Eco Geckos; followed by a demonstration of how to plant and care for a native garden; and finally an opportunity to work on the garden with the Eco Geckos and the adult volunteers. The entire process ran smoothly due to the leadership and participative roles assumed by the Eco Geckos.

Leaders in learning

The Eco Geckos accepted leadership roles throughout the event, enabling them to draw upon and share the skills they had gained as members of NNPS' first environmental task force. Throughout the planting event the steering committee stressed the importance of communicating their *Sustainable Schools* vision to the

entire school in order to gain whole-school support for their initiatives. Sharing their *Sustainable Schools* vision would better inform the remaining students of the Eco Geckos' mission, promote a growth of the program, and enable the Eco Geckos to showcase their talents in EfS through leadership roles and the communication of their ideas. The Eco Geckos were asked to share their ideas in a way that accepted suggestions and answered any questions the students might have regarding the how, or why, of making NNPS a *Sustainable School*. They were asked to emphasise and interpret their vision for the garden in a direct manner through individual classroom presentations, which would convey how the Eco Geckos had come to decide on this project, what the garden would look like, what motivated the garden design, and how the project would help NNPS become a more *Sustainable School*. These presentations were given by two Eco Geckos in each classroom before students were brought outside to work on the garden. The purposes of this presentation were to get other students excited about the planting event and encourage them to participate in tangible change for their school.

The multitude of tasks assigned to the Eco Geckos allowed them to build on their individual strengths. For some Eco Geckos, the planting project offered opportunities to exhibit and appreciate some of the skills they had learned at home. Through hands-on experience in native garden restoration in collaboration with adult volunteers with expertise in this area, the Eco Geckos were able to see how the work they had been doing to improve their school related to the skills and values of their home-life, their surrounding community and the larger world. This was particularly important for many students who struggled with the more academic aspects of the *Sustainable Schools* project, and often experienced difficulty in the more traditional

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aspects of classroom learning.

For example, one Eco Gecko was a frequent visitor to the principal's office for various offences, a fact attributed to a severe case of Attention Deficit Disorder (NNPS-sc2, 2004). The steering committee recognised that the inclusion of this student in the Eco Geckos was a potential risk to the harmonious functioning of the group, however they believed an outdoor, hands-on focus would enable this student to flourish in ways he could not in the classroom. They also recognised he was an intelligent child and perhaps not sufficiently challenged to relate his classroom learning to his daily life. As it turned out, the steering committee's judgement was perceptive, since this child did flourish in a number of the *Sustainable Schools* project activities, particularly those requiring him to be outside and actively working on a task. Despite the benefits to this student's school day, he could not conceptualise this planting experience as real learning[42]. Similar to the perception of the teachers at NNPS who resisted recognising the work of the Eco Geckos as educational, this student did not attribute his measuring of the bank, researching plants, designing the garden, problem-solving for arising circumstances and taking responsibility for a number of other children in a new situation as a learning experience. His comment on the day was:

> *I am having a great day... I haven't had to do any work at all!* (NNPS-st4, 2004).

Consider also the case of one of the older girls in the group who had a history of poor reading skills and trouble with literacy activities. The other Eco Geckos often

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[42] Rogers, Light and Curtis (2004) note that children have 'funds of knowledge' that are deeply embedded in their community and home discourses, which inevitably determine how activities are perceived as relevant to school learning.

undervalued her reading and writing abilities during their more academic undertakings, to which she responded with an obvious lack of self-confidence. Once the planting days commenced, however, this young girl displayed skills in planting, mulching and digging, and she had an exceptional understanding of water cycles and the role soil health played in the maintenance of a garden. After she corrected the planting instructions I was giving to one group of students, I left her to finish the planting lesson with this group and she became a strong team leader for the remainder of the project. At the end of the day, this student went home with a huge smile on her face and many of the other students were asking for her help the following day.

One of the most interesting developments in individual students occurred in the partnering activities between the Eco Geckos and the younger students in the school. When children from Grades Prep to 2 came outside to participate in the planting, the Eco Geckos exhibited exemplary partnership and leadership skills with these younger students. Such a leadership opportunity allowed some of the Eco Geckos to develop in areas not always promoted in traditional classroom study where children are separated by age group. One student who was often withdrawn in the activities she participated in as an Eco Gecko became one of the most skilled and outgoing members of the group while working with the younger students. At the end of the day she said:

> *that was really fun, you know, working with the little kids ... I think that I am good at that* (NNPS-st5, 2004).

Another Eco Gecko who did not have many friends at NNPS and who was often subjected to bullying by other students was also seen to excel in this opportunity

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to mentor younger students. In fact, this particular student was one of the most sought after partners by the students in the younger grades.

Teacher participation

Despite the emerging benefits of our planting project, the extent of whole-school participation varied in this collaborative event. While the ultimate goal of having each student participate in the planting was almost achieved[43], the participation of most teachers did not meet our initial goal. Throughout the planting project there seemed to be little practical commitment from staff besides those on the steering committee. While teachers agreed to have their students participate for a short period during one of the two planting days, only one teacher came out to plant a seedling in the bank.

It is also speculated that this lack of staff support led to the loss of three Eco Geckos from the project. Besides the students in the classrooms of the steering committee teachers, there were a few Eco Geckos enrolled in other classrooms in the school. The three students who withdrew from the Eco Geckos before the end of the project all came from the class of teacher who openly did not support the introduction of EfS to NNPS. Considering this teacher's lack of support and his students' subsequent resignation from the Eco Geckos raises the question of how teacher support and reinforcement might influence the establishment of EfS as relevant and worthwhile learning, and the transfer effect that teacher engagement might have on the perception of students (Rogers, Light, & Curtis, 2004).

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[43] During the two planting days there was a flu outbreak at the school and around 14 children missed the event.

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The steering committee realised that motivating and including other teachers in the development and support of EfS would be a critical element to sustaining such a program at NNPS. However, the steering committee also recognised that achieving such whole-school support would be a challenge without active commitment from those in management who could mandate such participation. Such support was not strongly apparent at NNPS. Before the planting days I approached the principal to ask if he would like us to develop a set of classroom activities for teachers to link the ELs to the planting project. The principal said because they were focusing on waste for their EfS/ELs units this year, such an educational link would not be necessary at this stage (NNPS principal, 2004), thereby disregarding the potential connection that could be drawn between a school ground greening project and school ground waste management (i.e. litter, storm-water clean-up; compost collection). Consequently, during the planting event the only class that attended with any previous classroom instruction or links made to the event were the students from a Grade 1 class under the temporary direction of a relief/substitute teacher.

Developing and maintaining partnerships – reflecting on successes and failures

Considering the continued lack of substantive internal support, the steering committee was forced to seek external support in order to develop and maintain its project. A number of emerging partnerships offered benefits to the program. Throughout the project active partnerships were established with the Derwent Valley Council, the University, and the surrounding community; however a number of deficiencies were identified in these relationships and will be described below. These deficiencies were shown to affect the sustainability of the networks

established as part of the planting project as well as the sustainability of EfS as a program at NNPS (Chodkiewicz & Flowers, 2005). Nonetheless, the lessons learned from some of these active collaborations revealed the potential for NNPS to seek further partnership developments through an improved approach.

The Local Council

Local council participation in EfS efforts has been noted as an excellent partnership opportunity for both schools and local communities (Chodkiewicz & Flowers, 2005; NSW Council on Environmental Education, 2002). The significant role of Local Council partnerships in contributing to local sustainability initiatives is also found throughout the international frameworks of the United Nations, as well as having a firm mention in the *Tasmania Together* strategy (Community Leaders Group, 2001; UNESCO, 2003; United Nations, 1992a). It is noted that if partnerships are to be successful, benefits must be available to both parties involved (Davies, 2002; Sanders & Lewis, 2005). Likewise, if benefits are available for both parties, so too responsibilities should be shared (Davies, 2002). While the Derwent Valley Council agreed to allow NNPS to re-develop Council land, it would not assist the school in maintenance, which proved difficult during school holiday periods. As part of the loose partnership established through this land endowment, the steering committee was hoping the Council would be able to assist with the maintenance of the block by having outside workforce water it a couple times a week during these periods. The Council on the other hand said it did not have the resources to maintain the area and the agreement to relinquish its planting rights to the school would come with the stipulation that its maintenance was the complete responsibility of the school.

University partnerships

This research project established a partnership between the networks of the University and NNPS, which displayed significant benefits for the Eco Geckos' mission to become a *Sustainable School*. Through this collaborative research project, a shared learning partnership emerged between the school and me, promoting learning for, and about, EfS on a variety of levels. While the steering committee gained experience in working with the theoretical aspects of EfS, I gained a first hand experience in the practical application of the theories on which this work was based. The potential contribution of postgraduate students to on-ground learning for sustainability has been an unexpected and welcome result of this project[44]. The ability to dedicate time, expertise and provide a link to University networks has proved an invaluable contribution to the learning and practical achievements of the people involved in the EfS program at this school.

The completion of my research project also completed my active participation with the steering committee and Eco Geckos from NNPS, however the steering committee has decided to continue to consider the different sections of the University that might assist them with other projects proposed by the Eco Geckos. There is particular interest at the school in building an outdoor classroom, which has led the steering committee to contact the School of Architecture at the University to see if a postgraduate student might be interested in working with the Eco Geckos on such a project.

Parents and community

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[44] Harris and Robottom (1997) and Packham and Sriskandarah (2005) note the valuable contributions that postgraduate researchers can bring to local sustainability initiatives through collaborative and action research.

Despite attempts by students, the steering committee and the principal to include parents and the surrounding community in the planting project, not one parent or community member volunteered to participate in the two-day event. Through reflection and observation of the event, as well as verbal feedback since the event, I can offer a number of suggestions about why this participation was limited, and about what approaches the school might take in the future to increase levels of parent and community participation.

Because environmental education is a controversial topic for the NNPS school community, many members of the NNPS staff did not believe there would be a big show of community support for the program (NNPS teachers focus group, 2004). However on the two days of the planting event many students were sent to school wearing old clothes, gumboots and garden gloves in response to a notice of the event given through the School's newsletter. This could indicate many of the parents of NNPS *were* supportive of such an approach to EfS despite being unable, or perhaps unwilling, to attend the event themselves. The socio-economic background of New Norfolk and surrounding areas indicates many of the families from this school are double income families, or single parent families, which could limit the amount of time available for parents to participate in activities held during school hours (Australian Bureau of Statistics, 2006; Sheldon, 2002).

Another speculation considers although parents may support a particular event, they may not perceive their own participation to offer a valuable contribution (Ames, DeStefano, Watkins, & Sheldon, 1995). In other words, parents may draw boundaries between home and school learning and identify the child's autonomy and the student/teacher relationship solely within the roles of the school. Many parents

arriving at school after the event expressed their appreciation for the project and its volunteers, however when invited to participate, many of them shied away saying they weren't teachers, or they did not know anything about native garden planting (NNPS-pt1; NNPS-pt2; NNPS-pt3, 2004). As for the surrounding community, many of the same speculations could be made, however it would not be fair to draw conclusions on this consideration as the participation of community members was only invited through the school newsletter, which is not a media necessarily circulated amongst the surrounding community.

Some closing thoughts from the Eco Geckos

In the weeks after the planting event, I held outdoor focus groups with the Eco Geckos as we mulched and cared for their newly established native garden. We spoke about the *Sustainable Schools* project and about what it was like to be an Eco Gecko. The students all said they wanted to participate again in the upcoming year. When students were asked why they liked being an Eco Gecko, most of them expressed enthusiasm for 'extra' activities that happened outside of 'real' school. Particularly, they spoke of how surprised and excited they were to have participated in this positive change to the appearance of the school. Some of their comments included:

> *We did a really good job* (NNPS-st16, 2004)

> *Wow this looks so much different than it looked before ... just a little bit more and it will look like a million bucks* (NNPS-st10, 2004)

> *I can't believe that we did all of this* (NNPS-st24, 2004).

While the future of EfS at NNPS remains unknown, the present achievements of its *Sustainable Schools* pilot project are already substantial. Admittedly the novice of the three schools participating in the DoET's pilot project, a small group of unlikely leaders managed to affect tangible change to the physical and social environment of their school. From the bottom up, the Eco Geckos and the steering committee for NNPS established working partnerships external to their school; visioned, planned and affected visible change to their school grounds; and motivated participation in a large scale rehabilitation project. Most importantly, these tasks were all accomplished through direct educational links with the ELs Framework.

Exploring NNPS' minimal commitment – lack of awareness or lack of experience?

During a final debriefing with the steering committee at the end of the planting project, a number of lessons emerged through collaborative reflection that will inform future plans and actions for EfS at NNPS. This reflection was mutually informed by the experience of the pilot year, and the steering committee's developing understanding of EfS. This section discusses the themes reflected upon by the steering committee and the lessons learned from each of the successes and challenges observed by this group. These themes include the need to communicate ideas and plans for implementing EfS throughout the whole school setting; the recognition of challenges and disappointments as a necessary component of learning; the unbalanced focus on environmental sustainability and the limitations this places on implementing a holistic EfS program; the desire and requirement for more professional development in the field of EfS; and the potential for the action research

method to promote progressive learning for EfS.

One of the most significant themes reflected upon was the need for constant and consistent communication of ideas, intentions and actions taken by the Eco Geckos and the steering committee in regards to EfS activities. The notion that teachers, parents and communities needed to be included throughout the phases of a particular project were considered especially important if a future project was going to receive whole-of-school support, commitment and participation (Enviroschools Foundation, 2004; Gould League & CERES for the Sustainable Schools program, 2002).

The *method* for communicating ideas and enlisting participation in EfS activities was also identified as an important consideration for planning future attempts at whole-school sustainability education at NNPS. Following McKenzie-Mohr and Smith's (1999) notion of identifying both the benefits and the barriers to promoting a change in a group of people's behaviour, the steering committee realised that if they could first identify and communicate the benefits to implementing sustainable behaviour change, they would be more likely to overcome any barriers to resistance and be able to promote participation and acceptance of the new behaviour. One approach the steering committee thought would be helpful would be to have the Eco Geckos work in individual classrooms to educate both students and teachers on the benefits and methods of participating in whole-school EfS. This would enable leadership opportunities for the Eco-Geckos, as well as collaborative learning experiences for students and educators alike (Hren & Birney, 2004).

Another important aspect discussed in regard to planning and implementing sustainability activities was the ability to accept failures as a necessary learning

experience (Arhar et al., 2001). The teacher heading up the school's participation in the Southern Schools Waste Challenge summed it up when he said:

> *the lack of a measurable improvement during the waste audit was really depressing, but then I realised that these are all just steps to be taken in problem solving ... they are just hurdles to get over. There is no value in saying that this didn't work and that we can't do it [make NNPS a Sustainable School] ... these are all just exercises in problem solving* (NNPS-sc1, 2004).

These comments further highlight the learning role inherent in the EfS process (Tilbury & Cooke, 2005). The steering committee believed that, throughout the course of the pilot year, they had learned just as much as the Eco Geckos did and, were in fact, only one step ahead of the kids in planning and understanding the development of both the practical and theoretical aspects of the project (NNPS-sc1; NNPS-sc2, 2004).

The steering committee identified the lack of recognition given of the integrative potential of EfS as the most significant challenge in the NNPS community's mission to become a *Sustainable School* (NNPS-sc1, 2004). The view that EfS is not a topic to be added to a curriculum but instead a tool through which the topics of a curriculum can be taught (IUCN World Conservation Union Commission on Education and Communication, 1997), was not being sufficiently recognised by the staff and administrators at NNPS (NNPS-sc1; NNPS-sc2, 2004).

This lack of integration could best be witnessed in the lack of cooperation and integration of the simultaneous pilot projects for the ELs Framework being run at

NNPS in 2004. With the school participating in both the *Thinking* and *World Futures* pilot projects for the DoET, the NNPS school community could have engaged with the ELs Framework in a deeply integrative process if the two themes had been incorporated into one. Instead, the two projects were planned and implemented by two separate steering committees whose members did not attempt to integrate their processes or outcomes in any aspect of the curriculum or social environment of the school. By never attempting to overlap the 'essential' learnings of these two projects, it can be argued that the integrative potentials of the ELs and EfS were never actively entertained by the NNPS school community. The segregated delivery of these two pilot projects implies that this school community did not interpret the ELs as an integrative curriculum. Instead, by not actively relating the theme of *Thinking* to the theme of *World Futures,* the segregation and fragmentation of the ELs was supported by the entire school community.

The steering committee believes the lack of understanding and experience in operating within the holistic framework proposed by an EfS paradigm led to minimal whole-school participation in the NNPS *Sustainable Schools* program, and a restricted focus on environmental sustainability within the majority of the school's educational program. As one teacher stated in a focus group meeting, 'the kids ask me why we are collecting our food waste instead of putting it right in the bin, and I don't know what to say to them' (NNPS-t8, 2004). This statement reflects the steering committee's belief that an individual teacher's restricted understanding of sustainability as 'environmental education' can discount the social and economic components of EfS. In this example, the steering committee believed that this teacher could have answered student questions from a societal or economic perspective. The steering committee noted that while this particular teacher's

comment highlighted a need for more professional development in the way of environmental education, it also revealed that the environmental component of sustainability remained an unbalanced focus for the school.

The steering committee also recognised that this environmental focus potentially hindered the integration of EfS as a whole-school, whole-curriculum effort. Some of the teachers were nervous about introducing such controversial topics to their young students, who may come from families sensitive to discussing environmental issues (NNPS-t1; NNPS-t4; NNPS-t5; NNPS-t6, 2004). Still others, especially those addressing the youngest grades, thought concepts of holistic sustainability were too big for young students to gain any type of 'real' understanding. In fact, the breadth of the category of sustainability in regards to linking it with the rest of the 'essential learnings' overwhelmed many of the teachers at NNPS. When asked to choose which 'essential learnings' were relevant to a unit on 'creating sustainable futures', many teachers displayed apprehension about the task of handling such a holistic topic in the classroom.

Sustainability covers a whole range of issues, but there is not a lot of time in the week to cover them all ... I think if we are going to get this down to one or two weeks we should just choose one issue and stick with it (NNPS-t4, 2004).

It's a hard one [sustainability] ... it's a pretty abstract concept for a lot of kids (NNPS-t3, 2004).

It [sustainability] is far too broad, they [students] are just little kids and they need teaching ... they just don't know it (NNPS-t5, 2004).

How do you avoid linking sustainability to all of them [the remaining

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essential learnings]? ... but if you choose them all then you are already

talking about something that is too broad (NNPS-t1, 2004).

Even things like 'maintaining well-being' could be linked, but I think in most

cases maybe the links that can be made to 'creating sustainable futures' may

be a bit tenuous (NNPS-t4, 2004).

I am not sure where literacy and numeracy fit in [to sustainability], but they

have to be put in there somewhere (NNPS-t6, 2004).

This is one of those topics that could just take a long time ... there's so many

areas you could go into ... that's part of the problem, trying to contain it

(NNPS-t2, 2004).

Such responses further indicate that there is a lack of professional development for

Tasmanian educators to address issues of sustainability within the context of a

classroom and a whole-school setting. Teachers at NNPS said that while they often

receive professional development and have access to resources regarding literacy and

numeracy; resources and professional development for teaching EfS are much more

limited and seemingly unavailable. As a result, many of these teachers have an

apprehension to teaching EfS, and an even greater fear of assessing it as one of the

'essential learnings'. This process of reflection highlighted the need for more

professional development opportunities to strengthen the capacity of teachers to use a

variety of methods for teaching and learning for sustainability[45]. There was

unanimous agreement among all of the teachers at NNPS that there was a need to

have more access to resources and more learning partnerships to extend the school's

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[45] The need for greater professional development has been well noted in the EfS literature (Australian Association for Environmental Education Inc., 1996; Environment Australia, 1999, 2000a; Fien, 2001; Gould League & CERES for the Sustainable Schools program, 2002; Henderson & Tilbury, 2004; Malcolm, 1992; Mortensen, 2000; Daniella Tilbury et al., 2005).

ability to respond to change and function as a *Sustainable School*. Many of the teachers at NNPS expressed a desire to increase their participation in the *Sustainable Schools* program, but only after they had the opportunity to gain a better understanding of the overall theories and functions of the program through proper professional development.

The steering committee thought one opportunity to increase professional development opportunities would be through establishing a learning partnership with MPS and the Environment Centre. Inspired by the extensive interest shown by teachers at NNPS to attend a paper-recycling workshop at MPS, the steering committee hoped the individual *Sustainable Schools* projects that presently existed at each school could in fact join together in a learning community that could mutually inform and support one another. The potential for this partnership has grown since the introduction of the ELs, and the establishment of support networks called *clusters* in each of the regional school districts.

In 2005, the DoET established 27 clusters across the state that were meant to replace the traditional notion of a school district and create a collaborative atmosphere between schools in close geographical proximities. These clusters are organised and managed by each participating school's principal, with one elected from the group to act as the cluster head. This cluster system was designed to accommodate the introduction of the ELs and is hoped to develop a network mechanism for collaborative learning communities to develop. MPS and NNPS are both located within the Derwent Valley Cluster, corresponding to their shared location in the Derwent Valley Local Government Municipality. The principal of NNPS is the cluster head for this collaborative learning community, which could potentially mean

that a working relationship for professional development between the schools could be entirely possible. The question will remain as to what kinds of leadership choices will be made in the senior management levels of the two schools to facilitate such a partnership.

A final reflection of the steering committee was the contribution of the action research method. Empowered by a process of collaborative inquiry, the steering committee of teachers and students were introduced to a method of learning that informed their practice and understanding of their *Sustainable Schools* mission both during and after the completion of the research process. In this sense, it was the actions, perspectives, and development in understanding of the research participants themselves that informed not only the research process, but the learning outcomes of the research (Kemmis & McTaggart, 1988). Through active participation in the research process, the learning of the research participants through the use of action research was empowered to progress indefinitely (Tilbury et al., 2004).

The steering committee believes the action research method could address future phases of the program by broadening students' (and teachers') understandings of the holistic aspects of sustainability. Because of the school's focus on waste throughout the pilot year, the steering committee felt the school had a very narrow understanding of sustainability, thereby limiting the applicability of EfS into other areas of the ELs Framework and the social and economic environments of the school. Through the lessons learned in the action research process implemented in the pilot year of the program, the steering committee is hopeful a similar learning process can be instigated to link the practical outcomes of visible change to the theoretical foundations, creating a better school-wide understanding of, and participation in,

EfS.

To Mr Watt!
I think I would be good for the taskforce group because I am responsible and I would be committed for the whole year. I have a particular interest in the environment because if I don't look after the environment the world will be a horrible place to live in and there will be nothing left unless we improve the situation. I would really like to be in the taskforce group!

from Danielle
5/6M

CHAPTER FIVE

DISCUSSIONS AND CONCLUSIONS

The purpose of this chapter is to revisit three themes emerging from the case studies. These themes are (i) integrative approaches to curriculum; (ii) place-based education through partnerships; and (iii) collaborative leadership and learning. Through these themes the chapter also returns to the international, national and state EfS policies introduced in Chapters One and Two, offering an assessment of their usefulness as mechanisms for delivering local sustainability initiatives in formal school settings. It is argued that the case studies indicate that such top-down strategies are subject to high levels of local interpretation. This interpretation reveals internal discrepancies in these policies which – while intended by the international community to be sensitive to place – may hinder a school community's ability to embody an integrative approach to EfS.

In this chapter, I reflect upon the two case studies in a way that compares, but does not rank their interpretations and different implementations of EfS. In so doing, I aim to reflect their inherent value as cases that inform and advance understanding of EfS, while demonstrating the potential for diverse, and more or less coherent, local translations of EfS policy such as the ELs Framework.

Theme 1: Re-interpreting integration

The Oxford Dictionary defines integration as 'a combination of diverse elements of perception', while 'integrate' is said to be the *process* of completing an imperfect thing by combining its parts into a whole (Sykes, 1982, pg 521). While these

definitions suggest a process of merger and inclusion, integration is viewed in one instance to create a space of encounter for a diversity of perspectives while, in the other, is said to be a means to achieve a whole and complete thing. The different outcomes proposed by these two definitions suggest a two-step process. The first step creates a space for diverse perspectives to come together, and the second actively integrates these diversities into a complete, whole and new entity. Evidence from the case studies suggests that policy commitments to integrate EfS into curriculum might create a space for different perspectives to merge in any school community; however the active initiation of the process of integration is oftentimes localised, partial and potentially ineffective.

Chapters One and Two emphasised the promotion of integrative learning approaches in the rhetoric of both the ELs Framework and EfS policy. The case studies also revealed that in both settings an integrative approach was sought to implement EfS through the ELs Framework. However, closer examination of each case study setting shows that diverse approaches were used when the integrative process was translated from the conceptual to practical teaching and learning methods.

From the conceptual to the practical

Evidence from this research suggests that the integrative nature of sustainability was recognised, at least on a conceptual level, by most of the participating educators. Most also thought the ELs Framework was a highly integrative curriculum (NNPS and MPS teachers focus groups, 2004). In focus groups and interviews, teachers from both case study schools stated that sustainability was a topic that related to most of the key elemental outcomes in the ELs Framework. This point was further recognised in the conceptual integration of a number of key elemental outcomes

in the planning of the *Sustainable Schools* projects at each school. Nevertheless, once the integration of EfS was instigated on a practical level in the two school settings, the conceptual understanding of EfS as a process – one evolving from awareness to understanding to participation – then revealed different approaches to integration. These were applied through different learning programs in each school, and resulted in a variety of educational opportunities delivered across each school community (Figure 22). This evidence is consistent with Gough's contention that 'schools are often familiar with the rhetoric of Environmental Education but do not know where to start in terms of implementation' (Gough, 2005, np).

Remaining MPS classrooms

EfS
Action-oriented; learning for change; linking thinking and behaviour; conceptual understanding and key outcomes emerge from action-oriented integrated learning

Awareness raising
Learning about environmental and/or social problems; abstract; often perceived by teachers as environmental education

Eco Geckos and Environmental Leaders

Remaining NNPS classrooms

Understanding
Integration of holistic understanding; comprehending EfS as encompassing environmental, social, economic, cultural, political etc.; integrating key elemental outcomes

Figure 22. Selective integration across different settings in each school

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In the case of NNPS, recognition of the integrative principles of EfS and its potential connection with many of the key elemental outcomes in the ELs was apparent in collaborative planning sessions that included every teacher in the school. This strategy led to the development of classroom units addressing the problems of unsustainable waste behaviour that were linked to other understandings of the ELs Framework. However, pre-determined planning of EfS classroom units limited the active integration of EfS within the classroom setting, and constrained the whole-school approach.

By structuring learning activities around a set of fixed key elemental outcomes, teachers attempted to discern *a priori* learning indicators for EfS, determined by their individual understanding and translations of the 'performance guidelines' and 'illustrative examples of behaviour' listed among the standards of the key elemental outcomes. Analysis of focus groups conducted at NNPS suggests that these ELs standards were interpreted as prescriptive guidelines, limiting the ability of teachers to respond to different classroom circumstances that emerged throughout the *Sustainable Schools* project and restricting the scope for responsive teaching and learning.

Concurrently, the steering committee at NNPS attempted to respond to an *evolving* EfS project, by enabling learning opportunities to emerge from the activities of the Eco Geckos. Key outcomes were not determined before the EfS activities took place and learnings were allowed to emerge spontaneously and evolve with the EfS project. Inspired by this process of understanding through experience, the steering committee sought more active commitment from other teachers and students to advance the EfS process throughout the school. However, they found that dogmatic

interpretations of what characterised classroom EfS affected the involvement of individual teachers in the integrative process. Many teachers demonstrated low levels of commitment to evolving integration by allowing their students to participate in the planting project while considering this EfS activity as additive to the established curriculum rather than integral to it (Figure 23). Other teachers went a step further and included classroom behaviour changes in their delivery of the key elemental outcomes addressing waste. However, as the steering committee pushed for more transformative and emergent learning experiences, commitment and participation from other teachers began to wane. This evidence supports prior research findings that show the rarity of truly 'whole' school approaches to EfS (Gough, 1997).

The evidence also revealed that the steering committee at MPS experienced challenges in establishing whole-school acceptance of sustainability as a core programme within the classroom curriculum. Even though levels of participation by teachers and students in particular EfS projects at MPS were high, the approach was nonetheless limited by a prevailing perception among most teachers and students that EfS is an educational program additional to the established curriculum. While the teachers were willing to have their students participate in sustainable behaviour change and environmental education activities outside of the classroom, there was not the same commitment to build links between these added activities and core curricular learning. Instead, EfS was perceived as an activity to be implemented through existing extra-curricular programs of the Environment Centre and the Environmental Leaders Program. The steering committee has attempted to confront this barrier to fully integrating sustainability through its use of a progressive learning

Commit to a
continued learning
cycle for change

Observing, documenting and
reflecting on changes in
understanding and behaviour

Participation in whole-school behaviour
change (i.e. worm farm, native garden care,
paper sorting)

Including classroom behaviour change into abstract
learning (i.e. sorting food scraps, recyclables etc)

Implementing the planned waste unit in the classroom

Planning of a two-week waste unit focusing on 'creating sustainable futures'
integrating other key elemental outcomes of the ELs

**Level of
integration
increases**

Participation decreases:
this includes the number of
teachers and students
committing to and actively
participating in EfS

Figure 23. Decreasing participation in behaviour change at NNPS

model, in which EfS activities are built upon and broadened as students progress

through their years at MPS (Figure 24). However, they recognise that until EfS is

accepted as a relevant part of the curriculum, these activities will continue to be

marginalised (Loughland, Walker, & Brady, 2000).

It was apparent in both schools that the holistic integration of EfS emerged only

when teachers were willing to participate in 'inventing a wide range of experiences

[to] allow students to connect what they [were] learning to their own lives [and]

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Prep-Grade 2
- Environment Centre activities
- Work with Environmental Leaders
- Community projects

Grades 3/4
- Environment Centre activities
- Recycling art centre
- Small group projects with *Sustainable Schools* resource teacher (i.e. worm farm)
- Community projects

Grade 5/6
- Environmental Leaders Program
- Environment Centre helpers
- Mentoring programs
- Sustainability classroom unit
- Small group projects
- Community projects
- Recycling art projects

Figure 24. Building and broadening the EfS experience at MPS

communities' (G. A. Smith, 2002). Because it was only the steering committee teachers at each school who were engaging in these activities, the result was the integration of EfS to only a limited number of students who participated in these small group projects. The learning benefits of working with small groups to enable educators to focus their attentions on individual students has long been recognised (G. A. Smith & Williams, 1999/2000) however, the whole-school approach promoted by both EfS and the ELs Framework implies that this method should be complimented by collaboration and reinforcement across the school.

Instead of achieving consistent collaboration in active EfS, the work of these small groups was mostly supported through lesser levels of integrative teaching including minimal curriculum links and/or participation in one-time environmental events (refer to Figure 22). Because of the limited number of teachers willing to actively deliver EfS, the extent to which whole-school participation was embodied at each school was limited[46]. In fact, other than the Environmental Leaders Program and the Eco Geckos, most activities at each school internalised a conceptual acceptance of sustainability vocabulary, while maintaining a practice of 'business as usual' (Fien, 2001, pg 16).

The case studies show that despite the provision of integrative space provided by the ELs Framework, the process of actively integrating EfS throughout a curriculum is still very much contested among individuals and communities. This in turn can lead to a multitude of interpretations and approaches to EfS when applied in practical settings. Michael Jacobs (1999) describes this outcome as a result of two tiers of

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[46] This lack of institutionalisation is a common complaint amongst many adjectival educations, including (i.e. environmental education, social education and health education). The reality of such programs being initiated and maintained by only a few individual teachers is noted throughout the literature and research on initiating and maintaining change in schools (Corbett, Dawson, & Firestone, 1984; Everson, Scollay, Fabert, & Garcia, 1986; Raelin, 1989; Sarason, 1982, 1990).

perception regarding the meaning, purpose and application of sustainability. At the first tier, sustainability is understood as a broad social ideal on which many perceptions converge. Yet, it is at the second tier of practical implementation on this ideal that disagreements often emerge, as its meaning is re-constructed in relation to local contexts. In accordance with Jacob's claim, the case studies suggest that a group of educators in one school setting can agree on the integrative nature of sustainability as an abstract concept, and subsequently fragment their implementations of EfS affecting the delivery of the whole-school approach.

Two approaches to integration

The primary conceptual difference between the steering committee teachers and the remaining teachers in each school was the difference in their *second tier* understandings of EfS. This suggests that the integration of EfS is a complex process that can lead to different approaches to implementation within a given school community. In each case study, EfS was integrated through the ELs via two distinct approaches. The steering committees of teachers in each school embodied active EfS through an *emergent* model of integration (Figure 25). In this approach, an EfS activity is developed and delivered before the relevant learning outcomes are identified and assessed. At NNPS, this work occurred in planning the planting project with the Eco Geckos; and at MPS it was used in the Environmental Leaders Program. Based on active experience through place-based learning, key elemental outcomes of the ELs Framework emerged through a process of individual and group discovery. Figure 25 shows how an initial school ground clean-up activity at NNPS provided the foundation for other activities and a number of key elemental outcomes to emerge. In this model, conceptual understandings are integrated with practical

experience and the development of learning outcomes is potentially unbound and

limitless (Dewey, 1907).
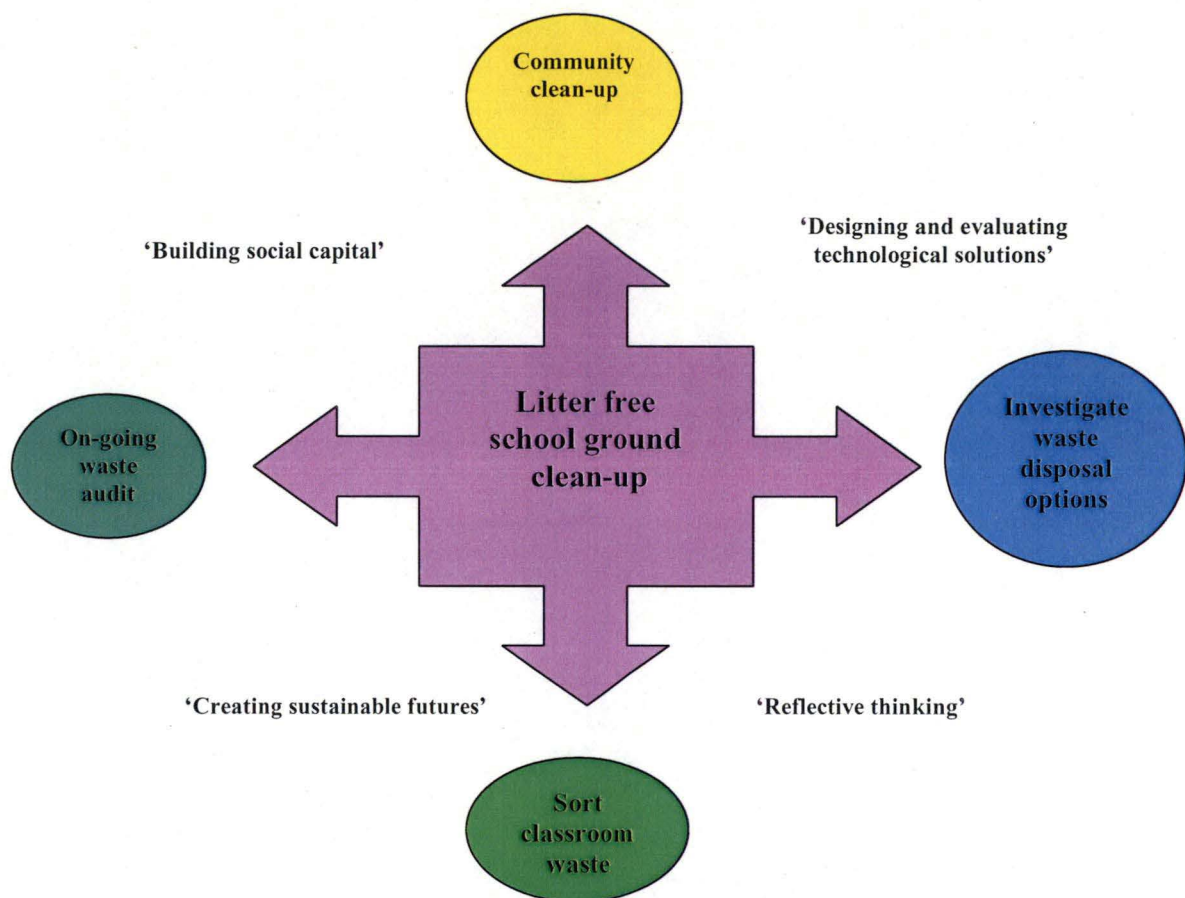
Figure 25. The emergent model of integration

The evidence shows that the steering committees in each school relied on processes

of critical reflection and adaptability to respond to the emerging outcomes of this

integrative method. Through in-process learning, teachers and community members

participated *with* students in EfS learning activities, and assessment of learning was

based on collaborative reflection occurring throughout and after the completion of

the activities. However, as Nicholls (1997, pg 69) points out, the process of critical

reflection is often constrained by the perception of teachers that classroom

settings are 'too busy' to allow them 'to step outside the continuous action in which [they are] involved in order to make sense of what is occurring and has occurred'. Confirming this position, the case studies show that the remaining teachers in each school were not so enthusiastic to engage as participants in the learning process of EfS, and as a result, implemented EfS through a rather more linear model of integration (Figure 26).

The linear process depends on a procession of planning and implementation where a learning activity is chosen and the learning outcomes are decided by teachers prior to the delivery of the activity (Sterling, 2001). After the activity is implemented, the *prescribed* learning outcomes are then assessed, and any other *emergent* outcomes are either disregarded, or placed into the 'maybe next time' category for lesson planning. In this circumstance, teachers appear to assume that the learning outcomes for 'creating sustainable futures' (as well as their links with others in the ELs Framework) can be determined before students and teachers become immersed in the learning environment.

Implementing EfS through this method allows teachers to think of their implementation of sustainability through the ELs as integrative, while in fact they are engaging in a process where EfS becomes bound, linear and determined by its obligations to deliver particular learning outcomes. As Saul (2000, pg 69) notes 'often, when educators call for mixing the disciplines, what they mean is inserting science into nonscience subject areas. They do not mean inserting an understanding of culture into the sciences'. As the case studies show, teachers can choose which disciplines will be mixed in their implementation of integrative EfS, which can then

Choose EfS activity/goal

Litter free school ground clean-up

Defining relevant key outcomes

'creating sustainable futures'
+
'creating and pursuing goals'
+
'investigating the natural and constructed world'

Implement activity

Assess learning outcomes based on ELs standards for pre-determined key outcomes

Bounded planning of activities constrains the potential for learning opportunities to emerge through integration

Potential other key learnings emerge

'valuing diversity'
'maintaining wellbeing'
'building social capital'
'understanding systems'

and create potential for more integrative EfS activities

Informing school and surrounding community of waste behaviour alternatives

Sorting classroom waste

Establishing worm farm

Figure 26. The linear model of integration and the missed opportunities of emergence

result in limited participation for sustainable behaviour change to the whole-school community.

Focus groups at NNPS revealed that teachers perceive benefits in the linear method because educational activities are delivered in a *controlled* learning environment and expected learning outcomes can therefore be easily assessed. Teachers perceived this as a teaching method easier than the emergent model, because pre-determined learning outcomes are more predictable and make any determination of individual student achievement more manageable. The case studies reveal that many teachers also prefer this linear model because they retain more control over the learning environment and activity and can ensure that 'essential' learnings such as reading, writing and arithmetic are not omitted from the curriculum. Preserving the delivery of basic learning skills in integrative teaching are laudable concerns on the part of teachers who are expected to assess learning outcomes across a range of disciplines. However, the evidence from the place-based approaches at each school suggest that an emergent EfS model can deliver a range of ELs outcomes, including the rudimentary basics of reading, writing and arithmetic. In each of the case studies, teachers and community members using the emergent model of integration were able to incorporate basic learnings as relevant tasks in an EfS focused learning activity. For instance, the Environmental Leaders at MPS were required to develop literacy and numeracy skills throughout the research, design and creation of the school's native garden and frog pond, as well as the *History of Molesworth* loom project. At NNPS, the Eco Geckos drew on their literacy capacities when writing information letters to parents and communities about their *Sustainable Schools* project. They also were required to develop their numeracy skills when measuring and designing their garden restoration project and conducting their school waste audit. While there is some debate about the need to focus on a strong foundation of the basics during the early

developmental stages of learning it must also be noted that the social purposes for these basics should not be overlooked (Banks, 2001; Barton, 1994, pg 211). Perhaps through recognition and commitment from the whole-school community that EfS is a fundamental social purpose to be addressed by formal schooling, the basics of reading, writing and arithmetic could then be taught via a focus on issues pertaining to sustainability (Orr, 1992).

As the case studies show, when educators interpret 'creating sustainable futures' as the underlying purpose and objective of the ELs Framework, opportunity arises for them to embody a creative and progressive approach to teaching and learning. The emergent approach was shown to potentially incorporate any and all of the key elemental outcomes (Figure 27), highlighting one of the key goals of an EfS paradigm, namely to engage with curriculum not as a burden, 'but [as] a perspective which permeates all disciplines and creates a context for integrated and creative learning' (IUCN World Conservation Union Commission on Education and Communication, 1997, np). Lessons from the case studies suggest that through an emergent model of integration, the ELs Framework could help Tasmanian school communities contribute measurable sustainability outcomes and provide a learning framework for ongoing capacity building for EfS in both school and surrounding communities. However, the case studies also show that it is only through a strong conceptual grounding within the local community that this emergent integrative approach can facilitate such capacity building and sustainable change, a matter to which I now turn.
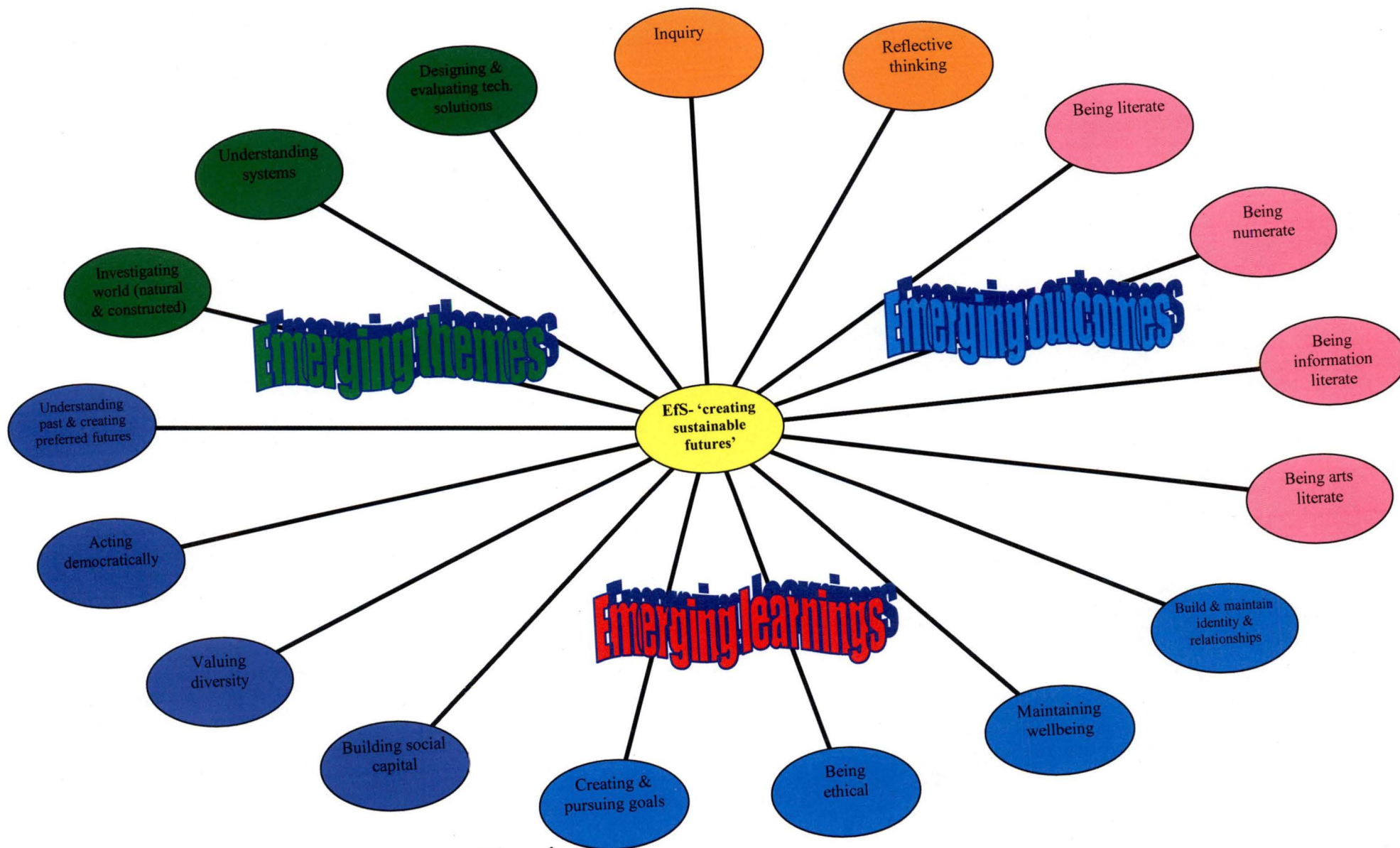
Figure 27. Identifying EfS as foundational to all learning

Designing & evaluating tech. solutions

Inquiry

Reflective thinking

Being literate

Understanding systems

Being numerate

Investigating world (natural & constructed)

Emerging themes

Emerging outcomes

Being information literate

Understanding past & creating preferred futures

EfS- 'creating sustainable futures'

Being arts literate

Acting democratically

Emerging learnings

Valuing diversity

Build & maintain identity & relationships

Building social capital

Maintaining wellbeing

Creating & pursuing goals

Being ethical

Theme 2: Place-based education through partnerships

Place-based education was highlighted in Chapter One as an integrative learning approach that engages the local environment, both ecological and social, to help students combine intellect and experience (Sobel, 2004; Williams & Taylor, 1999). Of particular concern to the cases studied here was the establishment of school/community partnerships through a place-based approach to link school life with community life, and facilitate students in more deeply inhabiting their local community (Keifer & Kemple, 1999; Orr, 1992). Chapter Two linked place-based approaches to the objective of the ELs Framework to promote relevant, integrative and contextual learning. It was concluded that place-based approaches can enable the integrated delivery of the ELs Framework through local EfS initiatives. However, the case studies also reveal that a place-based approach to EfS may be constrained by the existence of diversified and conflicting understandings of sustainability and integration within a particular community. This finding is consistent with previous work conducted by Dyment and Reid (2005) on the process of greening school grounds, which is a manifestation of the place-based approach. In their research, it was determined that 'the breadth by which pedagogic, structural and professional are defined [within a school community are] … important components in framing what can and cannot be envisioned and hence, enabled, in terms of social transformation' for sustainability (Dyment & Reid, 2005, pg 298).

Projects from both schools embodied elements of place-based learning through a focus on the local environment and the involvement of partners in the planning and implementation of their initiatives. The MPS Environmental Leaders Program and the NNPS native garden restoration promoted three of the key objectives of place-based education articulated in the EfS literature. These were, first, including achieving levels of both school and

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community sustainability (Prakash & Richardson, 1999; G. A. Smith, 2002; G. A. Smith & Williams, 1999). Second, recognising the role of the school as inclusive and integral to community well being (Williams & Taylor, 1999). Third, utilising forms of school/community partnerships as an integrative tool to build relevant links between student learning and community life (Chodkiewicz & Flowers, 2005; Miller, 1995; Sobel, 2004). While broadly succeeding in delivering the contextual, experiential and locally relevant outcomes promoted by the ELs Framework, these MPS and NNPS initiatives also reveal a distinct difference in each school's use of partnerships in their respective place-based approaches, indicating the vital role of locally grounded partnerships in initiating and validating contextualisation, participation and community support for EfS (PIRSA Sustainable Resources Group, 2000).

The MPS place-based approach was founded on the goal of addressing and contributing to community sustainability. This approach embraced the view that providing students with locally relevant experiences was an imperative and relevant task to be shared by educators and community members alike (Sobel, 1996, 2004). In this contextualised educational approach, children are appreciated as contributing members of the community. Their participation is exhibited and recognised through such daily actions as their use of water or stewardship of the land, as well as through their goals and aspirations for the future as exhibited through the activities of the Environmental Leaders Program. This localised perspective reflects the grassroots position expressed by some School Council members. Their feelings of responsibility for maintaining and developing a unique community culture motivate desire for accountability and relevance in education initiatives claiming to reflect community needs and values (Gill, 2002; James & Lahti, 2004).

To foster an educational approach that reflects these community needs and values, the

MPS place-based approach was shaped by the development of strong, formalised partnership agreements between the school and its surrounding community. Through such formal agreements members from both groups were encouraged to make valuable and continuing contributions to a shared educational objective that included school and community members in a process of life-wide teaching and learning (Johns, 2003; Miller, 1995; Sobel, 2004). As a result these collaborative, participatory partnerships made significant contributions to the shared goal of community sustainability (G. A. Smith, 2002; Tilbury & Wortman, 2004). Such an example of successful, cross-sectoral partnerships between a school and its local community bears out much of the literature on EfS and accords with international frameworks outlining the importance of maintaining partnerships to achieve the goals of learning for, and creating, sustainable futures (Chodkiewicz & Flowers, 2005; G. A. Smith & Williams, 1999/2000; Tilbury & Wortman, 2004; UNESCO, 1995-2006a). Therefore, the MPS place-based approach presents a valuable model for school/community partnerships for EfS.

In contrast to the MPS approach, where locally based partnerships defined and characterised the EfS program, the NNPS approach to place-based education did not evolve from such a local partnership model. Instead of allowing a whole-school EfS program to emerge from a shared community and school vision, participants in the *Sustainable Schools* project at NNPS independently decided on a focus for their project, and were forced to establish external partnerships in order to build support for their EfS initiative.

The result was a project bounded both physically and socially within a 45 metre block of borrowed land for the planting project and, in the case of the waste minimisation project, the two classrooms of the steering committee teachers. Without a social or ecological

connection extending beyond these particular spaces, the NNPS place-based projects were not linked to the function of the school or surrounding communities, thereby limiting their contributions to whole-school and community sustainability (Sobel, 1996).

Although this approach was essentially place-based, the NNPS community did not instigate a whole-school community discourse about sustainability and therefore were unable build their initiatives around shared environmental or social concerns. If they had, their program would have necessarily included a consideration about issues of dialogue, respect, equity, harmony and social cohesion, all of which are essential considerations for achieving sustainability (S. B. Hill, 2004). In their resistance to instigate a whole-school vision through school-wide discourse and partnerships (See pg 118-119 and 143-145), the NNPS community made only nominal advances in building capacity and progressing goals for sustainability in its school community, and in fact only entrenched the divergent culture and discourse of sustainability that exists in New Norfolk.

The MPS case study reveals that a school can act as a drawcard to engage the larger local community in which it is placed in a discourse of sustainability if all parties are willing to risk the potential for differences to emerge. The literature of EfS recognises that engaging with such different discourses is fundamental to building community capacity to participate in a more sustainable future (Nath, 2003; Saul, 2000). Therefore, in particular communities of place where the efficacy of sustainable development is contested, it is imperative that young community members learn 'to debate, evaluate, and judge for themselves the relative merits of contesting positions' (Jickling, 1994, np). Considering the influence of contextualised values and cultural beliefs on these perspectives it is also necessary to teach 'that often conflicts are not only about rational arguments, but also about the clash of cultural values and perspectives' (Saul, 2000, pg 7). As the NNPS case

study shows, the reluctance of a school community to engage in such dialogue may result in missed opportunities to advance school and community sustainability and build capacity of young students, teachers and community members to participate in localised EfS.

Highlighted by feedback from parents and community members regarding the Eco Geckos' planting project at NNPS, it was obvious that the place-based initiative at this school had been positively received and appreciated by the school and surrounding communities. The improvements made to the aesthetics of the area also improved levels of school and community pride. This may have served as a starting point for deeper school/community engagement and collaboration (James & Lahti, 2004). However, the fragmented and peripheral approach to partnerships in the place-based approach at NNPS weakened the viability of its EfS initiative, and affected its ability to engage in collaborative learning with the surrounding community.

Despite the benefits realised by the establishment of an external partnership with my own research and the participating environmental action groups, every partnership developed in the *Sustainable Schools* pilot year at NNPS was project-based, with no formal plans to continue beyond the initial collaboration. Furthermore, without strong local connections with the surrounding community, there was no opportunity for local community members to develop a sense of ownership or inclusion in the project to advance new initiatives (PIRSA Sustainable Resources Group, 2000). Therefore, if the NNPS community decides to advance its EfS program, it will have to start at the beginning again, and rebuild new partnerships to support its work. However, if leaders of the program embrace EfS as a progressive learning process that affects change over time, it may be possible for the NNPS community to continue to expand on the collaborative strategies developed through the external partnerships of the pilot year, and seek more formal partnerships and cooperation

for the future.

This discussion has so far suggested that integration and partnerships through place-based education are potential strategies through which the objectives of EfS and the ELs Framework can be achieved. Furthermore, evidence from each of the case study schools suggests that a critical factor enabling these strategies in a whole-school approach is the dedication and effort of a few passionate leaders who are willing to take on more than their fair share of responsibility. However, as highlighted in Chapter One, capacity building for EfS is intended to be transformative and responsibilities and actions in a whole-school approach are supposed to be shared. While leadership is recognised in both the literature and empirical evidence as critical to maintaining EfS in a school community, both suggest that it is through a sharing of these leadership roles that EfS is extended throughout the school and into the larger community, thus leading to the achievement of the life-long learning objectives of EfS and the ELs. Perhaps then in the assessment of whether or not these schools succeeded in delivering the ELs through a whole-school EfS approach, educators and architects of the Tasmanian education system should consider the level to which collaborative leadership and transformative learning was taken up by each school community.

Theme 3: Collaborative leadership

Apparent in both case study schools was the tremendous effort of a small number of individuals. The commitment and creativity of the steering committees were the underlying forces that promoted, supported and enabled the integration of EfS activities through the ELs Framework. Without the dedication of these passionate individuals, EfS would not have achieved recognition within the ethos (MPS) or praxis (both schools) of either school. The steering committees effectively guided each school community's

attempt at whole-school EfS by assuming responsibility for: determining the foci for each project; establishing, building and maintaining partnerships with surrounding and external communities; monitoring, evaluating, and responding to developments in the programs; and maintaining a cycle of learning and visioning to progress their projects.

In fact, in each school community, the steering committee teachers were known as the people who 'did' EfS in the school. Evidence from the case studies reveals that once these leaders were identified in each school community, other teachers, parents and community members were unlikely to assume responsibility as equal and active partners in the whole-school EfS approach. This indicates that sometimes strong leadership can reduce rather than promote involvement and growing participation within a particular community. As was highlighted by the MPS case study, school leaders must consider both the relinquishment and uptake of leadership roles in promoting transformative leadership so that a school's EfS journey might start 'as an individual task and [move] through a number of stages towards a developing shared vision' (Tilbury & Wortman, 2004, pg 26). Otherwise, the viability of a school's EfS programs will depend on the commitment and dedication of only a small number of people, which increases the risks of volunteer burnout (Alverson, 1997) and often leads to small, project-based implementations of the program (Wilson-Hill & van Rossem, 2001).

While the support of a steering committee can increase collaboration between teachers in a school (Gould League & CERES for the Sustainable Schools program, 2002; Henderson & Tilbury, 2004; PIRSA Sustainable Resources Group, 2000), one has to consider the level to which a whole-school approach is being implemented if the school community *remains* dependent on the direction and assistance of the steering committee. As Johns (2003, pg 319) states, it should be 'the partnership process [that] creates the leaders, rather than the

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other way around'. There is also the need to consider that a program will only last as long as the identified leaders remain committed to the project. As Chapter One highlighted, the goal of transformative leadership is to build capacity in a community in order to empower others to assume and share leadership roles and responsibilities (Kilpatrick et al., 2002). This mutual accountability helps to ensure the sustainability of the program (NSW Council on Environmental Education, 2002). However, in each of the case study schools, leadership roles in implementing active EfS seem to be perceived as a responsibility of the select few that are willing to assume these positions. Therefore, the evidence suggests that there may be limitations in having a steering committee designated to maintain a particular project, unless the membership of the committee is broad and changing.

This work suggests that a different system of governance might offer more benefits if individuals share accountability and leadership roles. Evidence from the NNPS case study reveals that individuals who may not feel they have the capacity to lead EfS in their school can be supported and enabled through various forms of collaborative learning and partnerships. This evidence supports the literature of EfS that calls for collaboration in the professional development of teachers (Environment Australia, 2000a; Fien, 2001; Henderson & Tilbury, 2004; Mortensen, 2000; NSW Council on Environmental Education, 2002; UNESCO, 2003). The success of the novice NNPS steering committee in assuming leadership roles in their school indicates that a shifting steering committee might be one method to encourage transformative leadership, collaboration and capacity building for EfS within a school community. Because 'different leadership roles are needed at different stages of the leadership process' a method of collaboration and shifting responsibility could enable teachers to exhibit individual talents and participate in a process of collaborative professional development and capacity building (Johns, 2003, pg 319). Furthermore, practice in collaborative learning shows that 'people pay most attention to

messages which are relevant to their own circumstances... and are more likely to support a change which affects them if they are consulted before the change is made' (PIRSA Sustainable Resources Group, 2000, pg12). This suggests that collaboration and transformative leadership essentially begin with a process of inclusion (UNESCO, 1995-2006a).

As the case studies show, collaborative leadership is also characterised by an openness to learn and an ability to respond to the evolving context of the learning environment. Each steering committee revealed that leadership in EfS is ultimately about trusting the process of the place-based education approach to deliver learning outcomes. This evidence further suggests that leadership is about recognising learning as an ongoing process to be shared by students and teachers alike, and it is the collaboration and sharing of this pedagogy that enables and creates transformative and facilitative (rather than authoritarian) leadership in a school community.

It must be noted that leadership opportunities in each school were enabled through the support and confidence of the principals in each setting. Having said that, it is also apparent from a comparison of the two schools that, in order for this level of leadership and learning transfer to extend beyond the steering committee, senior managers in the school must be willing to bring to the process other members of the school community who might initially resist this open learning environment (Gough, 2005). This signifies that while wide-ownership and democratic participation require initiation and inclusion from the bottom-up, a strong commitment from senior managers to provide support and dedication to a particular project will assist in creating this groundswell of support (Johns, 2003; PIRSA Sustainable Resources Group, 2000). For instance, the MPS steering committee did experience difficulties in stimulating the uptake of leadership roles to all teachers in the

school however, a direct and unambiguous statement from the school principal that MPS was a *Sustainable School* increased the whole-school acceptance of the relevance of EfS, and led to prolonged and progressive participation in whole-school EfS activities that was absent from NNPS. This outcome suggests that senior managers need to support the roles and responsibilities of the steering committee, thereby increasing capacity building, collaboration and transformative leadership for EfS across the school community (Gough, 2005).

One area through which senior management support might best serve to encourage collaborative leadership in each school community is in the opportunity recognised by the steering committee at NNPS to develop learning partnerships between the MPS and NNPS communities. This potential partnership would help each school to embody the collaborative and purposeful learning community approach promoted by the ELs Framework. Such a partnership would also contribute to the goals of the DoET in their establishment of the school cluster framework. Because the school clusters are managed by the principals of each school this opportunity is clearly one which is reliant on the collaborative support of senior management. Such senior level cooperation embodies the whole-systems structure proposed by EfS to enable communication, capacity building and participation at all levels of the formal schooling system (Duffy, 2004; Sterling, 2001). As Duffy states:

> when people are connected in a networked social architecture, each individual becomes a node – a connection point – in that network. The connections among the nodes form a matrix through which flows the professional intellect of a school system. When this matrix is fully functioning, it transports an extraordinary

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amount of human energy, ideas, commitment and learning (Duffy, 2004, pg 323).

In accordance with Duffy's claim, this research suggests that a collaborative learning partnership between NNPS and MPS, promoted and supported by the principals of the school cluster, could instigate and motivate the transport of energy and transformative learning for EfS throughout the Derwent Valley Cluster.

From an exploration of collaborative leadership in each case study setting, it becomes apparent that building the capacity of teaching staff to participate in the emergent model of integration of EfS through the ELs Framework is possible. With the support of senior managers, collaborative learning for EfS could be promoted so that all teachers within a school community are encouraged to share in the learning roles that are currently undertaken by each school's steering committee. Developing from this collaborative leadership the case studies show that it is possible for school communities to reach out to community partners and broaden their understanding and scope of EfS. Therefore, this research suggests that it is essentially the encouragement and establishment of mechanisms for professional collaboration in a supportive learning environment that will best enable EfS to emerge as an integrative outcome of the ELs Framework.

Modelling EfS

Through the lenses of integration, place-based partnerships and collaborative leadership this chapter has illuminated some of the opportunities and challenges involved in implementing whole-school EfS through the ELs Framework. In doing so, this chapter provides a useful summary of the lived experiences of MPS and NNPS and highlights how each might contribute to the larger narrative of global EfS, informing the larger context of state, national and international contributions to sustainability. To conclude the more

detailed exploration provided by this chapter, I will now present a modelled comparison of how the whole-school approach was interpreted and implemented by each of the schools, which illustrates that the guiding principles of EfS can be adopted and applied differently in the locally contextualised setting.

MPS – a nested approach

At MPS, the whole-school approach to EfS was strongly grounded in the culture of the Molesworth community, which conceptually and practically supported an integrative approach to sustainability. The MPS place-based approach reflected an ethos of sustainability that extended beyond the school grounds. Drawing on close school/community connections, learning at MPS was nested within the needs, values and processes of the surrounding Molesworth community. Figure 28 represents the integrative approach to EfS embodied by the MPS community through the processes of collaborative leadership and learning.

Through this nested approach, the school is included as part of the community, and education is perceived to be a shared responsibility of the school, the surrounding community and the wider social system, as embodied for instance, in initiatives such as the ELs. This nested model is reflective of a whole systems approach that recognises formal education institutions as one subsystem embedded within the larger systems of community and the social and ecological world (Sterling, 2001). In this model, education is a process of personal, communal and societal learning embodying the life-wide and life-long process of learning (Hill, Wilson, & Watson, 2004; Rawson, 2000). Acknowledging education as a reciprocal responsibility of the school and surrounding communities has also been noted as a potential scenario to improve management, leadership and governance within a school

Figure 28. The nested approach of MPS

The diagram shows nested circles. From outermost to innermost:

- Outer yellow circle: **Larger system including DoET, Tasmania, Australia, global world**
- Red circle: **Molesworth community**
- Blue circle: **MPS**
- Green ellipse across the centre: **EfS – Environment Centre; *Sustainable Schools;* Environmental Leaders Program; curricular links; community projects; inclusive School Council meetings**

Surrounding labels:

- **EfS contributions to local, state, national and international sustainability including ELS, AuSSI, DESD**
- **Extension partnerships with other Tasmanian schools via collaborative leadership**
- **Community contributions to school; mentors; School Council; land partnerships**
- **Sharing of services and space (i.e. recycling centre; community centre**
- **Community children attending school; school children entering community**
- **External students attending school; school students out migrating to larger community**
- **External partnerships brought to the school via the community (i.e. University links)**
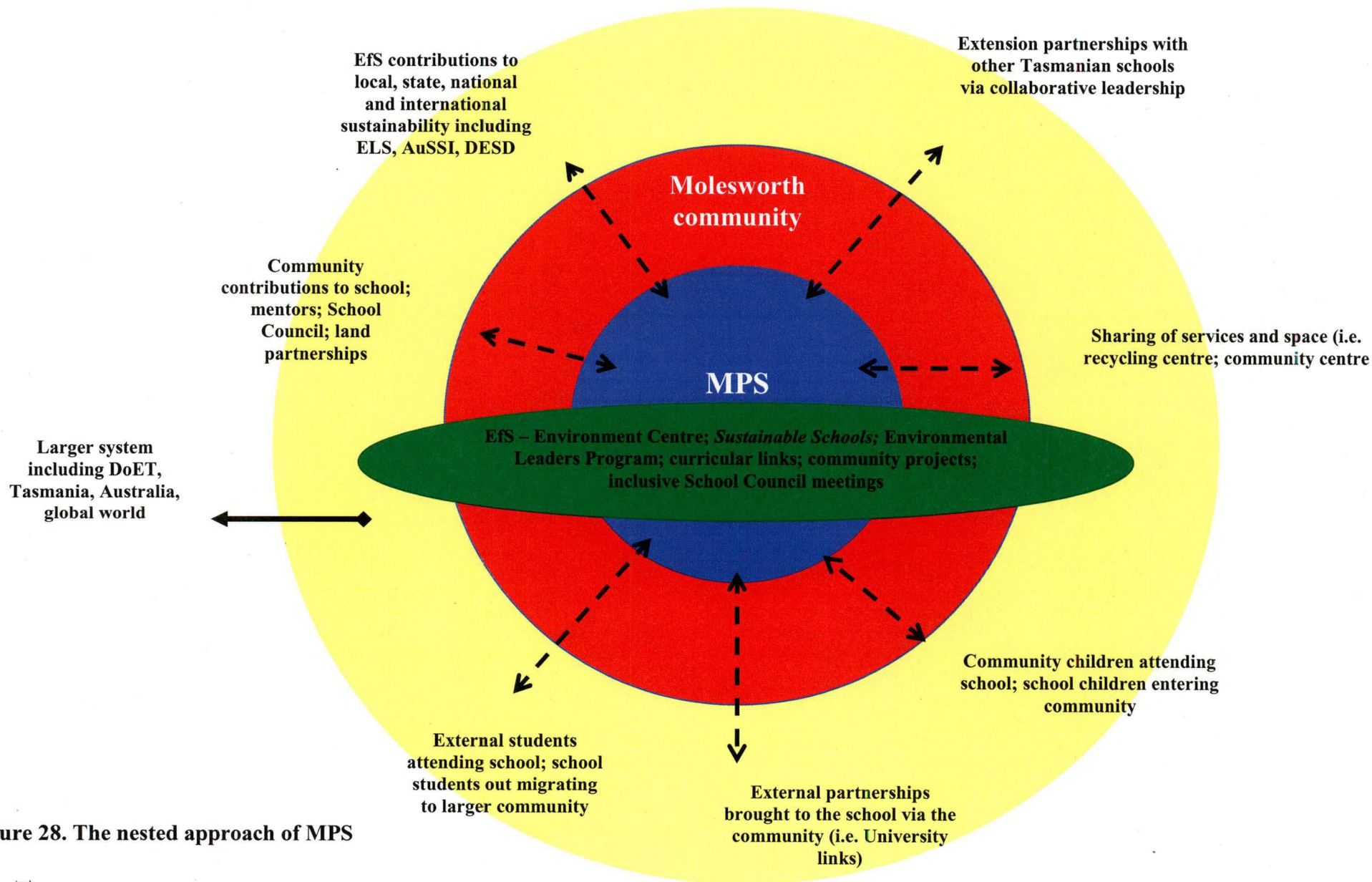
community (Istance, 2002). In this model, education for *local* sustainability infiltrates and underlays a school's entire educational approach, and is identified as the purpose and means through which the school community can contribute to state, national and global contexts of sustainability. The MPS community's embodiment of this nested approach provides an example of how a broad and inclusive vision of life-wide learning for EfS can support pedagogical and social transformations in a school and its surrounding community (Dyment & Reid, 2005).

NNPS – an isolated approach

NNPS' place-based approach was also reflective of its surrounding community. However the polarised discourse about sustainability that characterises the New Norfolk community has contributed to a fragmented approach in this school's implementation of EfS. Figure 29 shows how whole-school participation in EfS at NNPS was limited to the planting and waste projects. The *Sustainable Schools* program is shown to be disconnected from other parts of school learning, including the *Thinking* pilot project. This segregated participation typifies the divided values of the New Norfolk community. Interviews and focus groups with teachers from the NNPS community reveal this internal fragmentation to be a consequence of a perception by teachers and the surrounding community that sustainability was a topic of controversy. Teachers were unsure and uneasy about how to address what they considered a contentious issue, and so often resisted the implementation of EfS.

Figure 29 also shows how this conflict resulted in members of the steering committee conducting their EfS program in isolation from the surrounding community. While the Eco Geckos did focus their project on the local physical environment of New Norfolk, their efforts received only very limited support from the local community. Partnerships with the

New Norfolk community were limited to in-kind and monetary contributions from the Local Council. In this place-based approach, there was no attempt to access or influence local community knowledge, nor was capacity building for EfS extended into the local community through transformative or collaborative learning experiences.
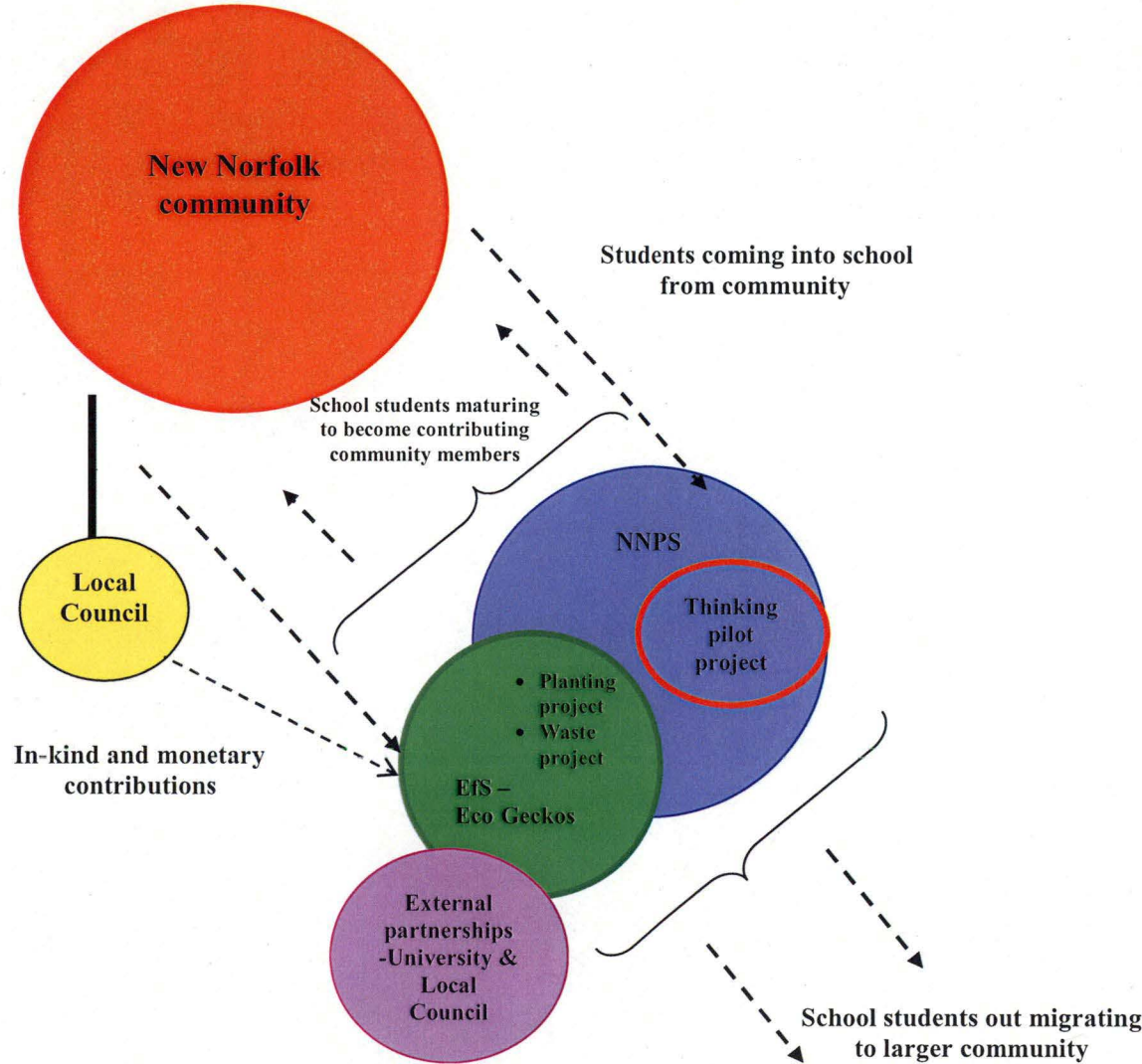

Figure 29. The distanced/divergent approach of NNPS

Comparing the two models of the case studies shows that while EfS can be committed to in vocabulary by a school community, the emerging, inclusive, participatory model of EfS envisioned by the DESD may or may not emerge. Elkind speculates that this is a failure of the constructivist education movement due to a lack of whole-systems 'readiness'. Elkind writes, 'there must be teacher, curricular, and societal readiness for any educational innovation to be accepted and put into practice' (Elkind, 2004, pg 312). In accordance with Elkind's claim, this research shows that while the ELs Framework might represent the curricular 'readiness' for integrating EfS, there are varying capacities of teacher and societal readiness to accommodate this change. For this reason it is inevitable that the ELs will be translated by particular communities of place, and affect the level to which EfS is implemented through a whole-school approach. However, as Robottom (2004) notes, constructivism in EfS requires a different pedagogical consideration than for that of other formal learnings, which suggests these varying levels of interpretation and readiness do not necessarily have to be deemed as either successes or failures of the EfS approach. Instead:

> the pedagogical dilemma seems to be different [in environmental education] ... rather than searching for and eliminating 'misconceptions', the approach is to celebrate alternative conceptions as grist for the mill of debate and critique, leading to sharper and more sophisticated understandings of the complex and contextual nature of environmental issues (Robottom, 2004a, pg 100).

Robottom's position reaffirms the inherently contextual nature of EfS implementation at the local level, which supports much of the EfS literature discussed in Chapter One. In accordance with this position, the case studies in this work reveal that there are varying interpretations and approaches to the holistic, life-wide and life-long learning approach promoted by the ELs and EfS. Therefore, in their role as pilot studies for the DoET's

Sustainable Schools project, these cases present a significant challenge for educators and architects of the Tasmanian curriculum in their determination of whether or not these school communities successfully delivered the outcomes of either EfS or the ELs. Embracing the concept that EfS is a complex and dynamic process that essentially encompasses all learning, requires that curriculum architects allow for a diverse range of interpretations and implementations of EfS to emerge (UNESCO, 2003). Therefore, this research indicates that it would be detrimental to impede novice participation in EfS by deeming a particular community's interpretation or approach as incorrect or unsuccessful. Instead, the variable approaches embodied by each of the case studies highlights that even in circumstances where only minimal sustainability outcomes are achieved, potentials and possibilities for progressive learning are still apparent. Therefore, the evidence suggests that although particular interpretations of the ELs Framework and EfS might not deliver the whole systems participatory approach promoted by the DESD it is still necessary to recognise the potential in all emerging approaches in order to celebrate and encourage future learning.

Conclusions

At the start of this work, I set out to explore how two school communities in Tasmania could address the challenge of sustainability through adopting a whole-school approach to EfS. This exploration began with an analysis of EfS policy as it is devolved through international, national and state strategic frameworks. I determined that the structures of the Australian and Tasmanian education systems appear adequately designed to deliver the whole-of-government approach enshrined in the international ideal of EfS, as defined in the United Nation's DESD. This assessment was based on the collaborative approach taken to develop and deliver education policy across the nation, as well as the provision

for life-long learning and community participation across education policy. This judgement was supported by the acknowledgment in both Australian and Tasmanian education policy that EfS is a life-wide learning process requiring support and participation from all levels of government and community.

Following an investigation of the policy frameworks that embrace EfS in Tasmania, it was revealed that political commitment to implement EfS as *foundational* to all formal curriculum is presently diluted as it is transmitted through the levels of government and into schools. While the DESD recognises EfS to require that all disciplines address the relevance of sustainability, the ELs Framework designates this topic as one among many outcomes of an integrative education. Despite the promotion by the DoET that the ELs inherently and necessarily spans all disciplines, the commitment to this integrative approach was devalued when the pilot projects trialing this curriculum were conducted through segregated and specific themes of the ELs. From the fragmented delivery of the ELs in this pilot study, the case studies reveal that devolving political commitment to a foundational EfS approach can result in reconstituted interpretations of the whole-school approach by individual school communities.

Although, each case study school employed strategies of place-based education, school/community partnerships and collaborative leadership in their attempts to deliver a whole-school integrative approach to EfS through the ELs Framework, the diverse understandings of sustainability that existed within each school community affected the extent to which a whole-school approach was embodied in each. Thus, while an individual school community may commit to the language and strategies of a whole-school integrative approach through the ELs Framework, its members can subsequently enact a fragmented, isolated and linear approach to the delivery of EfS. Therefore it becomes

apparent that although the ELs Framework intends to deliver EfS through an integrative whole-school approach, the contextualisation of sustainability inherently affects a school community's interpretation of the whole-school approach.

Of particular concern, then, is the evaluation of the achievements of individual schools in their implementation of EfS through the ELs. As the case of NNPS highlights, select individuals within a school community can be empowered to act on an isolated interpretation of the ELs Framework and EfS, which could then result in the achievement of independently determined objectives for learning and sustainable change. The result is a fragmented approach that limits the advancement of whole-school and community capacities to integrate the ELs or to address the challenges of sustainability. Recognition that whole-school approaches to EfS are based on the interpretations and subjective understandings of individual teachers and administrators within a particular school community highlights the point that overarching frameworks for EfS, while taking into account the notion of local context, do not necessarily provide flexible parameters through which local discourses can re-contribute to EfS policy. While the DESD, the AuSSI and the ELs do acknowledge the necessity of context, the case studies highlight that within individual schools, sustainability and integration remain contested concepts. In turn, this contestation affects the extent to which the recommended strategies of integration, place-based approaches, partnerships and collaborative leadership achieve their proposed outcomes.

Therefore, the case studies show that while the linear devolution of EfS policy may provide a framework through which school communities can be *introduced* to the language and objectives of EfS and sustainability, the influence of localised and individual interpretations of EfS requires thinking about, and likely warrants the development of

particular strategies to assist school communities to engage in forging discourses of sustainability that are shared in common. These strategies ought not be informed by top-down directives designed to encompass international, national and state contexts. Instead they need to come from a grassroots dialogue between school and surrounding communities, so that the partnerships, places, needs and learning are all decidedly relevant and particular to such community collaboration. Continued attention to and documentation of these local contributions and stories are required to inform and substantiate the global ideal of EfS. The usefulness of the current work therefore can be seen in its documentation of the local stories and experiences of EfS in two Tasmanian schools. While the scope and time frame of my research did not allow for a complete investigation of how the participating case studies might affect and influence state, national and international EfS policy, this work does suggest a necessity for further research to add to these contributions and explore how these collective experiences might initiate a state-wide dialogue on EfS.

To return to the question posed by UNESCO at the start of this work: 'How do you say sustainable development in your country?' This research suggests that the more prevalent question for schools is *How do you discuss, act, and embody sustainability in your school?* It has been revealed through this work, that while policy might aid a community in its pronunciation of sustainable development, the dialects through which the subtle discourses of sustainability are spoken come to have meaning in particular communities of place and interest and must be 'home grown'. Therefore, the fundamental strategy to enable EfS at the local level must be founded in processes of collaborative, grounded learning from which strategies and initiatives are created from the bottom-up. It is in this way that the evolution of EfS policy to the global ideal should be informed.

Through a locally grounded, participatory investigation, this work has emphasised that EfS

is a concept that is essentially constructed within the discourse of particular communities of place. This indicates that the top-down devolution of EfS policy, while aimed at whole world inclusion, will continue to constrain the potential for local interpretations until those local interpretations are recognised as the foundation for global sustainability. This work contends that through personal stories and the sharing of experiences, local interpretations can contribute to the evolution of EfS towards the global ideal. Therefore, this research concludes that it is only when educators, policy makers, researchers and students immerse themselves within a particular community of place or interest that the meanings, relevance and true potential of learning for a sustainable future emerge.

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Appendix 1. Focus Group Survey

Could you please describe your role as a member of the School Association/Parent and Friend Association?

How many years have you been a member of this association?

Why did you become a member of this association?

In the chart below could you please indicate the ages of the children living in your household as well as the schools that they have attended and their years of attendance at each school.

Age	Current School	Years Attended	Previous School	Years Attended	Previous School	Years Attended
Child 1						
Child 2						
Child 3						
Child 4						
Child 5						
Child 6						

Which government primary school is located the closest distance from your home?

If any of the primary school children in your household attend a school other than the one that is located closest to your home could you please indicate the reasons that this is so.

Would the presence of an environmental education program influence your decision to send your child to a particular school?

Have you participated in any projects with your child's school in the last three years? Could you please tell me what those activities where and what roles you and your child may have played in them?

Activity/Project	Your Role	Your Child's Role

The following is a list of key learning outcomes as indicated by the Essential Learnings Framework. Could you please indicate on a scale from 1-5 (1 being strongly agree and 5 being strongly disagree) the level to which you agree with the statements in Columns 1 and 2.

Key Outcome	Column 1: These outcomes are important to a school curriculum					Column 2: School is the best place to learn these outcomes				
1 = strongly agree; 2 = agree ; 3 = moderately agree ; 4 = disagree; 5 = strongly disagree										
Being literate	1	2	3	4	5	1	2	3	4	5
Being numerate	1	2	3	4	5	1	2	3	4	5
Inquiry	1	2	3	4	5	1	2	3	4	5
Reflective Thinking	1	2	3	4	5	1	2	3	4	5
Building and maintaining identity and relationships	1	2	3	4	5	1	2	3	4	5
Maintaining wellbeing	1	2	3	4	5	1	2	3	4	5
Being ethical	1	2	3	4	5	1	2	3	4	5
Creating and pursuing goals	1	2	3	4	5	1	2	3	4	5
Building social capital	1	2	3	4	5	1	2	3	4	5
Valuing Diversity	1	2	3	4	5	1	2	3	4	5
Acting Democratically	1	2	3	4	5	1	2	3	4	5
Understanding the past and creating	1	2	3	4	5	1	2	3	4	5

preferred futures										
Investigating the natural and constructed world	1	2	3	4	5	1	2	3	4	5
Understanding systems	1	2	3	4	5	1	2	3	4	5
Designing and evaluating technological solutions	1	2	3	4	5	1	2	3	4	5
Creating sustainable futures	1	2	3	4	5	1	2	3	4	5

'Creating Sustainable Futures' is one of the key learning outcomes listed in the above chart. From the following list of topics could you please indicate on a scale of 1-5 (1 being strongly agree and 5 being strongly disagree) the level with which you agree with the statements in Columns 1 and 2.

Topic	Column 1: This topic is very relevant to learning about 'Creating Sustainable Futures'						Column 2: This topic has a large focus in the curriculum taught at my child's school					
1 = strongly agree; 2 = agree; 3 = moderately agree; 4 = disagree; 5 = strongly disagree; 6 = Don't Know, Not Sure												
Conservation	1	2	3	4	5	6	1	2	3	4	5	6
Technology	1	2	3	4	5	6	1	2	3	4	5	6
Science	1	2	3	4	5	6	1	2	3	4	5	6
Ethics	1	2	3	4	5	6	1	2	3	4	5	6
Democracy	1	2	3	4	5	6	1	2	3	4	5	6
Diversity	1	2	3	4	5	6	1	2	3	4	5	6
Social Relationships	1	2	3	4	5	6	1	2	3	4	5	6
Understanding whole systems	1	2	3	4	5	6	1	2	3	4	5	6
Health	1	2	3	4	5	6	1	2	3	4	5	6

Economic Development	1	2	3	4	5	6	1	2	3	4	5	6
Equality	1	2	3	4	5	6	1	2	3	4	5	6
History	1	2	3	4	5	6	1	2	3	4	5	6
Politics	1	2	3	4	5	6	1	2	3	4	5	6
Maths	1	2	3	4	5	6	1	2	3	4	5	6
Literacy	1	2	3	4	5	6	1	2	3 ·	4	5	6
Local Environment	1	2	3	4	5	6	1	2	3	4	5	6
Community Responsibility	1	2	3	4	5	6	1	2	3	4	5	6
Personal Goals	1	2	3	4	5	6	1	2	3	4	5	6
Global Perspectives	1	2	3	4	5	6	1	2	3	4	5	6

Do you believe that the local community has a responsibility to contribute to the educational objectives of your child's school? If so, what are those responsibilities?

Do you believe that the ways a school manages its grounds, deals with its waste and uses energy and water resources are valuable learning tools that should be incorporated into the curriculum? Why or why not? How should this be done?

Do you believe that the ways in which a community manages its physical environment, deals with its waste and uses energy and water resources is a valuable learning tool that should be incorporated into local school curricula? Why or why not? How should this be done?

Any Further Comments?

Appendix 2. NNPS Group Planning Proposals

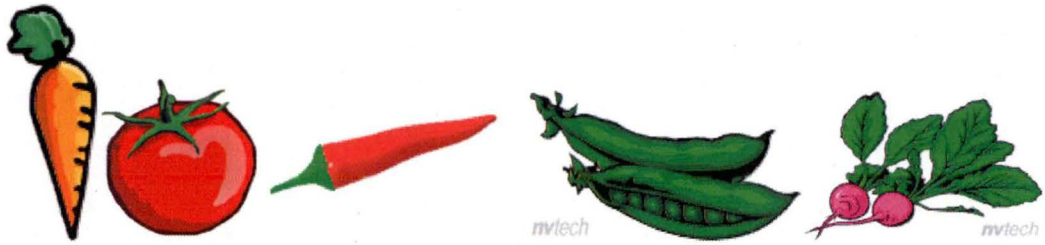The following pages contain the Eco Geckos proposals for the:

New Norfolk Veggie Garden

New Norfolk Art Murals

New Norfolk Nature Walk

New Norfolk Outdoor Classroom

New Norfolk Native Garden

New Norfolk Veggie Garden

The Eco Geckos from New Norfolk Primary School are hoping to plant a veggie garden at the school. We can use our own veggies to make all different soups for our soup day. This would be good for our school because we could enter lots of fundraisers and gardening competitions for the school. We need some gardening tools to start the project for the school. There will be a place to use the compost from the worm farm and students could learn how different veggies grow.

The tools we need are: shovels, seeds, soil, gloves, posts, fencing, pickets and watering cans. We already have: Water and compost.

In order to get the things we don't have we need to fundraise, apply for grant money and ask parents in the news letter.

We think that the best place for our veggie garden is outside the Prep room.

There are some veggies already growing here!

We can use compost from our worm farm

Students can learn how veggies grow

We can make soup for soup day.

New Norfolk Art Murals

The Eco Geckos are hoping to have another art mural to help the school look more interesting and colourful. There are places in the school that are too dark and too plain and it makes you sad to see that. We want to stop the graffiti and we want to change the looks of the school before our kids come to school here. Another art mural would make school more inspiring. We are hoping that it would be something where the whole school can help to paint colourful pictures. The Eco Geckos are going to ask one class at a time what they want to paint and then we will put it in our minds and think about it and choose the best ideas.

The things that we need to paint another art mural are:
> Paint
> More paint brushes that are bigger and softer
> Ladders or things to stand on
> Smocks
> A space to paint
> Art teacher or helping artists

Some of things we already have at the school such as:
> Some paint
> Ladders
> Smocks
> Space to paint
> Maybe the help of Lee Farrell

We want to put a letter in the newsletter to ask for help in changing this part of the school. We could also raise money by having a school disco.

There are lots of places that are too dark and grey that we need to change because it makes kids scared and they feel like they don't want to go there. An art mural in any of these places would change that.

There are places in the school that are just too plain

We would like our school to have more colour

We want to stop graffiti at our school

Some places of the school are gloomy and scary

Our school could look more colourful like this!!!

New Norfolk Nature Walk

The Eco Geckos are proposing a Nature Walk for New Norfolk Primary School. This would improve the look of the school by using native plants around our school grounds. A Nature Walk would bring native birds and other animals to our school. This would be a great way for students to learn about native plants and animals and we would learn how to care for the bush. One way that this Nature Walk can be started and kept up would be to have each class 'Adopt-a-Patch' every month with help from the Eco-Geckos.

In order for New Norfolk to have a Nature Walk, we would need:
- Native plants and trees
- Materials for a path, seats and rubbish bins (i.e. tires, stones, cement, wood)
- Pine bark
- Tools and Volunteers

Some of these of things we already have like:
- Tires
- Wood
- A few big trees
- A few rubbish bins

The things that we don't have we hope to get by donations, grants and fundraising. We would like to put a letter in the school newsletter, the local Gazette and The Mercury asking for donations of materials and volunteers. We would also like to raise money by selling food at the canteen, the discos and at home.

We believe that the Nature Walk should go at the back of the oval starting near the fort and going all the way around to the start of the infant area.
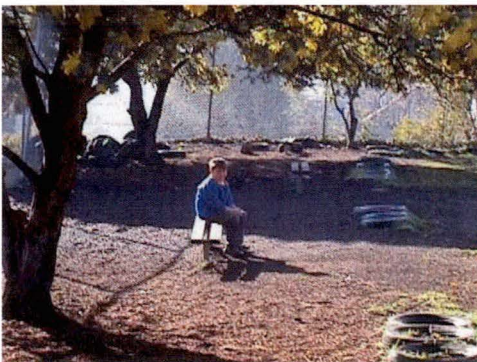
The Start of the Nature Walk

Tree planting along the way

Tire Rubbish Bins

Seats along the way

New Norfolk Primary School Outdoor Classroom

The Eco Geckos are hoping for an outdoor classroom so we can have classes outside on hot days when it is too hot to be inside. In an outdoor classroom we would get more fresh air. There are more things to discover outside than there is inside and this would be good for science and art. It would also be a good place for doing plays and presentations. We could have a roster so that all the classes could use the outdoor classroom.

In order to have an outdoor classroom we would need:
> Timber
> Building materials
> Builders
> Architects
> Tables and chairs
> Rocks
> Place to build
> Benches

Some of these things we already have and the things that we don't have we can get from asking Council for help, writing a letter to the school newsletter for parents to help and raising money with a bake sale, lunch day or selling lollies.

We think that a good place for this outdoor classroom would be down near the sand pit in the infant area.

An interesting place to learn

Lots of things to discover

We would need a rubbish bin at the classroom

There are heaps of places in the school for an outdoor classroom

New Norfolk Native Garden

The Eco Geckos are proposing a Native Garden for New Norfolk Primary School. This garden would make our school look better and more presentable and hopefully attract people to our school. Such a garden would show other students, teachers and community people how hard we worked. A native garden would help teachers to teach their students about the native plants by bringing them out of their classrooms and into nature. Seeing this garden will give students, teachers, and community members an idea of what the bush around New Norfolk looks like. A native garden would also attract and make homes for native animals, which would also offer more learning opportunities for the school.

In order for New Norfolk to have a native garden we would need:
> Native plants
> Volunteers and Helping Hands
> Garden tools
> Carpet underlay for covering and stopping the weeds
> Water
> Rocks for planting, making the garden look good and making animal habitat

Some of the things that we already have:
> Grant money from Mitre 10 and the Derwent Valley Council
> Native plants
> A few helping hands from the Eco Geckos and the Green Corps
> Water

The things that we don't have we hope to get from families of the school and people in the community. We would like to put a letter in the school newsletter and the newspaper asking for volunteers, carpet underlay, garden tools and rocks.

We want the garden to go on the weedy garden bank in the front of the school. We have measured it and it is 72 metres across and 4 metres up. We decided that planting 30 metres across would be better for the number of plants that we have. If we do an excellent job, then we might get extra money to plant the extra half.

Students could study native plants

We could get rid of all the weeds and improve the look of our school

We could measure how tall our plants grow

We can get help from the community