

MAKING THE CASE FOR “ARTS FOR SUSTAINABILITY”:

A STUDY OF EDUCATORS’ VIEWS OF EDUCATION FOR SUSTAINABILITY

by

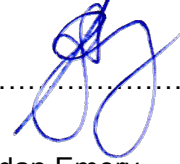
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DECLARATION

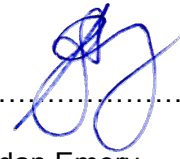
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Abstract

The Decade of Education for Sustainable Development (2005-2014) is entering its closing stages and still the field of Education for Sustainability has not achieved the paradigm-shift required to progress beyond its present stasis in the realm of environmental education. In seeking to conceptualise new ways of effecting transformative EfS, this qualitative research explores teachers' perspectives of sustainability education and their perceptions of connections between arts education and Education for Sustainability.

A study of teachers' perspectives was undertaken involving semi-structured interviews conducted with a purposive sample of five teachers following their participation in two EfS professional learning (PL) events during 2012. Clarke and Hollingsworth's (2002) model of teacher professional growth provided the framework for analysing the teachers' reports of change in their personal domain (knowledge and values) and their domain of practice resulting from their participation in the PL events. Findings from the study revealed that teachers identified arts rich education as a powerful transformative pedagogy for engaging students in EfS.

Participation in the arts engages children emotionally and cognitively, and in so doing can affect children's values and motivate them to take action. EfS calls for children to value their planet and become active agents of change. This thesis concludes that the fields of arts education and EfS attend to concepts and goals that are each fundamental to the other and provides a conceptualisation of *Arts for Sustainability* as a new field in education.

Keywords: education for sustainability, arts, arts for sustainability, capacity building, professional learning, teachers' perspectives, values, pedagogies.

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Abbreviations used in the thesis

DESD	United Nations Decade of Education for Sustainable Development
ECE	Early childhood education
ECEfS	Early Childhood Education for Sustainability
EfS	Education for Sustainability
EYLF	Early Years Learning Framework
IALEI	International Alliance of Leading Education Institutes
IMTPG	Interconnected Model of Teacher Professional Growth
NQS	National Quality Standard
NRM	Natural Resource Management
PBL	Problem based learning
PL	Professional learning
UN	United Nations Educational, Scientific and Cultural Organisation
UNESCO	United Nations
UTAS	University of Tasmania
WCED	World Commission on Environment and Development

Chapter 1 Introduction

Education for Sustainability (EfS)¹ has been identified as an urgent imperative (Hegarty, Thomas, Kriewaldt, Holdsworth & Bekessy, 2011) and the Australian education system is responding. Sustainability is embedded in the Early Years Learning Framework, (Australian Government, 2009a), and is a cross-curriculum priority in the Australian Curriculum currently being implemented throughout the nation (Australian Curriculum and Assessment Reporting Authority [ACARA], 2010).

The Brundtland Report of 1987 stated, “the world's teachers... have a crucial role to play” in bringing about “the extensive social changes” needed to effect the shift to sustainable development (World Commission on Environment and Development [WCED], 1987, A/42/427). Teachers are widely recognised as holding the key to change in schools (Fien & Tilbury, 2002; Ferreira, Ryan & Tilbury, 2007), however teachers’ perspectives have been largely absent in the discourse surrounding EfS which has been driven by academics and policy makers according to Stevenson (2007). It appears remiss to task teachers with transforming the world through EfS without first seeking perspectives from these “change agents”. This is what this research aims to do. This thesis reports on a study of teachers’ perspectives of sustainability education and their views about the potential role for arts education in this area following their participation in two EfS professional learning events during 2012.

In May and July 2012 two EfS professional learning events designed for teachers were hosted by an Australian university. Research from the first event is currently being reported (Dyment, Davis, Nailon, Emery, Getenet, McCrea & Hill, 2012). This study addresses the second event and involves a purposive sample of teachers selected

¹ Please note that the term Education for Sustainability (EfS) is used through this paper. EfS is a term used within Australia, while Education for Sustainable Development (ESD) is the term used in the international literature, and links to the Decade of Education for Sustainable Development (DESD). This thesis relates to the Australian context, therefore the adoption of the locally used term is considered appropriate.

because they attended both events and therefore can be characterised as having engaged in ongoing professional learning in EfS.

1.1 Arts + Sustainability professional learning event

An early scan of literature in the EfS discourse found frequent mention of the need for children to develop creative thinking to devise solutions to global problems of unsustainability (Fien, 2004; UNESCO, 2010). Convergences identified between EfS and arts rich education were the inspiration for the second professional learning event which I initiated with support of Faculty colleagues.

The *Arts + Sustainability* professional learning event invited teachers from early childhood, primary and secondary schools to explore the nexus between arts rich education and EfS in a day-long professional learning (PL) event. The learning framework for the event was built around the Australian Government's (2009b) five principles of EfS: Envisioning a better future; Critical thinking and reflection; Systemic thinking; Participation; and Partnerships for change (Australian Government, 2009b). The PL day was led by Dr Allen Hill, Lecturer in Sustainability and Outdoor Education at UTAS, Dr Mary Ann Hunter, Senior Lecturer in Drama Education at UTAS, and Arnold Aprill, visiting Fulbright Senior Specialist and founder of Chicago Arts Partnerships in Education (CAPE). The event unfolded through a professional conversation between Arnold Aprill and Allen Hill. This exchange of ideas opened up dialogue amongst participants surrounding sustainability and the arts. Examples from the field were shared before teachers participated in one of five hands-on arts workshops exploring the principles of Education for Sustainability (Australian Government, 2009b).

Viewed through the theoretical framework of Clarke and Hollingsworth's (2002) teacher professional growth model, this professional learning initiative can be characterised as a "stimulus" in the teachers' external domain designed to influence their knowledge, values and understandings (personal domain) of sustainability and arts education. The event invited participants to think reflexively about their practice with the intention that they would act upon the learning experiences in their own educational contexts (domain of practice). Participants were provided with a range of digital resources encompassing research and initiatives to facilitate the introduction of arts rich explorations of EfS in their practice.

1.2 Justification for the study

The Decade of Education for Sustainable Development (United Nations, 2005-2014) is entering its closing stages and still the field of EfS has not achieved the paradigm-shift required for it to progress beyond its present stasis in the realm of environmental education (Sterling, 2010; Læssøe, Schnack, Breiting, & Rolls, 2009). Narrowly-held environmental views of sustainability are prevalent in society (Stevenson, 2006; Tilbury, 2007) despite UNESCO's call for a broadened focus on a more sustainable future encompassing economic viability, a just society for present and future generations and environmental integrity.

There are many different suggested paths towards a more sustainable future evident within the literature. Key authors within the field argue EfS requires nothing short of a transformation of our society built upon a valuing of our planet and its diverse life (Sterling, 2007; Tilbury, 2007; Fien, 2003; Stevenson, 2006). The literature surrounding the theories and processes of arts rich learning is suggestive of a transformative potential (Dewey, 1934; Gardner, 1983) which aligns with the call from within the field of EfS for transformation of societies. The *Arts + Sustainability* professional learning event was therefore framed around the question "How can teachers engage students in EfS through arts-rich approaches?", and this study explores a number of participating teachers' perspectives on this topic.

1.3 Research question and context

The research focused on addressing the overarching question: in what ways can arts education and sustainability education intersect to bring about transformative learning for a more sustainable future? A collective case study (Punch, 2005) was employed to contextualise EfS by exploring the experiences of a purposive sample of teachers who participated in the professional learning events. Five teachers were interviewed between August and September 2012, four months after the initial professional learning event, providing the opportunity to explore perspectives of arts education and EfS from teachers engaged in ongoing professional learning in sustainability education. This study starts to address the absence of teachers' voices in the EfS discourse (Stevenson, 2007) through using a qualitative methodology to explore teachers' experiences of sustainability education and professional learning. Teachers are described as the "change agents" of the education system (Ferreira, Ryan & Tilbury,

2007) and their voices therefore are of fundamental importance to the EfS discourse (Stevenson, 2007). It is anticipated that reporting teachers' perspectives of EfS following their participation in professional learning stimulus events (Clarke & Hollingsworth, 2002) will help to advance the field of EfS.

1.4 Overview of the thesis

Chapter 2 presents a review of the literature relating to this study. Key concepts addressed include EfS in the Australian curricula context, arts rich education and its potential as a valuable pedagogical approach for EfS. Chapter 3 describes the rationale and the methodology in relation to the research context.

In Chapter 4 findings are presented from the thematic analysis of the interviews supported by verbatim extracts. The data is analysed through theoretical frameworks including UNESCO's four dimensions of sustainability model (the UNESCO framework) (UNESCO, 2005); the five principles of EfS (Australian Government, 2009b); and Clarke and Hollingsworth's (2002) model of teacher professional growth. The results of the study are discussed in relation to the key literature and the research question in Chapter 5. The implications arising out of this study are presented in Chapter 6.

Chapter 2 Literature Review

2.1 What is Education for Sustainability?

Defined simply, sustainability “addresses the ongoing capacity of Earth to maintain all life” (ACARA, 2010, n.p.). At the outset of the Decade of Education for Sustainable Development [DESD] in 2005, the (then) Secretary of the United Nations, Kofi Annan declared “Our biggest challenge in this new century is to take an idea that seems abstract – sustainable development – and turn it into a reality for all the world’s people” (UNESCO, 2010, n.p.). UNESCO identifies education as being society’s most effective means for bringing about this reality, but contends a reorientation is required “to integrate the values inherent in sustainable development into all aspects of learning in order to encourage changes in behaviour that allow for a more sustainable, economically viable and just society for all” (UNESCO, 2005, n.p.).

According to Davis (2010), sustainability is a “confused and contentious topic that has no universally accepted terminology or definition” (p. 2). Sustainability has become an expression used in daily life across many contexts but it is open to widely different interpretations (Fien & Tilbury, 2002). For example, Stables (2010) points to issues of sustainability including climate change, increasing population, declining biodiversity, pressure on land for both food and fuel, and pollution as presenting immediate threats to humankind. The influential Brundtland Report, known as “Our Common Future”, summed up sustainable development as that which “meets the needs of the present without compromising the ability of future generations to meet their own needs” (WCED, 1987, p. 43). Meanwhile Hawkes (2001) offers “ecologically sustainable development” as a further interpretation, which relies on a balance between environmental responsibility, social equity, economic viability and cultural development (p. 25).

A December 2009 report from the International Alliance of Leading Education Institutes (IALEI) offered a snapshot of progress by ten nations, including Australia, on the journey to EfS (Læssøe, Schnack, Breiting, & Rolls, 2009). While acknowledging that many promising practices have emerged internationally during the DESD, the IALEI report concluded, “The challenge today [is] to replace a narrow and marginal approach to EfS with a much more comprehensive and innovative approach” (p. 27). The authors problematise the current widespread interpretation of sustainability which they argue is limited to environmental efforts and a view of education that focuses on “teaching

children the correct form of environmentally friendly behaviour” (p. 27). Fien (2004) likewise is critical of the tendency for education to focus on nature conservation as opposed to encompassing a holistic model, which he argues should be the basis of sustainable development.

A more comprehensive, holistic approach to the creation of a sustainable future requires reorienting education towards solutions that encapsulate the complex relationships between environmental, socio-cultural, political and economic objectives (Fien, 2004; Læssøe, Schnack, Breiting, & Rolls, 2009). The challenge facing teachers is to develop in their students the competencies necessary to participate in those solutions (Læssøe, Schnack, Breiting, & Rolls, 2009). Unfortunately, as Stevenson (2007) argues, the emphasis on the acquisition of environmental knowledge and awareness in school programs has overshadowed the problem-solving and action-oriented goals associated with EfS. Davis (2010) argues that children have capacities to be active agents of change now, as well as into the future, and that early learning is important for shaping attitudes, knowledge and actions.

Numerous sustainability forums and summits have brought representatives from the international community together over the past two decades to renew political commitment to sustainable development, assess progress made to date and address new and emerging challenges (United Nations [UN], 2011). The first Earth Summit in 1992 saw an unprecedented 172 countries meet to find ways to halt the destruction of irreplaceable natural resources and pollution of the planet (UNESCO, 1997). This and further United Nations conferences provided an opportunity for the international community to discuss and eventually agree on a set of eight Millennium Development Goals to be achieved by 2015 (UN, 2000).

Global sustainability targets within the Millennium Development Goals agenda include the integration of sustainable development principles into country policies, universal primary education, reducing biodiversity loss and improving living conditions and access to safe drinking water and sanitation for the worlds’ most impoverished peoples (UN, 2000). Ways of thinking about and working towards sustainable futures have evolved during the Decade of Education for Sustainable Development (UNESCO, 2005). As the decade approaches its 2014 culmination it is timely to consider EfS in the current educational context in Australia and examine the potential of new approaches.

2.2 Theories related to EfS

Four key values for sustainable futures are identified by UNESCO (2005). These values are: conservation of natural systems and resources; peace and equity amongst peoples; appropriate development with a long term vision; and democracy which enables people to participate in decision making about the management of natural, social, political and economic systems. Sustainability is often graphically represented as a holistic field incorporating social, environmental, economic and political dimensions of issues (see for example Figure 1).

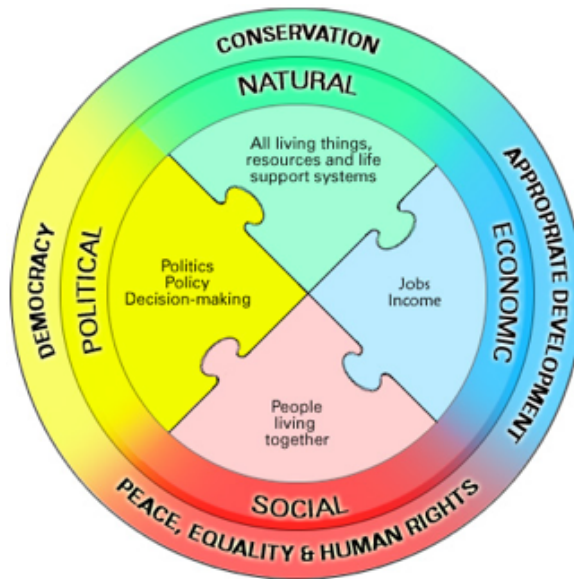


Figure 1. Four dimensions of sustainable futures (UNESCO, 2005).

Noting that knowledge of the inter-connected nature of these systems is an important beginning, Tilbury (2007) highlights that such graphic representations are a simplification and sustainability requires transforming current systems rather than merely linking them. There is a well-documented history in the EfS discourse of calls for transformation of the current system (Fien & Tilbury, 2002; Sterling, 2010; Wals & Jickling, 2002). Luke (2006) highlights the central role of learning in achieving transformation within the education system, asserting, “as we face the social and cultural, political challenges of this millennium... the making of knowledge and pedagogy is the key to educational change and to reawakening the transformative and generative capacity of educational systems” (pp. 5-6). According to Mezirow (1991), the process of transformation involves revising perspectives through processes of critical

reflection. This has the potential to alter frames of reference; the assumptions through which experiences are understood, and Mezirow argues such critical reflection can lead to paradigmatic and behavioural shifts.

Noddings regards current curriculum approaches and classroom practices that “reify knowledge acquisition, cognitive performance and measurable outcomes at the expense of caring for ourselves, others and the rest of living and non-living nature as being key to the paradox of un-caring in the modern world” (as cited in Fien, 2003, p. 5). Noddings calls for education to be oriented towards developing an ethic of care, (1984, cited in Fien & Tilbury, 2002). Ethical and value clarification has evolved as an important outcome of EfS, however Eilam and Trop (2011) argue that the literature within the field “scarcely provides practical pedagogies for producing such a process” (p. 50).

Developing an ethic of care requires more than cognitive knowledge about the planet and its systems. Turner and colleagues (2010) note that “the simple accumulation of knowledge about ecology and pollution does not necessarily lead to a fondness for nature or an intuitive wisdom about how to live in harmony with nature” (p. 86). The role of knowledge in transforming societies to more sustainable models is further problematised by Kollmuss and Agyeman (2002) and Hungerford and Volk (1990), who report that changes in environmental knowledge do not necessarily cause change in environmental attitudes or behaviour. This remains a contested area of debate. Others argue that for children to care for their planet’s future, they need to experience the wonder of it, with real education requiring firsthand knowledge (Whitehead, 1967, cited in Orr, 2004; Dewey, 1934; Kolb, 1984). Advocating a joining together of empirical knowledge and emotions in education, Orr (2004) declares, “There is no way to separate feeling from knowledge” and “no good reason to separate mind or body from its ecological and emotional context” (p. 31).

Caine (2004) contends, “School is never just about math or literature. School is about how a living organism interacts with its world and what happens to it as a result” (p. 8). Such positions suggest the imperative of embracing more expansive approaches than the current empirically focused educational system recognises. “A proper understanding of the way the world works requires people to think systemically, holistically, integratively, and in a futures mode” (Milbrath, 1989, p. 194). The importance of

children valuing the planet and its many life forms is well established (Noddings, 2006; Fien & Tilbury, 2002; Orr, 2004). What is less clear is how teachers can achieve this.

2.3 EfS and the Australian context

A national curriculum is being developed and phased into Australia's education system. This program of wide-ranging reform has been driven by five key imperatives: global integration, interdependence and population mobility; the emergence of Asia and the consequent need for Asia-literacy; globalisation and technological change; increasingly complex environmental pressures; and rapid advances in information and communication technologies (National Curriculum Board, 2008).

The concept of sustainability is now part of the national curriculum across all years of education in response to these imperatives. *Belonging, Being and Becoming*, the Early Years Learning Framework for children from birth to five years was introduced nationally in 2009 with sustainability embedded in its learning outcomes (Australian Government, 2009a). The new Australian Curriculum being phased into the wider school system introduces sustainability as a cross-curriculum priority (ACARA, 2010).

The Australian Government strategy for the United Nations DESD, *Caring for our Future*, outlined the government's commitment to embed EfS in formal schooling throughout Australia, reinforcing the importance of communicating concepts of EfS and developing suitable training and professional development (Australian Government, 2007, p. 5). The *National Action Plan for Education for Sustainability* (Australian Government, 2009b) is underpinned by the following five learning principles (Tilbury & Cooke, 2005, Tilbury, 2007):

Envisioning a better future, which aims at engaging people in developing a shared vision for a sustainable future;

Critical thinking and reflection, challenging people to examine ways of interpreting the world and how knowledge and opinions are shaped;

Systemic thinking, a way of thinking based upon understanding how complex systems function, identifying the root causes of unsustainability;

Participation, which aims at building learners' capacities to take action for change towards sustainability by placing them at the centre of active participatory experiences with learning, facilitation and decision making in the hands of the learners; and

Partnerships for change, in recognition that formal and informal partnerships which share learning experiences can strengthen commitment and accelerate the process of change towards sustainability.

Elliott and Davis (2009) argue the prevailing orientation toward EfS embodied in these principles emerges out of critical theory, and attempts to replace a narrow 'green' focus on sustainability with a focus "on the pedagogies of humans as agents for change" (p. 67).

2.4 Learning processes of EfS

The Australian Government's principles of learning for EfS emphasise active experiences and reflective processes. Kolb (1984) defines such experiential learning approaches as involving processes "whereby knowledge is created through the transformation of experience" (p. 38). Following Dewey's theories surrounding learning through experience (1934), Kolb (1984) proposed a model of learning beginning with concrete experience, before proceeding through stages of reflective observation and abstract conceptualisation, to active experimentation in new situations. According to Kolb's model, learners begin new cycles in a process of continuous learning in which deeper meaning can develop (1984).

Warburton (2003) describes deep learning as crucial in the case of sustainability education "where holistic insight... is central to the whole exercise" (p. 45). Deep learning involves paying attention to underlying meaning and is associated with a range of skills including imaginative reconstruction and independent thinking (Warburton, 2003). This iterative nature of learning applies to teachers as well as to students. In the Interconnected Model of Teacher Professional Growth (IMTPG), teacher growth is constituted "through the evolving practices of the teacher, which are iteratively refined through a process of enaction and reflection" (Clarke & Hollingsworth, 2002, p. 955).

Fien (2004) highlights the foundational role of creative imagination in envisioning preferable futures from the personal to the global level, one of the Australian Government's (2009) principles of EfS. Creativity is evident in the *National*

Environmental Education Statement for Schools in Australia (2005) which recommends pedagogies encompassing experiential learning, values clarification, creative thinking, problem solving, story telling and inquiry learning as important to EfS.

2.5 EfS, creativity and the arts

This research explores a “pattern that connects” (Bateson, 1980, p. 9) arts education and EfS and proposes a conceptualisation of “Arts for Sustainability”. Calder and Clugston (2005) proposed that the critical question to be asked at the outset of the DESD was, “What sort of education will allow learners to pursue their diverse cultural and context-specific paths towards sustainability?” (p. 8). That question influenced the direction of this study which sought to explore intersections between sustainability and arts education. EfS requires that children value their planet and care for themselves and others and there have been numerous calls for EfS to be values driven (Davis, 2010; Calder & Clugston, 2005; Fien, 2007). Hitlin and Piliavin (2004) argue individuals’ values provide motivational impetus for social action and frame the appropriate means and ends for such action. Values clarification involves learners clarifying their thoughts, feelings and commitments to enrich their awareness of their own values (Tilbury, Coleman & Garlick, 2005).

Gardner (1990) and Ewing (2010) contend that children’s values are impacted through participation in the arts which, in turn, invites exploration of the potential for engaging children in EfS through the arts. Further, a society’s values and the way they are expressed represent a society’s culture (Hawkes, 2001). Ewing (2010) highlights the potential for the arts “to foster connections between children’s culture, language and experience and lead to transformative changes in their understandings, so that they can interact with their social and physical environments, making new connections and seeing new possibilities” (p. 34). Recent literature explores convergences between the arts and the field of sustainability (Kagan, 2011 & 2012). Within the field of education, connections between arts education and sustainability are also being scoped out (see for example Everett, Noone, Brooks & Littledyke, 2009). In a chapter entitled “Education for sustainability in primary creative arts education”, Everett et al (2009) advocate the arts for the universal languages they offer in connecting people with big ideas and envisioning a better future for the world.

The *Australian Curriculum: The Arts* is due for implementation into Australian schools in 2014. During the consultation phase (in 2012) the *Shape of the Australian Curriculum: The Arts* (the Shape Paper) provided insights into the future direction of arts education in Australia (ACARA, 2011). As indicated in the Shape Paper, the curriculum will focus on five art forms including dance, drama, media arts, music and visual arts (see Appendix A). The overarching organising approaches within the curriculum will emphasise both arts “making” and “responding”, reflecting processes conceptualised by arts education theorists including Abbs (1989) and Gardner (1990) (ACARA, 2011). The Shape Paper elaborates on the role of the arts in relation to the sustainability cross-curriculum priority:

Using the exploratory and creative platform of the arts, students will develop a worldview that recognises the importance of social justice, healthy ecosystems and effective action for sustainability. They will use the arts to communicate their developing understanding of the concept of sustainability. (ACARA, 2011, p. 22)

In a review of the arts in the Australian education context, Ewing (2010) argues that the latter part of the 20th century has seen the arts become increasingly regarded as peripheral to education and relegated to the margins. Efland (2002) highlights the tendency within education to regard the arts as belonging solely to the affective realm of feelings, a notion that has continued despite a significant and growing body of theory advancing the arts as products of cognition (Goodman, 1978; Gardner, 1983; Ewing, 2010) and a form of inquiry which discovers, creates, and enlarges knowledge (Goodman, 1978). Abbott and Wilks (2000) have prepared a table of the cognitive processes that the arts involve which suggests the many ways in which the processes of the arts can address curricula outcomes and attend to the goals of EfS (Appendix B).

Gardner (1983) advocates a more central role for the arts in education, contending that they can serve as a means to an end other than art, with modalities and symbolic systems able to be directed towards other constructed cognitive goals. This concept is evident in the Shape Paper which highlights,

The Arts have a special relationship with learning, in that the arts can be learned and can be used as a tool by which to learn about something else. Fully understanding the arts involves critical and practical study. Through critical and

practical study students have the opportunity to explore, experiment, create, analyse and critique, and ultimately discover multiple meanings (ACARA, 2011).

These curriculum writings suggest the possibility of the arts serving as a bridge to other learning areas. Ewing (2010) includes EfS among these other learning areas in stating, “Arts education should be focused on the full range of contemporary society and cultural issues that young people are grappling with, as they consider the future. Their issues include the environment, migration, sustainable development, global citizenship and the need for peace” (p. 55).

Beyond these “instrumental benefits” of the arts as indicated by Gardner (1983) and evident within the Shape Paper, Koopman (2005) advocates arts education for the intrinsic value of the process of engaging with the arts. Koopman highlights Dewey’s assertion that the arts are among the principle experiences offering fulfilment in life.

Dewey (1934) emphasised the roles of perception and experience within the arts arguing that through these means we come to better perceive other objects and events, including ourselves and other people. Dewey attached importance to experiential forms of learning directly connected to the lives, cultures and interests of young people and their communities (McInerney, Smyth & Down, 2011). Eisner (1994) furthered Dewey’s work, suggesting the arts refine the senses through which we have access to the experiences that expand our consciousness and accordingly our ability to express our knowledge in forms of representation. Pugh (2002) builds upon these theories, proposing that individuals undergo transformative experiences when they actively use concepts, discover such concepts allow them to see aspects of the world in a new way, and personally value such new ways of seeing (p. 1104).

2.6 Teachers and EfS

Teachers hold the key to change in schools (Ferreira, Ryan & Tilbury, 2007). Stevenson (2007) argues teachers are both subjects and agents of change with their own practical theories of education that shape their curriculum and pedagogical decision-making.

These theories incorporate their beliefs, assumptions and values about schooling, knowledge, teaching, students and learning (Stevenson, 2007). Teachers’ values and beliefs have been shown to influence the educational content that is taught to students (Tatto, 1996).

The Brundtland Report (WCED, 1987) represented a key shift in education from a focus on “the kind of development that would respect and nurture the natural environment” to encompassing “social justice and the fight against poverty as key principles of development that is sustainable” (UNESCO, 2002, p. 7). Accordingly UNESCO identified the professional development of teachers in education for sustainable development (EFS) as “the priority of priorities” (UNESCO–UNEP, 1990, p. 1). Since that announcement numerous resolutions have been drafted highlighting the need to reorient teacher education towards sustainability (UNESCO, 1997, 2005; Ferreira, Ryan & Tilbury, 2007).

Loucks-Horsley, Stiles, Mundry, Love and Hewson (2010) advocate teacher learning programs that engage teachers in strategies that produce transformative learning, which change deeply held beliefs, knowledge, and habits of practice. According to Mezirow’s theory, this requires teachers to actively engage the concepts presented in the context of their own lives through identifying and examining their own assumptions and values (1991). The EfS challenge of transforming education through professional development is problematised by Thompson and Zeuli (1999) who contend “...teachers will have to unlearn much of what they believe, know, and know how to do while also forming new beliefs, developing new knowledge, and mastering new skills” (p. 341). Clarke and Hollingsworth (2002) argue that teachers’ beliefs change when they try new teaching practices and find those practices produce noticeable outcomes.

2.7 Conceptual framework for teachers’ professional growth

Clark and Hollingsworth’s (2002) framework for understanding change through professional learning reflects the complexity of the field of sustainability and the imperative for adopting transformative practices in EfS, including personal transformation. Their Interconnected Model of Teacher Professional Growth (IMTPG) (Clarke & Hollingsworth, 2002) provides a conceptual framework for exploring teachers’ perspectives and practices surrounding EfS (See Figure 2.).

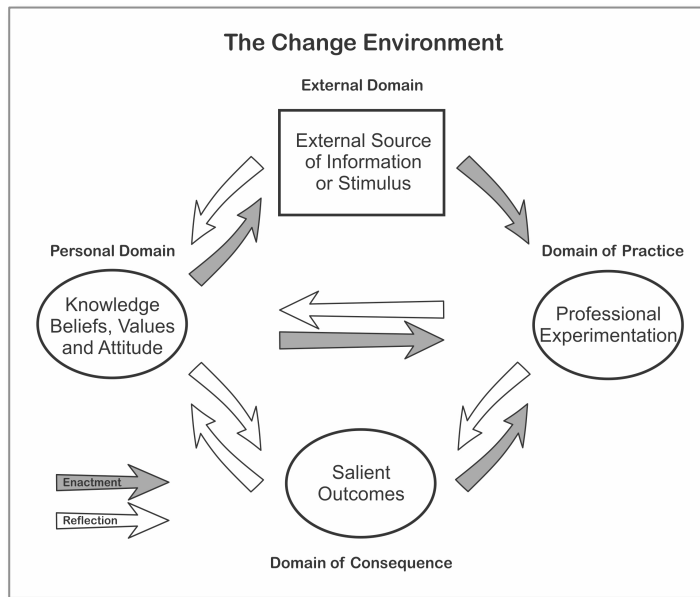


Figure 2. An Interconnected Model of Teacher Professional Growth.
(Clarke & Hollingsworth, 2002, p. 951)

According to this model, teachers' professional growth occurs in four domains that change through the mediating processes of "reflection" and "enactment". The four domains that encompass the teacher's world are summarised as the personal domain (teacher knowledge, beliefs and values), the external domain (sources of information, stimulus or support), the domain of practice (professional experimentation) and the domain of consequence (salient outcomes) (Clarke & Hollingsworth, 2002). The PL events represented a stimulus in the external domain which connected both with the teachers' initial ideas and values (the personal domain) and with their teaching practice (domain of practice). It can be argued that the participants targeted for this study had been engaged in a PL change process that could be identified in each of the external, personal, and practice domains described above.

2.8 Conclusion

This chapter reviewed key literature underpinning the study and identified critical debates within the discourses of Education for Sustainability and arts education. In the following chapter the research methodology for the present study is outlined.

Chapter 3 Methodology

This chapter details the theoretical position underpinning the present study and the qualitative research approach taken. A collective case study method was employed, bounding the case (Punch, 2005) by focusing on a small group of teachers who had shared the common experience of participating in two EfS professional learning events at an Australian university in 2012. This chapter discusses the compatibility of this method in relation to the research methodology and explains the data analysis process.

3.1 Theoretical position

This study arose from a constructivist philosophy of education which focuses on individuals' meaning making activity (Crotty, 1998, p. 58), and validates diverse experiences and multiple realities (Kumar, 2005). This philosophy is based on the premise that people "build their understanding of the world through experience, maturation, and interaction with the environment [and] other individuals" (Rovai, 2004, p. 80). The aim of this research was to develop understandings of teachers' perspectives of EfS, and thus a qualitative methodology was called for to enable their experiences to be explored in greater depth (Yin, 2011). Through dialogue the researcher can become aware of the perceptions, feelings and attitudes of others and interpret their meanings (Kvale, 1996), thereby producing exploratory and descriptive knowledge (Schmidt, 2005). These qualities were influential in the choice of a case study approach and qualitative interviews for data collection.

3.2 Case Study

A case study explores the experiences of one group of people while valuing the individual context of each member of the group (Punch, 2005). As this was a case study about teachers who had participated in particular EfS professional learning events, the individual nature of participants' experiences could be explored. Yin (2011) suggests a case study involves deeper, more comprehensive investigation of participants' understandings and experiences of a particular context, which can be used to seek a holistic understanding of a phenomenon.

3.3 The participants

A purposive sample of five participants was selected for this study (Yin, 2011). Generating a rich descriptive picture of teachers' values and experiences of EfS required that participants had some awareness and experience of EfS (Yin, 2011). The participants selected for the study were teachers and/or pre-service teachers who participated in the two EfS professional learning events conducted in 2012. It could be assumed that through their ongoing engagement in professional learning they had acquired a level of informed awareness and experience of EfS. Participants were recruited by direct personal contact at the conclusion of the second PL event.

The study's participants operated in a diverse range of contexts. Two were classroom teachers, one based within an independent primary school, the other in a state school. One participant was a classroom teacher working in a voluntary capacity co-ordinating a school/community garden project during a year's parenting leave. One participant was an educator at a technical college (Technical and Vocational Education and Training provider) delivering the Diploma in Children's Services. This participant also conducts training for early childhood teachers in a national Early Childhood Education (ECE) organisation. One participant was a mature-age first year Bachelor of Education university student undergoing a career change after 15 years of working in the eco-tourism industry and as an eco-tourism educator at a technical college. It is important to note that the participants in this study worked with students of varying ages and in varying contexts. All participants are referred to by pseudonyms in this study in order to preserve their confidentiality.

3.4 Ethics

This research study was conducted in accordance with the ethical guidelines for studies involving humans. Ethics approval was received from the UTAS Ethics Committee in July 2012. Following recruitment of participants at the second PL event, a Participant Information Sheet (Appendix C) was provided to each interviewee to ensure they fully understood the research study before consenting to take part. Participants were invited to take part in an interview of no more than one hour's duration with the focus on Education for Sustainability.

The Consent Form (Appendix D) was signed prior to the start of the interview. Participation in the research was voluntary, and interviewees were assured that their identities would be protected through the use of pseudonyms. Participants could withdraw from the research project or withdraw information at any time without reason before the information was analysed. Before the data from the interview was processed, participants were given the opportunity to read and amend the transcript.

3.5 Interviews

The data for this study was gathered by conducting five individual interviews during August and September 2012. Each interview lasted between 25 and 45 minutes, and was voice recorded. Kvale (1996) identifies the human interaction of interviews as a source of scientific knowledge. The aim of these interviews was to develop knowledge of teachers' perceptions of EfS as they related to their individual lived experiences. A semi-structured interview method was chosen for its ability to allow the researcher to adjust aspects of the questioning to accommodate the various contexts of the participants (Kvale, 1996). Meanings of comments were clarified within the interviews, an approach advocated by Kvale (1996) as a "methodic ideal" since it enables initial analysis to be built into the interview situation itself. Kvale argues that meaning clarification conducted within interviews enables the final analysis to "rest on more secure ground" (p. 178) and this technique was employed to assist in presenting a balanced reporting of findings.

At the commencement of the interviews, participants were initially asked to provide background information about their teaching role, including their educational setting and length of experience in the role in order to establish contextual details for the interview. The study of teachers' EfS perspectives and espoused practices was guided by four questions which related to the overall research question:

1. What are teachers' values surrounding sustainability and EfS?
2. What pedagogies and practices do teachers use to engage students in EfS?
3. What effects, if any, did participating in the EfS PL events have on the teachers' practice?

4. In what ways can teachers engage students in EfS through the arts?

The interview schedule is included in Appendix E.

I transcribed the interviews from the voice recordings employing denaturalised transcription (Oliver, Serovich & Mason, 2005) whereby idiosyncratic or broken elements of speech (e.g., stutters, nonverbal and involuntary vocalizations) are removed to provide a more comprehensible account of the interview. Following the approach documented by Saldana (2011), salient words and passages in the transcripts were italicised and pauses, significant vocal cues and gestures were indicated in italics enclosed in parentheses to help contextualise the comments. The transcripts were emailed to the five interviewees for checking and all were returned with only minor amendments, largely involving the removal of grammatical errors and conversational artefacts such as “um” and “ah”.

3.6 Thematic Analysis

Braun and Clarke (2006) define thematic analysis as a method for identifying, analysing and reporting patterns (themes) within data and further characterise it as a theoretically flexible research tool which can potentially provide a rich and complex account of data. This study employs both latent and semantic thematic analysis to analyse the teachers' interviews using methods described by Braun and Clarke (2006). The transcripts of the interviews appear in Appendix F.

The thematic analysis at the latent level examines “the underlying ideas, assumptions, and conceptualisations – and ideologies - that are theorised as shaping or informing the semantic content of the data” (Braun & Clarke, 2006, p. 84). The interview data was coded initially using the UNESCO (2005) four dimensions of sustainable futures framework (Figure 1) and secondly with the Australian Government's (2009b) five principles of EfS (outlined in section 2.3). Considering the data through these theoretical lenses brought a range of different insights into focus. The interviews were coded according to the “...purpose of the study, the researcher's knowledge and the constructs made” (Burns, 2000, p. 471). A further semantic thematic analysis focused on the explicit meanings of the data (Braun & Clarke, 2006).

Clarke & Hollingsworth's (2002) model of teacher professional growth (Figure 2) was used for the analysis of research question 3 which asked how participation in the professional learning events had affected the ways teachers engaged students in EfS. Through the selective use of this model, the relationship between the stimulus events (external domain) and the teachers' knowledge, beliefs and values (personal domain) was prioritised.

3.7 Limitations of the study

This study explores the perspectives of five teachers in Northern Tasmania who participated in professional learning events presented at an Australian university in 2012. Clarke and Hollingsworth's (2002) model of professional growth indicates stimulus events (an influence in a teacher's external domain) can result in change in the teacher's knowledge, values and beliefs (personal domain). While it is not suggested that participation in the PL events caused particular changes relating to teachers' values and experiences of EfS, it can be suggested that the events may have informed the teacher's experiences.

Punch (2005) argues that case studies can develop propositions which link concepts within the case and that such findings may be generalisable. This has been the approach adopted in the study, which links the concepts of arts and sustainability. Punch argues that while the one case study will not prove the generalisability of its findings "it can certainly suggest such generalisability, putting forward concepts or propositions for testing in further research" (p. 146). This study proposes arts rich education and EfS share synergies that are worthy of further research.

3.8 Conclusion

This chapter outlined the rationale guiding the qualitative methodology underpinning this study and described the methods adopted for the interviews and analysis of the data. In the following chapter the findings from the thematic analysis of the interviews are detailed.

Chapter 4 Findings

This chapter presents the key findings from the case study addressed in the order that the questions were asked within the interviews. The findings of the research reported in this chapter reveal that overall the teachers were united in holding strong views about sustainability and were proactive about involving students in initiatives that they perceived as addressing sustainability. Environmental actions and practices characterised much of the sustainability learning which the teachers involved their students in, chiefly through gardening and outdoor initiatives.

4.1 Educators' values and views of sustainability and EfS

Themes arose that indicated the teachers were concerned for the future of the planet and consequently regarded EfS as essential. Some options for action were outlined, many of which revolved around increasing children's access to nature.

4.1.i *Concerned for the future of the planet*

All five teachers signalled their concerns for the future of the planet and their view that some fundamental changes need to take place in our society in order to bring about a more sustainable world. "[We need] to make that jump into thinking in a sustainable way and accepting that perhaps we've really stuffed up and that things actually need to change at a really broad level" (Julie).

Kids completely get that the planet is stuffed, they know. What we need to do now is give them the skills to then cope and adapt to that, (*pause*) not raise a generation that is completely oblivious to the whole issue. (Liz)

EfS was regarded by all five teachers as being vitally important. The participants prioritised making children aware of "what is happening" in the world:

It's pretty evident that something needs to change... In my observations in society it seems to be... more of an attitude that needs to change. So that's where I think it's really important in ECE to bring that awareness of what's actually happening. (Carolyn)

Karen indicated that her students' attitude towards sustainability had influenced her values in this area:

So with sustainability, I don't just teach sustainability... it's in everything we do. I've become really passionate about that, and I think that's because the kids are passionate about it. As far as I'm concerned now there's no other way to be.
(Karen)

Liz's comments too highlighted children's awareness of sustainability issues:

You ask any kid what climate change is or what global warming is, they know in their own limited way.... I don't think we need to teach kids (*pause*) that the planet is warming up any more; I think we've passed that.... There's so much advertising isn't there about being green? It's becoming more mainstream. (Liz)

4.1.ii 'It's time' – for changing values and changing ways

The teachers suggested that children's values needed to change and that they need less 'stuff' in their lives and more experiences of the natural world:

I think we just need to go back to basics really. For lots of reasons, but mainly that we need children to value what we have, not just as far as commercial things and things that are fast and ready and things that entertain children. But we need them to have a real affinity with nature, to respect the community they come from, to understand what the community offers them, and to appreciate and value what we have around us with our natural resources. (Charlotte)

Julie echoed this critical view about the prevalence of commercialised experiences in children's worlds: "They [children] have a lot of ideas about computer games and movies, and I guess that will always be the case." She contrasted this with children's access to nature:

I think the environment is a very real context for children. I think that is where they want to be. It's something that they are denied quite a lot of access to. I think that children are fairly indoors bound... certainly compared to when I grew up thirty years ago so I'm acutely aware that children... don't have a lot of conscious awareness of the world around them. (Julie)

Charlotte likewise spoke of a lack of access to nature, and explained how she encouraged her Diploma of Children's Services students to be active about bringing nature inside the classroom:

For the children or the teachers who are in suburban built up areas that don't have access to outdoor environments in the community like farms that they can walk to, we try and bring things in from the environment to expose the children to those different things. (Charlotte)

Karen highlighted the importance of taking action sooner rather than later:

I've realised that really we've got to do something. If we don't do something now these kids, and their kids will live in a world that's going to be so different and I'd like to think that the world and what's in it, all the good stuff, is still going to be about. (Karen)

4.2 Practices and pedagogies teachers employ for engaging students in EfS.

The majority of the EfS practices and pedagogies discussed by the teachers involved students participating in various types of nature learning through active measures including vegetable gardening, as well as passive, immersive measures such as bringing nature into the classroom or conducting lessons in the outdoors. Between them, the teachers suggested more than 20 practices and pedagogies for engaging students in EfS and a summary of these appears in Appendix G. The curriculum was discussed in relation to EfS pedagogies with a range of perspectives offered.

4.2.i EfS in the veggie patch

Vegetable gardening featured prominently in the interviews. Liz and Karen spoke of their experiences of involving students in growing vegetables. Liz was quite explicit that through her role in the school garden she was endeavouring to prepare students for an uncertain future:

I've tended to use the [vegetable] garden as a tool that can stimulate or allow the opportunity to talk about scientific phenomena of the biological world.... [I'm] just imparting the knowledge that these kids will need to adapt and be in a different world that has to adapt to be sustainable. I'm trying to give them attitudes and skills and some kind of connection with where food comes from, how we produce it, how we eat it. We are going to have to know all of that stuff so it's sowing the seed of the idea that you can grow vegetables if you plant a seed and nurture it for six months, then you get food. (Liz)

Karen's nature explorations went well beyond the vegetable garden although her students reportedly had quite an attachment to their vegetable patch:

We are involved with the [School A] garden, we're growing our broad beans. The kids love it, they love to get out of the classroom and they nurture and care for those plants like they were babies. And they just love being up there, they love it to be growing, they measure, they can't believe the flowers are coming. They've been discussing what they can do with their broad beans. (Karen)

Karen further described involving her students in three other environmental settings as part of their education program: [School A] Wetlands in a landcare type capacity of planting, maintaining and improving a wetland environment; a midlands farm in a partnership with a farmer and Natural Resource Management [NRM] to remediate a degraded creek environment; and Tamar Wetlands in an experiential capacity. Taken together, Karen's initiatives go beyond the vegie patch and present opportunities for students to engage in the principles of EfS including partnerships for change, systems thinking, participation, critical thinking and reflection and envisioning a better future (Australian Government, 2009).

4.2.ii Favoured pedagogies: PBLs and experiential learning approaches

Educators reported involving their students in a range of experiential learning initiatives. In addition to the previously mentioned nature explorations, they spoke of teaching scientific concepts in the environment and designing and physically remodelling spaces employing principles of sustainability.

Problem-based learning (PBL) and project-based learning were advocated by these teachers as pedagogical approaches for engaging students in EfS. Warburton (2003) suggested that through problem-based learning tasks, students can clarify assumptions and examine value judgments, while meanings of abstract ideas emerge organically through case studies. Karen and Charlotte spoke of their recent successes with engaging students in EfS explorations through problem-based learning. Charlotte described the challenge she had set for her Diploma of Children's Services students:

We did an exciting project recently... I posed a problem and they had three weeks to work on a hypothetical [project]... Council has approached your class and have asked you to plan and design your ideal sustainable early childhood service... to

be presented for consideration at the next council meeting. Four different teams designed, planned and actually built 3D models of their ideal sustainable childhood service. They had to research about sustainable practice in early childhood, look at philosophies and other people's policies. So they were learning that holistic thing without me standing there talking to them about it all the time. (Charlotte)

Karen's class participated in a national online PBL initiative:

Our most recent [problem-based learning initiative] was "Murder under the Microscope" which engages the children in researching and investigating an ecological crime, I've never known children to be so engaged in a project. Yes it's scientific but it crosses every learning area and more and it's all based on sustainability. (Karen)

Julie indicated that project based learning, the "other" PBL, was one of the pedagogies she was interested in employing for engaging students in EfS:

I feel personally very strongly about integrating curriculum [through] project-based units of work which give the children contact with their environment and contact with their communities. There is no reason why it can't be contact globally now, through electronic means. I would like to think that I can enable that in classrooms and it can be a really relevant project for children, that they can then tie in all the other learning areas. (Julie)

The project approach is utilised within the schools of Reggio Emilia to facilitate children's efforts to learn and create connections "through meaningful activities in which different subject areas are integrated" (Edwards & Springate, 1993, p. 27). Like Julie, Carolyn is exploring practices and pedagogies surrounding EfS that involve integrated learning.

I think [looking at systems and biodiversity] would be really valuable. It kind of fits in too with that whole concept of constructivism learning and making connections across disciplines and keeping things a little bit more holistic rather than compartmentalised. (Carolyn)

4.2.iii Emergent thoughts about the curriculum

In their responses to the questions surrounding the practices and pedagogies they employ to engage students in EfS, the teachers expressed a range of views regarding the inclusion of sustainability in the new curriculum (ACARA, 2010) and the Early Years Learning Framework (Australian Government, 2009a). Charlotte indicated she felt supported in her practice by being able to link back to the Early Years Learning Framework and the National Quality Standard (Australian Government, 2009a):

I explain [to the students] I'm not just getting you to do this because I am passionate about it but because these elements [in the EYLF and NQS] say that you have to do this, so you actually understand what the units are about and how it all is threaded through sustainability. (Charlotte)

Carolyn indicated that the inclusion of sustainability in the EYLF and the Australian Curriculum hadn't been 'unpacked' sufficiently for teachers to be able to make meaning of it. "The cross-curriculum priorities ... are not actually evident in the layers of the curriculum... You could probably argue that sustainability isn't really embedded after that brief mention at the top [of the online Australian Curriculum site]." Carolyn suggested "a bridging document or something like that would be really helpful to look at the curriculum through that [sustainability] lens more specifically."

Potential conflict between real life learning and the curriculum concerned Julie:

On one hand there's a curriculum, [with] expectations that you are going to adhere to... and show results for. And on the other hand there is real life learning that children are going to engage with and probably learn the most through, so it's somehow tying those things together. (Julie)

Julie argued that the needs and the personal interests of students and the community should be influential in how the curriculum is delivered:

The curriculum doesn't articulate children's contexts at all, or it doesn't seem to. It really appears to be a checklist of knowledge that wants to be ticked off. I don't see that as relating to (*pause*) children's worlds. (Julie)

4.3 Effects of participating in the EfS events on practice

The teachers spoke about the ways in which participating in the PL events affected their knowledge and values in relation to engaging students in EfS through the arts. Further outcomes of participating in the events suggested that through their participation, teachers benefitted from the sharing of ideas and teaching tools, discussing sustainability concepts and reflecting on their practice. They called for further professional learning in EfS.

4.3.i Personal effects of professional learning events

The teachers reported a number of personal effects which resulted from participating in the Arts + Sustainability events. These ranged from considering new approaches in their own teaching practice to increasing their knowledge base around sustainability education. Charlotte indicated that she identified how she could incorporate the arts into her own teaching about sustainable practices and systemic thinking and had already implemented the drama workshop she participated in during the PL day.

I did [Drama in a] Shoebox with the students (*pause*) and that worked really well to get them motivated and get them a bit more physical and engaged... It's good how you can do sustainability through story telling, drama, or through expressing yourself in your art... I found it really worthwhile. (Charlotte)

Participation in the events led to Julie considering whole-of-community approaches as an essential part of sustainability education:

The events gave me the sense that there needs to be (*pause*) collaboration and cohesion within the teaching community and that includes parents, community members and community leaders around education, (*pause*) because (*pause*) of the energy that you can get from each other, the ideas that you can share. (Julie)

The events filled a knowledge gap in the area of sustainability education according to Carolyn:

My knowledge [of sustainability] before these conferences was purely an environmental focus... that framework that you guys worked from, I found that *really* helpful in seeing the bigger picture. It's kind of easy to focus on little environmental factors rather than looking at the big picture yet that [inclusion of

systems and politics and the environment and society working together] is pretty important as far as addressing a problem goes. (Carolyn)

Carolyn saw the value of a more holistic conceptualisation of sustainability as a teaching strategy:

I would never have considered applying that to teaching as a pedagogical strategy or a way of thinking about sustainability but I think it would be really valuable. It kind of fits in too with that whole concept of constructivism learning and making connections across disciplines and keeping things a little bit more holistic rather than compartmentalised. (Carolyn)

In discussing the impact of participating in the professional learning events, the teachers spoke of how the events had caused them to challenge their own views. Participating in Arts + Sustainability introduced new ideas of arts rich approaches for EfS. Liz for example indicated she was thinking about new ways of involving these ideas in her teaching practice:

I'm... more scientific in my way where my energies go, but I'm curious about the arts. I did a drama workshop in the afternoon which made me reflect on the way I use drama in the classroom... so I've become curious about using the arts across the subjects rather than having it as a little drama lesson once a week. (Liz)

Julie likewise had identified new opportunities to strengthen learning outcomes through community connections involving the arts:

The workshops in the afternoon gave me *lots* of enthusiasm for being able to incorporate arts. I have recently been seeing *such* strong connections between utilising the arts and the ideas of sustainability.... (*pause*) Because they require the kids and the teachers and other members of the community to really *engage* themselves with the activities (*pause*) and by doing that you've got an avenue for teaching really lasting things. (Julie)

Through the professional learning event Liz was reminded of children's competence. "One thing I took from the day was how capable kids are, that problem solving approach. I took as valuable that they do know a lot and can do a lot if we give them the opportunity and the challenge" (Liz).

4.3.ii Looking for further support

The teachers were proactively developing their own approaches to EfS through attending the professional learning events. They each called for further support for teachers in addressing the sustainability cross-curriculum priority. In terms of the support that participation in the professional learning event had offered, Julie commented:

With the arts [PL event], I enjoyed the way that discussion with sustainability and the arts broke down into the different (*pause*) sections of sustainability (*pause*) from the national curriculum. I saw from that some framework you could use for guiding your teaching (*pause*) which adheres to the national curriculum at some point. I thought that ticked a big box from a professional point of view. (Julie)

Karen emphasised the need for more opportunities for professional learning in the field of EfS:

It's great for us to be educating for sustainability here [at school] but it would be really wonderful to have *more* PL... There are [initiatives] about but I don't think there is enough. PL could improve on a community scale, maybe (*pause*) more community-based information about sustainability. (Karen)

Both Carolyn and Julie pointed out that sustainability was not covered in any depth in their studies for their teaching degrees. "We certainly didn't have a unit on teaching sustainability. No strategies have been suggested to really kickstart that learning" (Carolyn).

The teachers mentioned the value of hearing what others were doing in the field and reflecting on their own practice to examine it in light of current EfS efforts:

One thing I gained out of [the event] was to see what other schools are doing... It really reinforces what we're doing here. It made me think we are doing the right things... When you're out with other people you see they're doing something similar to us or [think] that's a great idea that I can take away. (Karen)

The professional learning events provided pedagogical tools and learning activities designed to support the introduction of arts rich explorations of EfS in the classroom. These included the Drama Australia resource *Acting Green* (Upton, 2011); and

Sustainability and the early childhood educator – an artist at work (Nailon, 2012).

Charlotte said the arts teaching tools were helpful for educating about sustainability and discussed how she had implemented the drama activities and made use of other tools shared at the events to help reflect on their lifestyles:

From the first [event] I came back and we did the global footprint on the computer and [the students] were quite shocked at how many planets they'd need to sustain their current lifestyle. They talked about what kind of changes they could make to reduce the amount of consumables and stuff that they buy. (Charlotte)

4.4 Engaging students in EfS through the arts

When asked about how the arts can engage students in EfS, the teachers spoke of arts rich approaches as being helpful ways for engaging students in EfS and highlighted a range of qualities they viewed as being inherent to the arts.

4.4.i The arts as 'ways of knowing' and 'languages' for EfS

Charlotte, Carolyn and Liz highlighted the arts as a pedagogical "way in" for children to make connections with systemic thinking and sustainability. Charlotte used the *Acting Green* drama workshop idea (Upton, 2011) as a way in to opening up conversations amongst young children, explaining:

I could see how this was a practical activity designed for me... to introduce [concepts such as] different types of trees that are endangered or only grow in certain places or some produce fruit and some are a hundred years old... [Drama] is a great different way to introduce a possible conversation with children... to get them thinking about different ways of starting that train of thought into systemic thinking. (Charlotte)

Carolyn considered that she could use the installation art activity she participated in during the Arts + Sustainability event in the classroom, using post-consumer (or recycled) materials to introduce an inquiry into "understanding the impact of what was happening in the bigger system." Carolyn further highlighted the embodied nature of arts learning pointing out that "it lets your hands do the talking or thinking" and suggested the arts may be a way to communicate with children about sustainability using their own "first language":

I think that the arts is probably one of the easiest ways [to engage students in EfS], because it's a different form of communication. And it's one that the research literature says is more suited to young children. They find it easier to communicate through the arts than they do verbally or through written communication. (Carolyn)

4.4.ii Arts 'for' Sustainability ideas in practice

The teachers suggested seven explicit ideas for arts rich learning that explored themes of sustainability (see a summary in Appendix H). Two spoke of involving their students in the arts initiatives they had undertaken themselves at the Arts + Sustainability event. Liz suggested the idea of introducing arts in the school garden to give children greater ownership of their garden involving sculpture or drawing in the garden.

Karen spoke about a unit of work she had implemented in her class called "Softies" in which students created soft toys made from recycled clothes. She indicated it had been a highly engaging unit for students:

The children wrote a blurb about the story of their Softie, named it, and talked about their Softie's life. It was *such a brilliant unit* and everything about it [related to] sustainability... We shared it with the whole school, the parents, [and] the grandparents, a lot of whom had come in to help us along the way which was really lovely. The students were so proud. They did *all their own* curating and displayed their softies. People were so intrigued with how they made them and what they wrote about them. (Karen)

Karen pointed out the flexible and creative nature of the arts and expressed the view that the whole "decision-making process" was foundational to the success of the Softies unit.

4.4.iii The arts – for awakening our creativity and our humanity

All of the participants spoke enthusiastically about the potential for engaging students through the arts. Karen commented "to me arts is one of the major areas you can crossover with sustainability. It is *creative*, it's flexible and every child gets to be themselves.... It encourages kids to be creative about how they can be sustainable." Karen's idea is reflected in the observation by Wals and Jickling (2002), "sustainability requires creativity as there are no recipes" (2002, p. 228). Moga, Burger, Hetland &

Winner (2000) suggest open-ended, problem finding skills, such as those involved in the decision-making processes Karen emphasized in the Softies unit are general creative thinking skills fostered by the arts. This position is further supported by Ewing's (2010) assertion, "to define the arts is also to define creativity and imagination" (p. 7).

The teachers in this study emphasised the engaging and emotional aspects of the arts as key to their suitability for children's explorations of sustainability. On this connection between arts and emotions Liz said, "I think it's to do with what I've read around how we learn when we're motivated and emotionally switched on and happy." She further connected that idea with the thought that through involving children in arts projects within the garden they might take greater ownership and have a "more emotional connection and response to the garden."

Julie elaborated on emotional connections she saw between arts and sustainability:

I think the arts can... reunite people with people. I feel that these basic connections are lacking,... that there's this [younger] generation of people who are really channelled, institutionalised almost. Like they've been put through this system, this machine that churned out people with minds that just do what they need to do.... I feel like the arts are the way into reuniting people with passion and with self-dedication and this sense of achievement that seems to be lacking.
(Julie)

Julie concluded "to make that jump into thinking in a sustainable way" the arts might be what's needed "to bring out our passions and awaken us to have that courage to take steps for change."

4.5 Conclusion

This chapter presented the findings from the study organised into key themes which emerged during the interviews. In the next chapter these findings are discussed in relation to the research questions and the key literature underpinning the study.

Chapter 5 Discussion

This discussion interprets the results of the research in order to address the questions guiding the study which explored teachers' perspectives surrounding sustainability and experiences of engaging students in EfS. The results are considered through the lens of Clarke and Hollingsworth's (2002) model of teacher professional growth (IMTPG) before a more extensive discussion in relation to the Australian Government's principles of EfS (2009b). Analysing the results through these frameworks raised questions about the extension of EfS beyond environmental dimensions of sustainability. The teachers called for support in further developing their practice in this regard, particularly in light of the sustainability cross-curriculum priority in the Australian curriculum. Views towards arts rich explorations of sustainability were positive amongst these participants, although this appeared to be a relatively new field of thought.

5.1 Teacher professional growth in EfS

This research focused on five teachers' experiences with EfS in light of their participation in two stimulus PL events. In terms of the IMTPG (Clarke & Hollingsworth, 2002), the study focused on the relationship between their participation in the events (a stimulus in the external domain) and their knowledge, values and beliefs (personal domains) in relation to EfS. The participants spoke enthusiastically about EfS and the potential for adopting arts rich education as an EfS pedagogy.

Participation in the stimulus events appeared to have affected the teachers' knowledge and attitudes towards EfS (personal domains), evident for example in Carolyn's comment that before the PL events her knowledge of sustainability was "purely an environmental focus". Uncertainty seemed to surround the teachers' conceptualisations of EfS. The pauses and clarification of their own comments gave indications that their thinking was still emerging. This is to be expected since the EfS field itself is relatively new, having evolved from environmental education around 2005 at the outset of the DESD (Tilbury, 2007).

In discussing the recent Arts + Sustainability event, the participants clearly conveyed enthusiasm for arts rich learning as a mechanism to engage students more fully in school and in the curriculum, particularly in relation to students' connections with concepts of sustainability. They spoke of the challenges faced when attempting to

deliver the sustainability outcomes required of them in a curriculum that provides little direction for introducing this complex field of study in an integrated manner.

5.2 The principles of learning for EfS

The Australian Government's (2009b) five principles of EfS provided a lens for interpreting the findings related to the themes that emerged around the teachers' practice relating to EfS. Participation was the principle that was most evident, with all five teachers discussing several ways of involving students in experiential learning initiatives. Critical thinking and reflection, and systemic thinking were evident to a lesser degree, while there were very few instances where partnerships for change were indicated.

5.2.i Envisioning a better future

An emphasis on envisioning a better future is intended as a shift from the disempowerment of "doom and gloom" scenarios to focus on futures-oriented thinking that motivates people by harnessing their deep aspirations (Australian Government, 2009b). Within this study the concept of envisioning a better future as a principle for learning was contentious, in that all participants revealed they are concerned about the future, and more pointedly, two interviewees separately ventured the opinion that the planet is "stuffed". The participants' aspirations for a better future for the planet revolved around children and education. Teaching children the skills to cope and adapt to change was described by one teacher as being key to effecting change, as opposed to raising "a generation that is completely oblivious to the whole issue" (Liz).

Without explicitly stating what "a better future" looks like, the teachers gave indications that changing attitudes and ways of living in the world were fundamental requirements. This accords with Sterling's (2010) emphasis on the need for significant change in cultural worldviews "for more sustainable states of society to be attained" and the development of resilient socio-ecological systems (p. 520). The participants emphasised the role of communities within the social system in creating change for the better. Julie highlighted the importance of community collaboration and cohesion while Charlotte prioritised children developing respect for their communities and all that they offer.

5.2.ii Participation

The teachers conveyed understandings of sustainability which encompassed social, economic and political dimensions in addition to the widely understood environmental ideas of sustainability, but interestingly, the EfS initiatives they spoke of having their students participate in were chiefly environmental practices. The teachers nominated 22 separate EfS initiatives, 18 of which (82%) were environmentally based.

Considered in relation to their earlier views about children needing more access to nature it is evident these participants were agents of change (Stevenson, 2007), proactively engaging students in such experiences so they will come to know nature. Such environmental explorations of sustainability reflect a fundamental tenet argued for within sustainability literature, “that children have an opportunity to bond with the natural world, to learn to love it, before being asked to heal its wounds” (Sobel, 1996, p. 10).

The Australian Government (2009b) advocates participation as a central tenet of EfS. According to Tilbury (2007) “genuine participation in the learning experience is essential to build people’ abilities and empower learners to take action for change towards sustainability” (p. 128). The teachers demonstrated a clear preference for pedagogies featuring active participation as a means to engage students in EfS. In describing the practices and pedagogies they employ to engage students in EfS, a diverse range of nature learning experiences were cited as entry-points for educating about sustainability. Most evident were programs involving students in experiential learning in gardens and gardening of all types. This included experiences ranging from planting and tending vegie gardens, to maintaining wetlands and rehabilitating a degraded creek bed on a farm.

Experiential learning (Kolb, 1984) is advocated in EfS literature with UNESCO (2002) prioritising “learning through doing” to enable people to understand sustainability, human motivations and visions which are key to social change. These teachers engaged their students in envisioning a more sustainable future using experiential learning approaches to participate in initiatives around the natural dimension of sustainability through what can be described as “learning in, about and for the environment” (Tilbury & Cooke, 2005).

The participants valued and were aware of the broader social, economic and political dimensions of sustainability, however the pedagogies and practices they spoke of

employing to engage students in EfS chiefly centred around environmental explorations. This raises questions about how teachers can be supported in developing broadened approaches to EfS to add to their repertoire learning experiences that encompass participation through explorations of economic, social and political dimensions of sustainability.

5.2.iii Critical thinking and reflection

This component of EfS challenges us to consider the underlying assumptions that shape our worldview and knowledge, and to look beneath the symptoms of unsustainable practice to promote alternative ways of thinking (Australian Government, 2009b). Some of the EfS initiatives participants detailed in their interviews had required their students to examine their own assumptions and practices, a key step in progressing their learning to a transformative level at which they acquire a deep awareness of alternative worldviews and ways of doing things (Sterling, 2010).

Charlotte's problem based learning exercise challenging students to design a sustainable ECE centre required students to research sustainable practice and policies, critically analyse existing philosophies of centre design, and reflect upon these perspectives in developing their own models. In another example, Liz took the opportunity to introduce critical thinking and reflection in the school vegetable garden upon finding their sunflowers had no seeds to harvest. Liz engaged students in reflection-in-action (Schön, 1983), by considering and discussing how and why farmers might engineer plants that were sterile.

Karen spoke about her students' high level of engagement in a "Murder under the Microscope" problem-based learning initiative, in which the class worked as a team to research and solve an online ecological crime. Karen explained that the students had to learn about how species in the food chain affect each other and reflect on their findings to solve the problem. Of particular interest to Karen was an incident that occurred after this inquiry unit concluded. Some of her students experienced a real-life run in with territorial plovers (birds) on the school grounds. Karen overheard one student saying the school should get rid of the plovers. Another of her students responded by questioning how that would affect the food chain and what effect that would have on the area's ecology. Reflecting on this incident Karen commented, "[Murder under the

microscope] has affected their thinking on a day-to-day level. Because they know now that every action has a reaction.... It's all connected."

5.2.iv Systemic Thinking

Participants demonstrated awareness of systemic thinking through their comments and through some of the EfS initiatives they spoke of involving their students in. The partnership between Karen's class and the farm in the midlands was based on a three-pronged model of systemic thinking which focuses on economic, environmental and social dimensions of sustainability. Through her elaboration of this initiative it was clear Karen was knowledgeable about systemic thinking and was teaching this dimension of sustainability.

According to Tilbury, Coleman and Garlick (2005) thinking and practice in EfS is increasingly being influenced by systems thinking approaches involving the guiding principles of "integration, interaction, interdependence and complexity in relationships" (p. 14). These authors argue there has been a lack of engagement with systems approaches in education and they highlight the need for resource materials which demystify these approaches (p. 16). In responding to the question about pedagogical strategies employed for EfS, Carolyn indicated that she had never thought of applying systems thinking to her teaching. Carolyn suggested that a bridging document would be really helpful, "to look at the curriculum through that [sustainability] lens more specifically."

5.2.v Partnerships for change

Two of the teachers spoke of engaging their students in EfS through practices which involved their students in partnerships with other organisations. This aligns with the partnerships for change component of the Australian Government's principles of learning for EfS (2009b).

Charlotte told of how her class is participating in remodelling the outdoor play space at a local childcare service. The students consulted with the proprietor and gathered a range of perspectives, including those of children who will use the space, about what the outdoor area should contain before designing their plans.

The 7-year partnership between Karen's class, a midlands farmer, and the Department of Natural Resource Management (NRM) to rehabilitate a degraded creek bed on the

farmer's property appeared to be a progressive example of partnerships for change. The partnership involved multiple stakeholders from various sectors of the community and was built upon a long-term agreement.

5.3 EfS and the arts

In terms of the overarching question asking how arts education and sustainability education can intersect to bring about transformative learning for a more sustainable future, the teachers shared the view that arts rich approaches can elicit high levels of engagement in EfS learning. Their comments provided some suggestions as to the potential for arts based learning to deliver EfS and wider curricula outcomes.

Liz said she understood the link between arts and sustainability “is to do with what I’ve read around how we learn, and that we learn when we’re motivated and emotionally switched on, and happy.” And further, “art seems to reach a deeper part of people and I think provides a richer response to things” (Liz). The connection identified by Liz between arts and emotions aligns with the affective dimension of the arts (Gardner, 1990; Abbs, 1989; Dewey, 1934).

Carolyn highlighted the suitability of arts rich approaches in early childhood education: “I think that the arts is probably one of the easiest ways [to engage children in EfS], because it’s a different form of communication. And it’s one that as the research literature says is more suited to young children.” Carolyn suggests that the arts provide ways of presenting concepts of sustainability to young children in the language through which they first know the world.

All five teachers perceived the arts as a powerful education medium and saw the potential of the arts as a vehicle for EfS. Beyond its capacity to engage learners, involvement in art making and responding can introduce learners to a range of thinking dispositions foundational to the principles of EfS. These include considering diverse perspectives, and the ability to find and pose problems, reason and evaluate, and explore metaphorical relationships (Gadsden, 2008).

In reflecting upon engaging children in EfS through the arts, Julie’s concluding statement offered an insight into her evolving personal ideas and values surrounding EfS:

I guess I see the arts as a deeply human thing and sustainability as something that we need to be deeply human about. So to make that jump into *(pause)* thinking in a sustainable way and accepting that perhaps we've really stuffed up and that things actually need to change at a really *broad* level, that we're going to need something like the arts that really bring out our passions and awaken us to have that courage to take steps for change. (Julie)

5.3.i The arts for re-engaging students in education

Julie spoke of the Australian education system producing a generation of children with “minds that just do what they need to do” after being “churned out” of this institutionalised education system. This view resonates with the comments of Robert J. Sternberg (2008), who argues for schools to aspire to produce students who embody the traits of wisdom, intelligence and creativity “rather than automatons who merely reproduce inert knowledge on demand” (p. 143).

Disengagement of students from schooling has been reported as a growing phenomenon in a number of recent reports (McInerney, Smyth & Down, 2011). The participants each characterised the arts as engaging pedagogies owing to their quality of involving students emotionally, cognitively and physically in the learning process.

Arts disciplines can facilitate closer connections between students and their classroom by attuning them to their developing insights into their relationship with, and comprehension of, school and its place in their lives (Siegesmund, 1998). Connections such as those fostered through the affective dimension of the arts equip students with clearer perceptions of the relevance of education in their world and provide motivations to actively participate in their own transformation (Eilam & Trop, 2011).

5.3.ii Sustainability and the arts - missing in action?

Sustainability is now a cross curriculum priority, and accordingly the imperative of EfS should result in an increased focus on sustainability in the education system. As Caine succinctly highlights however, “education is notoriously resistant to change” (2004, p. 1).

In the field of EfS there have been repeated calls over many years to embed sustainability into mainstream education systems (Ferriera, Ryan & Tilbury, 2006; Stevenson, 2007; Læssøe, Schnack, Breiting, & Rolls, 2009). A comment from one

participant in this study gave her summation of the situation: “Sustainability hasn’t been there at all” (Julie). Similarly, in the field of the arts, key theorists and scholars including Abbs (1989), Efland (2002), Eisner (1994), Gardner (1990) and Ewing (2012) have advocated a more central role for arts education.

This thesis proposes that the fields of arts education and EfS attend to concepts and goals that are each fundamental to the other. Gardner (1990) theorises that participation in the arts engages children emotionally and cognitively, and can affect children’s values and motivate them to take action (Gardner, 1990; Ewing, 2010). EfS calls for children to value the planet and its inhabitants and become active agents of change (Fien & Tilbury, 2002). The processes of learning in the arts align in many ways with the principles of sustainability education (Australian Government, 2009b) and this presents the potential for the fusion of arts rich education and EfS in a newly conceptualised field.

5.4 Conclusion

The discussion presented in this chapter considered the key themes which emerged from the interviews in relation to the principles of EfS and identified intersections between the educators’ perspectives of sustainability education and arts education. The implications of these intersections between the two fields are expanded upon in Chapter 6.

Chapter 6 Implications

The challenge of overcoming narrow environmental understandings of sustainability has been widely discussed and documented (Tilbury, 2007; Læssøe, Schnack, Breiting, & Rolls, 2009). The teachers in this study exhibited broadened understandings of sustainability, which may have been influenced by their participation in the two EfS professional learning events. Despite this, the study found that the teachers chiefly employed environmental practices in engaging students in EfS. The findings suggest a need to further support teachers in expanding their approaches to encompass ways of introducing social, cultural, economic and political dimensions of sustainability into their programs.

EfS has been described as “the most radical pedagogy shaping global society” (Spring, 2004 as cited in Stevenson, 2007, p. 287), yet the main focus in EfS to date has been on curriculum content rather than on pedagogies that are effective for sustainability education (Jickling & Wals, 2008). EfS pedagogies are an area of ambiguity for teachers (Eilam & Trop, 2011), in part due to a discourse which describes lofty aims for teachers to achieve but fails to address the circumstances necessary to their fulfilment (Stevenson, 2007). This gap poses serious obstacles for teachers in their attempts to move forward and implement EfS curricula (Eilam & Trop, 2010).

In this study of teachers’ perspectives of arts rich approaches to EfS, participants expressed enthusiasm for the potential of engaging creativity within sustainability learning. Further research is warranted to explore and document the ways in which the field of arts education can present pedagogical approaches for exploring broadened perspectives of sustainability. Shulman (1987) advocated a model of pedagogical content knowledge to aid teachers in adapting their practice to the unique character of their contexts through an enhanced understanding of the complexities within a field of enquiry. Shulman’s seminal idea of discipline-specific pedagogies (McVey, 2008) may be productive for elucidating this intersection of arts rich education and EfS.

A fundamental goal of Australia’s education effort is increasing the capacity of Australian students to “approach problem solving in new and creative ways” (NCB, 2008, p. 1). This thesis suggests that a new conceptualisation of “Arts for Sustainability” presents pedagogical opportunities for teachers to employ in addressing this goal. Arts for Sustainability (AfS) may represent a catalyst for moving beyond current approaches

to EfS which serve to reinforce narrow environmental understandings of sustainability (Læssøe, Schnack, Breiting, & Rolls, 2009). Environmental education (EE) has been foundational in sustainability education for many years (Tilbury, 2007). However progress beyond the sphere of environmental education is regarded as essential to achieve a more sustainable, economically viable and just society for all (UNESCO, 2005).

Arts rich approaches can engage students in integrated EfS initiatives encompassing holistic conceptions of the social, political, cultural economic and environmental dimensions (Ewing, 2010; Gadsden, 2008). Ewing further suggests that arts integration can bring sustainability learning into the educational mainstream by integrating with other curriculum disciplines (Ewing, 2010). Through such arts rich approaches, children may experience sustainability explorations enhanced by the many ways of knowing the world that the arts provide (Bruner, 1962), the diverse languages of the arts, and the cognitive, social, emotional and physical learning qualities of the arts.

Drawing on the many strengths of arts rich education (Ewing, 2010), it is possible to suggest a sample of broadened explorations of sustainability worthy of further attention. For example, teachers may consider introducing arts rich socio-cultural inquiries into local issues of homelessness and refugees, or studies relating to cultural diversity or indigenous culture. Arts rich responses might be invited for students' explorations of political processes such as the development of democracy in the 'Arab spring', peace building in the aftermath of war, or locally-relevant learning about community-level decision making. Economic or policy perspectives could also be introduced through arts rich inquiries surrounding local economies transitioning from reliance on polluting industries to new cleaner industries, or challenges faced by business to sustain economic viability through the preservation of the resources they rely upon.

In concert with calls for ongoing professional learning in EfS (Pratt, 2010), this thesis advocates the development of a strategic program of Arts for Sustainability professional learning for teachers to develop their practice in educating for a sustainable future. Davis (2010) advocates the sharing of models of good practice amongst educators. Furthermore, Ferreira and Davis (2012) argue for changing the centralized expert-led model of communication around EfS to a more dispersed model. Such dispersed sharing would be enhanced through the provision of appropriate infrastructure to enable the documentation and sharing of practice in the field.

The development of the new Australian curriculum in the arts provides an opportunity for examining the role of arts in education, particularly in light of its relevance to the cross-curriculum priority of sustainability. Further field-based research is warranted to explore how arts rich education can offer productive pedagogies for exploring social, cultural, economic, political and environmental perspectives of sustainability.

Chapter 7 Conclusion

The Decade of Education for Sustainable Development draws to a close in 2014. In its 'home stretch' there is likely to be much commentary and debate about what this decade-long initiative achieved. One certainty is that the challenge of sustainability will not have been solved at its conclusion. This challenge will continue in 2014 and beyond. The impending 'wrapping up' of the decade provokes certain questions. It seems appropriate to reframe Calder and Clugston's critical question posed at the outset of the decade: "What sort of education will allow learners to pursue their diverse cultural and context-specific paths towards sustainability *beyond 2014?*" (2005, my italics). The responses to this provocation are likely to remain contested.

Teachers are charged with the responsibility of educating today's students to bring about a more sustainable future, and accordingly they need to be part of the discourse informing the strategy for EfS in Australia beyond the DESD. This study explored the perspectives of five teachers following their participation in two professional learning events that focused on a range of different aspects of sustainability education. Findings from this study revealed that the teachers were concerned about the planet's future and passionate about sustainability. They were aware of being responsible for implementing a new Australian curriculum with sustainability as a cross-curriculum priority, but indicated that they need more guidance and support to do this effectively.

The teachers revealed that the professional learning events had influenced their knowledge and practices surrounding EfS and they identified a clear role for the arts in pursuing the goal of encouraging children to value their world and form an emotional connection with the planet and its future. The introduction of the new Australian arts curriculum provides an opportunity for engaging children emotionally in connecting with the world through the many ways of knowing that arts education affords. Connections between the fields of EfS and arts rich education are deep, complex, and somewhat difficult to measure in quantitative ways. Julie's closing remarks capture some dimensions of the mystery: "I guess I see the arts as a deeply human thing and sustainability as something that we need to be deeply human about." This thesis provides an early view towards the possibilities of connecting the areas of arts rich education and Education for Sustainability. Further research is necessary to investigate the potential for this field of Arts for Sustainability to support teachers charged with the priority of priorities – that of educating students today for a better future for all.

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Appendix A

Definition of art forms - Shape of the Australian Curriculum: The Arts

Dance is a dynamic and expressive performing art. Dance reflects and shapes contemporary local and globalised cultures, communicating ideas through the related practices of performing and choreographing. From early learning, dance is multi-sensory and multi-modal with dance movement embodying feeling, thinking and aesthetic understanding. When people dance, the interplay of visual, auditory, spatial, temporal and kinaesthetic perception evokes emotional and cognitive meanings.

Drama is a collaborative performing art where participants agree to imagine and actively construct a world which is known as the dramatic context. The central activity is live enactment: participants stepping into an imagined world to represent and bring to life the dramatic context. Drama exists in time, place and action. Through its primary instruments of the human body, voice and language, it integrates spoken, physical, emotional, visual and aural dimensions and sign systems in order to create symbolic meanings.

Media arts is the creative use of communications technologies to tell stories and explore concepts for diverse purposes and audiences. Media artists represent personal, social and cultural realities using platforms such as television, film, video, newspapers, magazines, radio, video games, the worldwide web and mobile media. Media Arts explores the diverse artistic, creative, social and institutional factors that shape communication and contribute to the formation of identities. Through Media Arts, individuals and groups participate in, experiment with and interpret the rich culture and communications practices that surround them.

Music is the imaginative process of creating, performing, and responding to sound and silence for personal and collective meaning. Through the processes of creating musical works, performing with voice and instrument, and responding to our own and others' music, individuals and groups communicate meanings, beliefs and values.

Visual arts is an imaginative engagement with visual and material skills and technologies, a way of designing and making thinking visible. Ideas are manifested in 2, 3 or 4 dimensions by constructing artworks and engaging visually, creatively and cognitively with a multi-modal visual world. Visual Arts includes objects and images,

performances, temporal and audio works, designed environments and graphic communications, and inter-textual combinations of these. Artworks embody cultural, cognitive and spiritual knowledge and are subject to critical scrutiny via the histories, theories and critical contexts informing the body of knowledge in the field.

(ACARA, 2011)

Appendix B

Thinking and process skills developed through art

<i>Art making</i>	<i>Aesthetic perception</i>	<i>Evaluative reflection</i>
discovering	observing	reviewing
producing	selecting	criticising
designing	visualising	reflecting
manipulating	applying knowledge	comparing
experimenting	evaluating	analysing
imagining	hypothesising	contextualising
risk-taking	discriminating	assessing
organising	validating	appraising
predicting	adapting	
deliberating	refining	
inventing	intuiting	

(Abbott & Wilks, 2000)

Appendix C

Participant Information Sheet

<p>Private Bag 1307 Launceston Tasmania 7250 Australia Phone (03) 6324 3265 Fax (03) 6324 3048 www.utas.edu.au</p>	 <p>UTAS</p>
<p>SCHOOL OF EDUCATION</p>	

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EDUCATOR INFORMATION SHEET

Early childhood educators' experiences of Early Childhood Education for Sustainability (ECEfS).

[A follow up study to "Researching the impact of the *Living and learning about sustainability in the early years* professional development events"]

You are invited to participate in a research study that focuses on early childhood educators' experiences with Early Childhood Education for Sustainability (ECEfS). This study is being conducted in fulfillment of a Master of Education (Research) Dissertation unit.

What is the purpose of this study?
The purpose of this study is to investigate early childhood educators' understandings of and practices surrounding ECEfS.

Why have I been invited to participate?
As an attendee of the *Living and Learning about Sustainability in the Early Years* professional development event in May 2012, your reflective feedback on your experiences with education for sustainability is valued. This research study will explore early childhood educators' values and experiences relating to ECEfS.

Please note that your involvement is voluntary, and there are no consequences if you decide not to participate. If you choose not to participate, this will not affect your relationship with the University of Tasmania or other partner institutions.

What will I be asked to do?
If you agree to participate in this study you will be asked to participate in an interview which will be audio recorded and which will last approximately one hour or less. With your permission I will come to your workplace to conduct the interview. I will offer any support necessary to answer the open-ended questions, for example by clarifying questions where necessary. Your signature on the consent form shows that you give consent for me to use your responses to the questions in my research in ways that guarantee that your anonymity is protected. Any quotes that are used to illustrate outcomes of this research will not be attributed to any person by name. Instead quotes will be representative of general comments made.

Are there any possible benefits from participation in this study?
It is anticipated that participation in the project may assist you to develop your understandings of and approaches to ECEfS, as well as to gain confidence in your capacity to meet the requirements of the Early Years Learning Framework's sustainability dimensions.

Are there any possible risks from participation in this study?
There are no foreseeable risks associated with the study. During the interview you can decline to answer any or all questions or ask that the interview cease at any time without explanation or consequences.

What will happen to my information?
Your data will be kept in a locked filing cabinet in the researcher's office. Names and other identifying information will be removed from the interview transcripts and data will be kept in a password protected computer. If you choose to withdraw from the study I will locate and delete your data from

the analysis. In addition, you will have the opportunity to amend responses on your questionnaire by contacting me before September 14, 2012. Five years after publication of the report of the project all transcripts and field notes will be shredded, computer files deleted and audio files deleted. All information collected will be treated confidentially.

What if I have questions about this study?

If you have questions relating to this study, please contact the researcher:


Sherridan Emery Ph: 0414279997 Email: sherridan.emery@utas.edu.au

This study has been approved by the Tasmanian Social Sciences Human Research Ethics Committee. If you have concerns or complaints about the conduct of this study, please contact the Executive Officer of the HREC (Tasmania) Network on (03) 6226 7479 or email human.ethics@utas.edu.au. The Executive Officer is the person nominated to receive complaints from research participants. Please quote ethics reference number [H0012466].

Thank you for taking the time to consider this study. If you wish to take part in it, please sign the attached consent form, and hand it to the researcher or return it in the attached reply paid envelope.

Appendix D

Participant Consent Form

<p>Private Bag 1307 Launceston Tasmania 7250 Australia Phone (03) 6324 3265 Fax (03) 6324 3048 www.utas.edu.au</p>		
<p>SCHOOL OF EDUCATION</p>		

EDUCATOR CONSENT FORM

Early childhood educators' experiences of Early Childhood Education for Sustainability (ECEFS).

1. I have read and understood the 'Information Sheet' for this project.

2. The nature and the possible effects of the project have been explained to me.

3. I understand that this study involves participation in a semi-structured audio-recorded interview with the researcher of up to one hour.

4. I understand that participation in this research project involves only low risk.

5. I understand that all research data will be securely stored by the researcher and will be destroyed five years following publication of the results.

6. I agree that the research data gathered from me for the study may be published provided that I am not identified as a participant.

7. I agree to participate in this investigation and understand that I may withdraw at any time without any explanation and I can request that any data I have supplied be withdrawn from the research up until 14 September 2012.

Name: _____

Signature: _____ Date: _____

Statement by the investigator:

☐ The participant has received the Information Sheet where my details have been provided. The participant has had the opportunity to contact me prior to consenting to participate in this project.

Investigator's name: Sherridan Emery Signature: _____ Date: _____

Appendix E

Interview Schedule

Can you please share with me your values relating to sustainability and EfS?

What pedagogical strategies and practices do you employ to engage students in EfS?

How has your teaching practice relating to EfS been affected, if at all, as a result of your participation in the UTAS EfS professional learning events?

How can you engage students in EfS through arts education?

Appendix F

Interview Transcripts

Interview with 'Karen' (September 2012)

Background info: Please tell me a little about the education context that you work within – age group of students, any particular subject area you focus upon and how long have you worked in this context?

K: I'm a grade 5 teacher and I've worked at [School A] for 15 years, seven of those in grade 5. As for areas, I particularly enjoy teaching science, and I rather like extension maths. But I suppose that science is one area that I've really grown in the last seven years. And because I've grown in that area I've become really passionate about it.

S: When you say you've grown in an area, how have you grown into that area through professional learning?

K: Probably because I was a bit nervous about coming to grade 5 because of my science and maths skills. Through the last seven years I've been doing a lot of professional learning in that area. I jumped on board the sustainability wagon, and that involves so much science and I really love that too.

S: And what type of professional learning have you done in past years?

K: I've been to a couple of CANASTA conferences which are like a national conference where I've met a lot of senior school people, a lot of early learning people, a lot of primary people, and I have taken a lot away from what they do and modified it for year five. And I've also been to a lot of places where they show you how to do a lot of practical experiments and things like that. I got involved in a lot of kitchen chemistry at one PL which is really great for the classroom. They are often just run by other schools, some are run nationally. I've been to a couple of national ones, I've been down to Hobart to the state ones. The STAT science teachers of Tasmania often run different things, and also they have great science

by e-mail which is really good. You can pick and choose what you want from there.

S: So they're tools you can use in the classroom?

K: First of all they give you a lot of ideas for experiments. Simple experiments you can just do on your art table which is great. You don't need lots and lots of equipment. Most of the equipment you use is just out of your kitchen cupboard.

Secondly they provide all the background information you need and they give you a lot of information about the learning areas that are covered, more of the theory of the teaching. They'll give you that and you can choose what the focus is that you want to run with. And they situate that within a curricular context which is really great. A lot of it is about probability, or predicting, those sorts of skills and getting children to use the scientific language at a certain level.

Q1. Could you share with me what your own personal values are relating to sustainability and Education for Sustainability?

K: Well, I take sustainability seriously and encourage my students to do the same. I look at what we were doing back in the 50s and 60s when I was a kid. *(pause)* We did a lot of good things especially when it came to reusing and recycling. But then as we came through the 60s, 70s and 80s we had that throwaway mentality. Even with my own children as babies in the 80s I remember they were just touching upon sustainability. Things like "mum turn the tap off when you clean your teeth". Even back then I thought that was sort of cute, I didn't really think much of it.

As we've evolved into the 90s and the 2000s I've realised that really *(pause)* we've got to do something. I've been involved in school level and at home level and with my own kids with sustainability in lots of ways. So much so I've started gardening and composting at home, doing lots of things and I've carried that into the school.

S: Why do we need to do something?

K: Well (*pause*) I really believe global warming is happening, I know there are people who don't but I certainly do, I think there's so many indicators that global warming is occurring. I do think the kids I teach are the kids who are going to be making the big decisions. And if we don't do something now their kids, and their kids, so it goes on, their world's going to be so much different and I'd like to think that the world and what's in it, all the good stuff, is still going to be about.

S: Continuing with what you were saying about your values relating to sustainability was there anything more that you want to add there?

K: I like the way that the 21st-century learning crosses all the learning areas. So with sustainability, I don't just teach sustainability, it's in everything. It's in everything to the point where we put our piece of paper that we throw away, what we do with anything we throw away in the classroom, closing the door as we go out, turning the lights off (*pause*) and then we might be doing something in a geography capacity, and there's so much sustainability in that. In science even when we clean up, do we put this down the sink, everything we do now inside the classroom and outside the classroom, play as well, (*pause*) has some kind of sustainable impact to it. It's in everything we do. I've become really passionate about that, and I think that's because the kids are passionate about it. As far as I'm concerned now there's no other way to be.

Q2. I'd like to ask you about the pedagogical strategies and practices you employ to engage your students in EfS

K: There are so many but I'd like to talk about one in particular. Our most recent is 'Murder under the Microscope' which engages the children, I've never known children to be so engaged in a project. Yes it's scientific but it crosses every learning area and more and it's all based on sustainability. (*pause*)

The students work with partners which is really good, we work in a whole class team, which again is really good. They research and investigate an online

ecological crime, it takes about six weeks to solve it. And the sustainability learning is fantastic in every way. First of all they learn so much about a particular area (as in a space on the planet), this one was done for Australia, so they are learning a lot about Australia. Secondly, they are learning a lot of the issues Australia is facing, especially on farmlands or coastal regions, things like that.

Then they've had to go and research a lot about the red list, which Australian animals are threatened, what Australian animals are critically endangered, what Australian animals are extinct. The learning there was phenomenal. We've had great debates about whether this snake was critically endangered or just endangered and they've realised there is a lot of fine lines between, and the time spans between critically endangered and things like that. So (*pause*) the research they do isn't general, they really fine-tune it which is what I really loved. It was a great skill, and that one skill of being able to cross-reference, two kids would come together, they'd go home and research, they might be researching the same thing but they've used two different websites. They come to school and they cross-reference. Then they'd go back again. They soon found out that one website was perhaps not always the best website to use, and there were so many skills in that, technology in there as well. So through making decisions in there "what do we think about that website, do we take that information?". Then we gathered all of their information, then we had to fine tune that again. We had a massive great board with our own findings. And the debates we had about whether it was a quoll, whether it was a bilby, this was the victim. So we're looking for a villain, a victim and the crime scene to fine-tune that down to 3 things from about 40 things. So it was a lot of work and everything was based on sustainability. What things in the food chain affect each other.

S: What type of thinking do you see happening with children as they explore these concepts?

K: As they explore it they think deeply about it, they just don't think "well if that's gone that'll be all right". A great example of that is the plovers up at [School A] park. The kids are really frightened of them and when we were there a couple of

weeks ago one of the kids said “I don’t know why they don’t just get rid of the plovers”. One of my kids, I was really rapt, said “When you think about it, it would be great if they weren’t here, but I wonder what else it would affect in the food chain, and ecologically what would that affect?”. That was after murder [under the microscope] had finished. It has affected their thinking on a day-to-day level. Because they know now that every (*pause*) action has a reaction, and that’s what came out of that which was really good. It was deep learning and that’s what I loved about that. It wasn’t just about animals, it’s making them follow through in their thinking, about their [School A] garden, it’s making them think about the rubbish in the garden. It’s all connected.

S: Any other pedagogical practices that you have employed?

K: Well we have been doing a lot of work in wetlands, (*pause*) we go to the wetlands at [School A] park a lot (*pause*) and the kids have been planting trees up there for quite some years. They’re hands on all the time. The last time we went it was great because they had a young guy he’s the new gardener who was talking not just about the planting of the trees, but how many trees are lost due to flood, what affects them. You know 50% of the trees they planted that particular day they were going to lose.

The kids actually got talking about that, here last Monday we went planting trees in the Midlands, I think the kids planted 800 trees. On the way home in the bus they said are we going to lose 50% of *those*. I thought that’s really awful and that’s a lot of work and 400 trees in a place that really needs trees. I said to the kids “well really I don’t know but we are going to follow up to make sure we go back to check”. The owner of the farm explained to that child that the farm is not like a wetlands, on this farm there this very little water. Each place has very different things affecting their lifespan. He would think that with human input where you could actually nurture the trees that they will get a greater success rate. Whereas wetlands have things we can’t control like flooding, so that’s why they lose a lot there. We do a lot of that sort of thing.

We are involved with the [School A] garden, we're growing our broad beans. This week we've been up there twice weeding. The kids *love* it, they love to get out of the classroom and they nurture and care for those plans like they were babies. And they just love being up there, they love it to be growing, they measure, they can't believe the [broad bean] flowers are coming. They've been discussing what they can do with their broad beans. It just puts a whole new (*pause*) dimension on my teaching, rather than everything having to be done in the classroom. So good for the kids to get out there. We've been down to the Tamar Wetlands that *again* is another ecosystem, they're amazed at how much wildlife, how many birds were there.

S: You were talking about a tree planting you did this week, is there anything more you can tell me about that.

K: You probably know it's fairly crucial in the Midlands, the loss of trees. This is on a particular farm and what they're trying to do is get trees back into the Midlands for all sorts of reasons, because of the land, because of the weather, because of their environment. Because over the years just about every tree has gone. They've got plots down there with *old* trees on and they are trying to keep those alive which is a major project. What they tend to have down there is called the sustainability stool, like a milking stool it's a three-pronged stool. The three prongs are environmental economic and (*pause*) social.

Basically what that is about is they make money on the farm and that's their day-to-day but that they can do as much for the environment as possible to keep that farm sustainable over the years. It's been there since the 1830s. As well as that they need to look at ways they can (*pause*) obviously make a profit. And the social aspect. So that farm will be sustainable there for generations to come. And as he said when he goes, the fact that farm will still give people pleasure, people will still visit that farm it won't just be bare earth sitting there crumbling. That was really interesting to me. That puts sustainability in another area for me, because I thought that sustainability will be coming from having to make money from it. It's

not just 'let's do everything we can for the environment', I've still got to make money and make a living from it.

They're working down there with Natural Resource Management (NRM) and over the next 6 or 7 years they've got a couple of projects going on with *maintaining* the trees that are there but also involving the children in lots of tree plantings in *different* belts where trees are needed for protection, and to keep the soil there; the soil is changing; the soil is eroding, there is a lack of water. This is a partnership between that farm and the children here and what they want to do is they want to carry this through until the kids are in year 12 which is another seven years away. They want those children to have that partnership to take responsibility for those trees, to go down there not only to plant but care for, to water, to watch them grow, monitor how many trees they're losing and why they're losing them, to understand the three prongs in that sustainability stool and why it's *important*. Apparently a lot of farms in that area have that sustainability stool that they do in conjunction with NRM.

And NRM which is funding from the government, they just want to improve our lands in the Midlands and that is one area that needs improving. They're doing work all over the state and in the Midlands there is a great need for trees to be planted. And for (*pause*) erosion to be addressed and the bush they're trying to keep. So there's a lot of work.

Q3. You participated in the Education for Sustainability event presented by UTAS in May this year. How has your teaching practice relating to EfS been affected, if at all, as a result of your participation in this event?

K: It was really great. One thing I gained out of was to see what other schools are doing. Even though it was early childhood you could see the links that it makes to primary and the links that it makes to senior school and beyond. It really reinforces what we're doing here at [School A]. It made me think, yes we are doing the right things. Well you feel you are but when you're out with other people and you see oh they're doing something similar to us or what a great idea that I

can take away. It's great to share those ideas but it was great to see that we're doing just as much as everybody else about having that sustainable future.

Q4. Do you have any thoughts on ways that the Arts can help us to engage children in EfS?

K: I think the arts, once again I think all of those curriculum areas just crossover with sustainability. There is no area in teaching that you can't be sustainable or learn about sustainability. I'll tell you about our Softies exhibition recently, it was a beautiful thing to do. We started talking to the art teacher and she asked what our major focus was. I said everything is based on sustainability for the Tasmanian Science Talent Search. She said could we do something like that through our visual art. This lady is a new teacher so she needed some help. *(pause)* Two of the girls in this class were presenting a PowerPoint about making toys from recycled clothing. *(pause)* We looked at it and thought what a great little idea. Wouldn't it be great to make toys out of recycled clothing. So that's what we decided to do.

We planned to the unit and we talked to the kids and we decided we're not going to *buy anything*. We told the kids you need to *find* your own material and this material has to tell a little bit of a story. We don't want you to grab somebody's good coat. It might be grandpa's work shirt, or an old rug you had when you were a little one. They had a couple of weeks to go and find their materials. A lot of thought went into those materials. There was a question "well is that still too good to be cut up could that go to someone else?". So we made those decisions as well.

From there we planned, we designed little toys. Even down to the buttons we cut buttons off other things, recycled everything. We use cotton in our cupboards, didn't race out and buy particular colours, we'll just make do. The learning from that was phenomenal. Even to the point where everyone was bringing stuffing from their cupboards that had been there for many years and we ran out of stuffing. I said I would go to Spotlight and get a bag of stuffing. The kid said "You

can't Mrs M, you can't" we then started using pieces of left over cloth. They were so stuck on "let's reuse, lets recycle". For this project we're not racing out and buying anything. It was really strong, the process was lovely the result was divine. We had an exhibition of the softies. The children wrote a little blurb about this softy, named the softy, talked about their softy's life. It was *such a brilliant unit* and everything about it was sustainability.

S: You had the opportunity to celebrate their learning.

K: They were so thrilled. We shared it with the whole school the parents, the grandparents. A lot of whom had come in to help us along the way which was really lovely. They were so proud. They did *all their own* curating. They displayed their softies. People were so intrigued with how they made them and what they wrote about them, and the fact that they did such a *great* job, not that I'm right into the end product, the end product was brilliant when you consider where the things came from. You don't have to always race out and buy things to have the best outcome, things will be fantastic. They've been asking me for weeks can they take the softies home, they did go home this week and they absolutely love them. I think it's because of the whole decision-making process, every story every toy had a story to tell. This little shirt was from this thing, these buttons are from.... It was really great. To me arts is one of the major areas you can crossover with sustainability. Well it is *creative*, its flexible and every child gets to be themselves. I should say that for every learning area. But what I love about the arts is that it is *really* creative, and therefore it encourages kids to be creative about how they can be sustainable. Not just "oh we turn the tap off, no we put that in the recycling". It's *great to be creative* about sustainability and what else can we do. And kids have *great ideas*. They have so many better ideas than I do.

S: Is there any other thought you want to share?

The thing I'd probably add is I think that it (*pause*) would be great if universities, STAT, CANASTA, (*pause*) not just science people that arts people as well offered PL to schools and really got on the bandwagon of sustainability. It's great for us to

be educating for sustainability in here but it would be really wonderful to have *more PL*. Probably out of school, maybe workshops where kids can go and you can look at it on a bigger scale maybe. (*pause*) There is stuff about but I don't think there is enough. We're doing a lot of it ourselves and that's what we do. That PL could improve, maybe on a community scale would be good. We watch a lot of international stuff about sustainability, but maybe (*pause*) community-based information about sustainability. Companies could get involved as well, saying we're running a program about sustainability as well and I know there's a lot of places that do but I think they should be a lot more.

[later addition] With the softies thing one of our parents owns the [Gallery A] at Longford. This was a brilliant opportunity, she invited my class to display their softies for two weeks at her gallery in Longford. We took them out there and she helped us curate the exhibition. Look I've never seen the children so proud. As if that wasn't enough to have our own display, and then we had them in the *proper* art gallery. We had some wonderful feedback from the parents and some wonderful feedback from the Longford community which the mum brought in as well.

It was great advertising for the school, that we're right in to sustainability. It was a great opportunity for the children, something they might never do again. When the exhibition closed the mum sent in certificates for the children for being part of that gallery. Those children might never get that chance again. And it just added to that whole process of sustainability and what they did and what they made. And it's involving the community. Having that partnership with someone out there in the community, is so important because it makes it real for kids.

And one thing I have noticed to especially with our buddy classes and our garden. Not only are these kids now (*pause*) taking on what I'm teaching or what we're teaching them about sustainability. They're taking it on and teaching others. They're teaching me. (*pause*) They come back with so many thoughts that as an older person I'd never thought of. They have brilliant thoughts. And they advise their little buddies. They advise their brothers and sisters, I've heard them talk

about things with other adults. They're not just repeating what I do, they are actually passing on and teaching others, *encouraging* others, and that's valuable.

Ends

Interview with 'Julie' (August 2012)

Background info: Please tell me a little about the educational context that you operate within, if you are a student, if you work in education and how long you've been either studying or working.

J: I've come from a long history of nature-based tourism so I've worked as a tour guide for about 15 to 20 years. So I guess that's one educational context but it's really a very commercial one. As I went through I was able to refine that and make that sort of what I wanted by having my own business and that sort of thing. I've done a little bit of work with the [TVET provider] so once again that's with mature age students mostly, *(pause)* teaching them environmental sustainability for *(pause)* tourism.

And I have two little children, so I work a little bit with them in their school they are in prep and year two now so since kinder for the past four years I've been involved with that. *(pause)* And now I'm first year at University doing primary education probably not with early childhood but I do love *all* the kids.

Q1. Could you share with me what your own personal values are with relation to sustainability and education for sustainability.

J: I'm very interested in managing my own life sustainably.

On all levels social and economic and environment. My great passion is environment. So I guess that's what I see the underlying thing is that we need to look after and focus on. And then I have a strong sense that the others will follow but they also need some dedicated focus also. As far as education goes, I think that's *(pause)* the key for future sustainability is to be *(pause)* getting right in at a very young age and making sure that children are connected with their environment and have an understanding of how that plays into this society, and *(pause)* then into the economies of their community. Does that answer your question?

S: So I'm hearing that starting with primarily an environmental focus you can then broaden understandings of sustainability to these social, political and economic contexts.

J: Yes I think the environment is a very real context for children. I think that is where they want to be. It's something that they are (*pause*) denied quite a lot of access to.

S: How do you mean in that regard?

J: I think children are fairly indoors bound generally speaking (*pause*) certainly compared to when I grew up thirty years ago (*pause*) so I'm acutely aware that children and I guess I'm seeing this through friends of my own children and their own classes really they don't have a lot of (*pause*) conscious awareness of the world around them. They've got a lot of ideas about computer games and movies and I guess that will always be the case, (*pause*) the idea (*pause*) that children need to have a bit more contact and awareness of (*pause*) the natural world around them and to also know (*pause*) the cultural world around them as well, their community.

Q2. I wanted to ask you now about pedagogy relating to education for sustainability. You're studying at university, and I wondered about any particular thoughts you have on pedagogical strategies and practices which could be employed in engaging students in education to sustainability

J: I feel personally very strongly about integrating curriculum and integrating (*pause*) them into project-based things I suppose, project units of work which give the children (*pause*) contact with their environment and contact with their communities. There is no reason why it can't be done globally now, by electronic means. (*pause*) I would like to think that I can enable that in classrooms and it can be a really relevant project for children, (*pause*) that they can then try in all the other learning areas.

S: So when you speak about tying in all the other learning areas, that's the sense within which you use the word integrating their learning is that correct.

J: Yes on one hand there is an awareness that there's a curriculum, that there are expectations that you are going to adhere to, and (*pause*) that you are going to be able to show results for. And on the other hand there is real life learning that children are going to engage with and (*pause*) probably learned the most through, so somehow tying those things together.

S: And how do you see those things being tied together

J: (*extended pause*)Because I'm not a practising teacher, I haven't had the opportunities to put it into practice in order to see what works and what doesn't work. (*extended pause*) From what I've read and the research I've done evidence seems to show that if children are engaged with their work and if you can provide them with relevant projects that are going to engage them and are going to provide them with a really good basis for (*pause*) associating themselves in, that will then lead to learning. It seems that you as the teacher can implement these mini lessons into their projects. Say if you're doing a big project on families or whatever, you might have specific lessons on timelines, or you might have some explicit teaching about (*pause*) cultural backgrounds or world geography that you can tie into this single theme or this project that you've got the children to (*pause*) adopt.

S: I do hear I guess a tension that you describe when you talk about the demands of the curriculum versus what is sort of relevant in children's lives.

J: (*extended pause*)Well coming through school I felt that tension. I'm aware that (*pause*) the curriculum doesn't articulate children's contexts at all, or it doesn't seem to. It really appears to be a checklist of knowledge that wants to be ticked off. I don't see that really as relating to (*pause*) children's worlds. Yes I do see there's some sort of conflict there. I don't think it needs to be seen as black-and-white as that too. I think that the curriculum and, I might be wrong here but,

(*pause*) I don't think it needs to be the Bible of teaching, the other way around almost.

S: Teaching needs to be the bible of the curriculum is that what you mean?

J: Yes pretty well. Well the teacher almost... if the teacher can work with the school in sort of a community (*pause*) with an idea of what that school and the students in the school require, that can then (*pause*) put its own emphasis onto the curriculum in the way that it needs to.

S: There's some really interesting thoughts in there Julie.

J: They're quite big thoughts and they're fairly elusive, because I don't really have any (*pause*) practice. But what I sense is that when you get out there in the school you get banged on the head by these things. That there's a lot of pressure to conform to (*pause*) what the government needs or what the school requires. And I guess that's all guided at some point, one would hope, by students and the parents.

S: So if I can clarify your meaning there when you do get into the socio-cultural context of a particular community, you're suggesting that the needs and the personal interests of those in that community, should be influential in how the curriculum is delivered.

J: Yes you hit the nail on the head. Wrapping up in about 10 words what I said in 20 sentences yes that's what it is. And I think it needs to be seen as the (*pause*) base from which to (*pause*) build the curriculum, from which to deliver the curriculum.

S: So you're saying the children's world is the base from which to build the curriculum

J: Yes in my mind it is.

Q3. You've attended two events relating to education for sustainability as I understand it. The one in May and then the recent arts plus sustainability event. I wanted to ask how has your professional practice relating to education and sustainability, been affected, if at all, as a result of your participation in these events.

J: The first event probably gave me some really (*extended pause*) good ideas as far as that projects approach. (*extended pause*) That thought just lost me. (13 *second pause*)

S: So that was the May event...

J: It's hard because I'm tying it all in with some units I did at uni and I just did so much altogether there and it was all exactly what I wanted to be hearing that I'm probably finding hard to pinpoint where I've got enthusiasm from or ideas from. (*pause*) The events gave me the sense that there needs to be (*pause*) collaboration and cohesion within the teaching community and that includes parents, community members and community leaders around education, (*pause*) because (*pause*) of the energy that you can get from each other, the ideas that you can share. And I guess that's one thing that would come out of those events for me from a professional point of view. (*pause*) Finding and identifying those other teachers and that network you can belong to and can support what you believe in. (*pause*)

The arts one I enjoyed the way that broke down through that discussion with sustainability and the arts, they broke down into the different (*pause*) sections of sustainability (*pause*) from the national curriculum. I saw from that probably some framework you could use for guiding your teaching. (*pause*) which then adheres to the national curriculum at some point. I thought ticked a big box from a professional point of view.

And the little workshops in the afternoon just gave me *lots* of enthusiasm for being able to incorporate arts. I have recently just been seeing *such* strong connections between utilising the arts and the ideas of sustainability, or using the arts as a way of teaching sustainability. (*pause*) Because they involve, they really require

the kids and the teachers and other members of the community to really *engage* themselves with the activities (*pause*) and by doing that then you've got an avenue for teaching really lasting things. (*pause*) And for (*pause*) reuniting people with people which I think is probably, importantly, in there somewhere at a very base level. (*pause*) I'm a bit lost on what I'm trying to say

S: I think I get where you're coming to

J: I feel that these really basic connections that are lacking and I see it around uni, like in my own situation, I'm 38 and most of the people I'm with at uni are 19 and I sense this *massive* gap in our thinking and the way we do things and the reasons why we do things. (*pause*) And I don't think it's just the 19-year-olds at uni, I think through having my own business and from teaching at the [TVET provider] and from friends who are teachers, it's almost there's this, (*extended pause*) generation of people who are really channelled, institutionalised almost. [S clarifying: Do mean the older generation or do you mean the younger generation?] The younger generation. I feel like they've been put through this system, this machine that churned out, (*pause*) people with (*pause*) minds that just do what they need to do. I'm being really overarching and general and that's not fair, but it's just a sense of what I get. I feel like the arts are really the way (*pause*) into reuniting people with passion and with self-dedication and this sense of achievement that (*pause*) may not be lacking but seems to be lacking.

Q4. You mentioned earlier that just recently you've been seeing possibilities for teaching students or introducing students to sustainability through the arts I just wondered if there were any particular examples you could share or what in particular you had seen recently

J: I think because the arts require this engagement from people, they require (*pause*) personal commitment in what they're doing, and it's something that people enjoy doing and there's a sense of enjoyment they get from actually participating. (*pause*) That because that engagement and motivation is there,

(*pause*) I think that's probably the way to (*pause*) put them in touch with sustainability themes.

S: I'm glad that you've elaborated that for me. We've covered off all the questions that I had on my list to ask, you've really shared your thinking as it's emerging with me which I really appreciate and I think that there is something in what you just said. I see many connections with what I'm also reading in literature. So I've come to the official end of the interview but I did want to give you the opportunity if there's anything more you wanted to reflect on please share it now.

J: No I'm feeling like I'm really, just like you said, emerging in my thoughts and I really am, (*pause*) every new little bit of information comes into my brain it's like oh there's another connection. (*pause*) And I'm searching for answers at the same time as trying to create things in my mind (*pause*) and so it's all little bit elusive. I'm sorry.

S: No it's terrific thank you and that's where I'm at with learning. I get the feeling that's where a lot of us are at and particularly I've been asking you about arts and sustainability and the two fields that traditionally haven't sat alongside each other.

J: No sustainability hasn't been there at all. I guess I see the arts as a deeply human thing and sustainability as something that we need to be deeply human about. So to make that jump into (*pause*) thinking in a sustainable way and accepting that perhaps we've really stuffed up and that things actually need to change at a *really* broad level, that we're going to need something like the arts that really bring out our passions and awaken us to have that courage to take steps for change.

S: That's a beautiful note to finish on Julie I love your point about the arts is a deeply human thing and sustainability requires us to be deeply human, that's gold

Ends

Interview with 'Carolyn' (August 2012)

Background information: Please share some detail of your studies, professional experience and future career goals. [Carolyn is in third year of the B. Ed degree.]

C: I've done three [prac] placements – at [School B] for two weeks in a prep class, [School C] in prep/1 and at [School D] in a grade 1/2. And I work at [School E] Primary in a prep class three mornings a week as a literacy assistant and I also work with a grade 6 student for 5 or 6 hours a week out there with her development, she's a long way behind, working at about a grade 1/grade 2 level.

That practical experience is so helpful in focusing in on what's actually being said in the textbooks and seeing it in practice. It's more meaningful because you can actually see it happening. The teachers there are so helpful. I just ask them "what do you think about this" and they'll either say "that's rubbish, they said the same thing to us at uni but it never ends up happening" or they're like "that's really interesting if you want to go into more depth just ask questions and check out this resource, have a look at that".

[I work] three mornings a week, it's in their literacy block so I work with the two lower groups. At the moment we're working on phonetic awareness so being able to hear sounds, words in sentences. Going into compound words, syllables. I've been working there for 3-4 months. [some conversation about combining work and study, omitted here as it's not relevant to this study.]

Q1. You've been to both of the events that have been held, the Living and learning about sustainability in the early years event and also the recent Arts + Sustainability event. I wondered if you could share with me what your values are relating to sustainability and also to ECEfS.

C: I think it's valuable to have that influence not just now that it's mandated in the curriculum or through other frameworks. It's pretty evident that something needs to change. And a lot of it just in my observations in society, a lot of it seems to be attitude based. Like an example at work, I used to work up at the casino, so a lot

of people I worked with there would just throw things, (*pause*) you know recyclables in the rubbish bin even when the [recycling] bin is right next to it. It wasn't important to them *at all* and I'd question it and it's like "it's not my problem, I don't care". Couldn't even care less.

Sort of indicates that it's more of an attitude that needs to change as well. And so that's where I think it's really important in ECE to bring that awareness of what's actually happening. (*pause*) Especially when people now tend to be more removed from the natural environment. If they're living in a city, Melbourne, working in your office all day you don't see the logging, or the rubbish on the beach or animals dying, (*pause*) so from that perspective there's a lot that can be done there.

S: When you mention that perspective of us being removed from our natural environments, how does that impact on children and children's learning?

C: I guess there's a lot you can learn through the environment and from the environment. I remember reading somewhere there was some very valid argument about asking children to care for something that they don't know. I think it was at that conference. So in order to be passionate about it and to care about it you need to first know what exactly it is and what it means to you as a person, as an individual, before you can ask them to fix the problems.

S: As far as your own understandings of sustainability did you feel that the event in May impacted on your own understandings and awareness?

C: Yes, not as much as the recent one [event]. I think the recent one, that framework that you guys worked from I found that *really* helpful in seeing the bigger picture. It's kind of easy to focus on little environmental factors rather than looking at the big picture yet that's pretty important as far as addressing a problem. You need to look at the big picture.

S: What kind of big picture did you take away?

C: That inclusion of systems and politics and the environment and society working together - the systems approach, critical thinking.

S: Before we depart from that I'm kind of getting from you that your understandings of sustainability have perhaps broadened beyond the environmental views. Would you say that initially before you went to the first event in May that you thought about sustainability more in environmental terms.

C: Yes, definitely. I think that stems from the media and the way that is portrayed. Clean up Australia Day, all those sort of initiatives are focused on the environment, they're not encompassing a wider social way. Even probably thinking back to when I was at school, I don't know that might have been more the subjects I chose, but even then sustainability was more of an environmental thing than a political or an economic thing. Politics and economics are easy to be seen as the bad guys or the root of all evil.

Q2. In terms of your own practice as in the classroom now and in terms of your future practice I wonder if you could share any pedagogical strategies you employ in terms of sustainability.

C: It's not something I've really thought about to a great extent but maybe just more about bringing the environment into the classroom. Not necessarily changing a whole lot but just instead of (*pause*) doing certain activities one way, doing them outside or (*pause*) incorporating strategies to allow children to get to know the environment a bit better. So instead of just running around the oval for daily PE you could do a scavenger hunt or (*pause*) in science if they are growing (*pause*) seedlings or whatever it is they are doing, expand on that to take that outside. So not just looking at purely the growth aspects in the life cycle, but talking about how different plants impact on different people and what would happen to biodiversity if you take that plant out.

I think that even young children would be able to understand those concepts that aren't traditionally brought into or are considered too complex for young children. They don't need to understand the whole thing but we could introduce it a bit

earlier. It's going to make them better people by doing it. That was brought up at the conference last week by one of the ladies from the child care centres, she was saying how much do we show them before they get depressed and upset. I remember that question being asked. It comes down to the individual children I suppose and how they react to it. And I guess as a teacher if you saw it as something that stressed you out and freaked you out you're going to pass that sort of feeling on or the kids are going to sense that in you. You need to think about that as well.

S: You mentioned before the concept of biodiversity and what the effect might be of removing plants from the system. That brought back to mind systems thinking was that something you had engaged with before attending the PL events.

C: Not to any great level. Not in the same context, only from an environmental perspective like in college studies, looking at systems and biodiversity. I would never have considered applying that to teaching as a pedagogical strategy or a way of thinking about sustainability.

S: Do you see opportunities to introduce that type of systems thinking into your education with young children?

C: I think it would be really valuable. It kind of fits in too with that whole concept of constructivism learning and making connections across disciplines and keeping things a little bit more holistic rather than compartmentalised.

Q3. Has your teaching practice relating to ECEfS been affected, if at all, as a result of your participation in either or both of the events.

I think it has definitely opened my eyes and it has sparked maybe a new interest. Because it's easy particularly in an undergrad degree when you learn so many new things in the course of each semester. It's all new I guess not coming from an education background, like my parents weren't teachers or anything like that. So it's all new. You don't really have a chance to sit back and focus in on something that really interests you. Like it's always learn that, on to the next thing. Not that

you forget about it and put it away but you kind of do. You're forced to move on really quickly to the next big thing that you need to learn. *(pause)* In that respect those conferences really *(pause)* got me thinking about how I can incorporate it more into each of the different units that I do so it doesn't just get pushed to the background.

Because we certainly don't have a unit on teaching sustainability at all. It's not been mentioned in science or *(pause)* any of the other units I've done so far. *(pause)* Mary Ann maybe mentioned it in the arts and drama unit. It was never really mentioned to any great extent in S&E, *(pause)* touched on briefly maybe but *(pause)* not focused on. No strategies have been suggested to really kickstart that learning.

S: And it's a cross curriculum priority in the new Australian Curriculum. That has interesting implications, that here you are three years into an education in which you'll be expected to teach sustainability.

C: I think it's even more worrying if you look at my knowledge before these conferences which was purely an environmental focus. I'm not saying everyone would think like that but there would be a lot more of an environment focus than perhaps the wider broader big picture you're suggesting we need to be focusing on in order to get to where we want to be. It's interesting.

Q4. As a result of participating in the most recent event I wondered if you had any thoughts about the ways in which the arts can help us to engage children in EfS?

C: I think that the arts is probably one of the easiest *(maybe)* ways, because it's a different form of communication. And it's one that as the research literature says is more suited to young children. They find it easier to communicate through the arts than they do verbally or through written communication.

Maybe it would also be easier for us to communicate with them through those means. They might understand the concepts more easily if they could be presented information through the arts. It might make it easier for them to

understand the concepts if they were presented to them in their own language. I have no idea where I got that thought, I think that just came into my head while I was talking.

Well like working with Andy last week or the week before for me really opened my eyes just through doing that art or through that experience it was easier for me to understand the impact and what was happening in the bigger system just through creating that picture that we created and talking about it as we were creating it. S

(clarifying): Did the talk have a big part to do with your understanding? C:

Probably, because that's how I find it easier to learn.

S: How did that workshop work for you and what did you do?

C: To start with we just talked about what rubbish was, I think there was two big tubs of plastic, he gave us a bit of a talk about scary facts and figures about plastic in the environment and what it does. But then a lot of it was just free. He just dumped it in the middle and said take some things you would like. Everyone just started sorting through and (making) little piles of stuff. And then from those little piles the directions were very loosely to create something.

A lot of those creations we came up with were (*pause*) environmental (*pause*) in their perspective, like there was a desert and the sunset on Uluru which was all orange made out of the orange blocks and teddy bears and things, because she had been to Uluru recently. So in a sense that (*pause*) picture being made out of rubbish was a little bit of a (*pause*) contradictory image. But there were lots of other different pictures being made. (*pause*) Cities or stories and things that were happening.

S: What did you make and what did it represent for you?

C: I had a big tower made out of CDs and blocks and things stacked up and a big rat on top. I really don't know what that was symbolising, I mean you could interpret it how you like. And then there were other little things all facing it.

S: And you found that an interesting way of thinking about things?

C: I think it let your hands do the talking a little bit more or the thinking as well. And you weren't thinking to create something in particular. What was created ended up being what probably the end goal was meant to be anyway.

There was a strong storytelling focus to it as well that would be good for young children. Once we created our things we had to tell a story about it. Each person told their story. Some were narrative form. The lady who had been to Uluru told of her personal experience. Personal experiences at a pool party or concert or something and narratives.

S: So could you see yourself replicating that in the classroom.

C: Definitely, that would be great. I don't know if there would be ethical issues there, about using rubbish. [Other conversation irrelevant to the study].

S: Any other thoughts that you would like to share?

C: I would like maybe to see a bit more focus in the degree on [sustainability]. That would be my main [comment]. Being expected to teach something without being taught how or where to start.

S: Have you had much exploration of the new Australian Curriculum?

C: Not really. I've read bits that are online and I've used them in my assignments. My third year prac was all taught to the Australian Curriculum. But I haven't delved into it from a critical perspective at all yet. I did read an interesting book yesterday about the maths side of the curriculum and the tension between that and the early years document and how they don't really align. Which was interesting. I think they were talking about the cross-curriculum priorities as well and how they weren't (*pause*) embedded in the actual content, that they were like extras on top. But not actually evident in the layers of the curriculum after that.

...You could probably argue that sustainability isn't really embedded after that brief mention at the top. [S: Does it seem like it's a lens kind of applied over it?] C: Yeah but how helpful is it when you're trying to teach it? Not very helpful. A bridging document or something like that would be really helpful to look at the curriculum through that lens(*pause*) more specifically.

S: Is it helpful to you to see EfS examples in practice?

C: Yes, it all kind of builds up the layers of understanding. And each time you look at it you look at it from a slightly different perspective or see something else in it you didn't notice before. Or you go oh yeah I can try that or you can apply it to a different strategy or a different activity.

[A later clarification.]

S: I'd never thought of the arts giving you the option to present information to children in different ways. I had only thought of getting children to respond using the arts.

C: It seems to make sense, if that's how they communicate then surely they're receptive to it.

Ends

Interview with 'Charlotte' (August 2012)

Background information: Please tell me a little about the EC education context that you work within – age group of students, any particular subject area you focus upon and how long have you worked in this context?

C: I'm across two different programs, one being that I teach the Diploma of Children's Services at the [TVET Provider]. Have done for the past 8 years.

Part of that delivery now of the Diploma of Children's Services is a Sustainability Unit. I'm also consultant through [Child Care Organisation] and do professional learning and training in whatever they need help with in particular environments for children and sustainable resources as well. So that's with adult educators who work with children from birth – 12 years of age. My students are aged 17+ at the [TVET provider]. So that covers quite a variety.

Q1. Could you share with me what your own personal values are relating to sustainability and ECEfS.

C: First of all I'll answer in regard to Early childhood EfS. I believe it's critical, I think it's really essential that we need to be educating the children in the services about sustainable practices and what that means. Just so they are aware in their early years that it's important what they do and how they contribute to the world can make a big difference, as far as the students go.

And the educators in the professional workshops it's essential because they're the ones that transfer that knowledge down to the children and they're the ones who model those practices and the children obviously learn from that. And as far as my values towards sustainability I just think it's really important with the way of the world and I think we just need to go back to basics really.

S: Why?

C: For lots of reasons, it's hard to explain. My main reasons are that we need children to value what we have, not just as far as commercial things and things

that are fast and ready and things that entertain children. But we need them to have a real affinity with nature, to respect the community they come from, to understand what the community offers them, and to appreciate and value what we have around us with our natural resources and our access to the beaches and the forests and the farms and all of that sort of thing. Because a lot of our children may not be exposed to the possible beauty of nature and things around us if you understand what I mean. That's really important and I'm very big on the obvious things like recycling, water conservation and natural resources as far as to do your maths and your science and things like that within the outdoors rather than having to buy stuff.

I think our children are exposed to a lot of commercial activity and a lot of stuff they don't need. A lot of plastic things that are just not sustainable, and they usually have one purpose or outcome for learning which is just not a necessity in their life. But I think that also comes back to people, the adults in their world as well who may not have that knowledge or respect or awareness. That's why I see early childhood as the real vehicle for delivering it really and making sure that the children are aware of it so they can make choices as they grow up and learn. That's how I feel.

Q2. I'd like to ask you about the pedagogical strategies and practices you employ to engage your students [TVET students and Child Care Organisation educators] in EfS. Could you share any thoughts about your practice in this area?

C: At this point in time with my Polytechnic diploma students this year for example we've had a big focus on sustainability. It's been part of our community and children's services focus for the year to embed sustainability throughout the whole year, no matter what we're delivering. So even if it's something like play and development, that cluster of four units, it's about setting up play experiences for children using recycled material or gathered resource. We've done a few different projects. One was we did a bit of a makeover to enhance the environment of a grade 3-4 classroom at [School F] primary school with the Kathy Walker

approach. The students gathered resources and made things. It was really quite exciting.

I am very influenced by the Reggio Emilia philosophy so a lot of that comes out in the kind of teaching, you know, how I try to motivate and inspire them to set up beautiful learning environments. For the children or the educators who are in suburban built up areas that don't have access to outdoor environments in the community like farms, that they can walk to, we try and bring things in from the environment to expose the children to those different things. The students have attended the Claire Warden presentation recently she was over from Scotland talking on nature education in early childhood.

And we were also doing an exciting project recently, I gave them a PBL which is a problem based learning activity. I posed a problem to them and then they had three weeks to work on that project. That was a hypothetical, that the [Shire] Council has approached your class and have asked you to plan and design your ideal sustainable early childhood service. It has to be presented for consideration at the next council meeting. Four different teams have designed, planned and actually built 3D models of their ideal sustainable childhood service. Part of that is they had to research about sustainable practice in early childhood, they had to look at philosophies and other people's policies. So they were really learning that holistic thing without me standing there talking to them about it all the time. That's been really exciting.

We're doing a makeover of the [ECE Centre A] sandpit. We went down there last week and did an onsite visit. We informally interviewed the children of all ages, the educators, the director and inclusive of the autism centre which is built above [ECE Centre A] house and we talked to the directors of both services and we documented the kinds of things they'd like to do to enhance their space because it looked very bland, unstimulating and just lacking nature.

They had lots of plastic bits and pieces for the children to do their traditional digging in the sand pit with the spades and the buckets. And we come away and

we said let's look at these photos, let's talk about the possibilities here, let's try to connect the children with the natural world and look at the Early Years Learning Framework and the National Quality Standard.

We've just finished this afternoon our map of what our intentions are. So we've incorporated a recycled music wall, a lovely art area outside, a water wheel... we've got lots of images and things, some trees in the environment and sensory tyres with different types of things. Just really trying to recycle, reduce waste, using pots and pans and things like that in the sand play just to make it more creative and inventive and imaginary using things we already have. They're kind of the things I'm doing with the group that I have this year.

I think they're enjoying it and making the connections and we always link it back to the unit descriptors and make sure I explain I'm not just getting you to do this because I am passionate about it but because these elements say that you have to do this you actually understand what the units are about and how it all is threaded through sustainability.

S: It sounds as though in some regard you are almost heartened by it being embedded within the curriculum

C: Definitely and it's really great to see the sustainability unit now as part of the qualification because previous to this training package that we're using there was not a sustainability unit in it. It was actually designed in consultation with Tracey Young she's been a guest speaker from Swinburne University, she's the author of many amazing books for early childhood. She came over and spoke to the students and us as a team here. That was great as well.

Q3. You have attended both of the Education for Sustainability events presented by UTAS this year. How has your teaching practice relating to EfS been affected, if at all, as a result of your participation in these events?

C: Yes, particularly the second one, the recent one where I came to Launceston a couple of weeks ago. I found that I got a lot of practical ideas to actually come

back and do with the students to try and (*pause*) get them to see that the arts can also be incorporated into sustainable practices and the whole systemic thinking that we learnt about. I just thought how do you teach that to college students with the limited knowledge like basically their current knowledge, if you said to them what is sustainability, they'd say things like recycling, water conservation, they might say about power but I don't think they have really thought about how it all links together.

From the second one I went to in Launceston I actually took a lot of notes and when I came back that night my head was buzzing with ideas of what I could do with the students. The Drama workshop in the afternoon I found really useful. I did the whole shoebox idea with the students. (*pause*) I also did the drama activity that we did in the afternoon. Like 123 and we all get together and that worked really well to get them motivated and get them a bit more physical and engaged with it. From the morning session I shared some ideas from that talk with them about what really stuck with me too was the childcare centre in Mexico the man was talking about where there was that fatal accident. Two children were killed because someone didn't read the sign and I explained to them that really affected the children and part of that process was how they made a new sign it was quite a strong message from the children in that community. I talked with them and gave them anecdotes about what I had heard and learned from my time at that Launceston one and I found that really useful I was very happy with that day.

From the first one I came back and we did the global footprint on the computer and they were quite shocked at how many planets they'd need to sustain their current lifestyle. And they talked about what kind of changes they could make to reduce the amount of consumables and stuff that they buy. I found them both really useful. I thought to be honest, with the first one I attended my students wouldn't have got most of that, it was a bit over their head. That it was quite a lot of information and you would need a bit of a background in what sustainability is before going to it whereas the second one, I thought anybody could have grasped that as a new concept.

Q4. Can you engage students in EfS through the arts?

C: Thinking back about the arts workshop. What I got out of that was, first of all I haven't had a lot of experience doing drama. I never did it at school. It's something I don't feel comfortable with putting myself out there with a big group of people you don't know, acting silly. And it made me realise that's how children feel when you go 'oh let's do this'. I was reflecting on little children and how we do things for them knowing that they learn from this and these are the possible outcomes, but how it actually feels as a person to be in that situation doing it.

For the first ten minutes I was thinking 'Oh my goodness, why are we walking around in this room trying to fill up space. I wonder what this is about'. And the more we got into it, I was just thinking 'I'm just so loving this' I didn't want this to stop and the whole group felt like that because we were late coming back. The lady was very engaging, she was a very effective listener I felt she gave people the opportunity to talk and share ideas and thoughts and there were just enough people in the group, there was about 12 I think. I thought that was a really good number. There was quite a diverse range, there were people not particularly from the drama area. There was a student from the [TVET provider] from Launceston, there were other teachers of early childhood, and there was a guy from the circus. There was quite a variety of different people in that team which was great and I just felt the kind of strategies she used and the techniques she used were excellent. There was a word she used, it was a drama word like a freeze frame where you had to freeze and she would say a word and you had to act it without talking to your partners. It was just so hilarious it was great how Mary Ann, for example when she said in three seconds I want you to stop and we stopped and she said the word 'tree' and we had little teams of three and we made a tree and she extended on that by saying 'oh wow', because I had a floral top on. 'Now tell me about your tree' and we had to come up with ideas. 'It's a lovely floral tree' I remember now "it only grows in the Meander Valley so that's really special to Tasmania isn't it". So it would be like extending the children's knowledge and vocabulary and I could see how that would work with younger children. If you had

have talked to me out about it I wouldn't have got it as much as doing it. It was a practical activity designed for me to go "So you could introduce different types of trees that are endangered or only grow in certain places or some produce fruit and some are a hundred years old". So it was a great different way to introduce how you could (*pause*) start a possible conversation with children or our Polytechnic students to get them thinking about (*pause*) different ways of starting that train of thought into systemic thinking. Does that make sense? I found it really useful.

[I've omitted a side conversation which is not relevant to the study]

S: If we were to ask you do you want to do a drama workshop...

C: I probably would have said not particularly because it's not my strength. You threw me into it and I am pleased you did! I really enjoyed the conversation with the two men I thought that flowed well. They complemented each other with what they were talking about. The other thing that really stood out in my head was Allen's anecdote about the playdough and his daughter how she made the giraffe and cut its head off. I thought wow, that shows you what young children are thinking. And it's so evident. Because obviously I love observing young children and documenting their learning.

The question that was from a teacher in the audience and Arnold, I thought he answered that so well. When she was concerned about if we're showing children are always exposed to the bad things in the world. Can you remember that? And his answer was 'Children don't get depressed about what's happening, he said they get depressed if they feel that they can't make a change', something like that. I wrote it down straight away and I was like 'yeah you're so right' because he had that image up on the board and it had on the left it had the mum and dad, and drinking in their cans, and watching the tv and eating heaps of food and having all the furniture and swept under the carpet on the right was the tragic side that the planet's dying and toxic it was a really good image to spark a conversation about it.

I did like that way he handled that lady's question. I thought he did a really good job of coming back in a real positive way and I thought he was so passionate about what he was talking about I could have listened to him all day. I even came back to the [TVET Provider] and I said to someone here I went to this fantastic thing on Saturday, it would be great to get that man to come up here and do a 2 hour presentation to our staff. Either of them, but Arnold in particular.

The Kiwi man, his story that he was telling us about the earth and the sky. Amazing. I wanted to record that. Thank you because it was just so interesting from the New Zealand perspective because we don't have a New Zealand person around us to share that. And I just thought wow, that's amazing I just thought that was wonderful. And I could see that you could sit with the children if you had that knowledge and you knew what you were talking about and you could say those words and the children would be so engrossed in someone telling them that story. I just thought it was so amazing. It's good how you can do sustainability through storytelling, you can do sustainability through drama, or through expressing yourself in your art. It goes across the whole thing so I found it really worthwhile.

Ends

Interview with 'Liz' (September 2012)

Background info S: Please tell me a little about the education context that you operate within, whether you are a student, whether you work, just your own personal context.

L: I am a primary trained teacher. I'm currently on leave from the Department (*pause*) to parent my kids. I am still fairly engaged in education and in particular our local school, where we have established a school/community garden over the last 12 months. I am interested obviously in issues around sustainability, and using the garden as tool to connect kids with it.

S: When you say you are engaged with the local school what sort of engagement do you mean?

L: I'm basically the coordinator of that program. It involves the go-between really between a group of parents that first initiated the idea, and actually there were staff members on that initial group. (*pause*) Originally we (*pause*) had envisaged a community garden, and that didn't get up for various reasons. The school was supportive of the idea, so it's become a school project. I suppose because I understand the pressures of classrooms and teacher demands I'm kind of the person that offers (*pause*) the staff and the school ways to access the garden. So I'm networking with parents, (*pause*) supporting parents to initiate cooking or gardening opportunities, (*pause*) that kind of thing. I'm kind of the go-between between the school and the community. And I use my teaching too because I offer to take classes out or to come into the class and do sessions. I suppose I'm trying to model to the school what a person in a paid job like one day a week, a sustainability educator, might be able to offer the school. In my year off that's my ambition.

Q1. Could you share with me what your own personal values are relating to sustainability and also education to sustainability?

L: I'm hugely passionate about sustainability in the bigger wider sense, like your lecturer from New Zealand I can't remember his name, [S: Allen Hill], yes like him talking about social justice and equity. I think it's classic the planet story, and the way we live on it isn't sustainable and that comes from a protection of my own children and our own community, that I want to act around those issues. They're kind of central to my being really.

As an educator, it's that classic thing about you get early concepts and early experiences then there's evidence that then they're more taken on or more easily learned when children are young. Just imparting the knowledge that these kids will need to adapt and be in a different world that has to (*pause*) adapt to be sustainable. I'm trying to give them attitudes and skills and (*pause*) some kind of connection with (*pause*) where food comes from, how we produce it (*pause*) and how we eat it. We are going to have to know all of that so it's sowing the seed of the idea that you can grow vegetables if you plant a seed and nurture it for six months, then you get food. I don't know what else to say, it's pretty basic

S: Strangely though not necessarily enacted in our world.

L: No, and you know people who are into sustainability are seen as "lefty weirdoes". (*pause*) I think people are just caught up in the life and keeping their heads above water and perhaps they don't have the luxury of a partner that works that supports me in basically a volunteer career. We don't have mortgage pressure, you know there's a whole lot of conditions that allow me to live (*pause*) kind of more morally than I see other people (*pause*) living. But everybody's under their own impressions, expectations and within their own (*pause*) worlds, how they think, their perceptions, their culture, (*pause*) all of that. So the school is a great place to try and open (*pause*) or provide access to those (*pause*) different perspectives on the world. And kids completely get that the planet is stuffed, they know. What we need to do now is give them the skills to then cope and adapt to that, (*pause*) not raise a generation that is completely oblivious to the whole issue.

S: When you say that kids know that the planet is stuffed, how do you know that?

L: You ask any kid what climate change is or what global warming is, they know in their own limited way that the world is [stuffed]. You know there are so many picture books and National Geographic shows or TV shows where that's [shown], (*pause*) maybe more so than 10 years ago but that language is common now. I don't think we need to teach kids (*pause*) that the planet is warming up any more, I think we've passed that. That's how I think they know. (*pause*) My kids know but I'm sure it's out there enough in our wider world. There's so many ads isn't there about being green? It's becoming more mainstream.

Q2. I'd like to ask you about the pedagogical strategies and practices you employ to engage the students that you work with in the garden obviously how you engage those students in education to sustainability could you share any thoughts about your practice and pedagogy

L: Well I'm exploring that, I've heard a few rumours about or stories about Landcare type community groups, Coastcare community groups that have a high success rate of use of engaging their communities using the arts on this issue. That's why I went to the sustainability and arts workshop, because I'm just curious around how do we engage kids? I've tended to go down the scientific thinking around this stuff and will go into to a classroom and talk about GE crops. [S clarifies: was that GE as in genetically engineered crops?] Liz: Yes. We had a (*pause*) situation at school where we planted sunflowers and when we went to harvest the seed there wasn't any seed inside. They were sterile, they were empty. We did some investigating and posed the questions with the kids. We took the kids up there and talked about what they would expect when they were there, and when they opened them they were empty. So we talked about how and why a farmer would (*pause*) engineer, whether that's selective breeding, it is not genetic modification it was a hybridisation, how and why they would make that happen. So that's kind of using the garden I suppose as a stimulus for the scientific concepts. Another kind of example would be (*pause*) looking through the compost the mini beasts and talking about the life cycle of and the value of decomposers. (*pause*) I've tended to use that the garden is a tool that can stimulate or (*pause*)

allow the opportunity to talk about scientific (*pause*) phenomena really of the biological world. So that's one way.

Another way which I think, if we could set up a system at school, we're not getting much response back from the school. I don't think they are committing, I think they're riding on our backs basically, and not really.... I think the school could use the garden and its volunteers a whole heap better than it does, and one way I would envisage that would be that classes have (*pause*) plants, and that they come out regularly and visit the garden and they have a connection with that regularly. When it's just me and to get round all the classes, they may get one or two visits a year, I don't think that connects them with what's growing, there is less value to it. There are a couple of teachers in the school who have sown the seeds, planted them, have come up every month, had photographed them and now are ready to plant again. They've taken their kids through the whole cycle. I think if we had to choose which kids came into the garden and my model, my ideal model, would be the early childhood classes coming regularly over the year, rather than 17 classes coming in to say six visits a year and doing little mini units. I think seeing that seeing the whole season through is really valuable so that's probably the second method.

But I am also interested in using the arts, and by launching the garden in October we're having a bit of a hoo-ha, one of the (*pause*) things were going to do is the classes to do some kind of artistic contribution. Whether that's a sculpture or some still life drawings or whatever. (*pause*) Art seems to reach a deeper (*pause*) part of (*pause*) people and I think provides a richer response to (*pause*) things, so I'm curious as to whether that's the avenue through which we can emotionally tune people into the garden. It's a skill area or a knowledge area that I don't really have yet, but I'm interested in finding out more about that.

Q3. You have participated in both of the education for sustainability events presented by UTAS this year is that correct? [Yes]. I wondered how your practice relating to education for sustainability has been affected, if at all, by your participation in this event

L: I think definitely the early childhood one really shifted my attention to this area, I'm not early childhood trained. But it made me think if we had to choose between where we put the garden resources that should be in early childhood if just for that reason of getting in early into their little minds and hearts. So that's the first thing.

And I did enjoy the presentation where the two presenters did that Prezi [Sherridan: this was Allen Hill and Arn Aprill] Liz: yes thank you. I love the way that (*pause*) Allen went through the principles of (*pause*) educating for sustainability and Arn complemented those with examples of artistic projects that he'd been involved with. Again I don't know much around the theory of it but I just think it's exciting and engaging and that it's the value of the arts. I'm a little bit more scientific in my way where my energies go, but I'm curious about the arts. I did a drama workshop in the afternoon which made me reflect on the way I use drama in the classroom, not around sustainability issues, but more generally. I'm actually going to a workshop tomorrow in relation to using drama for developing literacy. So I've become curious about using the arts across the subjects rather than having it as a little drama lesson once a week. So I suppose they have been the (*pause*) impacts that I am pulling to mind most easily.

Q4. If I can reflect back on something you said earlier in relation to summing up a little of what I think I've heard from you. You were saying that with your garden you've been looking for ways to engage children more deeply or at deeper levels in the garden and that you've been curious as to whether arts might hold some, whether it is a key, to gaining more engagement. Would that be about right?

L: [about engaging children in EfS through the arts] I think it's to do with that stuff I've read around how we learn and that we learn when we're motivated and emotionally switched on, and happy. If I took a class of kids up there and they weren't in the right headspace then they may not even hear what I'm talking about, perhaps I wonder if I took them up or they are involved in some arts project within the garden whether, even just as a concept and being there as well they have more ownership and just the more emotional connection and response to the garden that they would have.

I'm not sure that I'm trying to get them engaged more deeply, (*pause*) I am trying, I would like to see some systems (*pause*) setup so that their visits are the most (*pause*) effective that they can be and not just little flippant (*pause*) visits to the garden without any connection to it which is true for some of the classes that don't have the parent volunteer for example attached to that class or if the teacher is not really that interested or too busy or whatever. If the teacher is enthusiastic then that carries it. It doesn't need me. It doesn't need me to be doing the art, but I am curious about that whole concept of the role of arts in education and across all areas, I wonder if it's a little trick to getting not only kids but also adults in the community just paying attention really.

S: That actually brings me to the end of the interview the questioning within the interview. I always finish by saying now that you've shared all of that thinking I offer the opportunity if there's anything further you want to reflect on or elaborate on. No, not really.

L: One other thing I took from the day was how capable kids are, that problem solving approach, that I took as valuable that they do know a lot and they can do a lot if we give them the opportunity and the challenge. I enjoyed that about that workshop too.

Ends

Appendix G

Practices and pedagogies teachers employ to engage students in EfS.

RQ 2. What practices and pedagogies do you employ to engage students in EfS?

Coding legend (UNESCO framework, ARIES framework, pedagogies)

1	<i>Participation</i>	7	<i>Inquiry learning</i>	13	<i>Landcare</i>
2	<i>Partnerships for change</i>	8	<i>Problem based learning</i>	14	<i>Classroom environment</i>
3	<i>Critical thinking and reflection</i>	9	<i>Exploring practices and pedagogies</i>	15	<i>Nature learning</i>
4	<i>Envisioning a better future</i>	10	<i>Integrated learning</i>	16	<i>Natural</i>
5	<i>Systems thinking</i>	11	<i>Project based learning</i>	17	<i>Social</i>
6	<i>Arts learning</i>	12	<i>Vegetable gardening</i>		

Ka = Karen, Ch = Charlotte, Li = Liz, Ju = Julie, Ca = Carolyn

#		Summary of the practice or pedagogy the educator described	
1	Ka	Class participated in Murder under the Microscope, a month long inquiry PBL unit where they investigate an ecological 'crime', part of a national initiative (initiative of Uni of Western Sydney and NSW Gov't)	1, 2, 5, 3, 4, 7, 8, 16
2	Ka	The class has its own vegie patch in (School A) garden. Students planned and planted garden, growing broad beans, weeding, planning how to cook broad beans. Sketching in garden, botanical sketches.	1, 5, 3, 12, 4, 6, 16
3	Ka	Wetlands Landcare. Planting and maintaining the wetlands at (School A) park. Learning about loss of trees due to flood through working with the groundsman	13, 2, 1, 5, 4, 16

4	Ka	Farm Landcare initiative. Planting and maintaining a degraded creek bed on a private farm in the Midlands in a partnership between NRM, the farm and the school. Based upon the "Sustainability Stool" which has three pillars built on - environmental, social, economic sustainability. Long term 7 year partnership with these students (Grade 5) maintaining and monitoring this Landcare initiative until they graduate from year 12.	13, 2, 1, 3, 5, 4, 16
5	Ch	A PBL initiative over 3 weeks for students to work on based around this scenario: Council has approached the class and have asked you to plan and design your ideal sustainable early childhood service. It has to be presented for consideration at the next council meeting. Four different teams have designed, planned and actually built 3D models of their ideal sustainable childhood service. They researched sustainable practice in early childhood, examining philosophies and other people's policies.	1, 2, 5, 3, 4, 7, 8
6	Ch	We're doing a makeover of the (Childcare Service A) sandpit. We did an onsite visit, informally interviewed the children of all ages, the educators, the directors of the services and we documented the kinds of things they'd like to do to enhance their space because it looked very bland, unstimulating and just lacking nature. We did a map of what our intentions are (recycled music wall, outdoor art area, water wheel, trees in the environment, sensory tyres - recycling, reducing waste). We link this project back to the unit descriptors.	1, 2, 5, 3, 4, 7, 8
7	Li	Interested in exploring the way Landcare and Coastcare type community groups have had success with engaging communities using the arts in EfS.	9, 6, 1, 2, 4
8	Ca	Inquiry about life cycles of plants, not just looking at growth aspects but talking about how different plants impact on different people and what would happen to biodiversity if you take that plant out. Hadn't previously considered looking at systems and biodiversity as a pedagogical strategy or way of thinking about sustainability. Thinks it would be really valuable, and it fits in with constructivism learning, making connections across disciplines and keeping things holistic rather than compartmentalised.	9, 15, 5, 3, 4, 10, 16
9	Li	Worked with teachers and their classes who have gone through the whole season's cycle in the school garden: sown the seeds, planted them, have come up every month, photographed them and now are ready to plant again. They've taken their kids through the whole cycle.	1, 5, 3, 12, 4, 16
10	Li	Exploring whether art can be employed to emotionally tune people into the garden. Involving students in arts explorations of the garden for its launch in October (through sculpture or still life drawing for example).	9, 1, 3, 12, 4, 6, 16

1 1	Ju	Exploring integrating curriculum with students involved in project based learning which give children contact with their environment and contact with their communities. Prioritises real-life learning and consideration of the child's socio-cultural context in implementing the curriculum.	9, 3, 1, 4, 10, 16, 17
1 2	Ca	Exploring bringing the environment into the classroom more.	14, 9, 16
1 3	Ch	For the children or the educators who are in suburban built up areas that don't have access to outdoor environments in the community like farms, that they can walk to, we try and bring things in from the environment to expose the children to those things.	15, 4, 14, 16
1 4	Ka	A field trip to the Tamar Wetlands to experience another ecosystem.	15, 5, 1, 3, 16
1 5	Li	Exploring concept of having EC classes come into the school garden regularly over the whole year	9, 1, 5, 12, 16
1 6	Ju	Considering project based learning on families including specific lessons on timelines, explicit teaching about cultural backgrounds and world geography all tied into the one theme.	9, 1, 17
1 7	Ch	I motivate students to set up beautiful learning environments influenced by the Reggio Emilia philosophy.	14, 16
1 8	Ch	Students attended a presentation by Claire Warden about nature education in early childhood education.	1, 3, 15, 16
1 9	Li	Students discovered their sunflowers had no seeds and undertook an inquiry learning activity into why plants might be sterile.	8, 7, 12, 3, 5, 1
2 0	Ca	Instead of just running around the oval for daily PE you could do a scavenger hunt in the school grounds (finding natural objects).	1, 15, 16
2 1	Ca	Doing activities outside the classroom or incorporating strategies to allow children to get to know the environment better (eg. In science if they are growing seedlings, expand on that to take that outside.)	12, 1, 16
2 2	Ka	Recently did an art-based unit called Softies which involved children designing and sewing soft toys from recycled materials. Parents and grandparents helped children sew.	1, 3, 11, 17

Appendix H

Arts rich learning concepts listed by interviewees

RQ 4. How can you engage students in EfS through the arts?

1	Participation	8	Problem based learning	21	Making/building models
3	Critical thinking and reflection	18	Drama	22	Installation art
14	Classroom environment	19	Design	23	Curating
16	Natural	20	Visual arts	24	Creating texts

Coding legend (UNESCO framework, ARIES framework, pedagogies)

Ka = Karen, Ch = Charlotte, Li = Liz, Ju = Julie, Ca = Carolyn

#		Summary of the practice or pedagogy the educator described	
1	Ka	Spoke of a recent art-based unit called Softies which involved children designing and sewing soft toys from recycled materials. (Parents and grandparents helped children sew). Children wrote stories about their softies and curated an exhibition for school kids and families.	1, 3, 16, 14, 19, 20, 23, 24
2	Ca	Suggested involving students in installation art using postconsumer material (aka recycled materials) to open up critical thinking about our consumer culture	3, 22
3	Ch	Recently implemented the drama workshop activities with her students (Drama in a shoebox: a Drama Australia resource).	1, 18
4	Li	Art partnerships in the garden to give children greater ownership of their school garden involving sculpture or drawing in the garden (Liz)	1, 21, 19
5	Ch	You can do sustainability through storytelling, drama or through expressing yourself in your art.	1, 20, 18
6	Ch	Involved students in a PBL challenge of planning, designing and building 3D models of their ideal sustainable childhood service.	8, 19, 21
7	Ch	Setting up play environments and experiences using recycled/ repurposed materials	14, 21