A LIFE IN ENVIRONMENTAL EDUCATION: AN
AUTOBIOGRAPHICAL CASE STUDY

by

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Abbreviations used in text
AC – Action Competence
AEU – Australian Education Union
ANC – African National Congress
ARIES – Australian Research Institute in Education for Sustainability
ATSIC – Aboriginal and Torres Strait Islander Commission
CERI – Centre for Education Research and Innovation
CERES – Centre for Environmental Sustainability
CNE – Christian National Education
CS – Curriculum Support Staff (South Africa)
CSF – Curriculum and Standards Framework
CSF2 – Curriculum and Standards Framework 2nd edition
DET – Department of Education and Training (Victoria, Australia)
DSE – Department of Sustainability and Environment
DEECD – Department of Education and Early Childhood Development
EE – Environmental Education
EEFSD – Environmental Education For Sustainable Development
EFS – Education For Sustainability
EFSD – Education For Sustainable Development
ESD – Education for Sustainable Development
ENSI – Environment and Schools Initiatives
IFP – Inkhata Freedom Party
IUCN – International Union for the Conservation of Nature and Natural Resources
KLA – Key Learning Area
LOTE – Languages Other Than English
NCS – National Curriculum Statement (South Africa)
NCSA – National Conservation Strategy for Australia
NEP – National Environment Project (South Africa)
NEPI – National Education Policy Investigation (South Africa)
NRC – National Research Council
OECD – Organization of Economic Cooperation and Development
PD – Professional Development (Also referred to as Professional Learning)
PL – Professional Learning
POLT – Principles Of Learning and Teaching
SACP – South African Communist Party
SAAME – South African Association of Municipal Employees
SATA – South African Teachers Association (for whites)
SE – Sustainable Education
SOSE – Studies Of Society and Environment
UNCED – United Nations Conference on Environment and Development
UNESCO – United Nations Educational, Scientific and Cultural Organization
VAEE – Victorian Association of Environmental Education
VCAA – Victorian Curriculum Assessment Authority
VEEC – Victorian Environmental Education Council
VELS – Victorian Essential Learning Standards
VIT – Victorian Institute of Teaching
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Abstract

Personal experience and recent literature suggest that environmental education (EE) praxis is inevitably shaped by its context. Using relevant literature and an autobiographical narrative, this thesis develops and interrogates instances in my life which provide a platform for the development of new knowledge relating to the complex dynamics, nature and constitution of context, with specific reference to transformative EE praxis.

The thesis is framed by a socially constructivist epistemology and is non-behaviorist in its orientation. It advocates that people inevitably construct and give meaning to reality based on interpretations and connections that are influenced by deep contextual forces specific to their unique existence. From this perspective, environmental issues are considered to be social constructions, and EE is viewed as a socio-cultural and transforming practice that relates to these constructions.

This thesis essentially presents an argument that in order for EE to be transformative, we need to link the complexity of context with place-based learning, relevant learning theories and pedagogical approaches that promote action, understanding, global perspectives and critical thinkers with a civic, social and environmental conscience who are empowered to bring about change. It reveals that context can be used as a tool to explore the connections and meanings participants assign to their existence and their constructions of social/environmental issues, and that this new knowledge pertaining to context can inform practitioners in the future development of effective EE.

I examine and revisit instances in my life in an effort to develop new understandings and provide insight into the complex constitution of context, its complex dynamics and its relation to the learning process. In doing so I explore the link between the collaborative and real-life social context of learning and the pedagogical approaches necessary to bring about transformative EE. A study of contemporary curriculum initiatives in the Australian school context is included to position the study in relation to present and future developments in EE, as well as highlight the essential role of context in environmental curricula.

Finally, through reflection on the examined literature and a discussion on the content of the autobiographical narrative, I illuminate the link between the complexities of context and a transformative EE learning process.
Structure of thesis

This thesis is divided into three main sections.

Section One
This incorporates conceptual and methodological background to the autobiographical narrative that contributes to this thesis. I include a review of relevant literature with examples of context or place-based education and state the associated research questions.

Section Two
This section consists of the autobiographical narrative primarily focusing on my life experiences in South Africa and Australia from both a personal and professional perspective. This part of the thesis acts as an archive from which I elicit evidence in exploring issues and themes in EE, particularly those relating to the complex dynamics of context. Having grown up under the apartheid regime in South Africa, I also briefly consider contextual aspects such as the role of national legislation on race, education provision and opportunity; racial policy and EE perspectives. The narrative also explores factors influencing EE, such as subjective constructions and interpretations of teachers and learners, cultural, social, geographical, political and local community aspects.

Section Three
In the final section I examine issues and implications arising from the autobiographical case study and relevant literature to present key new perspectives relating to the complex dynamics and constitution of context and the implications for transformative EE praxis. I expose the potential of context as a tool to further explore how environmental issues are constructed and how these understandings can inform the way we approach EE.

Linking the Parts
All the separate parts of the thesis are inextricably linked. The divisions merely indicate instances in time. There is a shift from the temporal (the form of organization of the autobiography, referring predominantly to past events leading up to and including my present position), to the contemporal (a focus on contemporary issues and related practice), in the consideration of contextual complexity.
Framework and defining orientations

Guiding framework for constitution of effective EE

For the purpose of this thesis EE is assumed to encompass a range of activities, including but not limited to, community-based programs, formal education, environmental awareness campaigns, marketing (social and commercial), informing and engaging communities in environmental activities, incentive-based commercial transactions and miscellaneous activities that promote sustainable living.

All of these activities incorporate raising awareness and understanding of environmental issues, promotion of participation, the acquisition of new perspectives, attitudes, values, knowledge, critical understandings and skills, and the formal and informal lifelong processes that lead to informed transformational change, ultimately resulting in the development of a sustainable society. There is an acknowledgement of the importance of gaining broader environmental perspectives through the notion of ‘think globally, act locally,’ and incorporating local community involvement in authentic learning processes.

The main focus of this thesis is on EE in the formal school curriculum. From my review of the literature, I have identified four sets of criteria that form a guiding framework for what I believe is central to the constitution of effective EE. They are however guidelines and do not encompass all the aspects of effective transformative EE praxis that emerge through this thesis. These criteria together with the identified principles and visions outlined in ‘Living Sustainably’ (Commonwealth of Australia, 2009), the 2009 Australian Government National Action Plan for Education for Sustainability, I propose form an effective platform for the development of EE as an instrument of transformation.

From the onset, I would like to emphasize that effective EE ought to be transformative process aiming at change on both an individual and societal level. I have purposefully considered a broad time span in the identification of these principles, and I have also included examples of effective place-based EE from the ENSI Project in the Literature Review. These examples from two decades ago illustrate that active and authentic environmental learning experiences have been in existence in certain settings for a substantial period of time, although this has generally been the exception, and not typical of traditional EE praxis.
The four sets of criteria are:

- The eight guiding principles or fundamental criteria underlying the ENSI Project as outlined by Elliott (1991, pp.28-35).
- Defining characteristics of ‘education for the environment,’ from a critical perspective, as defined by Jickling (1997, p.96).

**Environmental Education, Education For Sustainable Development, Sustainable Education and Education for Sustainability**

In recent times the word ‘sustainable’ has often been associated with, or linked to EE, and there is a strengthening campaign advocating Education for Sustainable Development (ESD), incorporating economic, social and environmental aspects, as a ‘replacement’ slogan for EE.

When mention of Education For Sustainability (EFS), Education For Sustainable Development (abbreviated as EFSD or ESD), or Sustainable Education (SE) is made in this thesis, I acknowledge that these slogans encompass EE in that they set it in the context of socio-cultural and socio-political aspects, where EE is accepted as a transformational activity to bring about change in an evolving society. The words ‘sustainable’ and ‘education’ when utilized together as a ‘form/label/category’ of education, also emphasize both the provision of knowledge and understanding, as well as the capacity and skills to manage, plan and motivate change towards sustainability (Tilbury, 2004, p.104).

Some forms of ‘sustainability oriented education’ arguably share a different conceptual framework to EE yet in many senses share common objectives. They are both dependent on life-wide and life-long endeavors with an ultimate aim of what is presently and commonly referred to as ‘inter-generational equity.’ As far back as 1987, the Brundtland Commission stated:

> Humanity has the ability to make development sustainable to ensure that it meets the needs of the present without compro-
mising the ability of future generations to meet their own needs (1987, p.24).

In relevant literature there appears to be consistency in the common aim of achieving ‘inter-generational equity,’ but the 2004 ‘Evaluation of Environmental Education in Victoria,’ shows that at that stage there was uncertainty about the terms ‘Environmental Education’ and ‘Education for Sustainability.’ Practitioners recognized that they weren’t necessarily the same, but that they overlap (2004, p.15). A decade ago in Australia, the Department of Environment and Heritage (2000) regarded sustainability as an emerging field reflecting a shift in the general focus of EE. My present understanding gained from literature suggests that EE and ESD are essentially similar, but that EE is being supplanted by ESD as an overarching term.

**Orientation of this thesis**

The purpose of EE/ESD that I believe best aligns with my understanding of EE/ESD is drawn from the 2007 Australian Government Discussion Paper for the ‘Development of a New National Action Plan for Education for Sustainable Development’ (Commonwealth of Australia, 2007). ESD is in part defined as aiming:

To equip individuals, organizations and communities to deal effectively with the complex and interrelated social, economic and environmental challenges they encounter in their personal and working lives, in a way that protects future generations (Commonwealth of Australia, 2007, p.3).

‘Living Sustainably’ (Commonwealth of Australia, 2009) the Australian Government National Action Plan for Education for Sustainability, provides a refined view of ESD from the Discussion Paper that informed the new National Action Plan. It focuses particularly on equipping all Australians with the knowledge and skills to live sustainably.

It has evolved from a focus on awareness of natural ecosystems and their degradation to equipping all people with the knowledge, skills and understanding necessary to make decisions based upon a consideration of their full environmental, social
and economic implications (Commonwealth of Australia, 2009, pp.3,4).

The underlying features of future effective EE or ESD adopted in this thesis are aligned with the principles of education for sustainability outlined in the 2009 Australian Government National Action Plan for Education for Sustainability:

- Transformation and change
- Education for all and life-long learning
- Systems thinking
- Envisioning a better future
- Critical thinking and reflection
- Participation
- Partnerships for change (Commonwealth of Australia 2009:9)

The genesis of these principles was the 2007 Discussion Paper for the ‘Development of a New National Action Plan for Education for Sustainable Development’ (Commonwealth of Australia, 2007), where consensus on the vision for ESD was decided as:

- ESD represents an inclusive approach to learning and mechanisms for change to sustainability (2007, p.4).
- ESD is life-long: ESD is about engaging people of all ages and backgrounds in an ongoing process of learning, enabling people to develop new understandings of sustainability as well as make decisions and take actions that have a positive impact on sustainability outcomes (2007, p.5).
- ESD is about achieving whole system change: A key focus of the Australian Government approach will be on achieving whole system change. This means promoting change that looks for the relationships between individual behavior and wider systems, organizations and social practices in order to deliver and embed lasting change across social, economic and ecological systems. This approach requires strengthening education providers’ capacity to build relationships between organizations to
support change towards sustainability (Commonwealth of Australia, 2007, p.5).

The resultant document, ‘Living Sustainably’ (Commonwealth of Australia, 2009), also highlights the responsibility and role of the government in a sustainable future:

Through implementing the plan, the Australian Government seeks to provide national leadership and to encourage action by the many individuals and organizations with responsibility for, and interest in, education for sustainability as an instrument of change (Commonwealth of Australia, 2009, p.12)

The four sets of criteria that I have identified as contributing towards an effective foundation from which transformative EE can develop, sit alongside the principles and visions outlined in ‘Living Sustainably’ (Commonwealth of Australia, 2009) that I propose are crucial if practitioners are committed to, as mentioned above, ‘education for sustainability as an instrument of change’ (2009, p.12).
SECTION ONE

1.1 Introduction
The basic premise of this thesis is outlined in Table One below.

Table One: Basic premise of the thesis

In order to address, solve or prevent environmental issues we need to know how they are constructed.

Transformative EE as an instrument of change to bring about long-term quality of life.

1. New understandings of context contribute to the development of transformative EE praxis that critiques existing power structures, attitudes and activities to bring about change and long-term sustainability.

2. Examination of context and its constitution can reveal the connections and meanings learners assign to their constructions of environmental issues.

3. These understandings of context, its constitution and how it influences the construction of issues, can inform transformative EE praxis.

4. Alliances of context contribute to the development of transformative EE praxis that critiques existing power structures, attitudes and activities to bring about change and long-term sustainability.
In order to adequately solve or prevent environmental issues, we need to understand how they are constructed. As transformative environmental education (EE) can be used as an instrument of change to address environmental issues, practitioners require deeper insights into how learners construct these issues.

My proposition is that the notion of ‘context’ can be used as a tool to reveal the connections and meanings assigned in the learners’ constructions of environmental issues. A comprehensive examination of ‘context’ can reveal its constitution and its potential to inform transformative EE praxis. Equipped with these new understandings, practitioners will then be in a position to develop and employ EE curricula that meet the authentic needs of learners, and provide learning opportunities that generate the skills, knowledge and strategies to bring about transformation. The transformation of many existing environmental attitudes and practices is crucial in ensuring long-term sustainability and quality of life.

Currently understandings and the potential of ‘context’ to inform EE praxis is underdeveloped. Although there has been acknowledgement of the merits of contextual (place-based) approaches to EE and examples exists of their effective employment in various forms for over 20 years, the deeper notion of ‘context’ and its implications for transformative EE has not been comprehensively explored and requires further examination.

As long as two decades ago there was evidence in literature of the shortcomings of EE programs, suggesting the need for a revision in EE praxis.

One could argue that despite their good intentions, many environmental education projects seem to fall short in realizing ambitious learning goals such as helping citizens become environmentally knowledgeable, skilled and dedicated people who are willing to work individually and collectively towards achieving a balance between the quality of life and the quality of the environment (Gigliotti, 1990, p.9).
EE has gained prominence in recent years and has emerged in school curricula as a powerful instrument in contributing to long-term sustainability. There are numerous EE programs that have positively influenced environmental understanding and responsible environmental practices, but there are arguably also many that have failed in this objective. There are a number of reasons for this sense of ambivalence in EE.

The way in which EE has been integrated into the common curriculum, the status it is afforded, its purpose or role and policy decisions regarding its implementation, are all aspects that have been and are open to subjective interpretation. These factors are also influenced by complex contextual forces which are also subject to manipulation in order to meet for example economic, social or political needs.

The manner in which EE has been implemented is also diverse and contested. For example, over 10 years ago Wals and van der Leij (1997, p.12) suggested there are EE programs grounded in strong behaviorist principles, with little regard for the promotion of autonomous, critically thinking individuals supportive of social change. From my experience this is still the case in some contemporary school settings in which I interact. These forms of EE that do not always make adequate provision for the unique aspects of each environment in which they occur, often fail to engage the learner in transformative, meaningful, participatory and real-life learning opportunities that are more typical of context specific, or place-based approaches.

The reliance of behaviorist approaches on observable behavior, as opposed to cognitive learning with an emphasis on critical thought and problem solving, are arguably less effective in EE praxis than for example those grounded in social constructivism, where knowledge is believed to be a socio/cultural construction. The broad philosophy of behaviorism does assume that environment or context shapes behavior, and I acknowledge that contextualized approaches to EE are not necessarily bound by a non-behaviorist orientation, but I propose that behaviorist approaches are not conducive to a transformative EE. As they are objectivist in their epistemology, do not take into account complex social processes in scientific discovery, and do not endorse students to think critically about their existence and challenge existing power relations, I do not support behaviorist paradigms of EE as promoting transformational activity.

Instead, I put forward that EE approaches grounded in behaviorism more easily allow for the development of generic curricula and education policy which potentially is formulated devoid
of the considerations, needs, and interests of specific communities. This apparent flaw in many existing EE programs led me to further explore the notion of context and its implications for contemporary and future EE. Literature and personal study has since exposed an undeveloped argument in EE concerning the relevance, constitution and complex dynamics of context. It is the further examination of the issues associated with context and the relation between context and how learners construct knowledge and social issues that I believe will reveal new insights and understandings to inform effective, transformational EE praxis.

This thesis argues that learners need to be connected to where they live and learn, and that an examination of the entire learning context assists EE practitioners in gaining insight into and making sense of these connections. By drawing on the local environment and providing authentic learning experiences (for example place-based education), learners are better able to understand the world around them and make sense of their existence. However, each existential context is subject to a number of complexities that impact on the learner’s constructions of reality. It is these complex dynamics of context that I further explore to gain a deeper insight into the connections and meanings learners assign to their constructions, in order to determine what the associated implications might be for transformative EE praxis. Through the development of a deeper understanding of contextual complexities, and applying these new understandings to transformative education models, I believe young people will be better equipped to balance their quality of life with the wellbeing of the environment.

There is a lot of literature to support the value of place-based education and the significance of contextualized knowledge, for example Green (2008), Rae and Pearse (2004), Woodhouse and Knapp (2000), Inwood (2008), Swayze (2009) and Dittrick (2006). The Draft Report arising from The National Forum on Science, Mathematics and Environmental Education (Deakin University, 2004) held in Melbourne, Australia, states:

The curriculum cannot be based around decontextualized knowledge, selected and reselected perennially because it always has been taught; that is irrelevant to their [students’] interests and needs (2004, p.13).

Brennan (2000) also supports the notion of contextualizing any principles guiding school reform:
This means that any reform needs to be rebuilt and reconstructed to suit the culture, community and context where it is to be implemented (2000, p.34).

Cumming (1998) advocates that each school community needs to be able to localize principles and priorities to meet the needs of their own unique communities and their specific social ecology.

The argument for contextualized knowledge and contextualized approaches is not new, is well supported and of obvious value to EE, but little has been written or researched on the complexities of context and the associated implications for transformative EE. It is from this aspect that this thesis, framed by a socially constructivist epistemology, examines and supports the notion that EE occurs in specific environmental contexts, and argues that this context specificity and its complex constitution ought to have substantial implications for EE curricula, teaching and learning strategies.

In the past, most literature pertaining to context in EE has centered on taking into account broader contextual determinants such as the physical learning setting and the socio-cultural context of the learners, without adequately examining the deeper contextual forces impacting on constructions of knowledge and reality. The presented argument goes beyond advocating contextualized approaches, to include an examination of the complexities of context and its relation to how a curriculum is constructed and taught with specific reference to transformative EE. I argue from the proposition that there exist ‘contexts within contexts’ that can reveal hidden meanings and connections which all impact on transformative EE praxis. These contextual forces influence all levels of the learning process, including the learners’ constructions and interpretations, pedagogy, professional learning and policy. Presently there appears a substantial gap in the knowledge and understandings of the complex dynamics that shape learning contexts, which I address in my argument.

As this thesis also inquires into the nature of environmental issues, it is concerned with how human interests and the complex contexts in which they exist shape these issues. I acknowledge and support the notion that environmental issues occurring in different contexts each have unique attributes specific to those settings, and that they are in essence socio/cultural construc-
tions. However a comprehensive exploration of deeper contextual forces will also allow for connections to be made between learners’ interpretations of events, the meanings they assign to their existence, and how these shape their constructions of reality. It is these meanings, connections and interpretations that I advocate can provide more insight into the constitution of environmental issues and responses to them, which has direct implications for transformative EE praxis.

The use of context as a tool to expose how specific meanings and connections are constructed, will then further current understandings of context in EE and encourage a deeper exploration of contextual forces impacting on the entire learning process. Consequently, an understanding of these contextual complexities will have implications for future environmental research, curriculum development and EE praxis.

I acknowledge that there are a number of issues that are still problematic in the field of EE and the existence of multiple points of view on effective EE models and research in EE. I am also aware that EE models cannot for example simply reject positivist principles and adopt a social constructivist orientation in order to be more effective. Instead I am proposing that through an examination of the complexities of context and its associated implications for transformative EE, there is scope for better understanding and improvement in the manner in which EE models are developed and implemented.

This is indicative of ‘unfinished business’ around the notion of context in this field, and the need for further research. I have adopted an autobiographical study supported by relevant literature in order to approach this ‘unfinished business’ and seek new perspectives on the registers determining effective and transformative EE. In doing so, I extend the mere dualist strategy of positioning positivism and social constructivism in opposition to each other and explore the link between place-based approaches, constructivism, social constructivism, social critical education and transformative EE praxis. Through the autobiographical narrative I also consider aspects such the genealogy of the continuities in positivism and the forces impacting on critical pedagogy, which I illuminate through my life experiences. This is in an effort to provide insight into the role of complex contextual determinants such as habitual practices, existing power relations and political agendas in reinforcing educative practices that in essence oppose transformation of society. This thesis will reveal through the autobiographical narrative some aspects of the complex nature of context and how these complexities impact on EE praxis.
1.2 Statement of the problem

Environmental issues are social constructions specific to particular contexts and communities. Each of these contexts has amongst others, unique and specific political, cultural, geographical, economic and social attributes. This thesis argues that effective EE needs to acknowledge, relate to, explore and exploit the social constructions and immediate context of particular environments to inform practice. A better understanding of contextual dynamics and the complexities in the constitution of contexts within which environmental issues are constructed, is crucial in the development of an effective and transformative EE.

Discussion of the problem and its context

There is consensus in literature that contemporary EE should encompass more than simply learning about the environment. Traditional approaches to EE have focused mainly on students’ needs to have positive experiences with the environment and to learn values that would ultimately protect it (Tilbury, Coleman and Garlick (2004, p.7).

However the present state of the environment and some contemporary forms of EE indicate that these positive experiences are clearly not enough to bring about improved environmental understanding and transformative behavior. In response, it is necessary to ‘develop skills and knowledge for socially critical citizens to deal with complex issues’ (Tilbury 2004, p.7). This is also supported by Fien and Tilbury (2002) and Tilbury, Coleman and Garlick (2004):

At the same time it has been increasingly recognized through research and educational literature that awareness raising and experiences in nature is (sic) not sufficient in itself to lead towards a more sustainable future (2004, p.8).

Hart (1997) acknowledges that the formal school context is a very pertinent forum to further develop environmental skills and understandings that can then permeate into the local community.

An extension of this interpretation of EE was to view the school as not only a training ground for environmental management, but to showcase it as a site of good practice in EE for the community (1997, p.37).
Central to this thesis is the belief that EE can make a difference to the present state of the environment and long-term sustainability. Mortari (2003, p.110) argues that the ecological crisis is a direct result of the western-inspired philosophies and lifestyles that are underpinned by ‘unlimited consumption,’ which is generated by a combination of lack of scientific knowledge and thoughtlessness. As a response, Mortari (2003) proposes that the priority question in EE ought to be that of educating to think and being able to think by oneself. Mortari (2003) highlights this by suggesting:

This apparent lack of wisdom, attested to by persistence in unreasonable behavior, is caused by many factors, one of which is the absence of thinking which characterizes our time. And: Thinking is reflecting on experience in order to find its meaning (2003, p.110).

In consideration of the role of the formal school curriculum in challenging the ecological impact of western lifestyles and principles, Bower’s (1998) earlier appraisal supports Mortari’s claim:

A curriculum that helps students recognize the patterns of relationships and interdependencies - which encompass a wide range of intergenerational activities - will provide both understanding of and experience in how to live in less ecologically destructive ways. It should also provide a conceptual and moral basis for challenging corporate policies and the use of governmental resources that are directed toward the globalization of the Western model of a consumer oriented society (1998, p.65).

In my professional experience, I have witnessed some contemporary EE programs that address the importance of developing critical thinkers and problem solvers with a focus on human-environmental relation and interrelationships, but so too have I had first hand experience of traditional approaches to EE that are lacking in these aspects. In these instances, there is an emphasis on the transmission of factual knowledge about environmental issues that are in essence non-constructivist in their orientation. This scenario, where the learner is generally viewed as a passive recipient of knowledge with little emphasis on critical thought and under-
standing in the learning experience, I believe is not conducive for the successful implementation of effective and transformative EE. The rationale behind my belief is that if learners have no active role in the construction of their knowledge it impacts on their deep levels of understanding, potentially lacks authenticity and does not intrinsically empower learners to challenge existing power relations and Western models of consumerism.

Historically it has also been argued that positivism and behaviorism in EE were in the 1990s still widespread, with a mechanistic paradigm still conspicuously present as suggested by, for example, Wals & Van der Leij (1997), Selby (1999) and Jickling (1997). I accept that EE has evolved in the last decade, but I still support the case put forward by Wals & van der Leij (1997, p.13) who argue that, ‘behaviorist approaches to environmental education are part of the problem and not the solution.’ They also suggest that EE should rather be concerned with human development, where knowledge is generated in an experiential and contextual manner, and not specifically concerned with human behavior. An outcome of behaviorist perspectives is an interest in universally applicable curricula, yet personal experience suggests that EE is inevitably shaped by the context in which it manifests, which does not align well with typical mechanist, positivist and behaviorist approaches.

It is also easy to simply reject positivism after decades of critique, but as the autobiographical section of this thesis exposes, there are a number of complex contextual factors that allowed for the continuity of positivistic epistemology as a platform for EE praxis in certain settings. It is therefore necessary to further examine these complexities and the relativism of social constructivism prior to positioning one as the only preferred alternative to the other.

The existence of diversity in EE practices, many with different emphases and orientations, clearly indicates that practitioners are able to be selective of their approaches within the limitations of certain settings. It is the complexity of the contextual factors determining these choices that bear specific relevance to this thesis. I also acknowledge that contextualized approaches to EE are not necessarily only non-behaviorist in their orientation and that behaviorist principles may be evident in some contextual learning experiences. The purpose of the autobiographical case study is not to further extend this debate, but rather to examine past and contemporary examples of EE in order to identify characteristics of contemporary practice and the foundations from which they evolved. Through the examination of varied education settings, the study re-
veals the complexity of context and how exploration of the forces impacting on it can provide insights into how learners construct their realities.

Prior to the Literature Review I believe it is pertinent to briefly present my views on the political nature of EE, EE as a social science, my belief of the significance of teacher training and professional development in EE, and the adoption of an autobiographical narrative. (I acknowledge that there exist numerous and diverse factors that also influence EE which cannot all be addressed in this thesis, and that EE is an evolving field of study requiring ongoing critical reflection to ensure it meets the changing needs of society.)

The political nature of EE

The environmental issues that we are currently confronted with are according to Orr (1994) invariably political.

The Ecological Crisis is invariably political, having to do with ‘who gets what, when and how’ (1994, p.74).

Traditionally cognizance of context specificity has not been central to educational policy formulation, implementation, EE research and teacher PD. This has in part been due to the influence of overall government policy on education policy and content. Political histories of countries undoubtedly play an integral role in determining education policy and the resultant school curricula. Therefore it is reasonable to propose that EE, as an integral part of school curricula, is in this sense ‘political’, predominantly shaped by centralized policy, and therefore a political tool, linked to political agendas that potentially influence general public perceptions. It can be argued that school syllabi are then undeniably political, as curriculum content and implementation often explicitly represent the political aspirations and principles of the government of the day.

Research by the Australian Research Institute In Education For Sustainability (ARIES) suggests that there is a strong relationship between the success of school sustainability programs and their perceived relevance to sustainability as a clear federal government priority, as well as opportunities for their implementation and ability to adapt to changing circumstances (ARIES, 2005b).
If contemporary EE as I advocate is an inextricable component of education in general, then it is undeniably political in constitution and in the manner in which it is implemented. National educational and environmental priorities are in essence directly linked to political agendas and economic decisions determined by the government in identified and prioritized areas. They are thus only then particularly relevant or meaningful in specific contexts.

**EE as a social science**

EE is concerned with aspects pertaining to both the physical and social sciences, and therefore it can be argued is open to inter-disciplinary approaches. (For example, in an EE program students might be involved in the quantitative aspects of gathering and analyzing physical data, and then relating it to the social or behavioral aspects that generated the data.) But, because of its political and subjective nature as outlined above, is EE a social science?

Education and socialization are inextricably linked, particularly if education is viewed as passing on culture, attitudes, values and knowledge between generations. Although perspectives have evolved on our complex relationship with the natural environment, central to many environmental concerns is human behavior. As education as primarily concerned with human society and imparting knowledge that influences behavior, then I believe the employment of a social science perspective to examine our relationship with the natural environment is justifiable. This is of particular relevance in light of one of the key concerns of this thesis, that of the complexity of the contexts in which environmental issues and EE programs exist.

There have however been attempts to view social sciences in pure or applied science terms primarily influenced by objective, behaviorist perspectives. It has been argued that this serves to negate the essentially subjective and political nature of this field:

Conventional approaches to program and professional development in environmental education misrepresent the educational problem posed by substantial innovations in education, and suggests that environmental improvement and environmental education improvement are both political matters that tend to be depoliticized by the adoption of an applied science perspective (Robottom, 1994, p.32).
This thesis supports Robottom’s (1994) notion that EE cannot be viewed as if it is an applied science, as it is in fact highly political and ought to take account of the context of its manifestation. Robertson (1994) illuminates this political aspect of EE by stressing that:

Individual learning does not occur in a social, political or historical vacuum (1994, p.29).

The social, political and historical elements referred to by Robertson, become highly apparent in the account of my South African experience, where my learning and teaching was undeniably shaped by the social and political history of the country and the way in which it impacted on, and influenced, my constructions of reality.

**Teacher training and professional development**

My experience suggests that traditionally many teacher training and PD courses are grounded in positivist approaches to teaching and learning which is often at the expense of promoting and developing understanding and critical thought in students. Teacher training and ongoing teacher PD plays an important role in promoting pedagogical understandings, multi and interdisciplinary approaches and strategies, to ultimately improve practice. Although more importance has been assigned to ongoing PD in recent years, the ‘Review of Teaching and Teacher Education in Australia’ less than a decade ago expressed concern over the standard of teaching, the role of PD and the general community regard for education (Commonwealth of Australia, 2003). This too would have impacted on and shaped existing approaches to EE which I have experienced, and no doubt has also influenced my EE perceptions and professional practice.

The review document also stresses the important role of universities in addressing the perceived weaknesses present in many contemporary models, as indicated in these comments:

Universities and other higher education institutions can do much to equip prospective teachers with the skills and knowledge needed to develop an innovative capacity in students. They can value, encourage, and model creativity, initiative, enterprise and diverse ways of applying and using knowledge. There are many innovative programs and approaches in teacher education, notably those with close links to schools, including
organization of students’ practical experience of schools and classrooms (2003, p.6).

The review goes on to state that in areas of rapid change in knowledge and techniques (such as science and technology), there still exists a need for the upgrading of disciplinary and pedagogical knowledge. Although PD is not a central focus of this thesis, the extent to which contextual influences impact on both professional learning and pedagogical knowledge, is of relevance to the advanced argument.

An autobiographical narrative

A component of this thesis is an autobiographical case study. Having chosen this methodology I acknowledge the potential concerns related to personal interpretation of events and the influence of pre-conceptions/prejudices in determining my subjective constructions of meaning and understandings. In an effort to address this, I consider both reflexivity (an awareness of how my values and experiences have shaped my research/content of the autobiography) and hermeneutics (an examination of how I have interpreted events and experiences), which are later elaborated upon.

Within the narrative I explore a number of themes and issues in EE. Two uniquely different contexts are considered: South Africa, where I spent my formative years and early adult life, attended university and taught in the state school system; and Australia, the country to which I migrated and continued my teaching career where I am currently a practising school principal. The autobiographical case study is of course experiential and empirical, where I draw on my own experience and try and support my memory and personal interpretations with references to relevant literature and historical records.

I draw on my South African experiences in particular to demonstrate how politics generated a vast number of very different social and economical contexts all within one geographical boundary (or greater context). It too demonstrates that in an effort to include all cultures in one new ‘Rainbow Nation’ (as post-apartheid South Africa is often referred to), the unique identities and specifics of certain communities can also be lost. In addition to the legacy of an oppressive political system, the broad adoption of Western principles has in some instances caused the loss of traditional values and beliefs previously specific to many tribal cultures. This
has ramifications for education particularly in that the newly adopted values and beliefs of many youths might differ significantly to those of their teachers, parents and policy makers.

Although I propose that cognizance ought to be taken of newly adopted identities, social codes or cultures in EE, I support the notion that EE can also play a role in maintaining traditional cultural principles through education in terms particularly relevant to specific traditions, cultures and communities especially through a consideration of social constructivism. By recognizing and understanding the immediate environment, one is able to make more sense of global environmental issues and instigate action with observable results that are meaningful to a particular community and which can in fact strengthen cultural identity. The generation of local initiatives gives a sense of place and ownership to members of communities that ultimately promotes environmental understanding and action beneficial to the long-term quality of life. It is hoped that the autobiographical part of this thesis adequately demonstrates this aspect.

**Autobiographical aspects related to the problem**

As the autobiographical narrative illuminates contextual forces impacting on EE, the unique contexts in which I have existed generated personal interest and formed the basis for the choice of the examined contexts. Although South Africa and Australia were both colonized by Britain and have many commonalities, they are uniquely different. Their histories, blended with the influence of local, indigenous cultures, make for complex, yet interesting backgrounds to contemporary and emerging education practices.

It is evident that as the needs of society change, education changes to meet these needs. Globally education continues to evolve in response to the needs of specific societies, to reinforce certain values or beliefs, or to reflect the changing economic and political agendas of particular communities. Whilst considering educational change, I propose that a distinction should be drawn between content, the learning environment and the manner in which it is presented. It is only with an in depth understanding of the contexts in which issues are constructed and the learning process occurs, can we adequately respond to meet the needs of our evolving society and adequately respond to and prevent environmental issues from arising.

Issues of central concern to this research include the complexity of contextual knowledge, complex attributes of specific contexts and how they impact on social constructions, the relation between context and social constructivism, the importance and significance of the recogni-
tion of context in the design and implementation of EE curricula, and the range of influences on specific learning contexts. These aspects are considered in relation to the role they play in the pursuit of effective and transformative EE within a constructivist/social constructivist learning environment. These considerations illuminate the value of context as a device to provide understandings of socially constructed issues, transformative learning processes and action competency to shed new light on effective EE.

1.3 Literature Review

The review of the literature in this field is presented as a separate and concise part of the thesis, but is not only confined to a designated section. I continue to engage relevant literature throughout the entire thesis where it consistently pervades the text. This is due to the complexity of the issues and implications arising from the autobiographical narrative where diverse perspectives and issues pertaining to context require further consideration.

1.3.1 Background to contemporary EE practice.

For many years debate has existed on the philosophy and acquisition of knowledge. Traditionally in EE, there has been ongoing debate surrounding objectivist (positivistic) and subjectivist epistemology. Responses to positivist perspectives are however not new.

Since the 1800s philosophers and practitioners in a wide variety of disciplines have been responding to positivist perspectives on knowledge by exploring social constructions, understanding (as opposed to explanation), complexity, context, ambivalence, risk, uncertainty and the need for critique (Ward 2002, p.33).

Hart, Jickling & Kool (1999) a decade ago suggested:

Environmental education is a young field and there are contesting views about which direction it should or will take in the near future (1999, p.106).

Hart, Jickling and Kool (1999, p.107) also stress that ‘good education’ ‘developed and changed over time,’ and that ‘its meaning changes across a range of cultural and historical contexts.’
There has been generous discourse surrounding contesting views in EE, but arguably the two main approaches to education can be categorized into behaviorist and non-behaviorist. Although this thesis advocates a non-behaviorist perspective where the learner is encouraged to ‘construct, transform, critique and emancipate their world in an existential way,’ and what constitutes an environmental issue is determined by the ‘perceptions and the experiences of a learner as well as on the context in which education takes place’ (Wals & van der Leij, 1997, p.24), the thesis also acknowledges the complexities that can be attributed to the continuity of typical positivistic epistemologies within a behaviorist paradigm.

Ward (2002), in presenting an argument promoting constructivism, suggests there has been longstanding support for the positivist perspective. He highlights that literature pertaining to non-behaviorist approaches, particularly process, context-based EE, does not have a long history. This is partly due to the relatively new status that EE is itself afforded. In my research, it appears that ‘place-based’ education and the issue of contextuality has only recently attracted the attention of EE researchers, although examples of this approach to EE are not necessarily new as illustrated by the ENSI Project (1991) considered later in this Literature Review.

Contextual and place-based approaches are in essence constructivist in their theoretical orientation. However, research based on constructivist theory in EE, can generally be regarded as a fairly recent phenomenon, in that this type of research only surfaced in the early 1990s. Although it is now afforded more attention, there is still not a large amount of literature published, or research conducted, in this field. This aspect is supported by Robertson (1994) who in the mid 1990s stated:

A review of environmental education literature reveals a paucity of constructivist-based research. And: In environmental education research, however, constructivism receives remarkably little attention as a theoretical foundation for research (1994, p.21).

The reason for this, Robertson (1994) claims, is the attention afforded to objectivity in technocratic approaches, coupled with the lack of focus on educational issues in EE in general. There has however recently been more consideration of constructivism and its epistemological value.
It is my belief that as practitioners, the more we know about how people learn and construct issues, the more we can modify practice to make it more effective.

**Constructivism and social constructivism**

To avoid conceptual confusion, it is first necessary to distinguish between constructivist-based research, constructivism as a pedagogical approach, and social constructivism.

Constructivist-based research is a qualitative form of inquiry within an interpretativist paradigm. It is concerned with making sense of the world. In this form of research there is an inter-dependent and interactive relationship between the subject and researcher and it is essentially subjectivist. Constructivist inquiry can also ‘offer understanding of the meanings behind the actions of individuals’ and ‘seeks to understand the entire context, both at the macro and micro-environmental level’ (Pickard and Dixon, 2004: [http://InformationR.net/ir/9-3/paper175.html](http://InformationR.net/ir/9-3/paper175.html)).

As I advocate for an effective EE that is transformative, I put forward the case for constructivist and social constructivist approaches to contribute in bringing this about. What are the underlying features of constructivism and social constructivism?

Constructivism, as a philosophy of learning, is of particular significance to this thesis as it is based in the premise that all our understandings of the world are in essence our constructions. A teaching philosophy informed by constructivist thought takes account of learners being active participants and deriving meaning from experience. Cunningham (1992) suggests that in constructivist learning:

> Learners do not transfer knowledge from the external world into their memories; rather, they create interpretations of the world based upon their past experiences and their interactions in the world (Cunningham, 1992, p.36).

Idros et al. (2003) view constructivist learning as a distinct shift towards more independence for the learner and less reliance on the ‘regurgitation’ of learnt facts:
Constructivist principles are touted as providing learners the means to emancipate learning from rote thereby paving the way for a more independent style of learning (2003, p.10).

Idros et al. (2003, p.11) state that the fundamental argument underpinning constructivism is ‘that meaningful learning is affected by the integration of knowledge gained from new experiences into existing schemas,’ which is of particular relevance to my argument which places emphasis on the complexity of the contexts in which knowledge is generated, and the relationships or interrelationships that might exist within these contexts.

According to Pickard and Dixon (2004: http://InformationR.net/ir/9-3/paper175.html) constructivist-based pedagogy stresses the learner’s active participation in constructing knowledge and emphasises ‘the shift from a simple, single reality, to the complex, multiple realities of the individual.’ Just as constructivism takes account of deriving meaning from experience, social constructivism takes account of context, social interactions and culture in our understandings.

With regards to the construction of knowledge, Hyland (2007) views social constructivism as:

> Basically social constructivism suggests that knowledge and social reality are created through daily interactions between people and particularly through discourse. It takes a critical stance towards taken-for-granted knowledge and, in opposition to positivism and empiricism in traditional science, questions the idea of objective reality (2007, p.395).

Constructivist and social constructivist theories both oppose behaviorist and positivist principles of learning. Essentially constructivists advocate that learners use existing knowledge to create and develop new knowledge, where the teacher offers guidance and facilitates the learning process.

Social constructivist and constructivist EE models do not merely view students as passive recipients of knowledge. Instead, they recognize that learners are active and invent or construct knowledge as they are engaged in learning situations individually and collectively, in order to make sense of their worlds and existence. Social constructivism in particular emphasizes the
significance of social context and culture in the development of understanding. Although con-
structivism and social constructivism have recently been afforded more attention as significant
for EE, their roots go back to Piaget’s (1977) work on cognitive constructivism, and Vy-
gotsky’s (1978) concept of learning as a social construct, or as a social process. This emphasis
on the importance of human and social activity in creating knowledge, and how this knowledge
informs social constructions, is of particular significance to the notion of exploring context to
reveal meanings and connections relative to these constructions.

As constructivism supports the belief that learners actively construct and re-construct their
knowledge while interacting with their environment, it advocates ‘learner-centered,’ as op-
posed to ‘teacher-centered’ education. The proposition is that the learner needs to be able to
reconstruct knowledge as they are engaged in a culture of learning, and not simply receive
transmitted knowledge from the teacher. In essence then, for learning to be effective, there
needs to be an emphasis on learning processes, the development of thinking and deeper under-
standing, and not simply content. In the proposed scenario, learners become actively engaged
in the construction of knowledge where they are able to relate it directly to the context created
by their own values, beliefs and culture. This then is of direct relevance to the notion of context
or place-based learning referred to in this thesis.

Through the adoption of constructivist approaches, practitioners are able to encourage the ex-
amination of complex environmental issues through reason and critical thought, ultimately fo-
cusing on reflection and problem solving in a meaningful context. If the learner is able to en-
gage in real-life problems in a meaningful context, learners can assign more relevance and pur-
pose to their construction of knowledge. This is crucial in gaining a deeper understanding of
environmental issues on a broader perspective. I also support learning as a social activity where
learners construct knowledge individually and collectively. From a social constructivist pers-
pective, cognizance ought to be taken of the importance of social and cultural contexts within
the learning process. In this scenario, the teacher engages individuals and groups in meaningful
learning experiences and actively involves him/herself in the learning predominantly as a faci-
litator. This contrasts significantly to many traditional practices of ‘lecture’ style teaching
where the emphasis is largely on content transmission and retention. Disregard for learning
contexts with specific meaning to the learner, I believe is detrimental to effective and transfor-
mative EE praxis.
I accept that constructivist approaches are now more aggressively promoted in contemporary pedagogy, but in my experience this still does not always translate to constructivist practices, for which there exist many complex reasons. For example, a practitioner might support and acknowledge the merits of social and cultural constructivism (where recognition is taken of the influence and impact of political, social and cultural forces in the construction of knowledge and our views of reality), yet this might not necessarily translate to constructivist practices or teaching strategies within their particular learning setting due to a number of contextual forces.

Social constructivism is however not without its critics particularly those aligned with objectivist and positivist epistemology. There are however critics though who support a subjective epistemology where it is accepted that inquiry is not neutral, but have opposing ontological views. For example, critical realists in particular view relativist (social constructivist) views of knowledge and truth being specific to certain settings or contexts as a weakness in understanding or examining social phenomena. As a response critical realism supports an objective ontology where reality is separate or independent from the inquirer yet has commonalities in the epistemological assumptions of social constructivism (Farmer & Gruber, 2004, p.2). It should too be noted that critical realism is not merely an alternative to social constructivism, but also for example opposes positivism on an epistemological level as positivism is dependent on an objective epistemology, whereas critical realism although objective in its ontological orientation, epistemologically it does not advocate the objective and quantifiable nature of knowledge.

The main flaws in social constructivism according to critical realists is that interpretations of reality are too subjective, that in social research there needs to be reference to some underlying objective determinants, and there cannot be a rejection of objective social structures (Farmer & Gruber, 2004, p.3).

As social constructivism advocates that our understandings of the world are socially and culturally specific where reality is subjectively constructed, critical realists oppose or reject forms of relativism. In this thesis I propose that there are many subjective ways to construct or interpret events that are potentially influenced by for example gender, race or age, which needs to be taken into account in the examination of the construction of realities and the social issues that form parts of those realities. Relativism opposes the notion of an objective reality which in essence generates a debate over whether truth or reality is real, or constructed.
The debate surrounding constructions of reality stem from alternatives being posed to early and traditional EE paradigms have been grounded in positivistic epistemology. Previously I alluded to the suggestion that in the mid 1990s constructivist theory was still regarded a recent phenomenon (for example Robertson, 1994) however, the works of Jean Piaget (1896 – 1980) can clearly be viewed as providing a platform for constructivist theory and for many contemporary views on social constructivism. This further extends the question as to why in contemporary practice constructivism has not been afforded even more attention, given its background and relevance to contemporary practice.

The same could also be said for the somewhat only recent attention afforded to social-critical EE. As I elaborate on in the autobiographical narrative, the complex contextual reasons for education being uncritical of society are vast and numerous. (This also accounts for some of the continuities of positivism.) But, if as I suggest there is a need for a transformative EE, then existing power relations have to be questioned and challenged. If one is in agreement of the need for social change, then there certainly exists a case for critical pedagogy.

It was as recently as the last two decades in particular, that the social-critical dimension of EE emerged more prominently. This was particularly due to work and views of theorists such as Sterling (1999), Cooper (1998) and Kyburz-Graber (1999), who focused more specifically on living sustainably and the role of education in bringing this about.

But, Huckle (1999) intimates that there are academics such as Shotton (1993) and Ward and Fyson (1973) who suggest that social-critical EE has its roots much further back:

Socially critical environmental education originated with anarchist and socialist educators in the 19th century, and was sustained in this century largely by urban and community educators (1999, p.38).

This is not to say that constructivist and socially critical EE are one and the same, but rather that they are linked by the emphasis placed on understanding, critical thinking, experiential attributes and learning processes in knowledge generation.
Although the direct relationship between this school of thought (suggesting that socially critical EE originated in the 19th century from socialist and anarchist perspectives) and contemporary EE models is open to debate, the fact remains that socially critical epistemology has reformist roots that go back further than the social and environmental reformation typically viewed as a 1970s phenomenon. Huckle (1999) reminds one that there are also a number of socially critical perspectives in contemporary EE which can potentially impact on defining terminology and conceptual clarity. (For example, some practitioners refer to EE as education for sustainability, where it’s perceived to play the role of a process of critical reflection on sustainability, rather than a set, linear construction of sustainability.)

This ‘overlapping’ of concepts and ideas appears common practice in my experience, where in instances practitioners/teachers do not formally position themselves within one paradigm or approach (as opposed to researchers or theorists who place more emphasis on positioning themselves within a particular perspective), but rather respond to a set syllabus or environmental initiative, irrespective of the genesis of their involvement in the learning experience. This ‘response,’ as opposed to a premeditated or pre-emptive strategy is largely a complex contextual issue, which will be further expatiated through the autobiographical study.

To further illustrate my above-mentioned point, it is my belief that the ‘typical’ school teacher would find it difficult to easily recognize or identify the convergences and similarities between certain philosophies and paradigms in EE. It is also my assumption, based on personal and anecdotal experience that the ‘typical’ teacher would not be able to distinguish between for example, liberal education and a social-critical education without further exploration of the theories. Aspects such the empowerment of individuals and the development or cultivation of social responsibility, where teaching is structured to prepare students for socially valued work and responsible civil leadership, cannot easily be categorized into one specific theory.

This discord or philosophical misconception amongst EE teachers is understandable, particularly if they have undertaken no ‘formal’ training in EE. Even at a ‘specialist’ level, some theorists argue that within specific paradigms, there further exist a number of ‘levels’ or ‘ranges.’ For example, Huckle (1999, p.38) suggests a ‘range’ of socially critical versions of EE, which makes the task of categorizing a particular perspective as being specifically socially critical even more difficult. He also states that, ‘critical education for sustainability is not based on a single preferred construction of sustainability,’ but rather an emphasis on the process of critical
reflection (1999, p.38). However, although this thesis assigns importance to the consideration of various perspectives, its concern is not in the engagement of a complex debate concerning conceptual issues surrounding critical education or any other educational philosophy, nor the exact interpretations of any particular perspectives or slogans by practitioners, but rather the complexities of the contexts that influence constructions, interpretations and specific practices.

It is logical to assume that if practitioners position themselves firmly within a specific EE paradigm, it will impact on the manner in which EE is developed and implemented. I believe that this is an area worthy of further examination particularly in the formal school setting. However, irrespective of one’s alignment to a specific paradigm, my proposition is that a deeper consideration of context has a lot to offer in informing EE practice.

**Definitions and categorizations in EE**

Defining acronyms, slogans and categorizations were discussed in ‘Definitions and orientation of this thesis’ where I explain my adopted stance. With respect to the broader literature in this field, there appears to be ongoing debate over slogans best defining ‘environmental’ and ‘sustainable’ education. I acknowledge that some arguments propose that education for sustainability is neither essentially nor conceptually the same as EE, although they have many convergences, as Sauvé (1999) suggests. More recently, Calder and Clugston (2003) claimed that by including the social and economic dimensions of sustainability, education for sustainable development broadened the environmental foundations of EE. Palmer and Crocker (2009) refer to Grommes (2005) when proposing that the Brundtland report of 1987 popularized terms such as intergenerational responsibility and sustainability, which led to ‘environmental education’ being superseded by ‘Education for Sustainability.

It is clear that a multitude of literature exists concerning adopted terms and slogans, each slightly in agreement or conflicting in their orientations. I acknowledge that conceptual similarities and differences between ‘environmental’ and ‘sustainable’ education exist, and that these differences themselves generate generous discourse, but they are not critical to the argument put forward in this thesis.

However, as the anomalies surrounding definition and categorization are so evident in EE literature, I have sometimes found this somewhat problematic in my personal research. It is the
inconsistencies in interpretation of definition and categorization that are of most concern, and appear ongoing although it was not recently that Roth (1997) claimed:

Most would probably agree that we are long past the intense debate about the definition of environmental education (1997, p.29).

Even earlier than this, Sauvé (1994) is quoted by Gauthier, Guilbert and Pelletier (1997, p.164) as stating that although the UNESCO definition of EE is:

…the object of a consensus among the majority of theorists in environmental education, … most of them have developed, on their own, a more personal definition of EE, forming the basis of the theoretical framework they have adopted (1997, p.164).

Huckle (1999) also acknowledged Sauvé (1996) in emphasizing that:

There is no one single contemporary environmental education or education for sustainability, even in official discourse (1999, p.38).

A concise definition of EE is not central to the argument presented in this thesis provided there is consensus of the need for long-term quality of life through sustainable activity. Of more concern in this research is an understanding of the conditions and the employment of particular strategies that are conducive to effective, transformative EE. As such I place more emphasis on contextual complexities, the individual’s construction of environmental issues and the development of his/her understanding of those issues, so that there can be adequate provision of effective EE, more so than contention over definition. I do not believe that the formal title or definition given to EE severely impacts on the construction and understanding of environmental issues at school level, although I accept it can have a bearing on the orientation or emphasis of the environmental learning in the formal school setting. For example ‘sustainable’ has distinct ‘future’ connotations whereas ‘EE’ is sometimes viewed as having a more ‘general’ environmental orientation, but both can have similar role in contributing towards sustainability.
There has been debate (for example, Panth, 2005) that EE relates more to formal and informal education, whereas ‘sustainable’ refers more to sustainable development and the fabrication of a sustainable future. Irrespective of the intricacies associated with particular slogans or terminology, it is my belief that all forms of EE or ‘sustainable education’ need to instill in learners the skills, knowledge and understandings to address environmental issues with a sense of urgency. It is with this in mind that this thesis presents an argument for the better understanding of the complexities of context in order to assist in bringing about an effective and transformative EE that can immediately impact on environmental issues.

The broader notion of context in EE

It is not the perusal of one form of EE, nor the mere awareness of the importance of context or student’s constructions of reality that can bring about environmental improvement, but rather a transformative EE adequately informed by insights into the complex contextual influences impacting on learning and social constructions within particular environments, that will positively impact on sustainability.

For years practitioner’s attention has been drawn to the importance of taking into account the learning context, yet the potential of context as a tool to reveal meanings and connections that learners assign to their constructions has not yet been further examined. For example, McClaren (1997, p.41), Wals (1994, p.163) and Wals and van der Leij (1997, p.19) in the 1990s advocated the importance of the learner’s perception of experiences, which ultimately determines the meanings and understandings that they give to their existence. These theorists emphasized that EE incorporates the processes that enable both teachers and students to engage in planning, evaluating and implementing educational activities to assist in the resolution of identified environmental issues. Wals and van der Leij (1997, p.19) elaborated further by stating that cognizance is also required of the perceptions and experiences of the learner, as well as the context in which the learning takes place, yet this still does not specifically call for further exploration of context as a device to inform transformative EE praxis.

In essence then, the broader notion of ‘context’ and the implications of it for learning is in itself not new. My examination of the literature also revealed that context-based or place-based education, although evident in practice in the past, is still often viewed as contemporary innovative practice. Inwood (2008) claims:
So while place-based education might have been implicit in curricula in the past, it is seen as an innovative approach by many today (2008, p.30).

Rae & Pearce (2004) also allude to the relatively recent use of the term, although the actual practice has its roots much earlier:

Place-based education represents a recent trend in the broad field of outdoor and environmental education. Place-based education is a relatively new term in the education literature. However, the approach has developed from the experiential education which has been promoted by progressive educators for more than 100 years (2004, p.1).

It appears then that context-based or place-based education has evolved over time to become an accepted and valued practice, and Inwood (2008) also refers to the extensive body of literature recently published on place-based education, which would suggest that it has attracted the attention of both researchers and practitioners as a valuable approach to contemporary EE. But what are the benefits of such an approach? Inwood (2008) suggests:

In this, place-based education makes sense as it seeks to re-establish connections between learners and the neighborhoods in which they live. This increases the relevance of the curriculum and makes it directly applicable to students’ lives. If learners develop strong bonds with their place and community physically, politically, emotionally and spiritually, they are more likely to care for it and seek to improve it over time (Inwood, 2008, p.30).

There has also recently been a significant body of literature focusing on and exploring EE informed by the notion and value of a sense of ‘place,’ for example Lowan (2009), Swayze (2009), Triggs (2009), Gruenewald & Smith (2008), Sobel (2005), and Umphrey (2007). This is indicative of the importance and value being assigned to approaches taking cognizance of ‘context’ or ‘place’ in EE. If this is where a significant focus of contemporary EE now lies, wherein is its genesis?
A brief background to contemporary EE models

Prior to global acknowledgement of EE as a tool to bring about environmental change, studies in this field existed primarily as ‘Nature Studies’ in many schools. Stevenson (1987, p.69) suggests the curriculum focus of this era was essentially on understanding and appreciating the natural environment, with little emphasis placed on action or community involvement to prevent a potential crisis. Instead, the content of ‘Nature Studies’ (also known as ‘Environmental Studies’ or ‘Studies of the Environment’) was largely determined by economic factors or as responses to problems that existed already. This was in part due to early EE being dominated by behaviorist ideology with positivist principles very evident in these models, and also that many environmental problems or issues were not highly apparent (or perceived as such) at this stage.

My concern is that in instances contemporary EE models appear still to be grounded in positivist epistemology which is not conducive to a transformative EE. The continuity of positivism is largely due to a host of complex contextual factors that will become more apparent throughout the course of the autobiographical narrative. As proposed in this thesis, EE is generally not objective, depoliticized and free of economic determinants, which is problematic for positivist models. Focusing on environmental solutions at the expense of a genuine understanding on the constitution of environmental issues and the prevention thereof is also of concern. For example aspects such as, political ideology, teacher perspectives, individual/social constructions, economics and religion all can influence education policy, content and implementation, and therefore require consideration. This notion is supported by the views of critical social scientists such as Lather (1991), who even 2 decades ago claimed that no education can essentially be neutral.

Of relevance is that traditional models of EE (as with some contemporary models), I believe did not place sufficient emphasis on understanding the construction of environmental issues, instead focusing on content and the retention of knowledge about the environment. I contend that the content within the subject matter, more so than an emphasis on understanding and application of the content, is easier suited to further promote economic and political agendas which reinforce existing power relations. These earlier teacher and content-centered approaches were also predominantly not action-oriented nor interdisciplinary, which contrast significantly to the critical, constructivist, learner-centered and issues-based models advocated in this thesis.
Literature exposes that typically earlier EE models also lacked a focus on the theory of learning and the value of subjective interpretation. This aspect is arguably a fundamental weakness that sets them apart from some contemporary models that accept subjectivity and value centeredness as legitimate scientific practice in social science research, including critically oriented research. As a result, in my experience and practice, most students within such models were not encouraged to be assertive in their opinions and were given little opportunity to investigate controversial issues and develop critical thinking skills in forming personal perspectives. The ramifications of this included the lack of understanding, knowledge and skill development to tackle potential environmental problems (essentially pre-emptive action) in students, but also supported technocratic approaches by teachers with little value assigned to inquiry-based learning models. This aspect was particularly true in my South African teaching experiences, as revealed in the autobiographical narrative.

Another consequence was that social transformation was not seen as a viable response to an environmental issue/crisis. In contrast, the emphasis on learning more about an issue than understanding it was deemed significant enough to prevent a potential problem from eventuating. This lack of emphasis on the relationship between prevention and solution, coupled with student misinformation of their individual significance in environmental issues, did little to dispel the positive (distorted) perceptions of for example, the benefits of industrial advancement at the expense of environmental degeneration. In essence, humanity had progressively become an environmental interloper yet at school level minor attention was afforded to the relationships and interrelationships existing between humanity and the increasing pressures placed on the environment.

However, the realization of a potential global crisis and the role that education, science and scientists could play in the prevention of them generated more international interest and debate on the topic, which led to a number of international conferences through the 1970s such as the UN Conference on the Human Environment (Stockholm, 1972), the UNESCO program which resulted in the Belgrade Charter (1976), and Tbilisi Conference (1977) leading to The Tbilisi Declaration (1978). This aspect is reiterated by Palmer and Crocker (2009):

In response to a rapidly increasing awareness of the relationship between human actions and environmental conditions the 1970s
saw the promotion and implementation of a range of environmental education programs across the globe (2009, p.1).

These conferences can be considered as instrumental in developing a more urgent and committed approach to the prevention and solution of environmental concerns. They too stressed the role of education in advancing environmental understanding and action. Not only did this generate and promote a greater global interest in environmental issues, but it also alluded to the point that traditional teaching practices typical of that era might not have been the most befitting for an effective EE. Community involvement and the recognition of the need for changed understandings, inquiry learner-centered approaches with an emphasis on action ‘for’ the environment, appear to be conspicuously missing in earlier EE models. The active role of the community, school and education in general was also not recognized as a legitimate and effective tool for providing feasible solutions to environmental problems. Traditional teaching models generally made (or make) little or no allowance for active participation and intervention by learners in environmental issues. It is Robottom’s (1987a) view that:

> The notion of the school as a self-contained entity, isolated from society, exacerbates the difficulties of developing a community orientation in environmental education. New teaching approaches are considered necessary for the ‘adoption of a problem-oriented approach proper to environmental education’ (1987a, p.91).

This suggests that both social and institutionalized change was necessary (and probably still is) to bring about a ‘better’ EE. It is my view that educational reform encouraging a socially critical and inquiry-based approach became essential, particularly in light of the absence of critical thought and ‘action’ components in many traditional approaches to EE. The beneficial attributes of social-critical EE is emphasized by Sterling (1999):

> This kind of education goes beyond attitude and behavior change related to the needs of a sustainable society, and focuses on the development of sustainable life-style models that emerge from the collaboration and interconnection between society and education (Sterling, 1999, p.62).
However, the necessary changes appeared to transcend pedagogy and curricula transformation to include the need for systemic change, with a shift from technocratic and autocratic decision-making that supports existing power structures.

The necessity of a shift in orientation towards a more social-critical EE is well supported in literature, for example, Hart (1997), Mogensen (1997), Kyburz-Graber (1999), Sterling (1999) and Katsikis (2000) all illuminate the positive aspects of such an educative approach in addressing environmental issues. The move from mere ‘awareness’ of environmental problems towards a ‘re-creative competence’ as a product of social-critical orientation in EE is particularly emphasized by Sterling (1999, p.69). The shift from traditional teacher-directed approaches towards participatory, problem solving, action and critical approaches is well presented by Palmer (1998, p.23) in her table outlining key trends in EE over a four decade period. (See Table Two overleaf).

Some of the factors that initiated paradigm shifts are now briefly considered. I use Smyth (1999), Sterling’s (2001) framework focusing on the shift from traditional ‘transmissive’ approaches, towards more ‘transformative’ approaches in EE (Table Five), as well as Palmer’s (1998) identification of key trends in EE to assist in illustrating the evolution of EE (Table Two).

The move towards contemporary EE models and alternative paradigms in Environmental Education

EE has undoubtedly changed over time. Whether it has transformed sufficiently to meet the needs of a changing society is debatable. Increased globalization and changing social attitudes too have played a large role in the perception of environmental issues and contemporary society’s management (or mismanagement) of them. It is difficult to accurately define certain eras within these attitudinal changes to the environment, although certain events can be identified as having a significant influence on EE transformation over the recent course of time. Smyth (1999, p.72) uses Orellana and Fauteux’s (1998) summation of events that have marked changing foci in EE on a global level. He identifies five phases in his summary. Smyth (1999) also uses influential authors and conferences to categorise different epochs.
Table Two: Key trends in EE: A journey of four decades, according to Palmer (1998:23)

<table>
<thead>
<tr>
<th>Decade</th>
<th>Focus</th>
<th>Areas of interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960s</td>
<td>Nature study</td>
<td>Learning about plants and animals, and the physical systems that support them</td>
</tr>
<tr>
<td>1970s</td>
<td>Fieldwork</td>
<td>Led by 'experts' with a particular academic focus—biology, geography, etc.</td>
</tr>
<tr>
<td></td>
<td>Outdoor/Adventure education</td>
<td>Increasing use of the natural environment for first-hand experiences</td>
</tr>
<tr>
<td></td>
<td>Field studies centres</td>
<td>Growth of field and environment/outdoor education centres for the developing awareness through practical activity and investigation</td>
</tr>
<tr>
<td></td>
<td>Conservation education</td>
<td>Teaching about conservation issues</td>
</tr>
<tr>
<td></td>
<td>Urban studies</td>
<td>Study of the built environment issues</td>
</tr>
<tr>
<td>1980s</td>
<td>Global education</td>
<td>A wider vision of environmental issues</td>
</tr>
<tr>
<td></td>
<td>Development education</td>
<td>The political dimensions of EE</td>
</tr>
<tr>
<td></td>
<td>Values education</td>
<td>The clarifying of values through personal experience</td>
</tr>
<tr>
<td></td>
<td>Action research</td>
<td>Community problem-solving. Pupil-led problem-solving, involving field work</td>
</tr>
<tr>
<td>1990s</td>
<td>Empowerment</td>
<td>Communication, capacity-building, problem-solving, involving field work</td>
</tr>
<tr>
<td></td>
<td>Education for a sustainable future problems</td>
<td>Participatory action. Relevant approaches to changing behaviors and resolving ecological problems</td>
</tr>
<tr>
<td>2000s</td>
<td>Community of partners/collaborative learning</td>
<td>Students, teachers, NGOs and politicians working together to identify and resolve socio-ecological problems</td>
</tr>
</tbody>
</table>
In the initial phase, he claims the focus was on damage being done to the natural environment with a need to ‘put things right,’ which was an underlying feature of the International Union for the Conservation of Nature and Natural Resources (IUCN) in 1970. The second phase was the realization of the totality of the environment, including the human environment, encompassing quality of life, as expressed at the Stockholm Conference (1972), Belgrade (1975) and Tbilisi (1977). The third phase was characterized by proactivity and pre-emptive action, with humanity being an essential element in the system to be conserved. The fourth phase focused on sustainable development as a major objective of EE and policy, as stressed at Rio Earth Summit (1992). The final phase is almost viewed with pessimism and confusion, where education has not brought about as great a behavioural change as anticipated. Smyth suggests that this phase is also marked by the necessity to influence the thoughts of educators and environmentalists towards sustainable development. Perhaps the most important progression through the phases is the recognition of the global dimensions of environmental issues with attention afforded to being pre-emptive and proactive in finding solutions (Smyth, 1999, p.73).

Although one could use the above to differentiate between phases or periods in EE, there appears to be no one specific event, or political decision that brought about these ‘newer’ approaches to environmentalism as we now know it. Instead, the needs that arose from the circumstances and ideas of a particular time seemed to influence environmental perception and attitudes governing the role and content of EE. There is a lot of evidence to support the notion that changing social attitudes and values exercised an influence in more formal policy decision-making bodies, which in turn generated changes in EE policy.

There undoubtedly has been a distinct shift, although not a total shift, away from mechanistic and instrumentalist perspectives in EE. It appears that the recognition of the need to further improve EE policies, led to the realization that longer-term objectives and emphases would then also require transformation. For example, aspects such as the emergence of critical pedagogy (questioning and challenging existing power relations), gender equality and ‘student voice,’ have also drawn policy attention. There has also been recognition of the need for a shift from applied science approaches in EE research and the benefits of participatory action research. As this does not align well with positivist epistemology and behaviorist approaches to EE and EE research, a paradigmatic shift towards a social-critical pedagogy better suits contemporary EE, especially as positivist epistemology earlier allowed the social sciences to emulate the natural sciences, which is problematic in itself (Robertson, 1994, p.22).
It is also contested that early EE in many cases, did not significantly address environmental problems. This shortcoming generated a need for EE programs with active solutions, rather than programs that merely further developed knowledge about existing problems. The lack of emphasis on developing skills and understanding to actively participate in both preventing and solving environmental problems has become increasingly conspicuous in a more ‘environmentally enlightened’ global society. It is in this climate that the social-critical perspective has gained prominence and ultimately led to a shift from a focus on ecology to include a social dimension in addressing environmental crises.

There have been a host of complex contextual factors that have generated this shift, just as there have been a number of contextual factors that have seen the continuity of positivism in some instances, and it is this complex notion of context to which I now turn my attention. My research has revealed that attention has been drawn to context specificity in EE, but there exists a conspicuous need for further knowledge to extend our understandings of the complex constitution of context, what it can reveal about the construction of environmental issues, and its essential role and implications for effective and transformative EE.

Firstly I consider issues associated with the notion (or understandings) of context, then I focus on context in EE, and finally I consider context in relation to my assumptions of the most suited approaches and theories conducive to transformative EE praxis.

**The notion of context**

The notion of context is highly complex. As I endeavor to illuminate in this thesis, there is no simplistic existence of a linear or one-dimensional context. Instead I argue that there exist multiple ‘contexts within contexts’ (see Table Three overleaf) that play a vital role in amongst others, our constructions of reality, actions, perceptions, interpretations of events, and with specific reference to the presented argument, our EE praxis.

But what is context? I understand context to mean the conditions or environment in which something exists or in which events happen. I also propose that it is a social construction with subjective meanings to those existing in it. The complexity of context is that although participants within a context can make connections and have shared meanings, all participants in a specific context also have very subjective interpretations of reality that are impacted on by a
Table Three: Complex contextual influences (‘contexts within contexts’)

The Learner’s Overall Existential Context

- **Central Level**
  - Fairly static dominant contextual determinants
  - For example:
    - Geographic location
    - Dominant student culture
    - Education policy
    - Traditional teaching approaches
    - Curriculum

- **Anthropological Social Level**
  - For example:
    - Gender
    - Race
    - Socio-economic factors
    - Religion
    - Culture
    - Looks
    - Political histories

- **Immediate Level**
  - For example:
    - Daily mood
    - Peer pressure
    - Daily attitude
    - Weather
    - Immediate hunger/thirst
    - Spontaneous interest
    - School attendance

- **Intermediate Level**
  - For example:
    - Academic ability
    - Risk taking
    - Teacher training
    - Learning resources
    - Specific work units
    - Technology
    - Structure of school
    - Communication skills
    - Student interest
    - Receptiveness to
    - Home situation
    - Inputs/outputs
    - Self-esteem
    - Literacy and
    - Relationship numeracy levels
    - with teachers
    - Age

- Contextual determinants susceptible to mutability or in state of flux

Complex contextual forces impacting on the multiple realities socially constructed by individuals, which gives subjective and intersubjective meaning to our interpretations
Notes to Table Three

In this thesis I suggest that it is not only the dominant contextual aspects specific to particular communities that influence both EE content and implementation, but also the existence of a number of other factors on various levels. The impact of a range of influences can have either a positive or negative impact on the environment and environmental understanding. For example, I have identified political (hidden or apparent) or economic agendas that inevitably influence curricula and determine public awareness about certain environmental issues and potential solutions. I do however acknowledge that there are a number of more dynamic and immediate contextual factors that influence individual and communal perceptions of environmental issues and understandings. These understandings impact on the responses to perceived environmental issues within specific settings. Only some of these immediate influences are represented in Table Three, and there do exist others.

In addition, geographic locations are considered as but one of many context descriptors, as contexts vary not only between countries, but also within the same country. In turn, each more specific context in then further contextualized by what I term ‘intermediate’ and ‘immediate’ contextual determinants, creating additional ‘contexts within contexts.’

The concept of ‘contexts within contexts’ is easily illustrated in a multi-cultural countries such as Australia and South Africa, where schools exist in a multitude of contexts and are often made up of multiple cultures and elements all within the umbrella of one community. Similar to a ‘Venn diagram’ typically used in mathematics, there are common contextual elements that form the intersection of a Venn diagram, but there are further contextual factors that overlap but don’t always form the core intersection. These contextual elements are in some, not all, instances still common.

In this scenario, contextual elements such as the school’s geographic location, dominant demographic culture and departmental education policy are strong, central determinants that are fairly static. For example, they may only change over an extended period of time, or due to a change in government. These are closely linked, but might not necessarily overlap with socio-anthropological contextual determinants (eg. culture, socio-economic background, gender, political histories etc.); intermediate contextual elements that are subject to frequent change each school term or year (eg. academic ability of students in a specific group, student interests, teacher interests etc.), and then they are further linked to elements on an immediate level that are very dynamic. For example issues at home, the student or teacher’s state of mind or mood, hunger, weather conditions (a really hot day or cold day potentially affects student engagement) or even spontaneous interest or events (a student might have heard about an environmental event on the radio while coming to school that generated interest).

Exploration of these contexts can potentially reveal the connections and meanings learners assign in their constructions of social/environmental issues that can inform transformative EE praxis.
host of factors very specific to the individual. These contextual forces are on varying levels with some static and others dynamic. (For example, the race of a participant is static, whereas their daily mood or levels of hunger might be dynamic.) These unique contextual forces all influence perceptions and constructions of reality. As each individual has unique contextual forces impacting on them, and subjectively interprets things relative to these forces, there cannot be one set notion of context. Instead, it is a highly complex and ever evolving construction of existence and events.

As such, in order for effective and transformative EE to occur, the complexity of context and the contextual forces that impact on participants and their constructions in specific settings need to be better understood if we are to provide meaningful and authentic learning experiences. One such way is through the provision of ‘place-based’ EE, but this only accounts for shallow levels of a context’s constitution. A contextualized curriculum only takes into consideration the broader and more general contextual determinants, but does not take into account the specific contextual forces impacting on the learner and how these influence social constructions. Although ‘place-based’ approaches are becoming more common and there is a lot of benefit to be derived from such approaches as I illustrate in this thesis, but this alone will not bring about transformative EE praxis. Instead I propose that it is a combination of factors that all contribute to the learning context that is crucial. As I reveal through this thesis, these include certain pedagogical approaches (that are also inevitably shaped by contextual influences), adoption of certain learning theories, community involvement and contextualized learning.

My research revealed that the notion of context has been more evident in socio-anthropological and socio-linguist research than in EE. In language in particular, the context in which words are stated and interpreted are largely shaped by circumstances particular to a specific setting and it is understandable why considerable attention has been paid to this area. The same can be said of socio-anthropological concerns of the way people might act and the way in which these actions might be interpreted in certain situations and the importance of research thereof. In our existence it is clearly necessary for specific and relevant meanings to be made and the context in which events occur largely determine these meanings. It is from this tenet that I propose that for effective EE to occur, more research and examination is required of the complex contextual forces that impact on the learner, the learning process and their constructions of reality.
With reference to EE, traditionally ‘context’ has simplistically been understood to refer to a specific frame of reference for learning, or for ‘context/place-based’ education to take account of a specific setting where learning occurs. However, Dilley (1998, p. xi) suggests that contextualizing is a form of ‘social action’ where people, through the construing of contexts, ‘make interpretations and meanings for themselves.’ This has a very specific bearing both on the focus of my research and on my adopted methodology, that of an autobiographical narrative which supports my literature research.

I have briefly outlined the significance of context for effective EE, but with reference to my adopted methodology which encompasses hermeneutical and phenomenological aspects, it is also of relevance as I make meaning and interpretations of my lived experiences. These experiences have also been subjectively constructed and interpreted and therefore have also been subject to diverse contextual forces. Both the reader and I need to consider my prejudices in light of the context in which they evolved and acknowledge the need to take cognizance of them in my interpretation of my life experiences. (These hermeneutical aspects impacting on my research are discussed in section 1.4 Research Design.)

*Context and EE*

This thesis argues for an effective EE which is in essence transformative. In order for this to come about, I have suggested theorists, researchers and practitioners ought to gain a deeper understanding of context, its complexities and constitution through examination of the deeper contextual forces impacting on the learning process. This should however not be at the expense of the consideration of broader or more general context of where (location) the environmental learning takes place, and the stakeholders within that setting. As such I have included examples from the ENSI Project at the end of this literature review to illustrate examples of ‘context or place-based’ EE to demonstrate their efficacy and to locate them in the development of contemporary EE.

Although these examples do not explore the deeper contextual forces impacting on EE, they do illustrate that developing context specific curricula is a highly complex exercise and expose the diversity of players and stakeholders within a specific learning context. The ENSI examples also illustrate perceptions as to the role and objective of EE within localized settings and how these perceptions are also subject to a number of contextual determinants. Cognizance of the broader notion of context, that of the setting or conditions in which the EE occurs, can also be
used to reveal why or how place-based EE is effective and whether these forms of EE improve
global understandings of environmental issues through local involvement. It is these aspects
together with the genesis of other contemporary approaches that I now further explore.

If we are to provide effective EE, there is a need for our practice to be informed by a deeper
understanding of the meanings learners assign through their constructions, interpretations and
connections with their life-worlds. Wals and van der Leij (1997) claim that as practitioners it is
crucial to understand the world of the learner:

A prerequisite is that the educator immerses him/herself in the
world of the learners and the realities by which they are chal-
lenged, inspired or motivated. Only if this world is understood
well enough, can it act as a base for learning (1997, p.18).

Robertson (1994, p.29) also suggests that ‘the context in which knowledge is individually and
socially constructed and mediated, has much promise to inform our understandings of current
practices.’ In a quest to further enrich our understandings of the links between learning and
context, the connection (or disconnection) between curriculum and students’ lives is of obvious
concern. It is commonly accepted that learning needs to be meaningful and linked to the real
lives of students. More recent research by Hattam (2007) suggests:

Knowing the students as learners is essential, but students are
learners in and outside of school. The aim is researching your
students’ lifeworlds as a resource for planning curricu-
lum/pedagogy. And … the redesigning of curriculum and peda-
gogy that demands high intellectual challenge from students in
ways that engage young people’s lifeworlds and the concerns of
their communities (2007, p.22).

The link between a learner’s existential context and their learning/understanding ought to be a
central focus in curriculum design if we as practitioners are serious about connecting learners’
real lives to an official curriculum. Some theorists, for example McConaghy (2007), intimate
that effective reform in this area might not be occurring?
Separated from its social contexts, educational reform, on the whole, has become disconnected from social reform at community, regional and national levels (2007, p.27).

Although the above comments refer to education in general, from my experience they are also highly applicable to EE. Establishing a connection between the learner and his/her community might not be central in all approaches to EE, and EE literature certainly recognizes a diversity of views concerning the role and objectives of EE, as well as the link between the learner and how knowledge is generated.

Although there have traditionally been two main opposing paradigms in this regard, behaviorist and non-behaviorist, the last 20 years in particular has seen the emergence of a diversity of perspectives in EE. In the early 1990s, a number of additional EE paradigms surfaced, which offered greater insights into alternative epistemologies and views on knowledge generation. For example, McClaren (1997, p.41) presented more than one alternative to positivist epistemology; namely a process-context-based paradigm, a synthetic/ecoliterate and an ecozoic paradigm. He also suggested that the adoption of a purely process-content model probably won’t provide a more valid basis to formulate standards of practice in EE. As an alternative he proposed (1997):

That a valid and useful source of descriptive and prescriptive curriculum theory for environmental education is more likely to arise from a synthesis among the compatible elements in the four paradigms arrayed in Table 1 of this commentary (1997, p.41). The table referred to by McClaren outlines behaviorist, non-behaviorist, synthetic/ecoliterate and ecozoic paradigms. (See Figure Three.)

The non-behaviorist alternatives suggested by McClaren clearly differed from many existing traditional practices and essentially formed a platform of opposition to positivist epistemology. McClaren (1997, p.43) did however remind one not to simply stereotype ‘content-outcome’ models ‘to the point where it obscures our understandings of the real position’ of opposing paradigms. He also emphasized the need for a full understanding of the possibilities and challenges to existing structures, before simply defining set standards of practice in EE.
In the literature I encountered, advocates of particular paradigms also noted that their particular view is a ‘favored’ one, and not necessarily the ‘only’ one. The exploration of a range of approaches is also encouraged. For example, Wals and van der Leij’s (1997, p.55) comments of ‘we believe education is not an “all or nothing” game and that there is merit in being exposed to a wide variety of points of view and ways of thinking,’ illuminates that theorists at that time were not totally exclusive of any one particular paradigm.

The trend towards opposing behaviorist models, shortcomings of generic curricula and national standards, can be illustrated by Wals and van der Leij’s 1997 paper, ‘Alternatives to National Standards for Environmental Education: Processed-Based Quality Assessment.’ The basis for their argument in this paper is that EE ought to be process-based, which contradicts the traditional (behaviorist inspired) outcome-based EE. A decade later, this was still a topical issue in education literature as suggested by Luke (2007) in outlining the potential flaws in national curricula and standards:

> The risk in a national curriculum is that it will be too ‘high definition’, heavily prescriptive and test-driven. It removes teachers’ professional capacity to read the situation, the kids, and the community, and use their professionalism to construct curriculum locally (2007, p.18).

If national curricula and standards overemphasize content and can have a ‘deleterious impact on the social stratification of knowledge’ (Luke, 2007, p.19), what then is a reasonable alternative?

As far back as 1997, Wals and van der Leij (1997, p.7) proposed a four-dimensional learning process that encompasses construction, transformation, critique and emancipation of the learner’s (constructed) world in an existential manner. This idea of exploiting understandings of localized constructions to equip practitioners and learners with skills to bring about change was generally untypical of EE models at this time. Their opposition to generalized national curricula with set standards is clear:
Working within these four dimensions is incompatible with the idea of setting national standards for environmental education (1997, p.7).

The alternative as proposed by them is to utilize the knowledge, ideas and concerns of a specific community, as opposed to focusing on a pre-determined content or outcome.

These different emphases essentially form the basis of contention for the two dominant schools of thought; those who advocate a structured content with universal objectives and goals, and the opposing element, those favouring contextual development within specific communities. Wals and van der Leij (1997, p.10) cite theorists such as Hungerford, Peyton & Wilke, Hines, Hungerford & Tomera and Marcinkowski as supporting the former, while identifyingRobotom, Stapp, Wals and Stankorb as examples of proponents of the latter. The above categorization is merely a simplification highlighting constructivist, cognitive learning processes within EE as leaning toward context specific models, whereas content driven and outcome-based EE generally did not. (This thesis does however acknowledge the existence of a multitude of conflicting paradigms and the emergence/existence of numerous epistemologies beyond those simply opposing positivism.)

It is my belief that the value of EE not grounded in content knowledge and the acceptance of existing power relationships, is that it supports critical and autonomous thought, which can in turn lead to transformation. Contrastingly, behaviorist perspectives tend towards EE as an instrument or tool that can be used to modify (not transform) specific behaviours in a pre-determined direction (Wals and van der Leij 1997, pp.10,11). In this scenario, it can be argued that EE is potentially a manipulative tool, open to exploitation, in a bid to achieve political or economical agendas as it does not necessarily encourage critical analysis, nor does it consciously promote autonomous thought. Instead it has mass potential to produce groups of individuals with similar based thought patterns and imposed perceptions. This is somewhat of an extreme description, but it emphasizes the pontifical nature of positivist approaches.

Conversely, it would also be foolish to suggest that all students for example in learning environments informed by constructivism and social-critical theory, will automatically become autonomous critical thinkers. However, if in this EE scenario skills are encouraged and developed which enable students to make informed decisions regarding the environment based on their
own developed perceptions supported by contextually generated knowledge, rather than universally instructed and transmitted knowledge, then it is more beneficial for transformative EE than those based on positivist assumptions. If we are to provide authentic and meaningful learning opportunities, then the development of values and skills need to be relevant to particular settings, not merely pedagogically imposed. In addition, students and teachers should not be viewed as manipulable objects, instead there ought to be an emphasis on human development, and not solely intervention.

Why then are there in instances continuities in positivistic epistemologies? There is no simple answer to this, but as the autobiographical narrative reveals, the acceptance of (or fear of challenging) existing power relations plays a significant role. So too is the ease in adopting habituated practices, generic curricula, and emphasizing knowledge retention, all significant factors. In general, the method of instruction in schools and universities internationally is still largely teacher or lecturer directed. This ‘teacher-centered’ approach to learning epitomizes objectivist and positivistic epistemology, and through tradition and ease of application, is still widely practiced in many learning settings. The evolution of schooling, besides the advancements in technology, has not really been that dramatic over the last century when one considers that the ‘textbook’ or ‘chalk and talk’ method of instruction is still prevalent in many educational settings. The notion of fact retention and the ‘regurgitation’ of knowledge is fundamentally behaviorist and suited to universal or generic knowledge generation, which does little to transform existing structures.

In essence then is positivism, through the adoption of the same form/logic of inquiry irrespective of the field of study, an ‘easy way out’ for practitioners? Does this promote teaching programs that don’t take into account the individual needs (intellectual, emotional etc.) and differences (gender, age, interests etc.) of individual class members, but rather emphasize fact retention and rote learning, which in effect does little to support concept understanding? Is it easy to direct teaching at ‘the average individual,’ and allow for complacency with teachers comfortable in not encouraging a challenge to existing power relationships? I don’t have definitive answers to any of these questions, but it is hoped that the autobiographical narrative will provide deeper insight into these inquiries.

Personal experience also suggests that national (or whole state/provincial) standards and generic curricula, may also contribute to the continuity of an educational culture grounded in be-
behaviorist principles, which arguably can impact on quality learning. If ‘context or place-based’ EE is a viable alternative, what are the positive attributes? Wals and van der Leij’s (1997) opposition to national standards (effectively generic curriculum forms) and support for context as a determinant in effective EE illustrates that in relevant literature from 15 years ago there was a recognition of the value of contextualized approaches yet they are still not largely typical of contemporary practice:

For environmental education, and for human development, the setting of national standards for environmental education is more like an oxymoron since human needs and interests - fortunately, perhaps - vary with context (1997, p.21).

To add further substance to the importance of ‘contextual learning,’ the work of brain function theorists (Atkins, 1993 and Hermann, 1996) of a similar era is of interest. These theorists incorporate neuroscience into curriculum design, and suggest that learning with relevance to a known context assists in the accommodation of new information by allowing the brain to make physical connections. This is affirmed by Bawden (2005):

The first implication from the newer findings about brain function is the importance of organizing learning experiences around ‘real’ experiences so the brain can make connections to previously assimilated material. Neuroscience appears to favour the constructivist and discovery learning theorists, rather than the behaviourists. Some claim the behaviourists do not consider there are any internal mental processes taking place, yet science has shown the brain is making physical connections (2005, p.97).

However many practitioners who are aware of the shortcomings of behaviorist, linear approaches still appear to subscribe to such practices – in the form of a measurable, content-based curriculum. The ramifications for transformative EE in such a culture are vast and difficult to change. This is but one aspect requiring consideration by environmental educators; that of challenging existing traditions and cultures, and transforming them to a process-based approach that integrates EE with other subject areas and real life experiences. Hattam (2007) believes that this is particularly important in the middle years of schooling:
The need for innovation is especially urgent in the middle years, when many students begin to self-select out of schooling – partly because curriculum becomes more compartmentalized and content-driven, and assessment more competitive as well as disconnected from many students’ lives (even those who ‘win’ academically) (2007, p.21).

But is the integration of EE with other subject areas the key to successful learning and understanding? Walker (1995), as quoted by Gough et al. (2001), suggests that merely trying to integrate EE with other subjects is a problem in itself.

There is strong evidence to suggest that the problem of incorporating environmental education in the school curriculum is not much closer to being solved in the 1990s than it was in the 1970s (2001, p.181).

Jickling (1997) proposes that there needs to be more emphasis on the educational dimensions of EE to expand its presence in formal education. He mentions both Robottom (1987) and Wade’s (1996) research to support this aspect, and also suggests that the focus of teacher PD has been on the ‘environmental’ rather than the ‘educational’ aspects. This has obvious implications for how EE is approached in schools.

A further issue is illuminated by Jickling (1997, p.89) who proposes that the emphasis on ‘training’ for specific vocations, as opposed to ‘educating’ for life compounds the problem. In an effort to combat such inhibiting factors, he proposes that:

We should start putting more emphasis on educational characteristics of environmental education – putting the ‘education’ back into environmental education. To do this we must seek common understandings between environmental educators and the broader educational community (1997, p.100).

Jickling’s comments are pertinent in that prior to adopting and understanding a certain approach or perspective, educators themselves need to have clarity on the role and purpose of EE itself, and ultimately a shared or common vision with specific implications for pedagogy. In the
absence of such clarity, it is unlikely that the importance of contextual relevance will be understood.

The ‘common understandings’ mentioned by Jickling are essential elements in identifying the defining ‘educational characteristics’ of effective EE. Without these ‘common understandings’ and ‘defining characteristics’ it is a very difficult task for teachers to integrate EE in a purposeful manner into the general curriculum, and for teachers to have a clear concept of EE in general.

As some curricula inhibit the integration of EE with other subject areas, it is also often difficult for EE to be viewed in inter/intra-multi-disciplinary terms. This further compounds the neglect of contextual determinants as it tends to alienate sustainability from existing syllabi and related real-life experience. A further hurdle is that of varying perspectives of individual teachers on the role and purpose of EE as implied by Gough et al. (2001):

Whether a particular piece of environmental education is good or not depends as much on the perspective of the person asking the question as on the properties of the education (2001, p.186).

However, these perspectives themselves are also contextually determined and influence both the content and presentation of EE.

As revealed in the autobiographical narrative, learning contexts are inevitably subject to a number of political and economic factors (amongst others) that also influence EE praxis. In addition there also exist personal intrinsic, subjective factors directly related to the teacher or a particular institution that are contextually determined. Decision-making bodies, and individuals, are driven and framed by certain theoretical perspectives, whether consciously or not. These perspectives thus influence decisions and actions. Gough et al. (2001) elaborate on this aspect:

First, any particular individual or stakeholder group may be disposed to a particular focus, and may be unwilling to engage with educational efforts which non-negotiably begin from some other focus (2001, p.187).
This suggests a particular individual or institution might portray issues from a very linear, subjective perspective in an effort to achieve a certain economic or politically motivated (and in many cases socially, or behaviorally motivated) outcomes.

I do not propose that subjective interpretations and perspectives are necessarily a flaw in EE praxis. I support the adoption of social-critical epistemology which is essentially subjectivist, particularly in that reality is viewed as a subjective, social construction. In this scenario, individuals make sense of their world through contextually-based subjective interpretations as opposed to universally applied principles, with the teacher playing the role of facilitator and co-learner, rather than that of instructor or transmitter of knowledge. The subjective interpretations of the learner assist in assigning meaning and understanding to the world and socio-cultural context in which they exist. I also emphasize that the complex constitution of the context in which one exists and issues are constructed, cannot simply be viewed in scientific, objective terms as advocated by objectivist and positivist epistemology. Each learner and learning context is unique, requiring unique learning processes, which is not easily achievable when the focus is on generic, universally generated knowledge. In order to further explicate the subjectivist nature of social-critical epistemology, more consideration of the constitution of environmental issues and the complexity of the contexts in which they occur is necessary. These issues themselves are social constructions and are therefore subjective in nature.

I also acknowledge that the adopted non-behaviorist stance of this thesis is open to challenge by many, not only those grounded in positivist epistemology. There presently exists a vast quantity of literature supporting objectivist principles and emphasizing the importance of observable phenomena whilst rejecting metaphysics, particularly in the ‘pure sciences.’ I accept the role and importance of positivistic epistemology in gathering and analyzing data disassociated from any human or social position, but this to me is not what EE is all about.

There are also theorists who suggest an approach framed by both behaviorist and non-behaviorist principles. Although contradictory in principle, certain attributes from both paradigms might contribute to effective EE and cannot be entirely discounted. This is not a new phenomenon. Roth (1997, p.33) stresses that both educational practice and EE methodology will probably continue to emphasize both behaviorist and non-behaviorist attributes. Roth (1997) claims:
There can be no one world view, but the overall goal of achieving ‘quality of life’ will increasingly become utilized, and educational and communication strategies will continue to be as diverse as the ecosystems of which we are part (1997, p.33).

Roth’s dated comments are of value to the contemporary setting. It would be foolish to assume that there is only one ‘correct’ perspective or manner in which to implement or formulate a specific curriculum. It is also true that certain aspects of both behaviourist and non-behaviourist paradigms might be suitable in certain learning situations, and in certain subject areas. But this is not what is of issue here. I do not argue that one paradigm is right and the other wrong. With specific regard to transformative EE, I demonstrate that principles such as scientific rationalism and objectivity, as well as content-oriented and discipline-based approaches generally fail in their effectiveness when the paramount aim is for the development of critical thought, understanding and social transformation – essentially all defining characteristics of an ‘education for the environment.’

I also do not question whether it is possible to manipulate behavior to achieve certain outcomes. Instead, I propose that non-behaviorist approaches support the development of problem solving skills, independent and critical thought, cooperative living and collective shaping of society, where behaviorist approaches lack in this regard. This not a new notion in EE, and it was in 1997 that Jickling (1997) stated:

People will not think and act intelligently if they have been trained, conditioned, coerced, or otherwise manipulated to behave in a certain way (1997, p.95).

Conditioning and manipulation of behavior certainly makes little allowance for individual difference and intelligent thought, but is rather directed at achieving measurable generic outcomes. It is on these grounds that I feel behaviorist principles alone shouldn’t be considered as legitimate for effective EE, as they don’t allow for the development of the skills, understanding and modes of inquiry central to a transformative EE. Behaviorist principles focus on behavior, often at the expense of encouraging individuals to think about their actions and the ramifications thereof, (i.e. why they might act in certain ways and the cognitive processes involved in
determining certain behavior). In general environmental terms, behaviourist principles can be viewed as strategies to enforce conservation of resources, and thereby reduce the impact on the environment through for example, government incentives or deterrents, without a proper understanding of the issue at stake.

I further argue that to better increase and sustain positive environmental attitudes and actions, an understanding of the context and its complex constitution in which environmental issues evolve, is crucial. In this scenario specific actions or behaviors are rather the result of critical problem solving skills, educated and informed decision making, deep levels of understanding and intrinsic values developed within a meaningful real-life context, rather than through conditioning, coercion or the imposition of extrinsic determinants.

The real-life contexts I refer to are social constructions and ‘our’ meanings which we give to our existence are of immediate relevance to ‘us’ as individuals, as they are integral to our link and relationship with the environment. They provide a unique context for one to understand and survive in a complex and intimidating world.

With reference to ‘our meanings’ and real-life contexts, Palmer (1997) stresses that if the potential of EE is to be fully realized, then in the design and implementation of policies and programs we need to take account of:

- The nature and importance of prior knowledge and of formative influences and significant life experiences impacting upon people's thinking and behaviour.
- The importance of knowledge gained through living and interacting in communities; socially acquired knowledge, as distinct from 'formal' knowledge gained in classrooms.
- The critical significance of the natural environment and 'in' the environment experiences.
To conclude this section, I emphasize that formal education provides but only one (not separate) aspect of EE. By focusing on EE in school curricula, it is easy to lose sight of the role other sectors play in EE. Mahoney (1998) reminds one that:

It is commonly assumed that environmental education is primarily the mandate of the formal sector, but it is eminently reasonable to argue that the most vigorous and persuasive education is being promoted in the non-formal and informal spheres (1998, p.138).

He goes on to suggest that the typical cognitive approaches of formal education lack the emotional appeal often utilized by non-formal environmental organizations. As a result it is often easier for non-school organizations to engage individuals in environmental action, than many formal curricula where the learning is less incidental and possibly less relevant to their real-life experiences. It is the integration of both the formal and non-formal learning situations, and the opportunities that they both present, that can ultimately contribute to an effective and transformative EE.

The Australian Government’s National Action Plan for Education for Sustainability (2009) also acknowledges that EE is not only the domain of the formal sector, and the development of sustainable practices goes beyond mere education:

Education is not the only tool for promoting sustainable practices

This suggests that amongst others, if the values, understandings, skills, inquiries, habitual practices and traditions generated within certain socio-cultural contexts have a sustainable focus, then this together with formal education also largely contributes to sustainable practices. It is however our understandings of the constructions in these socio-cultural contexts that informs EE praxis, and it is these understandings that currently appear underdeveloped. This section has illustrated that the notion of context has been considered for a number of years, but this has not translated into deeper explorations of the forces impacting on social constructions, and how contextual examination can reveal EE responses that adequately address environmental issues as social constructions.
It is clear that a significant body of literature exists that acknowledges the importance of contextualized learning and relating it to the real-life of the learners, but this is the point where further examination of context seems to pause and not delve deeper into how we can use contextual understandings to inform transformative EE praxis.

There is a need to go beyond the inclusion of local community, place-based approaches, and interactive learning ‘in’ and ‘for’ the environment. We need to place a new emphasis on understanding the forces impacting on the construction of environmental issues if we are to bring about transformation, and this requires insights into the context in which they are realized. Although I acknowledge the value for EE in incorporating and considering the role of community, it and as importantly place-based approaches, are but links in a chain that collectively strengthen approaches to effective EE. They both are crucial in transformative EE, but cannot alone bring about transformation. Place-based education should not be the end point, but instead a starting point to more closely examine how participants in specific settings construct their realities. Place-based education can assist in exposing deeper contextual constituents impacting on learners and the meanings and connections they have with each other and the environment. The value of such approaches cannot be underestimated and as such have included examples to assist in the understanding of their development and implementation.

As such, the research questions I have posed relate mostly to context, complexity of context and how this relates to effective and transformative EE praxis. I do however consider an exploration of other influences impacting on EE and the associated hermeneutical and reflexive aspects of my chosen methodology.

As context is of central focus in this thesis, I have chosen to include an overview of the ENSI (Environment in Schools Initiative) Project in the Literature Review to illuminate examples of what I believe to be the effective implementation of contextualized curricula or place-based education. The inclusion of these examples also positions place-based approaches or the consideration of context into the development or history of EE, which illustrates such approaches were employed over 20 years ago, yet the notion of context in its entirety has still not fully been explored.

In these examples, traditional modes of classroom instruction have been set aside and replaced by an integrated, community-based approach with direct relevance to real issues con-
fronting a specific community. These case studies also illustrate how general education policy need not hinder the implementation of environmental initiatives, but it is rather the subjective interpretation thereof that essentially determines EE praxis.

**The ENSI Project (Environment in Schools Initiative Project)**

Briefly the ENSI Project is an international research project in EE involving 20 countries, including Australia, with the majority of the member countries being predominantly European. The basis of the Project is to develop dynamic qualities in students which will improve the environment and ultimately allow human technological and economic advancement without environmental exploitation (Elliott 1991, p.19). ENSI is a government-based international Environmental Education learning network. It falls under OECD’s Centre for Educational Research and Innovation (CERI).

The countries I have included in this section illustrate instances where effective place-based EE has occurred within formal education contexts that include significant involvement of the local community and utilization of the local environment. They also illustrate that context-based EE is not a new concept although it is still not afforded a significant amount of attention in contemporary literature. The underlying principles of the included initiatives are based on the basic premises of the ENSI Project as outlined by Elliott (1991, pp.23-35).

The guiding criteria of the ENSI largely conflict with the more traditional instrumentalist approaches to EE and teacher training which have generally been adopted as the norm in many Western schools (Kyburz-Graber and Robottom, 2000).

One of the significant aspects of the ENSI Project was that it did not give prescriptive rules to participating schools. Instead it provided guidelines and criteria that governed individual initiatives, which resulted in a broad diversity of projects being undertaken in various settings all based on similar principles.

**A summary of the basic premises of the ENSI Project**

I have used the eight underlying fundamental criteria of the project, as defined by Elliott (1991, pp.28-35), alongside other sets of identified criteria and issues that emerge in this thesis in an effort to further our understandings of ‘effective EE.’ There is an emphasis on action research, action in immediate environments, practical problem solving, an integrated curriculum, the
generation of a variety of skills and knowledge, environmental understanding and awareness and critical reflection of practices by teachers. The ENSI examples also serve to illustrate that active involvement in real-life and authentic environmental activity can contribute to understandings of global environmental issues.

The criteria intend to both raise the profile of EE and promote environmental responsibility. By virtue of their nature as criteria and not specific policy they do not insist on immediate radical changes to existing traditions and practices. Instead they are posed as viable alternatives. It is not the ENSI’s intention to produce a generalized, agreed set of goals that can be used for teachers and teacher training. There is also an emphasis on the use of action research as a form of PD to better inform practice, which was not typical at that time.

*The role and purpose of the ENSI Project*

The project plays a significant role both in EE and education in general as it challenges traditional and conventional roles and approaches to PD and curriculum content, development and policy. The project is community-focused and is based on action research principles where curriculum and PD can be linked through active participation in educational enquiry allowing teachers to reflect on their own practices and experiences. It promotes an approach that contrasts with traditional ‘scientific’ or ‘applied science’ research methodologies in EE, by promoting alternative research genres (Kyburz-Graber and Robottom, 2000, p.273).

Elliott (1991, p.19) views the purpose of the Project as an examination of a specific goal or concept of EE, and of the feasibility of its application to a number of different education systems. The above-mentioned examination was realized through the documentation of various case studies outlining specific attempts at achieving a particular EE goal.

Elliott (1991, p.28) also suggests that the action research component of the project develops environmental awareness as a type of ‘practical wisdom’. This emphasizes the Project’s move away from the conventional, technocratic education ‘about’ the environment towards an education ‘for’ the environment. Elliott’s neglect of EE ‘in’ the environment I assume is due to education ‘in’ the environment referring to education outside the classroom and in the actual environment, hence being a pedagogic technique, not an EE goal (Lucas 1979, pp.50-65). In this scenario, although the education might actually occur ‘in’ the environment, it may still be void of the characteristics typified in an education ‘for’ the environment approach.
The adoption of an education ‘for’ the environment approach is characterized by students experiencing the environment through personal interaction, where the environment takes on a dimension of social importance directly relevant to the individual. The intention of such an approach is the generation of intrinsically motivated sustainable practices. This enables the learner to critically reflect on one’s impact and relation to an immediate real-life setting. In this scenario curriculum content can be better structured to meet the needs of a specific environment directly relevant to the learner’s own existence, often resulting in necessary changes to existing teaching strategies. This has implications for teacher training (and PD) as practitioners need to be skilled with practical strategies that they can apply to specific contexts to adequately meet the needs of the learners.

**The ENSI Project and professional development**

In reflection on the aims and the implementation of the project, my attention is drawn to possible flaws evident in some contemporary PD models. In my experience there is a general assumption that the role of PD is to ensure practitioners remain abreast of emerging trends, initiatives and content in contemporary education. This is of course relevant, but the absence of some aspects considered in the ENSI Project might render some PD models in EE less effective than they set out to be. (These include participatory action research, practical strategies and their application to specific contexts, the lack of an ongoing focus and a focus on multidisciplinary learning.) Much of my PD has been a ‘one-off’ event which rarely encouraged a rumination of my own actions and practice. Instead the norm is characterized by generalized sets of prescriptive actions that educators are encouraged to take on board with little regard for their own unique experiences and environment. In support of this challenge on conventional and traditional practices, the project criticizes instrumentalist approaches to PD, suggesting that they do not offer sufficient scope for critical self-reflection and constructive communication amongst educators themselves.

**Action research as professional development**

The ENSI Project illuminates the beneficial aspects of action research as a legitimate form of PD. As a teacher, reflecting on one’s practice is no doubt a valuable tool to inform planning for future learning opportunities and to improve pedagogical skills. What exactly is action research? McTaggart (1998, p.25) states that action research is a form of self-reflective inquiry undertaken by participants in various social situations. He also suggests that naturalis-
tic, qualitative and interpretive methods of inquiry are the most useful in action research (1998, p.21).

Action research has gained acceptance as a legitimate form of qualitative research particularly in the last 15 years. McTaggart (1998) confirms its present status as a legitimate alternative to dominant, traditional positivist forms of inquiry:

> It is a sign of marked progress that we can discuss these matters in terms specific to each methodology and not have to fend off criticisms of each because they do not attend to the canons of positivistic inquiry...The proliferation of action research marks a significant shift in both the kinds of relationships researchers from the academy have with others and in the locus of knowledge production of professional practice (1998, p.1).

Robottom (1987a) described this form of participatory self-reflective inquiry over 20 years ago:

> Action research, then, is mediated by praxis, by practitioners’ critical reflection upon their professional activities. It aims at personal improvement through praxis applied to the dialectic between thought and action (1987a, p.109).

This highlights the role of the practitioner as the researcher where a better understanding of his or her practices can come about through personal self-reflection. Action research, as a form of PD, is then largely different to existing practices as it is based on principles of collaboration, participation, criticism, practice and enquiry (Robottom 1987a); all principles that are still conspicuous by their absence in traditional, and from my experience, in many contemporary PD programs. This absence of action research does little to advance one’s understanding of how personal actions, practice and interpretations can better inform EE praxis. It also does not promote professional dialogue relating to practice and understandings amongst practitioners within specific contexts, which potentially inhibits improvement.
Taking account of context in the ENSI Project

This thesis supports the basic premise of the ENSI Project; that traditional instrumentalist approaches essentially view the environment as a manipulable commodity, and that such approaches can have deleterious effects on the natural environment. As earlier acknowledged, in positivists and instrumentalists approaches there is an emphasis on the application of generalized principles, which contrasts with taking cognizance of unique contextual complexities and specificities of particular environments. This I believe jeopardizes both the natural environment and the potential of such approaches as an effective form of EE.

Where does cognizance of context sit within the ENSI initiatives? It must be borne in mind that complex contextual factors influence the practical application of general policies at school level, irrespective of governmental policy directives. (Examples of some contextual factors influencing implementation might include a perceived ‘over-crowded’ curriculum, time constraints, finances, personal interests of teachers, individual school policy and teaching towards a final examination, to mention but a few.) From what I have read and experienced, differences between policy intention and actual implementation is not unique, but in fact quite prevalent and often vast. This is confirmed by Kelley (1991) and is a reminder that each initiative should then be viewed in the unique context of the school in which it occurred and not necessarily be viewed as a reflection of EE on a national level.

However, in many countries the gap between policy statements on paper and the actual translation of environmental objectives in curriculum terms is quite significant (1991, p.124).

Important too, is that the considered initiatives formed part of the second phase of the ENSI Project, which was not entirely independent on the first, but rather an extension that consolidated and expanded on the results from 1986–1988. This is clarified by Posch (1991), who claims that the initial phase of the project merely provided a catalyst for the realization of the long term targets of the ENSI Project. It is also interesting to consider the long-term sustainability of the initiatives and the processes put in place to ensure this occurs. Of particular relevance is the Italian example, where every five years an exhibition is held which focuses on the work and successes of the preceding few years, ensuring ongoing interest and involvement.
Finally, note that the inclusion of these examples is not for comparative purposes with my experiences outlined in the autobiographical narrative. They are included as examples of effective context or place-based EE where a curriculum has been designed or modified to suit the needs of the context in which it manifests. They illustrate that such approaches enable practitioners to better understand the contextual forces impacting on the learners’ constructions, as they themselves as facilitators are part of the learning process. Place-based approaches are then valuable to EE practitioners as they can expose meanings that are specific to certain learning contexts that can transform both the constitution of EE and the manner in which it is implemented.

The examples also exemplify the importance of the inclusion of the broader community and local authorities in the involvement of the initiatives. In most cases this involvement has been instrumental to their success. In addition the media attention many of the projects attracted exposed the relevance and successes to a larger audience and also highlighted the difference in approach to more standard and traditional forms of EE, where there is often less attention afforded to the beneficial aspects of community involvement.

*An emphasis on community involvement and partnerships*

The considered initiatives clearly outline the benefits of community involvement in EE programs. As illustrated in the examples, this is on a number of levels and plays a significant role in teaching, learning and PD. Posch (1994) illuminates the importance and benefits of sound partnerships between school and local community in the following comments:

Dynamic networks are developing in education as a means of dealing with increasingly complex situations. Such networks are particularly adapted to the requirements of environmental education where the boundaries between school and community are not separate and students and teachers need access to outside resources. Dynamic networks provide an increasingly important framework for professional development. They facilitate the exchange and use of information, skills and practical examples based on concrete learning experiences of teachers (Posch 1994b, p.6).
The considered initiatives illustrate the significance of transcending the boundaries between the classroom and the community, and are what I consider examples of sound, learner-centered EE. They also serve to illuminate alternative approaches to EE and highlight the importance of networks and community involvement in context or place-based EE praxis.

Selected European member countries participating in the ENSI Project

Most of the countries involved in the project had a number of schools that participated, which encompassed a diversity of activities. For the purpose of this thesis I only focus on specific, selected schools in each example. The following six initiatives are considered:

<table>
<thead>
<tr>
<th>Country</th>
<th>Focus of environmental initiative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ITALY</td>
<td>Water resources.</td>
</tr>
<tr>
<td>2. SWITZERLAND</td>
<td>Waste management.</td>
</tr>
<tr>
<td>3. SWEDEN</td>
<td>Market gardening, fish farm, windmill, radio station and a purpose built yacht.</td>
</tr>
<tr>
<td>4. FINLAND</td>
<td>Visual arts.</td>
</tr>
<tr>
<td>5. AUSTRIA</td>
<td>Construction of an environmental pillory.</td>
</tr>
<tr>
<td>6. GERMANY</td>
<td>Establishment of a Nature Information Centre.</td>
</tr>
</tbody>
</table>

A brief overview of the environmental initiative undertaken by each school is outlined, and supported with a brief and non-comprehensive overview of educational policy in each of the countries to further define the context in which they occurred.

Although education in the selected European countries occurs in vastly different contexts, all the EE initiatives that I cover are based on the principles that governed the ENSI Project. Each school was required to adhere to fundamental criteria that guided their initiative within their unique setting. The project is not ‘new’ in the typical sense of the word, as Phase One started as far back as 1986 with eleven European countries as members. Each country had a different number of schools involved. The first phase of the Project concluded with a conference in Linz in 1988, where it was suggested that the Project’s initiatives for the first phase appeared successful. The second phase of the project went beyond the European context to include schools in the broader international arena from countries such as Australia, Canada and the United States of America. Not all countries had similar levels of involvement in the project with some merely given observer status and other member countries carrying out in
depth policy reviews (Pettigrew and Somekh, 1997, pp.10,11). This second phase was an extension of the first phase and consolidated and expanded on the results from 1986-1988.

The ‘Background and Issues Report’ tabled for the 1994 ENSI International Conference on Environmental Education Policy and Practice in Germany, views the development and extension in the second phase of the Project as coming about as a result of increasing the number of schools in the network, improving support structures, extending action research, generating a greater emphasis on critical reflection and interaction between member countries, and the examination of developments in environmental sciences and their relevance to the ENSI (OECD,1994, pp.4,5). I do however stress that the development of the above mentioned strategies were viewed as ‘ambitious’ and ‘long-term targets’ with the initial phase of the project merely providing the catalyst for their eventual realization (Posch,1991, p.18).

**Rationale for inclusion**

The inclusion of the initiatives in the Literature Review serves to provide instances where differences in interpretation of educational policy, the constitution (or perceived constitution) of an environmental problem, curriculum development, program implementation, as well as interpretations of teacher PD might have subjectively (and differently) occurred although they were located within the same guidelines. This illuminates the complexity of contextual determinants that govern interpretation and EE praxis within particular settings. They are also included to position the consideration of context in the history of EE, and to illustrate that contemporary contextualized EE has not developed significantly from the employment of place-based models over 20 years ago. This demonstrates that there is significant scope to further explore context to gain deeper understandings on the constructions and responses to environmental issues.

The European case studies also clearly demonstrate the success of local initiatives and serve as an indicator that such an EE approach can, and perhaps should, be employed in other settings. This study indicates that most effective EE programs have taken cognizance of the context in which they manifest. ENSI is also ‘underpinned by a pedagogical approach of constructivism’ (Mayer, 2002 and Smith 2004), which is very student-centered and accommodates student-community and school-community relationships; aspects also arguably crucial for effective EE.
To complement these aspects, the ENSI Project endeavored to identify international principles or criteria to assist in the development of effective EE, which although are slightly dated, still hold relevance to informing contemporary practice.

What follows then is a brief examination of some initiatives undertaken in Germany, Finland, Austria, Italy, Switzerland and Sweden. I have also included some information pertaining to education policy in each country as originally outlined in ‘Environment, Schools and Active Learning’ (OECD, 1991), the publication outlining concrete examples of innovative environmental initiatives. This is in an effort to position the initiatives against the backdrop of a general education policy perspective in each country. These brief references to specific policy refer to policy at the time of the ENSI Project. There have inevitably been many policy reforms and changes since, as the political and economic dynamics in each country have naturally evolved. (For example the unification of Germany occurred after the start of the project.)

It would also be pertinent to note that specific policy determined at state level, is often open to subjective interpretation at school level, which in turn influences implementation. Consequently some of the local initiatives undertaken in the projects might not necessarily be an exact or accurate reflection of Federal or general governmental policy in the country concerned.

**Examples of effective contextualized environmental initiatives from the ENSI Project**

1. **Germany**

   The German example is unique in that the first phase of the ENSI Project was conducted prior to the re-unification of Germany and the second phase of the project was post re-unification. Although there have been many social, political and educational reforms since 1990, educational changes appear to have had little or no direct effect on the environmental initiative discussed in this example. In fact the establishment of the environmental centre that formed the basis of the German initiative dates back to 1975 and was actually the extension of a previous project.

2. **Education in Germany – post re-unification**

   Following re-unification, there are 16 states in Germany. These states known as ‘Lander,’ are faced with a multitude of new challenges that have come about since having to integrate capitalist and socialist principles post 1990. Education is no exception with East and West having had two distinctly different systems. All the ‘Lander’ have cultural autonomy of which educa-
tion is part, with general policy being determined by a Federal Framework, and specific education policy determined by Higher Education Acts existing within each ‘Lander.’

Perhaps the most dramatic changes in the new Federal Republic in education policy have occurred at tertiary level. It is unclear whether primary schools under the previous division in West Germany were more or less affected by the re-unification process. The OECD Education Committee Review Team found that in the former GDR, schooling was more specialized than in the West, and consisted of 12 years of formal schooling as opposed to the 13 in the FRG (1997, p.24).

The OECD Education Committee Review Team (1997) viewed the ‘Eckertepapier’ of 1993 as the key paper on educational reform and policy direction in Germany, although the central focus of this paper was on higher education. This suggests that urgent reform was deemed more necessary at tertiary level with particular emphasis on assessment and the examination system. The focus on higher education can particularly be demonstrated through the budget allocation that saw federal (Bund) funding increase by 50% and state (Lander) funding increase by 400% in a twenty year period (OECD Education Committee Review Team, 1997, p.13). These statistics also indicate a commitment to education both at state and federal level, with expenditure on education doubling from 1985 to 1992, a period encompassing the ENSI Project.

The most probable reason for reform being concentrated in the higher education system rather than the primary and early secondary, is the shift in student demand and changes in the labor market that have come about since re-unification. As primary school education is less vocationally based, with teacher education also regulated by the state, its content is not as subject to economic determinants as secondary and higher education. Students generally start school at the age of six and then have 12 years of formal education or an optional 13 as adopted by the minority of states. Besides universities, there exist other opportunities for adult education, for example access to ‘Volkshochschulen,’ essentially colleges for the people that have existed since the 19th Century as a less academic alternative to universities.

At school level formal education policy generally promotes EE, with responsible attitudes towards the environment touted as being of paramount importance. As far back as 1980 the Conference of Ministers of Education formalized a resolution where schools were held responsible for the promotion of environmental awareness and environmental responsibility. This included
first hand experiences with the environment, interdisciplinary teaching and an understanding of the complex relationships within ecological issues (OECD, 1991, p.128).

**German initiative: The establishment of a Nature (Environmental) Centre**

The students who took part in this initiative were mostly 13 and 14 year olds, had completed primary education and were now in the early stages of secondary schooling. The project revolved around the renovation of an abandoned eighty-year-old schoolhouse that was re-equipped and transformed into an environmental centre. The success of the project was dependent on committed teachers and students as well as a unique interpretation of policy that was supported by school management structures. It is a good example of an initiative that utilized the local community, local geography and resources, as well as local businesses and interests, through the application of contextualized curricula particularly relevant to the participants within the project. The initiative also reflected adherence to the resolution passed in 1980 promoting environmental awareness and responsibility in schools.

The geographical area of northern Germany where the school is situated, in Bredstedt, supports little local industry other than tourism. The proximity to the North Sea ensures a steady stream of tourists to the area which, in addition to the local community, was targeted as likely to produce visitors to the centre upon completion. Beyond the obvious benefits of such a facility to both the environment and visitors, it also provided the local and school community an opportunity for ownership of a project that encompassed various ages, genders and socio-economic groups. The relatively alternative approach adopted by the school to the project is indicative of the scope or flexibility within the formal curriculum at junior secondary level in Germany.

German education policy includes a focus on understandings and relationships as well as the promotion of interdisciplinary teaching, with responsible environmental attitudes an expected outcome. This is in parallel with the objectives outlined by the OECD at the time of the project. Kelley (1991), the OECD Secretary at that stage, made the following comments regarding German EE policy:

It was stated that students were to learn to understand complex relationships; interdisciplinary teaching was to be promoted, especially in the natural and social sciences; and first-hand environmental experiences were essential for students if they were to understand the conflicting in-
The project required an alternative and diverse interpretation of the policy needing to transcend ‘typical’ curriculum implementation, although it still essentially complied with departmental guidelines. This illustrates the potential for a broad diversity of programs that individual departments or teachers can offer if scope is encouraged within the set syllabus and is supported by local school policy or management. If formal policy is too prescriptive and does not allow a subjective aspect then it can impact negatively on the creative and original interpretations on a practical level.

The German school’s initiative actually further developed a project that had previously been undertaken as far back as 1975. A large portion of the project had a practical component with little emphasis on traditional academic pursuits. It did however allow for a large range of aptitudes and interests that catered for a diverse group of students and encompassed many skills. The variety of roles associated with the initiative meant that those students with less of a ‘hands on’ approach to learning were designated tasks suited to their interests, while the more practically oriented students undertook the more physical jobs. This ensured that all involved still had a sense of ownership of the completed product. A multitude of skills that encompassed building, management, academic, social, communicative, management and financial, were all drawn upon and formed the ‘package’ necessary for the success of the project, as did the commitment of students, teachers and local community who assisted also play an integral role.

On completion of a year of strenuous work the centre opened. Students presented guided tours of the actual centre as well as managed and preserved a nearby protected site. A number of dioramas were also constructed, which then formed the basis for explanations of various ecosystems. Success of the project was confirmed by the number of visitors to the centre which exceeded 27 000 in 1987 and led to a permanent position at the centre being funded by the local town. The centre was also used by visiting schools and over 500 teachers visited during 1987.

Why was this initiative an example of effective place-based EE?
This project can be assessed on a number of levels. The most relevant would be that of its success in engaging students in decision making and problem solving, fostering cooperative work-
ing, involvement of students in a real life issue, community involvement, promotion of environmental awareness and responsibility through active participation, the promotion of an integrated and inter-disciplinary approach, and the acknowledgement by school authorities that effective learning can occur in a range of contexts.

To complement these aspects, beyond its initial purpose the centre also provided an opportunity for education to be presented in a manner different to the usual classroom scenario. It also provided an ongoing opportunity for teacher PD and sustenance of the project beyond the initial renovation of the schoolhouse.

The German example clearly reflects the merits of a contextualized curriculum that focuses on local issues of relevance to those involved. The beneficial value of such a project is illustrated not only in the ongoing success of the project, but also in the understandings and skills gained by all participants, and at all stages, within the initiative’s development. It had a substantial community component and included the learning of new skills and the practical application of them across a range of disciplines, all conducive to effective learning.

2. Finland
Finland is home to a relatively small population (under six million) considering its geographical size, and has approximately 600 000 comprehensive school students. The country has a high standard of education with Finland rating well in OECD comparisons with other countries. The education system acknowledges the importance of lifelong learning and provides free education, books and a free hot meal daily. Compulsory education has been in effect since 1921 and it is up to the local municipalities to provide accessible and basic education for all. General education principles are determined by Parliament but it is up to local government, Ministries and the National Board of Education to implement policy. Of these bodies, the Ministry of Education is the most significant and generally oversees all education, thus attracting around 15% of the annual overall budget. On visiting Scandinavian countries one is easily impressed with the apparent order, cleanliness and the apparent lack of obvious environmental problems. This is not to suggest that these problems do not exist but rather that they appear well managed and reflect that the local populace has an educated respect for the local environment. In Finland this is in part due to governmental policy, the general culture, values and traditions of the people and an acknowledgement of the importance of environmental knowledge and understanding within the national curriculum.
Environmental Education policy in Finland

The OECD state that in Finland, EE is viewed as a cross-curriculum subject with cognizance taken of its multi-dimensional nature (1991, p.129). The OECD outline the EE policy of Finland (at the time of the project) as basically including:

- Schools need to collaborate with local municipalities to work out the best ways for teaching the subject area.
- Environmental Education needs to be part of the practical training in vocational schools.
- Objectives are to impart knowledge and to teach students to be critical of knowledge.
- Students need to be able to put previous knowledge to use and to take a stand on issues.
- Students need to be able to state reasons for adopting certain viewpoints.
- Students need to develop the courage to rely on their own observations (1991, p.129).

Perhaps the most important aspect of the above is that of students developing independent critical thought and the encouragement of collaboration between schools and local government to achieve best practice. This then takes the immediate concern out of the formal classroom and enables attention to be afforded across a broader range of issues and approaches to them. The promotion of individuals to adopt a critical stance on issues allows for the generation of independent thought, respect of opinion and courage of conviction in students. By encouraging networking and collaboration with municipalities an opportunity exists for community involvement and a variety of pedagogical approaches. This contrasts with the traditional instrumentalist models that were still fairly typical in this era.

The Art Project

The Finnish school opted for a visual arts approach to convey an environmental message and promote an environmental theme.

Students from upper comprehensive and upper secondary schools in Finland (the Australian equivalent of Grades 7, 8 and 9) took part in the project. More than 700 pupils were actively
involved with various aspects of the project. A range of art mediums were offered that encompassed painting, textile design, graphics, sculpture and computer generated graphics. In an effort to transcend normal classroom boundaries it was also decided to include mural and horticultural design within the broader community. This exposed students to a variety of techniques and also illustrates how EE was integrated with other subject areas.

*Organization, interpretation and management*

The students were divided into different groups. Each group had a leader or instructor whose role was more that of a facilitator. The leaders were skilled in art or teaching art and generally consisted of teachers or local community artists, which allowed for a greater direct involvement by the broader community. It also gave the students the opportunity to work closely with a ‘specialist’ in a particular field and learn specific art skills while also increasing their environmental understandings.

The groups researched and chose different environmental themes and then opted for what they thought would be the best medium to convey their message. The themes encompassed environmental issues that had both local and global relevance. As would be expected there were broad interpretations. Some groups opted to try and change existing practices present within the local community such as the use of plastic shopping bags. They did this by producing ‘funky’ graphical designs on paper bags and presenting them as alternatives to plastic in local businesses. By adopting the use of envelopes that had been designed with an environmental theme by another group, the city offices also showed support for the project. Representatives from the Ministry of the Environment, the local city of Pori, local business leaders and the National Board of Education, all attended an exhibition of all works included in the project.

This drew wide media attention and promoted the environmental message even further. Participants in the initiative felt a real sense of ownership and had a real sense of pride through the acknowledgement of their successes by the authorities and the initiative’s broad acceptance by the community. By involving all levels of the community a specific culture of environmentally acceptable behavior was generated. This carried certain expectations within the community and a degree of communal pressure to ‘do the right thing.’ Another aspect illustrating the beneficial value of the initiative was that parents of students in particular were able to witness a number of diverse outcomes of education, which they possibly would not have experienced in the normal school setting (OECD, 1991, p.157).
Why was this initiative an example of effective place-based EE?

All students had to research an environmental issue and then apply their understanding of it. This generated deeper knowledge of the issue and encouraged rumination of how it applied to their real life.

The use of an environmental theme to learn different art skills was merely a by-product of a greater environmental message conveyed to the community. This ultimately resulted in a better environmental understanding of an issue and improved environmental practice. The host of other positives generated by the initiative such as teamwork and cooperation, learning a knowledge of marketing, community and business liaison, exposure to different approaches by teachers and students and ultimately the direct environmental benefits, all demonstrate the value of integrating EE with other subject areas within the curriculum whilst maintaining a local or contextually relevant focus. The project also had a good balance between research, theory and practice. Teachers were also exposed to a number of different pedagogical approaches which informally played a role in their PD.

Other positive attributes of the Finnish example are aptly described by Posch (1994c):

> The (involvement in the project)...reinforced local, regional, national, and international collaboration and networking. In the very long run, which is the proper time scale to adopt, successful environmental education policy making requires building institutions (1994c, p.15).

He also acknowledges the broader benefits of the project, those of collaboration and networking beyond the immediate context of where the initiative occurred. He stresses the long-term value of ‘building institutions’ in a range of settings where such approaches become the norm, not the exception.

3. Austria

Austria is a democratic republic encompassing areas of the Balkans and the Danube Basin. Vienna, the capital, is well known in the western world for its strong association with European arts and culture which is also reflected in the attention these areas are afforded in education.
Education in Austria

At the time of the project, the Federal Ministry of Education was responsible for determining school curricula in Austria. However there are two aspects of particular interest in this regard. Firstly interest groups in society were consulted with to determine curricula, and secondly as education policy was considered a constitutional matter, the major political parties had input into reform that required mutual agreement. (This is quite different to a number of other education models where the government of the day is often responsible for education policy.) Although EE was not given the status of a separate subject in some schools, particularly those stressing vocational education, students engaged in EE either directly or indirectly (integrated with other subjects) within the general syllabus. In general though, EE did not receive high priority in most schools and nor was there much support at governmental level for schools to develop specific environmental programs to address existing or potential issues. In short, Austrian teachers at this stage did not have much formal training or experience in EE, although it was publicly deemed important.

On a positive note, Provincial School Boards were able to adapt curricula to suit local conditions in certain circumstances, which allowed for the development of a more contextually relevant curriculum. Kelley (1991) points out:

(In Austria) however, the infrastructural provisions in support of environmental initiatives are far less developed than the general expectations for teachers to develop them (1991, p.127).

This was not specific to Austria but also illuminates an apparent global problem. Teachers are often expected to design and deliver EE programs but have little training and support in this regard. Teachers appear to lack both initial and ongoing training in EE in the many settings I have been involved in. This has ramifications for the quality of EE teaching/programs and the depth of understanding and concept development within students. The focus of teacher training and PD on more traditional school subject areas and the ‘pure’ sciences is often at the expense of skilling teachers with the attributes necessary to further develop environmental understandings and strategies within the classroom.

Posch (1994c) has interesting thoughts on the environmental perceptions of the public and government:
Environmental Education policies are most advanced in countries in which the environment appears threatened to the people who live there…Also, in most countries, the public is more anxious about the environment than the government (1994c, p.5).

Was this the case in Austria at the time of their involvement in the project? This is difficult to answer accurately as there is no clear evidence from research that indicates Austrian public perception of the state of their environment. However education policy and teacher training didn’t adequately support teachers in this subject area to a level that matched the expectations of them. At the time of the project in Austria there still appeared to be a lack of cohesion between the relevant authorities, who in principle supported environmental initiatives, and the actual infrastructures and availability of training in place to support such initiatives.

The above comments by Posch, an Austrian himself, are particularly pertinent as he was one of the heads of the ENSI Project. He therefore would have been very familiar with the Austrian policies and structures which in turn would have assisted in his understandings of the intricacies of implementing the project in accordance with both ENSI guidelines and government education design.

**Background to involvement in the ENSI Project**

Thomasroith Primary School had a fairly active EE program prior to its involvement with the ENSI. This was uncharacteristic of most primary schools in Austria and presented a number of obstacles. These included a perception by the local community that their initial environmental efforts lacked legitimacy and that efforts to implement new environmental ideas appeared quite extreme to many teachers and other schools. Favoring their involvement with ENSI the headmaster, Karl Haas, suggested that the school’s previous involvement in environmental work had prepared them well and supported the school taking part in the project. (In the OECD report on the project, Haas (1991, p.39) later claimed that previous environmental efforts had resulted in both improved documentation and greater intensification in environmental action, as well as the improved environmental attitudes, awareness and behaviors demonstrated by his students.)
In choosing an approach, Haas’ objectives included positively changing the environment, as well as educating the local community. By focusing on students, parents and the greater community, a broad audience was targeted so that more people could gain ownership of the project than students alone. In order to achieve these objectives, local businesses were asked to respond to questionnaires, environmental guides and newspapers were published and environmental activity nights were to be held.

The main focus would be on the community assessing their own environmental behavior and practices and then adopting new approaches and strategies to positively modify it if deemed necessary. By reflecting on their own actions, the community would then be more able to accurately measure or assess their own environmental impact. The school managed to gain the support of local authorities, businesses and also the community whose perceptions had been positively enhanced from previous exposure to the school’s environmental projects.

The Biotope and Environmental Pillory

As with most of the European examples, the students were empowered with most of the planning, design and decision making, with the teachers offering guidance and acting as facilitators. The main focus of the project was on the building of a biotope that catered for plants and animals. They also constructed an environmental pillory. The pillory was designed to display rubbish/litter/waste that had inappropriately been disposed of in their local environs. As with the biotope, the students themselves constructed it with assistance from parents in the community. The pillory was erected outside the entrance to the school which allowed for maximum exposure to a large audience. The main purpose was to display to the community their poor environmental practices, which in turn would encourage the community to reflect on their own actions and alter their behavior. To support mere awareness of poor actions, information leaflets were also circulated to domestic households as well as questionnaires to local merchants to foster a deeper understanding of the impact of their actions. The local radio station also offered its support to the project allowing for the message to meet an even greater audience.

Students were given the opportunity to liaise with and educate the local community, almost a reversal of their traditional role of being instructed by adults. Their sense of ownership in the project generated both positive attitudes and environmental action with an ongoing element consolidating on issues at home that might have originated at school. By encompassing a diversity of activities (construction, collection, questionnaires, leaflet design, management etc.), a
broad range of interests, abilities and aptitudes were catered for. Through the broad acceptance by the community and local industry of the worth and value of the students’ involvement in the project, a great sense of pride was established. Some local wine industries even commissioned some students to develop proposals to improve on some existing environmental practices that might previously have had a harmful environmental impact. The involvement of the media also generated greater exposure and assisted in developing a new environmentally responsible ‘culture,’ which was of vital importance in sustaining impetus and ongoing interest within the community.

Why was this initiative an example of effective place-based EE?

The Austrian example exemplifies the beneficial value of involving students in activities directly relevant to their own existence and life world where they are able to identify with issues affecting their daily life.

Clearly it highlights the effectiveness of a contextually relevant curriculum in EE. This example also demonstrates the importance of reinforcing classroom based learning with real life experiences in the home, and in the immediate surroundings with which the students interact. (Parental involvement supports this aspect.) The students were exposed to a broad range of educational experiences during their involvement in the project which allowed for environmental concepts to permeate other subject areas and disciplines, allowing for inter and multi-disciplinary approaches to their learning. By giving the students a degree of autonomy and decision making they were able to experience a different relationship with their teachers allowing more of a ‘facilitator/learner’ relationship as opposed to an ‘instructor/passive recipient’ relationship. This also was evident in the relationships they forged with ‘power brokers’ in their society.

As in the previous examples, there too was a high level of community involvement and encouragement for individuals to reflect on their own practices prior to modifying their actions. The involvement of local businesses and industry assisted in the ‘message’ reaching a wide audience and having a greater impact on society. Even though there was not significant support in the form of education policy in EE, subjective interpretation of guidelines and the adaptation of the formal curriculum to meet the needs of their specific setting, still allowed for a very successful project. The success was also dependent on the support of the school leadership team.
and the willingness of teachers to involve themselves in activities in which they may not have had any formal training.

4. Italy

Italy was established as a republic in 1946 following World War Two. The country is led by a President who is elected by the two houses of parliament, the Upper and Lower Chambers.

Up until the mid seventies, the Italian education (school) system was totally centralized with reforms only coming into place after 1974 that allowed for greater flexibility in decision making at specific school level. Presently the principals of schools have a fair amount of autonomy, but as in many contemporary examples, school councils consisting of representatives from both the parent and teacher (and in some cases student) bodies have a say in local policy and decision making. This allows for curricula to be centrally determined, but at for a reasonable amount of flexibility at the local level in the interpretation and implementation.

Status of Environmental Education in Italy at time of OECD Project

This system outlined above is well suited to innovative approaches such as the initiatives of the ENSI Project, as suggested by Kelley (1991, p.129). Policy allows teachers within the system to initiate new projects and the official syllabus includes EE as a designated learning area. Unfortunately though, some secondary schools don’t have as sufficient free reign over the implementation of environmental initiatives as primary schools do. This is due to the system of curriculum content based examinations that dominate the secondary and tertiary system. The obvious implications for teaching applications and the type and manner of EE occurring in some schools is that it is sometimes treated on the same terms as other more ‘academic’ subjects. Bearing these limitations in mind the Italian initiative involved students predominantly in their late teens and from five different schools. These schools encompassed vocational, technical, Art and a teacher training school, probably the most diverse group of schools involved in the project.

The Water Analysis Project

The initiative occurred in the geographical location of Mantova, an area of great socio-economic change in the 30 years leading up to the project. Although extreme economic growth has had a profoundly positive effect in this region, as is so often the case, the positive has come with harmful environmental impact. The biggest impact has been on local water sources espe-
cially the region’s lakes which are fed from a number of rivers in the area, specifically the Og–
lío, Po and Mincio. The rivers, lakes, waterways and manmade canals have been integral in the
local history of the area and play an important role in industry, recreation and transport. The
pollution has predominantly been at two levels; industrial pollution and ground water pollution
from local farming and agriculture. This has led to grave concerns at both governmental and
local level and was the obvious choice for an environmental study. The study was given the
acronym, WAP, standing for Water Analysis Project. It was commissioned by the local com-
munities and authorized by the local authorities and municipalities.

To summarize the project, the local territory was first divided into specific zones of approx-
imately three to five square kilometers each. Five students were responsible for survey, data
and sample collection from each zone. An analysis of the samples examined bacterial, chemical
and micro plankton content. Once all the data had been collated and analyzed, the results were
then made public through a series of lectures and exposure in the media. It must be noted
though, that there was a broad range of responsibilities and activities involving the students,
beyond the mere collection and analysis of data. These included interviews, establishment of
work plans and schedules, provision of transport, writing reports, physical collection of sam-
ples, building of racks and protective cages, surveys, public presentations and research. This
catered for a broad range of aptitudes as well as involving large student groups. Up to 350 stu-
dents, 13 teachers and 20 classes were utilized in each analysis cycle. A total of 900 pollutant
substances were identified as suitable for collection and analysis. The social and individual
benefits of such an initiative are also obvious. Team work and cooperation were integral to the
success of the project, with all the schools involved in the project dependent on one another in
some form as they were all given equal status and levels of involvement in the project. This
allowed for close cooperation between both teachers and students and improved interaction on
a number of levels.

Once results had been collated and findings made, students were then able to draw links be-
tween certain practices and the water contamination. They were able to identify and distinguish
between the sources of ground water pollutants and industrial pollutants. Once this was estab-
lished, steps were put in place to try and lower these levels of contamination. Through the forg-
ing of positive relationships with businesses and industry in the area, students were able to
work alongside these parties to search for a feasible and reasonable solution. Industries ac-
cepted their responsibility in protecting the local environment and were accepting of possible
preventative measures designed by students. The students also worked closely with farmers in the area in an effort to lower contamination from agricultural practices. This also gave students a greater insight into agriculture and the role and significance of it in their local economy. Active solutions were sought and ultimately practices changed.

Sandro Sutti (1991) outlined the benefits of the project:

> For the participating schools, the annual study carries many meanings. WAP served to break down the isolation at each school, form a dynamic link with the real world surrounding it, and stimulate its receptiveness to evolving phenomena (1991, p.61).

Sutti (1991) goes on to emphasize that students were also provided with an opportunity to confront problems in their immediate surroundings that stirred emotions and led them to question the causes of certain phenomena and ultimately acquire a better appreciation and understanding of their environment (1991, p.62).

*Why was this initiative an example of effective place-based EE?*

The relevance of context in this project cannot be understated. As students were able to confront an issue of immediate relevance to their local environment which impacted on their daily lives, they were able to acquire a sense of ownership and assign importance to their involvement in the project. By encouraging students to offer solutions to the problems they were confronted with, critical thinking skills were developed. As a result the study was not viewed primarily as an assessment of the problem, but also as offering answers that would ultimately lead to improved quality of life for participants in the project and their wider community. As students were encouraged to question existing practices and their consequences, they were exposed to a deeper understanding of the human impact on their local environment. They were also afforded the opportunity to actively identify solutions and offer preventative measures through the modification of practices.

Besides the obvious environmental benefits and the learning experiences of the students involved, the teachers too played an integral role in the success of the project. As facilitators and catalysts for the necessary action to take place, they too developed new skills which would have positively enhanced the traditional practices that they were accustomed to. Their know-
ledge of environmental issues also increased greatly, as did their exposure to a variety of methods and approaches to EE, particularly the way it was able to be integrated with other subject areas. This is particularly noticeable in the ‘follow up’ activities that had a strong visual art and media focus. In an effort to sustain the interest in and value of the project, video and films were made and publications were released between 6 and 12 months after the release of results. Documents and charts were then archived. Every five years an exhibition is also held which summarizes the activities of the last few years which is vitally important to maintain the focus and impetus of the fine work already done. As a number of schools were involved in the initiative a high degree of networking, communication and resource sharing was necessary. This resulted in a lot of professional dialogue and the development of closer working relationships between local schools.

The Italian example illuminates the value of a multi-disciplinary approach in assessing and attempting to overcome problematic environmental issues. It also accentuates the opportunities existing within projects such as this for a broad range of student assessments that aren’t readily accessible in the traditional classroom. For teachers it allows for interdisciplinary discussions with teachers from other schools, essentially a form of action research where they can reflect on their own practices and consider the merits of others. For the local community, the benefits are also numerous. Involvement in such a project provides some solutions to environmental issues perceived (or identified) as being problematic, it also gives a sense of ownership and pride in their environment; and for the environment itself, the benefit is obvious!

5. Switzerland

Geographically, Switzerland is a small country with diverse landscapes. Culturally it is influenced by the surrounding countries, yet it maintains a strong identity of its own. Its cultural diversity is reflected in the broad number of languages spoken, including French, German, Italian and Romansch.

*Education and government policy*

Legislatively the country is divided into 23 cantons each with their own parliament. These cantons are all essentially self-governing and relatively independent of the federal government. However as with most confederalional forms of government the electorate determines the constitution and laws, which can be changed on electoral demand. This leaves the federal government with little say over provincial matters but ironically, very much at the mercy of the opi-
nions of the people it represents on a national level. The federal government’s main area of concern is foreign affairs with international relations and treaties as a main focus. With this arrangement responsibility for education is directly that of each canton with no input at Federal level, other than what is written into the constitution. As the constitution does not determine specific policy or its implementation, all education related decisions rest on the Cantonal Departments of Public Instruction.

Each canton has complete responsibility over curriculum and teacher appointments, with a committee appointed by each Cantonal Department of Public Instruction determining broad policy and content. The lack of a prescriptive approach to syllabi lends itself to a wide array of subjective interpretation by individual schools and teachers, as well as allowing for innovative teaching styles. From an EE perspective this system promotes the integration of various subject matters, with more traditional school subjects able to be approached from a variety of perspectives, which for example could include environmental issues. Curriculum design in this general form allows teachers to focus on areas of specific interest to themselves, their students and the community.

Teacher attitudes and involvement in the project

Curriculum design which allows for flexible interpretation is however subject to the attitude of teachers towards their practice. In reference to the Swiss initiative, Posch (1994a) states:

> Any innovation, especially school initiatives that depart from the transmission mode of teaching, can be (and often are) interpreted as a threat to prevailing interpretations of the tasks of teachers and to the persons who practice (sic) them (1994a, p.11).

He goes on to mention that active forms of teaching such as those demonstrated in the ENSI Project exert pressure on other teachers and expose the possibility that many of one’s teaching colleagues could actively do more than the traditionally accepted methods of instruction (1994a, p.11).

Participation in the Swiss initiative was entirely voluntary for teachers but still it attracted about an 80% involvement rate. The Zurich Canton’s education authorities approved and
backed the initiative, but it was ultimately up to the teachers at the participating schools as to whether they wanted to be part of the project or not. The support of the relevant authorities eliminated some of the traditional bureaucratic restraints, which left it up to the teacher’s aptitudes and interests to determine their participation. This also prevented the negative responses sometimes associated with teachers who feel they have been forced to accept a directive or take part in a project against their will. (These factors can ultimately determine the success or failure of a project.)

At the time of involvement in the ENSI Project the general curriculum design in Switzerland ideally suited the principles of the project. This was particularly evident in the promotion of approaches that utilized an integrated curriculum and eclectic methods where a variety of skills and knowledge could be drawn upon. The flexibility in this design promoted the involvement in initiatives where no specific prescriptive boundaries were set. This allowed for interpretation and input from schools, teachers, students and the community. Swiss policy at this time clearly paralleled Elliott’s (1991, p.19) perception of the purpose of the ENSI Project to examine the feasibility of certain environmental education concepts or goals within diverse educational systems. The Swiss system’s flexibility and stance on voluntary participation clearly positioned itself as alternative to the norm.

‘Fighting the waste mountain’

The Swiss initiative revolved around both the prevention and reduction of waste matter.

After funding was secured from an independent public body whose role was the management and reduction of waste, teachers were trained in the field so that they could present a series of lessons covering responsible waste management. The lessons were divided into four parts where waste related problems were discussed and alternatives were sought to the reduction and better management thereof. Attention was paid to finding alternative methods of waste disposal and issues such as the reduction and recycling of waste matter were posed as possibilities. As the focus group of students were predominantly from primary schools (there was one group from a lower secondary school), an approach had to be adopted that related to their perception of the problem. As the schools were situated close to a waste incineration plant, many of the students were familiar with the problems generated by such disposal. Most of the students had been exposed to high levels of noise, air and ground pollution and therefore the project was of direct relevance to them. As a result the students were easily able to identify with the problem
and acknowledged the real threat or impact on their existence. The reality of the problem, as opposed to a perceived threat of another issue in a foreign location, gave the students the opportunity to have direct input into the improvement of quality of life for their community.

The first task of the teachers was to establish a new scale of priorities primarily aimed at the prevention of waste followed by alternatives to existing practices. Reduction and recycling were only presented as a secondary measure to initial prevention. Kyburz-Graber (1991, p.84) uses verbs such as ‘informing,’ ‘confronting,’ ‘sensitizing,’ and ‘motivating’ to describe the roles and approaches of the teachers involved. This clearly demonstrates a move away from typical instruction and illuminates the attention afforded to the promotion of critical thought on the issue, as well as the promotion of more student input. Through questioning existing practices the students had to seek real solutions prompted by the ‘waste trained’ teachers. This placed the emphasis on the attitudinal changes crucial to the long-term sustainability of responsible environmental practices. Parents were also notified of their children’s involvement in the project in writing, which had the beneficial effect of generating home based discussion about topic.

Why was this initiative an example of effective place-based EE?

The success of this initiative was dependent on a number of factors. Perhaps the most important was that it had a direct bearing on the lives of both the students and the greater community. As with many of the other ENSI initiatives, the local community then also became involved and was part of the whole EE experience. Members were invited to partake in a number of seminars and were encouraged to provide input into forums. In this way the message of waste prevention filtered into domestic households and transcended the theoretical confines of the classroom, resulting in more direct action. Kyberz-Graber (1991, p.84) refers to many visible behavioral changes within the community such as: the better utilization of community waste deposit centers, the establishment of composting facilities in many households, the use of separate waste containers for different waste categories (for example recyclable or reusable objects) and a lesser amount of overall waste. This all impacted directly on the visible problems people experienced and associated with the waste incinerator plant.

Changes to traditional teaching practices were also very evident in this instance. Teachers no longer viewed students as passive recipients of knowledge, but rather encouraged them to critically assess the problem and then seek active solutions and preventative measures. This ap-
proach was constructivist in its orientation and afforded deeper levels of understanding of the issue on hand. Essentially all the knowledge that the students gained was contextually generated and positively impacted on their daily existence.

This example illustrates that education policy does have a role to play, but ultimately long-term success is dependent on attitudinal changes, community involvement, ownership of the project, reflection on existing practices, teacher and student interest, flexible curricula and the promotion of critical thought; factors which all need to be contextually relevant to those involved. This initiative included all these aspects.

6. Sweden

Sweden has a relatively small population of around nine million people. In 1975 a new constitution came into being with power resting in the democratic parliament. It has a strong economy largely resulting from iron deposits and the associated manufacturing industry.

Education policy and EE in Sweden

At the time of the ENSI Project EE featured prominently in the Swedish school curriculum on various levels. As with many contemporary models EE did not have an individual identity, nor the status as an independent subject area, but instead was covered in a broad variety of subjects such as science, history, technology and civics, with ecology also forming part of the biological sciences.

Environmental issues were included in the upper secondary two and three year study programs, which encompassed the social sciences as well as economics. Inclusion in these subject areas, particularly economics, demonstrated a commitment in policy to promote student investigation of the important relationships and interrelationships that exist between the environment and economics. Unfortunately history shows that these relationships were in instances exploited at the expense of the environment. The Swedish model aimed at reversing this historical trend through the incorporation of environmental aspects into the study of economics.

The progressive nature of Swedish environmental attitudes in schools was also illuminated by their commitment to using organizations and private individuals to augment and support the formal curriculum in relation to environmental matters. The National Environmental Protection Board also promoted EE in schools through the provision of resource officers funded by the
Ministry of Education. The inclusion of public environmental and health authorities in school related EE programs demonstrated a commitment by both government and education bodies to environmental initiatives at the time of the ENSI Project. As the previous European examples have illustrated this commitment is instrumental in the success of community based environmental programs, as well as in assisting to raise the public profile of environmental concerns.

The Scandinavian countries all appear to demonstrate a commitment to effective environmental education policy and Sweden is no exception. This is highlighted by Kelley (1991) who claims Denmark has an emphasis placed on preparing pupils so that they might make informed decisions and take an active interest in their environment. He also suggests that there exists a practical EE component in Finland and that local conditions are included in the multi-disciplinary approach of Norway. Furthermore he says the multi-disciplinary approach adopted by Sweden with support from local and governmental authorities, is backed by both the Ministry of Education as well as The National Environmental Protection Board (1991, p.121). Implementing environmental initiatives in a climate or culture such as this is far easier than in countries without such a commitment to the awareness of environmental issues and the promotion of understanding thereof.

*Alternative approaches to schooling in Sweden*

The involvement in the ENSI Project was not the first commitment to alternative approaches to EE within the Swedish system. In 1976 a school in Gothenburg (who later took part in the ENSI Project) invited students to negotiate their own curriculum after dissatisfaction with their present system. This took the form of the teacher taking on a role only as supervisor or facilitator in a Project Studies subject area. This was for a specified time each week and students could undertake research and involve themselves in a project that they themselves had deemed relevant to their own interests and the local environment. It was required to have a strong community focus. At first some parents were concerned and did not see it as complimenting the traditional curriculum. However, initial successes led to it being better accepted and a number of lessons each week were designated to Project Studies.

The involvement in Project Studies went beyond traditional age grouping and designated subject areas. Pupils could work in groups across three form levels on a choice of three projects out of a total of 40. Six lessons each week were devoted to Project Studies, which was an ideal platform for their later involvement in the ENSI Project.
The actual ENSI initiative covered five different foci, encompassing a variety of practical projects backed by a strong theoretical foundation. The projects were very clearly a shift away from traditional instrumentalist approaches. Each project had immediate benefits for the local community, environment and economy as is illustrated below.

The Swedish initiatives: market gardening, fish farming, purpose built yacht, windmill and radio station.

Briefly the projects undertaken encompassed the following: (In some instances these were a progression or modification of a previous activity.)

- **Market Garden**
  Three green houses were constructed after an abandoned greenhouse was demolished. A herb garden was also established with produce sold at the local school and in the community. Local authorities backed the project and another nursery was also established in another district. Different produce was grown depending on seasonal conditions and Retailers were favorably impressed with the quality of the produce.

- **Fish Farming**
  Pupils and teachers who had questioned why they hunted fish instead of cultivating them, generated this project. Further investigations led to collaboration with local fishermen who taught students how to build nets and cages. At the time of involvement in the ENSI Project, the students had generated an annual stock of 1.5 tons of fish. A further project saw the establishment of a modern processing factory as well as the sale of fillets and the use of fish recipes in the local canteen. The project developed further with lobster farming and the provision of courses covering various aspects of aquaculture being made available to the local community.

- **Radio station**
  Students produced their own radio programs for airing on the local radio station covering various topics as well as exposing information about projects they were involved in. The school equipped its own studio and also had video production facilities available for making documentaries.

- **Windmill**
At the Bratteberg school, students were involved in a project focusing on the generation of electricity through wind power. By utilizing the assistance of the local university and upper secondary students, pupils designed and made all the necessary components themselves and had an experimental station up and running on a neighboring island.

- ‘Hawila’

This was a monumental project involving the restoration of an old cargo ship that required thousands of hours of labor to make it seaworthy. Students now sail once a week and learn about navigation as well as being able to explore nature in their local environment. The project has enabled participants to learn more about their local culture, history and shipbuilding skills. As a follow on to the success of this project, an old lifeboat was purchased for use as a training vessel and for excursions.

**Why were these initiatives examples of effective place-based EE?**

As illustrated the projects required varying skill levels, management, organization, research and commitment that drew on a number of aptitudes and interests. The students demonstrated that they could make a beneficial contribution to the local community, environment and economy. They acquired a multitude of new skills and learnt about a broad variety of topics they would not have been exposed to in the normal school curriculum. Their contribution to the community was well received and improved social relations. This gave students a sense of ownership and pride in their achievements. Rapp (1991) reinforces the valuable lessons learnt by the students and teachers:

> They can see the consequences of their actions: careless sowing, planting or watering quickly shows; fish die if they are not fed during the summer holidays; and customers express their appreciation of healthy plants. The person who has learnt most of all since 1978, of course, is the supervisor who never stops learning (1991, p.83).

The Swedish example clearly demonstrates the beneficial value of a ‘hands on’ approach to EE where both teachers and students are learning ‘in,’ ‘about,’ ‘with’ and ‘for’ the environment. The initiative encompassed all of these aspects with a good balance between theory, under-
standing and practical skill application. The example shows that by transcending normal classroom boundaries and integrating various subject areas, EE can incorporate the local community and benefit the immediate environment in which the participants exist. The increased awareness of local culture, history and environmental relationships are additional attributes obtained by the students’ involvement in the various projects. Governmental and education policy enabling contextual relevance and support from local authorities was also integral to the overall success of the project, and is conducive to effective EE.

As in all of the European examples these initiatives expose that effective EE is largely dependent on engaging students in activities that have direct relevance to their personal existence. In this way they are able to gain a deeper understanding of their own existence within a specific environment and their relationship with it. They are more easily able to assign meaning and ownership to their perceptions, actions and interaction within a particular environment that is familiar to them than to a context that is foreign. This was made possible by the schools structuring their curricula to immediately relate to the interests of the students and the issues which held significant meaning for them, within the context of their existence.

All of the initiatives undertaken in the European schools clearly advance my developing argument of the significance of context in effective EE and in the construction and understanding of environmental issues.

1.3.2 Research Questions
The stated research questions are derived from relevant literature which exposed that there is an undeveloped argument of the complexity of context and its implications for a transformative EE. Although other authors have already argued for contextualizing learning and the transformative nature of EE, my intention is to revisit the idea of EE as transformative education based on an enhanced understanding of the complexity of context. By drawing on these aspects I am in a position to structure research questions which explore issues that go beyond existing discourse on this topic and offer a detailed exposition of what effective and transformative EE is. Through personal experience, an examination of context/place-based case studies and other literature, the intention is to redefine what EE ought to be in light of its complex, contextual constitution.
As I endeavor to make new conceptual advances in the understanding of effective EE, the research questions will focus on, from an international perspective, how context shapes EE praxis, the complexity of context and the connection between complexity, social constructivism and the curriculum. The use of context as a device to reveal the meanings and connections assign in their constructions of issues is also incorporated into the questions.

In formulating the questions I have had to establish that other research has stopped short in showing the complexity of ‘contexts within contexts,’ and the relevance of this complexity to transformative EE praxis. I have also acknowledged that many theorists and practitioners are aware that EE is contextual, but I have had to go beyond existing and understated views to explore the complex relationship between context and transformative EE praxis. By addressing the research questions it will become evident that the propositions I articulate are an extension of existing understandings and is in essence new knowledge.

**Research Questions**

- In what ways are current understandings of contextuality in EE underdeveloped and can further exploration of context reveal connections, interpretations and meanings that impact on transformative EE?
- What complex contextual factors impact on the delivery of EE programs?
- What is the complexity of context’s relationship with effective, transformative EE?
- Is there a link between complexity of context, social critical teaching, constructivism/social constructivism and transformative EE praxis?
- What other considerations may be understood by adopting an international autobiographical approach to the study of contextuality in environmental education?

Explorations of these questions provide new perspectives to enrich the debate surrounding contemporary issues relating to context in the field of EE. The research sheds light on how an examination and consideration of complex contextual factors can impact on EE and generate understanding that provide an enhanced view of contextuality and transformative EE praxis.
1.3.3 Consideration of the methodological literature

In order to adequately address the stated research questions and consider the relevant literature, the selection of a sound methodological approach was a difficult task. What follows is both background and justification for my adopted methodology; that of an autobiographical narrative supported by relevant literature. This approach has allowed for a thorough exploration of the research questions, and enabled interpretation of issues affecting EE on a first hand basis, from a very personal perspective in different settings.

Research in Environmental Education

Why do we do EE research? In the present educational context, sustainability has become an important and high profile component of many school curricula. As EE has grown in significance, so too has an interest in research in this field.

Sauvé (1999) explicitly reminds one of the significance of EE in contemporary education:

However, the specific nature, the legitimacy and the importance of environmental education cannot be questioned. Through the debates concerning the determination of its educational niche and theoretical basis, environmental education remains a fundamental and unavoidable dimension of contemporary education. It is not a mere fashion, a slogan or a label Sauvé (1999, p.30).

If we are in agreement with Sauvé’s (1999) comments as to the importance of EE, then further research into the constitution of effective EE is required. Although the last few decades have generated healthy debate encompassing ontological and epistemological issues in EE, it is important not to detract from the essential role or purpose of this field of study. I propose that different perspectives, although often opposing each other in terms of their epistemological framework, still ought to aim at positively enhancing the natural environment and minimize impact on non-renewable resources. Through further enhancing our understandings of the complexity and construction of environmental issues, I believe an improved EE can be realized that contributes to long-term quality of life.

Although there exist a diversity of approaches, or methods of research in EE, whether they be quantitative or qualitative, a researcher’s main concern ought to be reliability and validity
Chawla, 1994). Theorists clearly have different views on research in EE. These are often positioned as one opposing another, with little cooperation between contesting views. Martin (1998, p.01) states that ‘research programmes are the subject of continual power struggles.’ There is also a lot of debate about the qualities of scientific research. There is consensus that the discovery of facts is central to research, but it is the manner in which research is done that is more contested. Gough (2004, p.1) argues that EE research is more useful if it ‘reduces our collective ignorance,’ instead of how well it may produce ‘warrantable claims to truth,’ and Hagege et al. (2007, p.91) suggest that ‘scientific discovery is a complex process including psychological, social and historical dimensions.’ Other theorists might emphasize objective, systematic approaches where a hypothesis is tested.

These differing views on scientific research are largely dependent on the researcher’s perspective on the purpose of the research, which is in essence a subjective interpretation of the researcher. From a personal perspective I view my purpose of research as providing new understandings and knowledge to better inform EE praxis. In order to reach these understandings, I have had to place my research in a specific socio/cultural, personal and historical context, which lends itself to a research paradigm that is more interpretive and constructivist in its orientation, rather than positivistic or scientific.

Presently there is still evidence of scientific research paradigms (or methods) in EE, but the 1990s saw a noticeable shift from earlier quantitative traditions, to incorporate a broader diversity of approaches more suited to the social sciences as Palmer (1997) suggests.

Furthermore, the range of methodologies and approaches to research is slowly but surely broadening to take account of the all-important social context of environmental education. The number of qualitative research studies including interpretative and socially critical has increased considerably during the 1990s (1997, http://www.bgci.org/education/article/334/).

As a result of its subjective orientation (environmental issues are perceived differently in different contexts, either subjectively or intersubjectively), it does not lend itself to one specific research methodology that might be applicable to other natural or social sciences. Instead, a number of research methodologies might be more appropriate in this area.
Traditional and emerging research methodologies in EE

As research methodologies essentially allow themselves to be tainted by ideological worldviews they cannot be considered as wholly objective and neutral and nor can they be examined in isolation. Robottom and Hart (1993b, pp.5,6) support different methods of inquiry within a range of perspectives. These methods are however sometimes characterized by the traditional classifications evident in other disciplines.

In literature there is recognition of a number of different research paradigms in EE. In the early 1990s, Robottom and Hart (1993a, p.18) suggested three main paradigms in EE research, namely: positivist (applied science research perspective), interpretivist (interpretive research perspective) and critical (critical research perspective). The positivist approach with applied scientific/analytic roots has traditionally dominated this field but has been opposed by advocates of alternative (or contesting) paradigms that have seen a swing towards a more critical and interpretive approach.

In the mid to late 1990s Wals and van der Leij (1997, p.12) also proposed the existence of three research traditions existing in EE, each effectively reflecting different world views. These in turn imply differences in epistemology as previously proposed by Robottom and Hart (1993a), that of ‘in,’ ‘about’ and ‘for’ the environment. These three research traditions outlined by Wals and van der Leij can be considered empirical-analytical, interpretive-hermeneutical and social-critical. As they express world views, Wals and van der Leij (1997, p.12) called them ‘paradigmatic.’ The emergence of a broader diversity of research paradigms in the 1990s appears in large to be a response to the inadequacies of positivism in EE research.

There had also been recognition that quantitative data is not the only form of ‘valid’ data in scientific research (particularly in the social sciences), and it was acknowledged that ‘strong counter pressures against quantification have emerged’ (Guba and Lincoln, 1994, p.106). Guba and Lincoln (1994, p.109) recognized four main competing paradigms in qualitative research, namely: positivism (traditionally the dominant paradigm and from my understanding, essentially quantitative), post positivism, critical theory and constructivism. Although I advocate the benefits of constructivist research (and learning), it is clearly distinguishable from the other paradigms due to its relativism, an aspect that has generated opposition to its ontology and methodology as a scientific form of inquiry. The adoption of an autobiographical narrative in this
thesis is distinctly dialogical and dialectical in its methodology, and is in essence a constructivist form of inquiry. This contrasts significantly with the positivist paradigm, characterized by experimental methodology.

If one is agreement with my tenet that the positivist paradigm did/does not adequately address some of the EE issues and inquiries that have evolved in this field, then the adoption of alternative paradigms better suited to EE inquiry are necessary. The main paradigms outlined above have since expanded to include many more forms of inquiry. Abell and Lederman (2007, p.703) include narrative forms of inquiry, interpretive approaches, ethnography and critical ethnography, various forms of participatory action research, critical inquiries within specific contexts and hermeneutic phenomenology all as examples of forms of contemporary EE inquiry. They also state that critical research has a place in EE, although Martin (1998, p.8) suggests that ‘very few academics actually do any research which has more than the mildest critical edge.’

In consideration of new EE approaches, Gough (2007, p.9) states that amongst others, ‘critiques of traditional science education from feminist, post colonialist and anti-racist perspectives,’ and ‘critiques of traditional science education from cultural and constructivist perspectives,’ all need to be taken into account. Gough (2004, p.7) also proposes that, ‘story telling is an under-used method of environmental education research in the West,’ which also infers the benefits of phenomenology as a qualitative form of research in EE.

Literature clearly suggests the need for a broader diversity of approaches to both EE research and praxis. Of significance though is that issues of critical reflexivity and intersubjective scrutiny are associated with these more recent qualitative forms of inquiry, as indicated by Abell and Lederman (2007, p.703). This aspect, which is of particular relevance to my adopted methodology, is elaborated on:

Unlike the past, when the dominance of positivism relegated such debates to the philosophy of science, questions of subjectivist epistemology and social constructivist ontology now challenge environmental education researchers to justify their narrative based accounts of research in terms of what counts as legitimate knowledge or as adequate forms of representation in
terms of what makes them seem credible, trustworthy, and au-
thetic beyond subjective judgment (Abell and Lederman,
2007, p.709).

We too are reminded that specific approaches to research can fit within a broad range of re-
search forms and discourses. In other words, the adoption of an autobiographical narrative such
as I have done, is merely defining my form of study, and not necessarily a particular research
paradigm. It is my concern with the unique qualities of specific contexts that sets it apart from
positivist paradigms and gives it a critical and interpretive dimension. My emphasis is on the
understanding of the complexities within contexts, more so than the explanation of them, which
sets my approach apart from the positivist and postpositivist perspectives.

As this thesis focuses predominantly on ontological and epistemological issues, the adoption of
an interpretive research paradigm is justified. My presented argument is grounded in the bene-
fits of EE models based in part on constructivism/social constructivism, where I emphasize the
importance of not only culture and environment, but also context (and its complex constitu-
tion), to better understand the learning process and how knowledge is constructed within spe-
cific settings.

**Critics of constructivism**

I acknowledge that constructivism is not without its critics. Positivism, postpositivism, and
critical theory all have differing ontologies (views on the nature of reality) to constructivism.
Social constructivism is one interpretation of constructivism associated with Vygotsky, and
psychological constructivism is another interpretation associated with Piaget (Abdal-Haqq,
1998). In this thesis, my concern is with social constructivism as a theory of learning, where
there is an emphasis on the social processes in learning.

With specific reference to EE, critical realists have also critiqued social constructivism. In lit-
erature one is exposed to terms such as critical theory, critical approaches, critical realism,
critical realists, critical pedagogy and critical research. It is perhaps necessary to clarify some
of these terms to avoid confusion. From the onset it must be stressed that critical realism and
critical theory are not one and the same. I understand critical realism to be a philosophical view
of knowledge, and critical theory as essentially a paradigm of inquiry. It is on this view of
knowledge that critical realists oppose social constructivism which is of more concern to this
thesis. It should also be stated that although there are clear ontological differences between constructivism and other paradigms, epistemologically (views on the nature of knowledge) constructivism shares similar transactional/subjectivist views as critical theory (Guba and Lincoln, 1994).

**Critical realism**

Critical realists and constructivists both hold an acceptance of subjectivity and a link between the inquirer and the object of inquiry. Critical realism, ontologically positioned within postpositivism, was developed by scientificic philosopher Roy Bhaskar, and increased in profile largely due to the work of Roy Wood Sellars. Critical realism is essentially a philosophy of science that views knowledge as transient and immediately relative to a specific social, political and historical context, and therefore proposes all knowledge is fallible (Burnett, 2007).

In literature, there is a lot of contention over individual interpretation of knowledge and the relativism of social constructivism, for example Psillos (1999), Merill (1997) and Matthews (1992). The argument advanced by critical realists conflicting with social constructivism is centered on the ‘rejection of strong forms of relativism in understanding nature’ (Proctor, 1998, p.352). As social constructivism is focused on the social, inter-subjective nature of knowledge construction, ‘social constructivists are interested in the collective generation of meaning among people,’ and ‘the idea that there is no objective basis for knowledge claims, because knowledge is always a human construction’ (Au, 1998, p.299). Critical realists differ in that their concern is more of an ontological one, that of the nature of reality, and questions how we know what the nature of reality is, or how we know the world as it is. Essentially it opposes relativism, which is an overarching ontological assumption of constructivism. In simple terms, critical realists propose a reality independent of our thought and values and are critical of any theory that suggests it is possible to know reality with absolute certainty.

Ontologically critical realism’s more objectivist stance assumes that ‘it is possible to approximate (but never fully know) reality,’ whereas constructivism is more concerned with a constructed reality. Constructivism assumes that knowledge is created in ‘interaction among investigator and respondents’ (Guba and Lincoln, 1994, p.111). In social constructivism there is also acknowledgement of values shaping inquiry outcomes and values shaping constructions of reality, but proponents of critical realism advocate that value judgements and ethical claims can only ‘be made on the basis of facts and theoretical explanations of how things work in the
world’ and that all observations are fallible (Schostak, 2002, http://www.Enquirylearning.net/ELU/Issues/Research/Critical%20Realism.htm).

Burnett (2007, p.3) proposes that critical realists believe that individuals and their social relationships exist within the natural world and social structures ‘have their own qualities, independent of our knowledge and understanding of them.’ This leads to the assumption that critical realists advocate the existence of reality separate to our thoughts about it. This contrasts with the social constructivist view of reality as a social construction where meaning is created through social interaction and interaction with the environment. Burnett (2007, p.5) goes on to state that critical realists question why structures and processes occur, which requires a thorough understanding of ‘contextual knowledge; historical, political and social, in order to attempt to interpret the mechanisms present.’

Perhaps the most pertinent aspect of critical realism that opposes my adopted methodology is that ‘critical realism maintains that the social sciences should emulate the natural and physical sciences, and that it is possible to investigate the social world as a science’, and critical realists reject that ‘social phenomena can be reduced to our experience of them’ (Fopp, 2008, pp.4;8). This contrasts significantly with social constructivism where knowledge is viewed as a human product. Social constructivists reject knowledge as an objective representation of reality and oppose the notion of ‘reducing knowledge to science’ (Fopp, 2008, p.11). My acceptance of this notion of the personal and subjective nature of how knowledge (and reality) is constructed, is important to my adopted argument.

**Personal stance on knowledge construction and research in EE**

Different perspectives on reality, philosophical assumptions, ideologies and world views all determine the diversity of pedagogical approaches and research in education. Perceptions of the role education and research ought to play in society also influence and determine these ideologies. As I am at odds with the efficacy of EE practice grounded in behaviorist principles, which essentially promote content-based learning with little emphasis on the importance of context, I have had to offer a reasonable alternative that takes into account socially and culturally constructed knowledge where learners make meaning and understanding from experience. This however raises a number of issues, as each context is complex, and subject to a number of influences which impact on our understandings of them. The examination of unique contexts, and the complexities that determine individual perceptions and meanings within those contexts,
gives the researcher a deeper insight into the environmental understandings of individuals within specific settings. Subsequently the researcher is able to use this knowledge to better understand the constitution of environmental issues (essentially as human constructions), and evaluate forms of EE praxis best suited to transform actions that impact negatively on the environment and long-term quality of life.

As I am concerned with how knowledge is gained through social processes and experiences and how this knowledge influences the construction of issues within multiple realities, it would seem an interpretive, and qualitative research methodology is best suited to further understandings in this field. There are however aspects of a critically oriented research that too would suit my inquiry, particularly from an epistemological and methodological point of view.

The model of EE promoted in this thesis encourages critical thought that challenges existing power relations (essentially transformative), and informed decision making by students, rather than responding to stimulus without conscious thought or choice. As the aim of my inquiry is to transform or modify existing EE praxis (assuming my experiences and explorations of the complexity of contexts present a valid case for transformation), it is essentially critical with interpretive moments. How is this positioned within research literature?

**The position of my adopted research paradigm in relation to other existing, recognized research paradigms**

The research design of this thesis makes use of a number of episodes within the framework of an autobiographical narrative where I as the researcher actively play a part in the research itself and make use of subjective interpretations and personal experiences. This is in obvious opposition to quantitative methodologies and positivist epistemology. I do not view my role as the researcher as one of an objective outsider, analyzing observable facts or analyzing collected data, with no place for any subjective interpretation.

Instead, as an active participant in the research (as the principal witness to the events outlined in the autobiography), I am immersed in the experiences of the learners documented in the narrative. This allows for a deeper understanding of how the learner’s knowledge, meanings and realities are constructed, and of our place and role in the world within which we exist. I have however found it difficult to position myself within one specific research paradigm.
As previously alluded to, there are aspects of my research that can be considered both critical and interpretive. From my understanding, it appears as though all critical studies have an interpretive moment but conversely, interpretive studies are not necessarily critical. Both interpretive and critical approaches acknowledge the socially constructed nature of phenomena under study (EE issues) and have similar epistemologies. As critical approaches go further in seeking to engage inequitable power structures and relationships and to change them for the better, my research is in essence critical, or social critical. This is largely due to my concern with social processes and social phenomena, particularly within my own perspective and experiences.

I acknowledge that there have been challenges to critical theory in EE, for example Walker (1997, p.34) who suggests it is ‘an effective mechanism to critique practice, but it does not provide the strategies to solve educational problems.’ In response I suggest that critique of practice can generate educational change (particularly through the adoption of processes such as participatory action research where practitioners reflect on the efficacy of existing practices, contextualized learning, consideration of social constructivist theory and community involvement), which can all potentially generate deep individual and societal changes.

In support of my proposition, Jones et al. (1999) stress the importance of critical thought to challenge existing paradigms (in order to bring about change), and with reference to EE, Fien and Tilbury (2002, p.10) make it clear that critical enquiry is necessary ‘to explore the complexity and implications of sustainability as well as the economic, political, social, cultural, technological and environmental forces that foster or impede sustainable development.’ In short, there is a lot of literature that supports socially critical theory in the promotion of our understandings of the social, economic, cultural and political aspects of environmental issues, where many traditional general education models do not.

Social critical research is essentially a challenge to existing research paradigms and it too may offer in our understandings of the shortcomings of some current practices. This approach to EE research is not new. There is a history of healthy debate to support the existence of other research paradigms as I have already mentioned in this thesis, but for example as far back as 1997, alternatives such as the synthetic-ecoliterate and ecozoic, grounded in contextual and biological connective epistemologies respectively, were put forward by McLaren (1997, p.41).
Literature also suggests that critical thinking (also termed ‘reflexivity’ in some literature) has gained more importance in EE. It was as long ago as 1994 that Janse van Rensburg (1994b) proposed a further paradigm in environmental research beyond those of the three traditionally recognized paradigms at the time, those of positivism, interpretive and social critical. She contended that social transformation needs to be considered in the context of ‘critical and contextual review and action,’ and therefore suggested an additional ‘reflexive’ paradigm. Acknowledgement of the existence of paradigms other than the traditional is certainly not new and has been previously suggested by researchers such as Robottom and Hart (1993), Gough (1987) and Eulefeld (1995). The focus on reflexivity and the social processes of change adds a further dimension of engaging with the environment in terms of environmental crisis.

In summary, after a consideration of the available literature it seems the paradigm I have adopted has both a critical and interpretive orientation, from both an epistemological and ontological view. Essentially I advocate that knowledge is gained through understanding the meaning of social processes and experiences (interpretive), but I also suggest in my argument that knowledge is generated through ideological critiques of power, privilege and oppression to bring about action for change, and not merely further produce knowledge, (critical). The thesis, due to its hermeneutical and dialectical nature, can also be deemed social constructivist or reconstructivist in its orientation, as it is also concerned with change or reconstruction through transformative EE praxis.

However, I could not find literature that specifically located autobiographical research within a set, categorized paradigm. Just as my adopted stance contradicts the foundations of behaviorist-based paradigms, it is also not immediately in parallel with other paradigms grounded in the transformative and applied contextual generation of knowledge. I do however concede that there are overlapping aspects, particularly those of subjectivity and contextuality, which align with, for example, the synthetic-ecoliterate paradigms mentioned earlier, as tabled by McLaren (1997). (See Figure Three.)

1.4 Research Design
1.4.1 Case study approach in the form of an autobiographical narrative
Gough (2000, p.144) reminds us that asking methodological questions is ‘a disposition rather than a procedure,’ and that they ought to be asked ‘at all stages of inquiry’. Literature suggests that many educational researchers, particularly at post-graduate level, are faced with methodo-
logical difficulties (Daykin 2000, p.52). Many report that these difficulties are often resolved within the course of their research.

In the narrative I examine contextual factors that shape constructions of environmental issues in various diverse settings and I expose the complexities within contexts that impact on the learning process. Through the use of this methodology it is hoped that our understandings of how environmental issues are shaped and perceived in different contexts will be enhanced, and it is also anticipated that it will demonstrate autobiographical research has something to offer EE research.

Personal experience forms an integral and major part of this study. This in itself can be problematic particularly with regards to reflexivity. Nightingdale and Cromby (1999, p.228) state clearly that ‘reflexivity requires an awareness of the researcher’s contribution to the construction of meanings throughout the research process,’ an aspect that critics of qualitative research would deem a flaw in my chosen methodology.

My involvement as a participant in the research has significant hermeneutical implications, as I have constructed specific meanings from my lived experiences that are subjective and prejudiced. I acknowledge this in my accounts, and I urge the reader to constantly be aware of my perception of who I am in a specific context. It is my intention through the provision of a short history of my life, that the reader can better understand the context in which my constructions of reality developed. The importance of exposing to the reader the perspective of the researcher is made clear by Bachor (2000, http://www.aare.edu.au/00pap/bacoo287) by stating ‘that the researcher must unfold his/her perspective and clarify how evidence has been interpreted so that the reader can determine if the case study as published has integrity.’

Much of the account of my South African and Australian experiences is dependent on memory, which is also problematic in that memory too is prejudiced and somewhat ‘selective.’ There are aspects of my life that are significant to me personally, of which I have clear memories of. There are however other aspects that I might have sub-consciously erased, that would influence my presentation or recollection of events in the autobiographical narrative. I am well aware of the problem this poses in ‘legitimate scientific research,’ where there is an emphasis on validity and reliability. The complexity of the context in which I grew up also has substantially impacted on my constructions of reality. This aspect was reinforced in a piece of literature I came across by Gough (2004) where after reading some South African biographies he comments:
These narratives provide compelling evidence for the view that environmental awareness of every South African was shaped not only by the determinism of apartheid, but also by those systems and structures which, in addition to racism, were implicated in and supported the ideological machinery of apartheid: patriarchy, sexism, homophobia, class and language bias, ethnic nationalism and so on (Gough, 2004, p.6).

Gough (2004, p.7) goes on to suggest that autobiographies are effective in reducing ‘ignorance of the cultural milieu in which environmental education is practised in southern Africa,’ and that ‘story telling is an under-used method of environmental education research in the West,’ which further personally justified my selected methodology.

My selected approach, with its related flexibility, I viewed as suitable as I am essentially studying human affairs and social action within specific contexts. With reference to Australia and South Africa, I was also intent on utilizing a narrative style where my autobiographical history would play a role in further explicating the contextual complexities within certain settings. Exploring literature on case study methodological approaches revealed that most autobiographical narratives are traditionally used for self-study and critical, reflective purposes such as action research. I also became aware that autobiographical narratives are a legitimate means of inquiry that can be adapted for case study purposes. Although it is ‘virtually impossible to outline any strict or universal method or design’ for conducting case study research, there are guidelines that outline this form of research (Yin 1993, p.46).

Examples of these include Yin (1993), who outlines basic components of case study research design and data collection, Taylor and Settelmaier (2003) who offer important goals of autobiographical writing, and Hoover (1994), who focuses on the reflective merits of autobiographical writings. Amongst the better known case study researchers, are Stake (1995), Simons (1980) and Yin (1984, 1993 and 1994), who have all suggested appropriate ways of utilizing this research methodology effectively.

I have been able to formulate a research design that includes a personal narrative allowing an analysis between settings without drawing on direct comparison. Most case studies are in essence empirical, whereas parts of this study are not. A precise definition of a case study in EE
is also difficult to find. Davis (2005, p.3) claims that case study is ‘an analysis of a real world problem of which he or she has experience or been able to observe,’ which is a description of my intention in this thesis, so that I might generate deeper understanding of the complexities informing ‘real world problems.’

Perhaps the two most appropriate interpretations, yet dated, are those of Walker (1980) and Yin (1984). Walker (1980) states:

Case study is the examination of an instance in action. The study of particular incidents and events, and the selective collections of information on biography, personality, intentions and values, allows the case study worker to capture and portray those elements of a situation that give it meaning (1980, p.4).

To complement Walker’s interpretation, Yin (1984) believes case study research to be an empirical inquiry exploring contemporary phenomena within real-life contexts. He expands his understanding to include that this methodology uses multiple sources of evidence.

Although the above does not give an exact description of my methodological approach in terms of data collection, it is accurate in its description of what I am essentially setting out to study and achieve. More recently, Noor (2008, p.1602) in referring to case study research, states that ‘it enables the researcher to gain an holistic view of a certain phenomenon or series of events and can provide a round picture since many sources of evidence were used,’ which illuminates the plausibility of case study to gain further understandings on meanings and constructions of reality.

The value and merits of case study approaches are well established, and it also is an accepted form of inquiry in qualitative research in the contemporary setting. Presently case study is widely used and is accepted as a legitimate and effective methodology. Chandler (2000) cites Lancy (1993), Lincoln (1985) and Wiseman (1993) as examples of advocates of such methodology and explains his understanding of case study as being:

Within the interpretive tradition, I understand that a ‘case-study’ means a rich descriptive account of meanings and experiences of people in an identified social setting, offering an em-
phasis on synthesis rather than analysis, and drawing on ethno-
graphic research methods and procedures (2000, p.36).

Available literature proposes a number of advantages and disadvantages in using a case study
approach, and states what it can or cannot be. Davis (2005, p.8) confirms that it allows for the
use of multiple sources of evidence and allows one to examine real life contexts. Older inter-
pretations of the case study approach are still valid in the contemporary setting. Stake (1978,
p.3) for example implies that if the purpose or aim of an inquiry is to determine explanation,
propositional knowledge and law, then the case study approach might be disadvantageous.
However when one aims at understanding and extending experience, and consolidating some-
thing that already might be known, then the case study approach is advantageous. He goes on
to suggest that the main value of the case study, ‘appears to me to be for adding to existing ex-
perience and humanistic understanding’ Stake (1978, p.3).

As this fundamentally is what I intended, the use of a case study if viewed in the above terms
seemed an appropriate methodology to complement personal experience, historical accounts
and personal (in essence empirical), observations. I essentially gathered my data from personal
meanings and understandings that are revealed through the autobiographical account of my ex-
periences.

Issues involving context in EE have not yet been fully examined and developed, although there
is significant literature exploring aspects of context and its influence on EE. These include the
influence of culture on EE, for example Barrett (2007), de Haan (2006), Barraza et al (2003),
the importance of contextualizing student learning and teaching, for example Wals (2007) and
Stevenson (2007), and the relevance of context to national curriculum frameworks, for example
Lotz-Sisikta and Schudel (2007). However, I believe that autobiographical research enables an
exploration of the complexities within contexts and how these contexts can reveal meanings
impacting on transformative EE praxis. It is this aspect that sets this study apart from existing
research into the influence of different contextual factors on EE. In some ways this is highly
sensitive and political as this thesis is essentially a criticism of existing practice, policy, inter-
pretations and inadequacies within some educational systems. This is however fairly typical of
case study research as acknowledged by MacDonald and Walker (1975, p.5) who remind one
that the use of case study research in education ‘takes the researcher into a complex set of polit-
ically sensitive relationships,’ which is an important aspect of my adopted critical research methodology.

Hakim also (1993, p.115) reminds one that, ‘case studies are probably the most flexible of all research designs,’ and this flexibility is probably a necessity in the methodology adopted in this thesis. My research does not make use of interviews, questionnaires or surveys targeted at particular (interpretive) aspects, and therefore required a methodology enabling the examination of various issues, understandings, implicit comparisons and implications relevant to existing practices and policy, which suit an autobiographical narrative.

The use of autobiography in case studies is not entirely recent but is have recently gained more popularity is social scientific research as suggested by Merilainnen and Syrjala (n.d.).

In education science, the narrative approach is now appreciated widely. Writing about one’s life is narration, and there may be many smaller stories and voices intertwined with the main story…In our opinion, the power of writing should be discussed seriously now that the narrative approach is gaining ground in education science (n.d., p.17).

My attention to education praxis in specific settings relies heavily on my autobiographical account of events in these contexts, but certainly does not constitute the entirety of the study. As such, many forces including memory and reflexivity have impacted on these subjective interpretations of my life events and both the reader, and myself as the researcher, need to take this into account and be aware of the contextual influences that have impacted on my constructions of reality. My interpretations, the hermeneutical aspects governing my constructions and research, therefore require some consideration.

1.4.2 Hermeneutics

Although I don’t actively or purposefully engage in a comprehensive study of hermeneutics, I would not be fulfilling my intellectual responsibility if I didn’t briefly consider Gadamerian philosophy, as hermeneutics largely informs my autobiography.
Over four decades ago, Gadamer suggested that all individual interpretation was affected by historical consciousness and traditions that have an impact on objectivity (Gadamer, 1967, cited in Gallagher, 1992, p.90). My awareness of the impact of personal history in the interpretation of events during my life, has assisted me in attempting to avoid subjectivity, but by the same token has encouraged me to question the accuracy not only in my interpretation of those events, but also my understanding of them.

I have no doubt that my understandings are situated within various levels of prejudice and context, but it is also these prejudices that give ‘uniqueness’ to my autobiography. It is not my intention to provide a totally objective representation of events outside my life. There are of course certain undeniable facts and events in history that have occurred during my life, but it is my understanding and interpretation of these that I present in my autobiographical narrative. I have endeavored to put forward a version of experiences, tainted by my history and worldview, in an attempt to expose my human experiences and the meanings I have drawn from my involvement in different EE settings. The autobiographical narrative does not serve the purpose of documenting an objective history, but rather positions myself and the reader alongside events that have impacted on my life perspective. This allows the reader to engage with my reflection and interpretation of events within a specific context, that of a qualitative inquiry situated within my own historically located tradition, to better understand the complexity of context and its relationship with transformative education.

In the process of writing this thesis I have constantly reflected and questioned my interpretation of events. I have also considered some of the views of renowned Hermeneuts, such as Gadamer, in an effort to further probe, question and analyze events to make more sense of my interpretation of them. Perhaps Gadamer’s (1984, p.105) view that the ‘very idea of a definitive interpretation seems to be intrinsically contradictory,’ best sums up my concern. However, I believe that through continually reminding myself of placing my research within the historical, philosophical and social context from which it derives, I have been able to present a narrative grounded in a qualitative methodology that will further advance understandings of effective EE.

Throughout the entire thesis, not only within the autobiographical narrative, does the reader need to position the presented argument within the frame of my existence and experiences. A deeper understanding of the contextual complexities that influenced my constructions of reali-
ty, will no doubt aid the reader in the interpretation of the advanced thesis. Sammel (2003) reminds one that:

As people interact within a particular historical horizon of tradition Gadamer insists all interpretations are anchored in our social and individual histories. These histories or pre-understandings enter into any dialogical situation with us for they serve as the foundations for our values, assumptions and relationships (2003, p.158).

The presentation of events in my life is then clearly prejudiced by my ‘social and individual history.’ My narrative serves a multitude of purposes: firstly it informs me more about myself, my interpretations, constructions of reality, existence and relationships with others; secondly it exposes to the reader the complexity of the context that influenced both mine and other’s actions or behaviors within specific time frames, and finally it is an avenue to further explore the diversity of contextual influences or determinants on education in general, specifically EE.

I have briefly mentioned Gadamer, and if hermeneutics centers on the art of interpretation, what then is the core of Gadamerian philosophy? Sammel (2003, p.158) suggests that Gadamer focused on a ‘shift from pure description of the conscious experience to an interpretation that includes evolving meaning,’ and that both the interpreter and listener in a dialogue are ‘conditioned by their culture.’ Gadamer (1975, p.263) views the role of hermeneutics as, ‘not to develop a procedure of understanding, but to clarify the conditions in which understanding takes place.’

To extend our understanding of hermeneutics, Sammel (2003, p.159) claims ‘hermeneutical phenomenology is not a methodology but a philosophical endeavor that seeks to explore the process of understanding,’ and when positioned alongside Gadamerian philosophy, she succinctly explains:

Gadamerian philosophy and hermeneutic phenomenology is founded on the idea that people make meaning (the hermeneutic aspect) of lived experiences (the phenomenological aspect) through dialogue from a perspective where cognition is a product of a particular time and place (2003, p.155).
The ‘meanings’ that I have assigned to my experiences are then very subjective and specific to me the individual, an aspect clearly stressed by Davey (2004, p.231) who in consideration of Gadamer reiterates ‘that many of my thoughts cannot be fully clarified by me alone and that I am never fully transparent to myself.’ So, even by positioning myself within a specific socio-cultural context, and being conscious of avoiding subjectivity, my interpretations might seem to me to accurately portray experiences, but these experiences are also open to further interpretation by the reader. This complex aspect of interpretation is simply stated by Davey (2004):

For Gadamer, however, whatever we say, will (according to the principle of interpretive openness) always mean something more than what we say. And, When something is said or written, it can never be fully said so that the meaning of what is communicated is always in need of further explication (2004, p.223).

If one is in agreement with Gadamer’s views, then what I have assigned meaning to in the written interpretation of my life experiences, might have a very different meaning to the reader. An assimilation of meaning, or new meanings are dependent on dialogue. In consideration of Gadamer, Sammel (2003, p.159) explains that, ‘the meaning of a text (or words spoken in dialogue) is never purely a function of the original intention of the author/speaker,’ and that further production of meaning depends on, ‘the interplay of dialogue between the author/reader or speaker/listener.’ This is true of the ongoing dialogue I engage in about my life experiences, where the more I revisit certain experiences, the more my meanings evolve and the greater my understandings become of them.

A further complexity is also associating the direct relevance of my experiences to what I am aiming to achieve in my research. In further exploring the dialogical nature of understanding, Taylor (1993, p.59) reminds one that ‘understanding is structured historically in the traditions, prejudices and institutional practices that come down to us,’ and that ‘when we read we shall not be able to understand unless we have worked out the question to which the text is an answer (1993, p.69).
Hermeneutics then has drawn my attention to the subjectivity in all my observations; mine and others interpretations of them, and the relativity of these interpretations to a specific context. Hermeneutics also enables me to deconstruct my autobiography and derive further meaning from it by looking at how it could be interpreted by others. By further clarifying the contexts or conditions in which my understandings of events were generated, I am able to expose how my personal history, prejudices and traditions all influenced my interpretations of them. Gadamer (1984, p.105) is clear in his suggestion that the ‘very idea of a definitive interpretation seems to be intrinsically contradictory,’ and I am very aware that the way in which I have viewed many events certainly is not a ‘definitive interpretation’ of them, but merely a subjective recount through my personal lens. What then is the relation between interpretation, the generation of meaning and context?

As specific contexts influence interpretations of meanings, my interest has been drawn to the constitution of context. It is only through a deeper understanding of the range of socio-cultural influences and prejudices that in part determine specific contexts, can one shed light on the activities or events that might have occurred within a particular context. It is not in examining the meaning of context itself wherein lies the significance of my research, but rather in furthering understandings of the concept of context, the connections and meanings it might reveal, its constitution, complexities and relevance to transformative EE.

However, if I propose that an autobiographical narrative with its subjective interpretations is valuable in providing new understandings of EE praxis, what constitutes an autobiography?

*What are autobiographical narratives?*

Autobiographical narratives are constructed through life experience.

If one is interested in doing historical work that has political meaning, utility and effectiveness, then this is possible only if one has some kind of involvement with the struggles taking place in the area in question (Colin 1977, p.64).

Colin’s supposition is of direct relevance to my adopted methodology. Literature has also exposed that more types of postmodern qualitative research have become popular, with new
forms having evolved, such as critical autobiographical research (Taylor and Settelmaier 2003, p.1). Taylor and Settelmaier (2003) also proclaim:

This form of research focuses on the researcher’s own life-history, involves writing in the narrative first person voice, and can give unique insights into the social and cultural forces shaping his/her own practice (2003, p.1).

They refer to Roth (2000) advocating, ‘autobiographical research allows us to explore aspects of our interpretive horizons and thus our biases,’ as well as Roth and Bowen’s (2000) suggestion that, ‘given that our autobiographies and our scholarly works are deeply integrated – we can therefore draw on our autobiographies to elucidate our knowledge’ (2003, p.5). These comments illustrate that autobiography is a very useful tool in qualitative scientific inquiry, as that they allow for an insight into certain situations from a ‘human experience’ perspective with a degree of subjectivity.

What are the key features of autobiographical research?
Essentially autobiographical writing consists of personal experiences. It is also largely determined or influenced by reflective thinking, usually meaningful to the researcher. This enables me as the researcher to acquire more self-knowledge and impart factual information about pedagogic contexts or practices which I have experienced, or am presently part of.

Autobiographical studies are able to be conducted from various perspectives. These include opposition to positivist and postpositivist traditions, instead synthesizing with forms of postmodern qualitative research (Settelmaier and Taylor, 2002). Myers (1997) reminds one that qualitative research assists in the understanding of the social and cultural contexts in which we live and is therefore specifically culturally situated in the context of the researcher. van Maanen (1988) suggests that autobiographical writing can take on a variety of literary forms that in some instances contrast greatly with traditional scientific writing styles. Clandinin and Connelly (2000) state that autobiographies are a narrative study of experience. Denzin (1989, p.23) on the other hand describes autobiographies as ‘inscribing and creating a life.’ Roth (2000, p.7) also proposes that autobiographies, ‘tell us about a culture as well about lives at the same time.’

With specific reference to my adopted approach, Taylor and Settelmaier (2003) comment:
When autobiographical research is conducted from a critical social perspective, it can enable teachers to develop critical reflective awareness of the culture of their profession, especially the shortcomings that restrain the quality of their educative relationships with their students (2003, p.2).

Literature clearly states what an autobiography is and what it ought to do. There are also commonly accepted principles that form the basis for scientific inquiry, which may differ depending on the adopted epistemological perspective, within this methodology. Guidelines do exist that assist the researcher in formulating legitimate autobiographical research, but although this methodology is gaining broad acceptance, there still are a number of critics. Proponents of positivist research perspectives in particular question the validity and legitimacy of autobiographical narratives in research. Meriläinen and Syrjälä (n.d.) reminds one that:

A personal voice in academic writing has been considered suspicious, unreliable, illegitimate, and even trivial. Because narrative forms of writing may interrupt the public academic discourse, to explore positioning and reflexivity, they have often been dismissed. Each aspect of the self constructs, apprehends and writes a very different interpretation of reality (n.d., p.14).

From my understanding it appears that ‘quality’ autobiographical writing is necessary to further contribute to the broader acceptance of qualitative subjective research as being a legitimate form of scientific, naturalistic inquiry. ‘Quality’ writing also assists in dispelling suspicions that might exist in this regard. As ‘quality’ is the key word, what constitutes quality autobiographical writing?

Bullough and Pinnegar (2001) propose:

Quality self-study research requires that the researcher negotiate a particularly sensitive balance between the biography and history. Self-study researchers stand at the intersection of biography and history (2001, p.15).
They go on to provide guidelines for the use of autobiographical forms of research. These are by no means a definitive list governing this methodology, but assist in establishing consistency and legitimacy. Briefly they concur that autobiographies should:

- be true
- assist in insight and interpretation
- be honest, stand by the author
- have an obligation to improve the learning situation
- be relative to a context or setting
- offer fresh perspectives on established truths
- provide insight into participant’s thoughts and feelings
- be coherent, structured and provide convincing evidence
- present the ‘whole’ picture (Bullough and Pinnegar 2001, pp.16-20).

This summarized list of guidelines is not comprehensive, but is supported by Taylor and Settelmaier (2003) who add that autobiographies should:

- reveal a lively conscience
- tell a recognizable story
- portray character development
- offer new perspectives
- reproduce the emotional impact of the author’s experience.

In addition, Barone (2001) adds:

- language should be expressive and contextual
- the text should create a virtual reality
- the text should show a degree of textual ambiguity.

These guidelines give significant direction for both style and content. Perhaps the most significant of these suggestions is that there needs to be a high level of honesty, consistency in interpretation and relevance to a specific context whilst providing convincing evidence. It is exactly these aspects that I expose in my narrative. Autobiographical narrative clearly allows for my unique story to be told. No-one has had the exact experience I have witnessed. The methodology I have chosen makes it possible to make my unique experiences public knowledge and contribute new knowledge to this evolving field.
There are other factors worthy of inclusion in the above lists that will no doubt emerge as this form of scientific inquiry is more broadly used and accepted. However, at present, a ‘quality’ piece of autobiographical writing has a lot of literature from which to draw guidelines, although this methodology may constitute only a small section of the complex field of qualitative research. There are appropriate standards to which one should conform, and if this is coupled with an understanding by the reader of the issues, values and context which inform the author, there is no reason for an autobiography not to be viewed as a valid and legitimate source of information or form of inquiry. The importance of narrative in research cannot afford to be undervalued if we are serious about offering new perspectives in EE.

Literature also exposes that autobiography provides valuable insight into the interrelationship between past and present and allows for a lot of reflection on the part of the author, bearing in mind that the different perspectives of the author generate different interpretations and answers. Although autobiographical case studies are subjective they cannot afford to misrepresent historical facts. The underlying philosophy of the researcher determines the adopted stance. In my instance the research is conducted from a critical social perspective, although I also make use of interpretive and illustrative aspects.

By adhering to the standards and guidelines informing my methodology, I believe my integrity and sense of inquiry enables this autobiography to accurately portray contexts I have witnessed. It is a means of making my unique experiences relevant to contemporary research in EE and serves as a tool to promote the understanding of different contexts in diverse, yet specific settings. It also allows for the reader to be exposed to new knowledge from a very personal level of experience. It still is though a very subjective interpretation consisting of my constructions within particular settings.

Through the autobiographical narrative I examine specific practices in a set place and time, as well as reflect on the forces that shaped my own identity and practice. I then attempt to relate these to broader policy, practices and curricula within contexts relevant to moments in time. This allows for a greater analysis and understanding of individual contexts as there are interpretive aspects worthy of further exploration. Essentially I use the autobiography to illuminate moments in my life where the complexity of context has shaped my experiences and pedagogic practice, in an effort to better understand the forces shaping EE praxis.
I also go beyond the pedagogical context to encompass a number of defining experiences in my life from birth in an oppressive apartheid society, to my present role as a school principal in Australia. I explore experiences from both a personal and professional level. I also demonstrate how the complex constituents of context have shaped many personal and influential life experiences, and illuminate and indicate these instances with ongoing references to the literature I have studied.

1.4.3 Data collection methods

My data is qualitative and derived from my life experiences and literature I have consulted. In my research I sourced relevant information to support four main categories, namely:

1. Experiential studies within the autobiography.
2. The critical examination of issues emerging and identified within the autobiography.
3. An analysis of the complex constitution of context and how this potentially informs EE praxis through revealing the forces that impact on constructions of knowledge and reality.
4. The relationship between complex contexts, social critical pedagogy, constructivism, social constructivism and transformative EE praxis.

The data consist of a review of literature, exploration of educational policy and practices relevant to my life experiences, anecdotal records, life experience, selected syllabi and school texts relevant to my experiences, curriculum frameworks determining my teaching experiences and empirical aspects (in the form of personal observation and experience). I was also informed through dialogue on trips to South Africa after I had immigrated to Australia and ongoing professional dialogue in my present work capacity. Most of these conversations gravitated towards operational and design aspects of EE, and together with my own experience formed an ideal platform for the autobiographical narrative.

Beyond my experiential account in the autobiographical narrative, I also explored the complex constituents of context and how it potentially shapes EE praxis and our constructions of reality and knowledge. I also put forward that in my experience the nature of EE (its constitution and the way it was approached and taught) was a direct function of the complex context in which it developed.
I considered curriculum, policy and policy formulation that was already in place, instead of merely examining my subjective interpretations of the policy, or responses to policy by practitioners (although cognizance is taken of these interpretations). No ‘formal data’ beyond anecdotal and conversational information, was sought from respondents. The use of narrative has therefore been crucial in documenting these unique experiences. Essentially no-one other than me has had this same experience, and these unique life events are my warrant to make personalized new knowledge, public. As a result it is subjective and sociocentric, as my personal experiences were developed alongside those of others in a multitude of environments in varying contexts. I accept that this thesis is subject to personal prejudices beliefs and values. My particular principles and beliefs have no doubt influenced my perceptions in past experiences and settings considered in the narrative.

Not only have these values shaped my perception of life in general, but they also have inevitably affected both my interpretation of EE and my EE praxis. Barone’s (2001) comments are in parallel with my thoughts:

Our autobiographies as learners in childhood, adolescence, and young adulthood frame our approach to teaching at the start of our careers, and they frequently exert an influence that lasts a lifetime (2001, p.50).

Both the reader and I need to recognize that my inquiry was inevitably shaped by a personal world view, and the context in which it was shaped has influenced and biased my research and interpretations. Taylor and Settelmaier (2003) clearly state:

If interpretive study is to be a truly educative experience then, from a critical social perspective, the interpretive researcher needs to be able to adopt the role of an authentic learner, and to become critically aware of how his/her own world view shapes the design and conduct of the inquiry, especially the quality of his/her communicative relationships with other participants (2003, p.37).

There also exist contradictions within my life story. For example, I was in principle opposed to apartheid, yet still I found myself working within the system as an educator in the South Afri-
can context. My subjective constructions indisputably influenced (and currently influence) my classroom practice and the way in which I presented certain subject matter, yet at that time I could not clearly identify how and to what extent. So although particular perspectives tainted my teaching and understandings, when I looked at my practices retrospectively through this inquiry I was able to subjectively gain a clearer vision of how, and to what degree I think I was influenced.

Bearing this in mind this study contains a brief historical perspective in order to give the reader a deeper insight into the context of each selected region. I endeavor to go beyond the educational experience to expose a number of factors that constitute the complex contexts in which we exist. Walker (1996) proposes:

The best case studies transcend the boundaries between art and science, retaining both coherence and complexity. Inevitably, the case study worker finds himself [sic] part historian, part psychologist, part sociologist and part anthropologist (1996, p.11).

By adopting this approach I found it difficult to avoid ethnocentrism as my personal evaluation and interpretation of policy, formulated in cultures other than my own, has obviously been tainted by my own.

The settings I have lived and worked in provided an ideal platform to further investigate how the learning process is shaped by individual and collective constructions and how the constitution of these constructions can impact on the way we view EE. They also enable me to try and expose the complex constitution of each unique context and extrapolate what implications these complexities might hold for transformative EE praxis.
SECTION TWO

Autobiographical Narrative

2.1 South Africa

The table below outlines examples of the contextual forces influencing my constructions of reality growing up in South Africa (left column), and how they might have potentially been different (right column) under different existential circumstances at the same space in time.

Table Four: Examples of some broader contextual forces impacting on my constructions of reality living and growing up in South Africa

My subjective view of some actual contextual influences

--- Central Level ---
Living location: Urban 'white' area, regional city
Curriculum: Determined by Cape Ed Dept for white schools
Dominant student culture: White, Anglo-Saxon, English speaking

--- Anthropological - Socio level ---
Gender: Male, heterosexual
Race: White
Religion: Christian, Pentecostal
Heritage: English
Political history: Lived within and conformed to apartheid rule

--- Intermediate level ---
Teacher training: English University degree trained
Learning resources: Well resourced
Language: English
Health: Generally good
Literacy and numeracy skills: Good numeric, written & verbal skills in 2 languages
Home situation: Stable family with siblings

--- Immediate level ---
Daily mood: Dynamic
Peer pressure: Dynamic
Weather: Dynamic
Spontaneous interest: Dynamic
Hunger/thirst: Dynamic

My subjective view of some contextual influences impacting on other South Africans at same space in time

--- Central Level ---
Living location: Township, rural, metropolitan etc.
Curriculum: Dependent on racial classification, geographic location, political agents etc.
Dominant student culture: Indigenous languages and heritage, Afrikaans speaking, immigrant, European etc.

--- Anthropological - Socio level ---
Gender: Female, other sexual orientation etc.
Race: Racial classifications of 'coloured', black, Indian, Asian etc.
Religion: Hindu, Muslim, Catholic, Zionist etc.
Heritage: Dutch, German, Portuguese, Indigenous etc.
Political history: Apartheid dominated, freedom struggle, support for opposition parties

--- Intermediate level ---
Teacher training: Teacher College, Training College, University, off campus education, Diploma, certificate etc.
Learning resources: Under resourced, limited resources
Language: Xhosa, Zulu, Afrikaans, Tswana etc.
Health: Health impacted by diet, living conditions, socio-economic background etc.
Literacy and numeracy skills: Numerical/written/oral skills in one or more languages, only communication skills, illiterate etc.
Home situation: Absent parents, siblings, no siblings, single parent, extended family etc.

--- Immediate level ---
Daily mood: Dynamic
Peer pressure: Dynamic
Weather: Dynamic
Spontaneous interest: Dynamic
Hunger/thirst: Dynamic
My autobiography focuses predominantly on sequential educational settings that I have experienced during my life. I make use of a narrative to describe these unique experiences that track my life from being schooled, attending university, conscription and working in apartheid South Africa to illustrate how many contextual forces impact on constructions of reality and how this influences the learning process and EE. The narrative documents events leading to a decision to immigrate and follows my work and study experiences in Australia up to the present. Central to my story are the unique experiences I have witnessed in EE praxis, teacher perspectives, policy interpretation and formulation, and how education systems deal with the development of environmental values, constructions and understandings in the learning process.

Through my unique story, I am able to contribute new knowledge and insights by exploring the complexities within each context in order to better understand how social constructions are shaped and how this can inform future practice and research in this field. As previously mentioned I propose that the notion of context is underdeveloped and that more cognizance should be taken of its complex constituents in order to develop more effective transformative EE praxis. By delving deeper into the constitution of specific contexts, I have revealed that there exist multiple ‘contexts within contexts’ that play a major role in both the teacher and learners’ constructions of reality and knowledge and that this has implications for future EE.

**Context one: South Africa**

*A brief historical overview and background to my story*

South Africa, the land of my birth, holds an interesting history that I divide into two distinct eras; pre-colonization and post-colonization. From my perspective the post-colonization era has three further distinct legislated eras; pre-apartheid, apartheid and post-apartheid. (Apartheid is derived from the Afrikaans word meaning ‘separateness’).

African countries have complex and interesting histories. From civil and social injustice, revolution, war, trade embargos, sanctions, dictatorship, elements of Socialism, Communism and Marxism, unrest and political upheaval, famine and genocide, there are few countries that match those of the continent of Africa in this regard. Although rich in mineral wealth, industrially active and an interesting blend of both First and Third World cultures, South Africa is no exception to many other African countries when considering the diverse problems it has been confronted with. However, there is one unique characteristic that sets South Africa apart
from the rest of the continent, that of social and racial division through governmental legisla-
tion.

In a similar way to other European colonized countries in Africa, South Africa became the in-
terest of many European powers due to its strategic positioning on the lucrative trade routes to
the East. So lucrative was the spice trade, that it even took the focus off other exploration. For
example, earlier exploration of land masses further east such as Australia, even after the suc-
cessful mapping of Cape York Peninsula by Willem Janzoon in 1606, were abandoned to focus
on the Indonesian spice trade to the north west of Australia. These trade routes also served a
role in the spread of European, more specifically Dutch culture, art and language. There is still
much evidence of this in contemporary times, for example Dutch words in the Indonesian lan-
guages and European architecture and cuisine evident in countries along the old trade routes.

After colonization of the Cape in 1647 the creation of the Dutch East India Company led to the
establishment of a trading station under the command of Jan Van Riebeek at the Cape of Good
Hope (the present site of Cape Town) in 1652. In the period that followed the Cape became the
focus of a ‘tug of war of occupation’ predominantly between the British and the Dutch. The
second British occupation in 1806 formally ended the military rivalry over the colony but the
foundations had been laid for an intense division of cultures that was to surface across all strata
of society for many years to come. Demographically, as in the present day, white people have
always formed a minority of the total population. The economic and political control held by
this minority led to the legislation of official policy after the general election of 1948, classifying
people according to racial groups. It was upon these foundations originally imposed by co-
lonists that a racially segregated society with significant differences in opportunity and life
quality largely determined by skin colour, was the socio/political context into which I was
born.

Racial policy and societal segregation

The indigenous peoples can lay claim to a history of thousands of years in Southern Africa but
it was the European influence of the last 400 years, specifically the 50 years preceding the 1994
democratic elections that particularly determined the fate of the native people during my life in
South Africa. Prior to the dismantling of apartheid, the arrival of the Europeans was perceived
and presented as the starting point of national history in many South African school textbooks.
Marshall (2003, p.1) claims there is conclusive archeological evidence of indigenous presence
in the region dating back at least 20 000 years (for example in the form of stone art from the Kalahari Bushmen, members of the Khoisan, who had moved southwards from the present country of Namibia), little attention was afforded to the pre-colonization period in my South African school experiences.

Colonization does not necessarily breed racial intolerance, but in South Africa it was colonial arrogance that elevated the Europeans to an assumed superior status. It was the assumption that as more ‘civilized’ Europeans, they had rightful occupation or possession of land that in fact did not belong to them, an attitude typical of the times.

Without negating the significant effects of a colonial history, it was perhaps the dominance of the National Party Government’s political legislation that drew international attention to the plight of the native population. Byrnes (1996, http://countrystudies.us/south-africa/) outlines a number of legislative Acts that played a major role in galvanizing the social divisions generated by earlier European colonization in the 17th century. It was the Population Registration Act of 1950 that had the most powerful impact on what was to become a further fragmented and segregated society where race, skin colour, culture, religion, language and political affiliation determined both one’s role and place in society through the formal policy of ‘apartheid’ or ‘separate development.’ It was however as far back as 1892 that The Franchise and Ballot Act and the 1894 Natal Legislative Assembly Bill already had placed restrictions on the black and Indian franchise. By 1905 the blacks were totally disenfranchised through the General Pass Regulations Bill, with the white population gaining political control formally in 1910 through the passing of the South Africa Act.

By the time of my birth in 1962, The Group Areas Act of 1950 had already been enforced for over a decade. This Act restricted races to specific living areas with schools also subject to regulated zones. ‘Pass’ laws were enforced which prevented the movement between restricted zones unless a passbook (similar to a passport) was carried. Some cities and towns enforced curfews where no ‘blacks’ were allowed in the white urban areas during certain times.

The Group Areas Act of 1950 was to have far reaching implications across all facets of society including education. Separate education systems were developed to ‘cater’ for different race groups. This reinforced perceptions in society of individuals fulfilling different roles according to racial classifications.
The extreme politically motivated laws and policies of the apartheid regime led to a very fragmented society with separate amenities and the development of social structures based entirely on race classification. Education, as a social structure, was no exception. It was within this environment that I was schooled and ultimately became part of the system. On completion of school I entered a predominantly English speaking university in Grahamstown (generally perceived by most as a ‘liberal’ university at the time) to study Education. Although opposed to the political aspirations and policies of the National Party government, upon graduation I was legally required to enter into conscription, after which I entered the work force as a teacher for the Cape Education Department. As a teacher in a public (state) school the expectation was to implement syllabi devised by a government, arguably to meet the needs of their policies. Although there was a small margin for individual expression, essentially state schools as the ones within which I worked, were dependent on government financial support and did not encourage much freedom of expression. The reasons for this were numerous and will be elaborated on through the exploration of the depth and complexity of the factors constituting the context in which the schools operated.

The private schools too were subject to similar controls, and although having national external examinations prepared by a different body known as ‘The Joint Matriculation Board,’ they were granted only negligible leeway with aspects such as admission policy, curriculum development and implementation, school structure and organization. However they too had to conform to governmental policy and guidelines as they too were dependent on the government for a large degree of their funding.

By the time I entered the workforce, separate schooling for different races was well entrenched after being legislatively imposed (Bantu Education Act, 1953, Coloured Persons Education Act, 1963 and the Indian Education Act, 1965). This brought about obvious inequalities and the ‘non-white’ population was significantly disadvantaged in relation to finance, resources, quality of instruction and facilities compared to those classified as white. Through legislation (The Afrikaans Medium Decree of 1974) tuition was enforced in Afrikaans alongside the English medium, which was in cases a second and sometimes third language for students. Language policy thus widened the gap ‘between the potential political and cultural elite on the one hand and the masses of the oppressed black people on the other hand’ (Alexander, 2003, p.9).
According to Naicker (2000), the ruling government’s ideological interests were also promoted through education.

Apartheid education in South Africa promoted race, class, gender and ethnic divisions and has emphasized separateness, rather than common citizenship and nationhood... Education policy and curriculum development in apartheid South Africa was used as an ideological state apparatus to promote the interests of the ruling apartheid government. The philosophical base of the curriculum was fundamental pedagogics, which served apartheid interest (Naicker, 2000, p.1).

This was then typical of the environment in which I was schooled and within which I worked, which obviously impacted on my constructions of knowledge and reality.

**Significant events leading up to the 1994 elections**

Beyond the inequalities promoted through education, the general racial policies which were in effect during my life in the country saw South Africa slowly become ostracized by the international community. Over time the economic sanctions, trade embargos, a lack of foreign investment, sporting isolation and military commitment to prevent what I believe the government perceived as a ‘flood of Marxism or Communism through Africa,’ took its toll on the economy of South Africa. Although the period of economic sanctions forced the country into self-sufficiency and some domestic markets flourished, the years of the military spending huge portions of the budget, the weakening of the currency on international markets, the decrease in the gold price in the 1980s and a small tax base all began to cripple the financial resources of the country. Inevitably this coupled with growing dissatisfaction among the masses, a strengthening black trade union movement representative of the largely unskilled workforce, high interest rates, civil uprisings and unrest amongst a host of other factors, led to the government bowing to both domestic and international pressure. As a result it made moves to de-restrict certain political movements and individuals.

Perhaps the first sign of the National Party government’s recognition of the need for reform was in 1983, when new legislation enabled a ‘Tricameral Parliament’ where races classified as Indians and coloureds were given some representation and a say in their own affairs. Those
classified as black, although they constituted the biggest race group, were still denied any representation in parliament as they were actually deemed citizens of ‘homelands’ that had been established by the government (Marais, 1989, p.258).

Although there was some ‘token’ reform in the late 1980s, it wasn’t until there was a change in presidency in 1989 that significant reform occurred. In the early 1990s the African National Congress (ANC), the South African Communist Party (SACP) and other previously outlawed organizations were mostly unbanned, but this did little to ease the tensions that had built over time. The State President of the day, F. W. de Klerk, negotiated for the release of Mandela in 1990, although the plausibility of his release had first been raised by the previous State President, P.W. Botha, in 1985. Botha had largely been viewed as a pillar of apartheid, and some white reactionaries viewed the new willingness of the National Party to negotiate with the ANC as a traitorous act to the white cause. This further fragmented the minority white community broadening the division between the liberal and conservative elements of the population. Although Mandela was released in 1990, it was not until 1994 that the first truly ‘democratic’ elections were held, with the ANC securing the vast majority (62.65%) of votes from nearly 20 million voters (EISA, http://www.eisa.org.za/WEP/sou1994election.htm).

With the optimistic view of a ‘New South Africa’ on the horizon, things began to look rosy, but the legacy of apartheid had unfortunately caused irreparable damage across all sectors of society. Amongst the white population there were distinct divisions between those who supported separate development and those who did not. There were white groups who were opposed to apartheid in principle, yet were comfortable in their advantaged existence. The ‘coloured’ population felt that they weren’t an integral part of either major population group.

The substantial Indian and Malay population members were also caught up in the racial classification confusion with mixed reactions to new governmental reform. To add further complexity to the cultural and racial aspects dividing society, the ANC (predominantly Xhosa) and the IFP (Inkhata Freedom Party, predominantly Zulu), also had a longstanding conflictual relationship leading to issues surrounding the proposed representation in future government. Some citizens became disenchanted with life in the ‘New South Africa’ because they believed the new government had failed to deliver on pre-liberation promises, whilst others felt uneasy without the accustomed privileges previously afforded by the government to certain race groups. There were others who favored peaceful resolution to these issues, and there was of course a large
degree of uncertainty amongst whites of the implications of a future under a democratically elected government.

Essentially there was no single or overarching descriptor that could even generally portray the ‘average’ or ‘typical’ South African. Likewise one could not use a general term like ‘the South African context,’ as there was no single broad context. Instead, within the broader context of South Africa, there existed multiple contexts on various levels, each with their own subdivisions or further ‘contexts within contexts.’ I believe that it is through this complex constitution of these multiple contexts that I can best illustrate how different forces influence constructions of reality and knowledge within specific settings, and thus used an autobiographical narrative to assist in revealing how these contextual forces can inform EE praxis.

It was in this complex climate that I experienced the South African education system, but from a specific socio/cultural perspective as a ‘privileged’ white, male. After teaching for a number of years in South Africa interspersed with traveling abroad I became disillusioned with the country’s past and held pessimistic views of its future. I found that the growing civil unrest, safety issues, dissatisfaction with the collapse of many social structures and a soaring crime rate had resulted in a somewhat paranoid life-style that I could not easily cope with. (According to Mc Cafferty (2003) police records show that there were 25 960 murders and 26 810 attempted murders recorded by the police in the 1994/5 period.) After much reflection on my personal safety and uncertainty of the future of the political and education systems, I became part of the ‘brain drain’ of young professionals to leave the country. It was within this climate that I moved to Australia in an effort to lead a ‘normal’ life.

*South Africa – a prelude to my story*

The National Anthem that has been adopted by post apartheid South Africa marks a new beginning for many South Africans including myself.

*The National Anthem of the New South Africa*

*Nkosi Sikelel’I Afrika*

*(God bless Africa)*

*Maluphakanisw’ upondo lwayo*

*(Raise up her spirit)*
When I read or hear the national anthem of the ‘new’ South Africa it evokes a range of emotions within me. It appeals to my conscience and spirituality in a way that the country’s previous anthem never did. It evokes a feeling of ambivalence, of both sadness and optimism. It makes me think of those who died in the struggle for freedom, the evils of the past and also the future that might take generations to heal. It also generates many questions in my mind, many of which I choose not to seek answers for. The reason for this I do not know.
Reflecting on my childhood, any patriotism I held had obviously been tainted by the distorted perception of reality the National government had tried so hard to instill into the hearts of white South Africans. At school assemblies and other events deemed important, the singing of the anthem, ‘Die Stem’ (Afrikaans for: ‘The Call’ or ‘The Voice’ of South Africa), made me feel unjustifiably proud and often provoked thoughts of my country’s wonderful history and the great nation I was part of. Little was I aware that my well-being was the result of political engineering that severely compromised the existence of my fellow people.

The romantic image of the wonderful nation I belonged to slowly became soured as I grew older and realized the reality of my situation. Sure I was part of a beautiful country, but I was also only one of a lucky and privileged few. In my early teens the societal inequalities became more apparent. My immature mind had begun to question my existence, yet still I accepted my ‘rights’ in a manner that I felt bestowed upon me by God and government. It was only as a young adult that the truth became a reality. With the realization of how the apartheid government had poisoned my mind, I took a different view of the context in which I lived.

I have vivid memories as a teenager of reading a novel by Alan Paton, called ‘Cry The Beloved Country.’ His 1944 novel had a huge impact on me and generated many questions in my mind about my perceived ‘right’ to a privileged and advantaged upbringing. His message of love, hope and injustice altered the way I looked at people and ultimately forged my criticism of a personal comfort that I had become so accustomed to. A few years ago I found a copy of the novel in a second hand bookstore in Australia and emotionally revisited his inspirational words. It was at a time when I had just started researching this thesis and I made notes of one particular extract that I thought was particularly pertinent to my narrative. To me it summed up the fear some people hold of the power of education and the role it has to play in the development of any country. It was the words below of Paton (1944) that once again reminded me of how many great minds might have been stifled by the collective fear of a conservative, ruthless white minority.

> And the churches cry too. The English-speaking churches cry for more education, and more opportunity, and for a removal of the restrictions on native labour and enterprise…And others say that this is a danger, for better-paid labour will not only buy
more but will also read more, think more, ask more, and will not be content to be forever voiceless and inferior.

Who knows how we shall fashion such a land? For we fear not only the loss of our possessions, but the loss of our superiority and the loss of our whiteness. Some say it is true that crime is bad, but would this not be worse? Is it not better to hold what we have, and to pay the price of it with fear? And others say, can such fear be endured? For is it not this fear that drives men to ponder these things at all (Paton, 1944, pp.70-71)?

He would go back with a new and quickened interest in the school, not as a place where children learned to read and write and count only, but as a place where they must be prepared for life in any place to which they might go (Paton, 1944, p.79).

My early life in South Africa

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It was in the summer of 1962, interestingly the year that Nelson Mandela was first arrested, that I was born in Grahamstown in the Eastern Cape of South Africa. From a South African perspective of the era, I was born racially classified as ‘white’ in colour and compared to the vast majority had warm and safe living conditions, ample food and potentially a very positive future based purely on my racial classification.

After gaining power in the 1948 elections the National Party (the new name for the coalition formed between the Herenigde Nasionale Party and the Afrikaner Party), found itself securely in government with only members of the ‘white’ population afforded the opportunity to vote in
‘democratic’ elections. At this stage, the country was relatively stable economically, and ironi-
cally, politically. The currency was strong and South Africa had not yet suffered the wrath of
international condemnation (at least not publicly), for its racially motivated policies.

I was born from what I perceive into a typical middle class family. My father worked for the
local municipality and my mother accepted casual work at a local retail outlet. Money was al-
tways tight and they worked hard and fairly long hours. Work positions such as my parents,
were generally reserved for whites, whereas most of the unskilled, manual labour was allocated
to the disenfranchised blacks due to the legislation of The Mines and Works Act (Act no 12 of
1911, amended in 1926 to The Job Reservation Act). The policies determining the job market
enabled a continuous cycle of cheap unskilled labour, which was instrumental in maintaining
strong industrial activity, particularly the huge mining operations. It also provided cheap un-
skilled farm labour, serviced the domestic labour industry (cleaners, gardeners and labourers),
as well as instilled in many young white children the perception that certain roles in society
were particularly suited to specific race groups. As a child I did not realize that access to even
basic education by the domestic workers employed by my parents was limited. I was also not
aware that race played a greater role in job opportunities than education in many instances. But
what is the background to the ‘world as I knew it?’

Historically the tribal background of many domestic workers had generally been determined
geographically through tribal wars dating back to the period prior to European occupation. Al-
though the Northern areas of Africa were dominated by rich Muslim trading empires in the 15th
and 16th Century, the African tribal dynasties further south had only survived through primitive
farming and cattle herding. Perhaps the only southern exception was the Great Zimbabwe
kingdom, which also traded in copper and iron with the Sofala, who occupied territory around
contemporary Mozambique. By the turn of the 15th Century this kingdom was already in de-
cline, which paved the way for smaller tribes to flourish as regional powers. One of the most
notorious of these was the Zulu. By the early 19th Century the Zulus controlled the east coast of
Southern Africa with a stronghold in the area of the present Kwazulu Natal Province of South
Africa. Another powerful tribe, the Matabele, controlled the region of present day Zimbabwe.
The most influential event on demographics in this period is known as the ‘Mfecane’ (Difaqane
in Sosotho), which roughly translates to ‘the crushing’ of opposition. This event, which we
learnt about in school History lessons, saw the all conquering Zulu tribe move down the east
coast of Southern Africa where they violently overpowered smaller tribes along the way. They ruthlessly enforced a policy of either join their swelling and powerful ranks, or face death.

Around this time the Xhosa, encompassing a number of tribes, had also developed into a strong tribal power base. They occupied the central interior east of the Sunday’s River, which can be found in the present day Eastern Cape Province of South Africa near Port Elizabeth. It was these two groups, the Xhosa and the Zulu, which would prove to be a thorn in the side for both the Boers and the British. Many battles raged that were essentially ‘black native’ versus ‘white interloper.’ From what I learnt in History lessons in school, the Zulus eventually defeated the Boers but then themselves were defeated by the British. The Xhosa were also engaged in a number of wars, known as the ‘Kaffir Wars,’ with the British. As a possible solution to prevent further violent engagement the British invited a number of ‘Settlers’ to come out from England with the promise of free farms. The real intention was to settle them along the Great Fish River as a buffer against the Xhosa. There were still a large number of skirmishes, but ultimately the Xhosa and the Zulu advancement faltered.

To this day the Eastern Cape and Transkei are still predominantly Xhosa and Kwazulu Natal predominantly Zulu. The tribal conflict between these groups transcended into modern politics and is reflected in the Eastern Cape now an ANC (African National Congress – traditionally Xhosa) stronghold, and Kwazulu Natal an IFP (Inkhata Freedom Party – traditionally Zulu) stronghold. Vilakazi (2007, p.1) claims that even in the contemporary setting the relations between these two parties is ‘characterized by tension, intolerance, hostilities, distance, even hatred,’ which obviously has its roots a long way back. Ironically both the Zulu and the Xhosa were originally members of the same Nguni group of people. The Zulu and the Swazi became the dominant tribes in the northern region, while the Xhosa became the largest southern Nguni society. (Both isiZulu and isiXhosa are Nguni languages that fall under the greater Bantu language classification.)

As I was born in the Eastern Cape, I was born into a traditionally English liberal area – a legacy from the 1820 British Settlers (many of the towns and cities in the Eastern Cape have very English names, for example Port Elizabeth, East London and Port Alfred), with the black population of the area being predominantly isiXhosa speakers. I have very clear and fond memories of being cared for by an Nguni (from the Xhosa tribe) ‘maid’ called Rosy, and at a later stage by her sister Miriam who worked for my parents as domestic workers. Even although these
women were entrusted with my safety and well-being, and did most of the cleaning and cooking, due to the traditions of racial segregation, they only entered the house through the back door and ate with separate utensils from the rest of the family. They also had their own separate toilets. Many ‘domestic servants’ often worked long hours and had no formal work contracts. (The Basic Conditions of Employment Act which covers domestic workers, was only legislated in 1997.)

*My South African education experiences*

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I started school at Oatlands Preparatory, Grahamstown, in 1969 in an education system that was totally segregated through legislation by virtue of the Bantu Education Act, 1953, Coloured Persons Education Act, 1963 and the Indian Education Act, 1965. There were separate schools for the racial classifications of whites, coloureds, Indians and blacks. Some Asians attended private schools while others generally attended ‘coloured schools.’ Throughout my 12 year school career I did not have one non-white student in any of my classes, no non-white teachers, nor did I have any true friends of ‘colour’ that I was officially allowed to admit to. I remember some of my parent’s friends expressing dismay at me listening to the music of black artists like Jimi Hendrix and Bob Marley, let alone have posters of them adorn my bedroom walls.

In my sheltered existence and from my upbringing it was not the norm to mix with people of races other than one’s own, and my interaction was often no more than a casual game of soccer or rugby on the local sports field before the ‘kaffirs’ were chased away from being on a white recreation area by older conservative types. We were often sworn at for daring to even play with ‘them.’ Remember that this was an era of separate amenities ‘whites only’ parks and beaches, separate entrances to public buildings, separate train compartments and busses, and of course separate education. (The Reservation of Separate Amenities Act, Act Number 49 of 1953, enforced separate use of all amenities and services.)
Towards the last few years of my schooling, there were however some private local colleges that started admitting other race groups. These students were generally from wealthy families who could afford the expensive school fees, or in some instances were at boarding school from families abroad, children of visiting diplomats or academics, or children of successful businessmen who had against the odds done well in an oppressive society. This was however not the norm and in some instances, radicals supporting the struggle against apartheid viewed the attendance of white schools by blacks as collusion with the enemy. In the violent social uprisings of the 1980s, black people thought to be collaborating with whites supporting apartheid were sometimes labeled ‘impimpis’ (traitors, spies or collaborators), which in some instances led to ‘necklacing’ (a motor vehicle tyre placed around their necks and set alight after the tendons under their arms were cut to prevent the removal of it) as a powerful sign of opposition to government policy and those who supported it.

All students in South Africa, regardless of race, received tuition in both official languages, English and Afrikaans. Alongside English, tuition in Afrikaans was legislated through The Afrikaans Medium Decree of 1974 and presented as the norm irrespective of one’s home language. In order to gain a matriculation certificate at the end of schooling a pass was required in both languages. In my matriculation year I had to complete 6 subjects, those of English, Afrikaans, Mathematics, Science, History and Accountancy. (For those wanting to study further at university, many courses such as Education and Law, also required the study of both languages at university level.) This meant that those classified as black were instructed at school in what was essentially a second or third language. For example Xhosa people’s first language is isiXhosa and the Zulu first language is isiZulu, yet they received tuition in English and Afrikaans. This immediately put them at a disadvantage academically and the mere language barrier in itself contributed (alongside a host of other factors) to low retention rates in formal education. Presently 11 ‘official’ languages are recognized and no longer is Afrikaans a standard mode of instruction, although it is the third most widely spoken language behind IsiZulu and IsiXhosa. English is the fifth most widely spoken language (Daily Dispatch, http://www.dispatch.co.za/2005/05/25).

Teachers too could not teach in state schools without previously passing a second language (Afrikaans) examination. Some private schools tended to have a more lax approach to this policy although effectively were still at the mercy of the legislation even if they didn’t strictly enforce it.
The school language policy suited the government’s agenda. It meant that the lesser educated, unskilled labour force was cyclically reproduced and continued to play its vital role in the economy. This aspect is illuminated by Arko-Cabbah (2003):

A scheme to disempower the black population that forms the majority, included the introduction of official language policy that was limited to English and Afrikaans, and an inferior educational system that was aimed at making the black population hewers of wood and drawers of water (2005, p.3).

While there was opposition to these policies, black people were in many ways powerless to do much about it for fear of brutal reprisal. The South African security police, under the apartheid government, were ruthless in their dealings with suspected activists opposing the regime, and the Terrorism Act of 1967 enabled indefinite detention without trial. Although social uprisings reached a peak in the mid 1980s, opposition to some imposed policies had its roots far earlier, with for example Nelson Mandela being arrested alongside 155 others for treason as far back as 1956.

Perhaps the most noted resistance to this system was demonstrated in 1976 when a number of black school students protested about being taught in Afrikaans, in Soweto, a black township in the province of Transvaal. The police force under instruction from the government violently quashed the uprising with 26 students being shot dead on the first day of riots, and by the end of 1976 approximately 566 people had been killed (Davie, 2006, http://www.southafrica.info/about/history/hastings-ndlovu-150605.htm).

After graphic images of the death of a 13-year-old boy on the first day of riots were released in some media, demonstrations continued over a three day period. This resulted in at least another 150 deaths, mostly school children (Kramer 2003, p.82). I have clear mental images of what appeared in newspapers at the time of parents and teachers running and carrying dying or wounded children in their arms as police shot at their backs. The photos were unashamedly published to send a clear message to those opposing the regime. Some years prior to this event in 1960, there had been an earlier uprising against the pass-book system in Sharpeville, another
township, that had also left 69 dead and 180 wounded (Howden, 1998, p.13). This was the political climate during my childhood years, yet it seemed surprisingly ‘normal’ as I suppose I knew no better.

The above examples demonstrate how the law was enforced, which was foremost in the minds of people opposing the regime, yet there still was a committed number of activists prepared to die for the cause. To me, my parents and the media I was exposed to, gave me the impression that it was predominantly the Afrikaners who were the racists, and that those from English speaking backgrounds were the liberally minded and opposed to the gross injustices of the society. This was far from the truth. For example, when elections (whites only) came about the opposition parties were still the blatant minorities, with many English speakers supporting the government of the day alongside Afrikaner whites. This is illustrated through the election results of 1970 where the National Party received 54.4% of votes ahead of the United Party on 37.2%; the 1977 elections where they received 64.8% ahead of the Progressive Federal Party on 16.7%, and the 1981 elections where they received 53.3% ahead of the Progressive Federal Party on 18.2% (African Election Database, http://africanelections.tripod.com/za.html#1977-House_of_Assembly_Election).

Those members of the population who were prepared to publicly support white left wing political parties such as the PFP (Progressive Federal Party) were from my memory often labeled ‘socialist,’ ‘communist’ or ‘kaffir lovers’ by extreme right wing groups. Activists also quickly drew the attention of the security police and in police terms, some perceived radicals were ‘withdrawn’ from society, under the Internal Security Act (ISA) No. 74 of 1982. (In instances this was merely a euphemism for eliminating an individual through detention without trial, or assassinating someone in mysterious circumstances. An example would be the death of human rights activist, Steve Biko, who in 1977 died in custody.)

Although the ruthless and violent approaches adopted by the police were widely known, the true extent of their crimes against humanity was only exposed years later. Unfortunately as time passed the public suspicions of many further atrocities were proved true. When the new ANC government came into power they initiated ‘The Truth and Reconciliation Commission’ (a result of the Promotion of National Unity and Reconciliation Act, No. 34 of 1995) where amnesty would be granted to some of those responsible for politically motivated crimes in the apartheid era. This was in an effort to forgive and assist in a peaceful transition between gov-
ernments. It was at this forum that many truths were exposed that shocked the nation. However at the time of many of these crimes being committed, both the government and much of the white population chose to ignore it. For most whites life was good, and the adoption of an ‘out of sight, out of mind’ mindset was for many people the order of the day.

This insulated approach was also adopted at school, which inaccurately reconfirmed our white status as ‘superior.’ As in many other countries, my experience of history textbooks is that they tended to present a slanted perspective favouring the government of the day. Msila (2007, p.149) states that apartheid education ‘was a practice of maintaining the status quo and of preserving the master-servant relationship between the Africans and the whites,’ and that it essentially was a form of indoctrination. From my experience and memory, some historical events were either ignored or presented in a manner that ridiculed or belittled the black population. Msila (2007, p.149) cites Kallaway (1998) who proposed that state control over education ‘had been a means of restricting the development of the learner by distorting school knowledge to ensure control over the intellect of the learners and teachers, and propagating state propaganda,’ where schools ‘indoctrinate students instead of liberating them.’

As school curricula were determined by the government, the content was inevitably influenced and tainted by the government’s agenda as suggested above. To me this was particularly evident in compulsory activities that I took part in such as military cadets, which was part of the syllabus in white schools. This supposedly was part of ‘life preparation’ in a subject at my school called ‘Youth Preparedness,’ but in reality was more directed at preparing students for conscription after leaving school. Activities such as this also contributed to the government’s agenda of elitism and intimidating the non-white population groups who had no part in National Service, advocated sexism (only males were conscripted), promoted individualism and egoism, where white males were assigned an air of importance as ‘moral policemen’ protecting South African ‘values and interests’ through National Service.

Societal perceptions of education in South Africa and the legacy of apartheid

The extract from Alan Paton’s 1944 novel that I earlier quoted could quite easily apply to, or be a reflection of, the fragmented racially suspicious 21st Century South African society. The wounds from years of oppression, conflicting racial interests and multi-cultural differences ultimately may take generations to heal. Beyond the evils of past wrongdoings there still exist
many new challenges that have emerged since the dismantling of apartheid; an equitable education system is one of them.

Contemporary education will however too be subject to many contextual forces that inevitably impact on learners’ constructions of reality. Many of these influences are dynamic and require constant consideration, which suggests that one cannot come up with one set ‘recipe’ of EE that will suit the needs of all learners. A consideration for transformative EE praxis is that it ought to be structured in a way that it can flexibly mutate in a manner that responds to the evolving constructions of the learners. As the contextual forces impact on the learners, so too does the provision of EE have to adapt to meet new interpretations and meanings. An education system that adequately addressed new structures, expectations and needs was one of the big challenges to the new government (post 1994) in South Africa.

Due to the many injustices and inequalities generated by the apartheid regime, natural environmental issues may have in instances become secondary to what has been deemed more pressing social and economic challenges. Although inextricably entwined (society/economy/environment), the pressure on the new government to provide for the masses on short-term immediate issues, has drawn more attention to alleviating crime, the housing shortage, electrification and the AIDS crisis to mention but a few. I accept that these are also environmental issues, but they are not typical of the issues explored in EE programs that I have experienced where more emphasis has been placed on the natural environment. In the South African setting there is a sense of urgency driven by societal needs and pressure from its members, as well as pressure on the government to deliver on political promise yet delicately balance priorities. This has obvious implications for the political aspirations of the ANC government as well as for the environment. Freeman and Mgingqizana (2002) cite O’Riordan (1998) to elaborate the complexities forming the foundations of the contemporary situation:

O’Riordan describes South Africa as being: entwined in a triple helix…a combination of economic redistribution, social justice via democratization and shared opportunity, and environmental protection linked in part to the public health. The primary drivers are economic renaissance for the poor and improving the rights and liberties of those formerly oppressed by apartheid. The economic development effort is geared to the positive redi-
From my perspective, South Africa is in many respects still a developing country. Rectifying past inequalities is undoubtedly of vital importance, yet for long-term life-quality considerations, there are a number of factors that need to be taken into account, and the conservation of the natural environment is but one of them. Careful management of environmental resources is essential in assisting in economic growth, which in turn contributes to improved social conditions. Yet one cannot but sympathise with those who require an immediate social transformation with a lesser emphasis on long-term sustainable development. The path to reformation has been long and arduous with much suffering and hardship along the way. Even amongst those I perceived as liberal whites, there was often no more than perfunctory attitudinal opposition to apartheid, possibly just tokenism, as they were already enfranchised and enjoyed relative economic stability. It was those with little political or economic power who generated most action for change, and it is within these ranks that a sense of urgency for change now exists.

This dichotomy of diverse attitudes by South Africans towards social reform and education cannot and will not easily be resolved. The necessity for social transformation as exemplified by the under-privileged citizens in the apartheid era is still very pertinent in the contemporary setting of the ‘New South Africa,’ as there still exist vast social and economical imbalances. The exact role and function of education (including EE) in generating improved standards of living is somewhat difficult to place. There are no doubt individuals who still live with the view that liberation and equality is more important than education, and find it difficult to comprehend the links between the two. Even the present ANC Youth League leader, Julius Malema (elected as president of the ANC Youth League in 2008), still expresses the need for a more militant approach to bring about change quickly. As an example, the media reported that he recently sang ‘kill the boer’ at a student gathering in March 2010 (du Plessis, 2010, http://www.iol.co.za/news/politics/malema-sings-the-mokaba-anti-boer-tune-1.475838).

As education is a very powerful political tool it was not surprising that factions of the white population feared disempowerment through the education of the (generally black) masses. Christian National Education (CNE) and a focus on fundamental pedagogics also gave a narrow perspective on the role, potential and purpose of education in general, especially when its purpose was arguably ‘to protect power and privilege’ (Mfila, 2007, p.149). These differing
perceptions of the role of education have a bearing on EE and the focus of this thesis, as they highlight how individual interpretations and constructions are determined by complex existential contexts that are constituted through layers of forces continually influencing our perspectives.

The economic and political agendas essentially prevalent in educational policy need also be viewed in the context in which they manifested. In the broader South African context the minority group holding economic and political control manipulated policy to suit their agenda. In this instance the National Party made sure it maintained economic and political power whilst sublimely (yet very blatantly in some respects) ensuring the existence of a second-class social group, as suggested by Msila (2007):

The CNE principles on education for the Africans were declared as a way of maintaining the black South African in a permanent state of political and economic subordination. The education system had been an obvious instrument of control to protect power and privilege (2007, p.149).

This was brought about through legislation advocating separate development for cultures they viewed as inferior to the Afrikaner and whites in general, thus ensuring a disenfranchised majority to fill the needs of the manual labour market required to meet the needs of a capitalist dominated white minority. With regards to the political context it must also be understood that the apartheid Nationalist government, ironically, based its education system on Christian principles (the CNE referred to above). As a result the emphasis placed on fundamental pedagogics and CNE led to the neglect of other essential subject areas with little emphasis placed on developing critical skills within learners. EE was one area that suffered neglect. As an example, Kellaway (1998) refers to a concept of ‘veld schools’ (in English, ‘bush schools’), which although were part of the Nature Studies learning area, were rather focused on the protection of the land from blacks and enhancing the elitist white superiority complex, as opposed to nature conservation.

CNE it seems, was unashamedly used as a tool or medium to support or confirm the white population’s assumed superiority, which also contributed to the loss of cultural identity within some indigenous populations. The education system, alongside the implementation of strict
legislating governing freedom of expression, simply made it difficult for non-whites to occupy significant portfolios, which in turn ensured the continuity of perceived elitism amongst the privileged class. Prior to the first democratic elections in 1994, some high profile liberal whites (for example, Helen Suzman, Donald Woods and Nadine Gordimer) had endeavored to be a voice piece for the oppressed, as indigenous groups had little legitimate input into decision making or public say over their disadvantaged existence, but they too were subject to strict censorship laws. Under the Suppression of Communism Act (Act No 44, 1950) and The Internal Security Act (1982), the government was able to ‘ban’ or place restrictions on persons suspected of being a threat to the state or public order. These Acts were broadly applied and interpreted to suit the needs of the government, once again filtering out any information that would detrimental to the government’s agenda.

Elitism was also promoted by conservative right wing white groups, who together with the security police, generated a reluctance for individuals to openly express sympathetic racial attitudes, which further perpetuated perceptions of superiority. As a result the plight of the South African non-whites was often only raised in depth through the foreign media. On the local front, expression through the use of novels, freedom songs, dialogue and poetry (where censorship laws allowed), are examples of how the message of the struggle for justice was spread. However, extreme Nationalists generally viewed anything or anyone that challenged the regime as treason. The white people sympathetic to the black cause were derogatorily labeled ‘kaffir-boeties,’ roughly translated to ‘little brothers of the blacks,’ and ‘kaffir’ a derogatory term meaning non believer. This impacted on the formulation of school curricula, as any input or representation from academics that was construed to have a hidden agenda possibly detrimental to the government, was not allowed. For example, during my schooling the literary works of authors such as Andre Brink and Nadine Gordimer were not allowed to be studied as texts in language classes, as under the Publications and Entertainment Act (1963), any publication could be banned if it in any way could be seen to compromise safety or the order of the state.

Statistics show that the minority who were afforded the opportunity to vote, still supported a legislation that protected their comfort zone and shielded their fear from what an educated mass might have been capable of, with the National Party consistently securing over 50% of the white votes during the apartheid era (African Elections Database, http://african-elections.tripod.com/za.html). Extremists in the white minority, for example members of the Hers-
tigte Nasionale Party (Reconstituted National Party) who were even opposed to English as an official language, erroneously believed they had been endowed with a better intelligence and were more worthy of an education than the black people. This elitist attitude had been in many ways reinforced through the education system where in history books the use of ‘emotive words calculated to arouse feelings of hostility against the Xhosa,’ and views of ‘the Xhosas as thieves and possibly murderers,’ positioned whites as blameless and superior with regards to the racial relations in colonial South Africa (UNESCO, 1967, p.64).

Extreme right wing groups such as the Herstigte Nasionale Party and the Afrikaner Weersstandsbeweeging (Afrikaner Resistance Movement) also generated racial repression that permeated through society, which further compounded on the racist and elitist views generated by the education system. The social and economic ramifications of these perceptions are still evident in modern day South Africa where disparity is commonplace in all strata of society. It is not only the impact of racism that constantly need to be borne in mind when considering educational issues in the South African context, but also a host of other factors promoted through apartheid education, such as elitism, sexism, individualism and religious intolerance which are all in essence constituents of context that influenced the manner in which participants perceived things and acted.

Although I have briefly considered the social (predominantly racial), elitist and economic agendas of the apartheid government that impacted on individual and collective constructions of reality, there is also literature illuminating some of the other factors mentioned above. Jansen (1990, p.1) for example, claims that the apartheid curriculum was, ‘racist, Euro-centric, elitist, sexist,’ that control was ‘central and undemocratic,’ and that examinations were ‘culturally biased and racially selective.’ The Euro-centrism aspect can be linked to the country’s colonial past and the advent of Missionary Education, where the British traditions and language was promoted through education. The Afrikaner response to British Education was the establishment of Afrikaner schools, based on CNE, where Afrikaner nationalism could be spread and the perspectives of the white boers imposed on the natives (Msila, 2007, p.149).

From my memory of school experiences, CNE curricula were also sexist. Chisholm (2005, p.6) suggests that they were designed so that ‘girls would become low-skilled, domesticated and agricultural workers,’ and that subjects such as needlework, housecraft and typing were only offered to girls. She goes on to state that ‘gender bias was prevalent in all subjects,’ and the
ethos that underpinned CNE was ‘authoritarian, hierarchical and paternalistic’ (Chisolm, 2005, p.6). This is echoed by Hoadley and Jansen (2009, p.173) who when referring to apartheid curricula claim that ‘the content was biased towards those who held political power offering a white, male point of view,’ and that content was often ‘unrelated to most learners’ experiences of the real world.’ This illustrates that students’ perceptions of reality in this era of schooling in South Africa were determined by a diversity of complex factors that generated different meanings to different people.

From a religious perspective CNE undoubtedly was used as a vehicle to promote Christianity and the intolerance of other religions, which also had racial implications. For example, the Indian members of the population were traditionally Hindu, but had Christian principles imposed at school. There also existed a substantial Muslim population that was also subject to the imposition of a Christian education. This devalued the beliefs of minority population groups and generated disrespect for the values and traditions of religions other than Christianity. As I have illuminated, racial segregation and separate development alone were then not the only inequalities advocated by apartheid curricula, but there existed many more forces in the broader educational context that impacted on the construction of social issues.

The Church, CNE and apartheid

The apartheid government’s policy of CNE ‘was a component of the apartheid (ruling) ideology’ and formed the guiding philosophy for curriculum policy (Le Grange, 2008, p.403). Religious Education was a compulsory subject in some levels of schooling and Christian values underpinned ‘responsible citizenship,’ which was supported through the National Education Policy Act (No.39, 1967) where a Christian orientation was prescribed for all school education.

The Church played an important role beyond the boundaries of formal school education in reinforcing a segregated society with elitist views. This was particularly evident in the Dutch Reformed Church, where it ‘offered religious justification for whites' and Afrikaners' self-assumed position of superiority in relation to the 'non-white' population’ (du Toit, 2006, p.1). Congregations were gathered according to both race and religion, with some clergymen from the Afrikaner dominated Dutch Reformed Church (a legacy of early Dutch occupation of the Cape) publicly supporting apartheid. For example, D.F. Malan, apartheid advocate and prime minister from 1948-1954, was also a Dutch Reformed Church minister. It must however also be stated that the Church, although a scaffold for apartheid, was also an important player in the
Some Afrikaner clerics publicly denounced racism and preached equality for all races. Perhaps the most prominent was Christiaan Frederick Beyers Naude, whose father ironically was a founding member of the Broederbond. He led the way in opposition to racially motivated Church politics and rejected wholly any theological basis for apartheid. He was consequently ostracized by his own community and banned by the Nationalist government. After stating his commitments and beliefs in a proclamation to the World Council of Churches, he was forced to resign from both the Broederbond and the Dutch Reformed Church. This gained him recognition internationally and his profile was raised by those opposing the apartheid regime locally. With Christianity forming the backbone of the education system people such as Naude were portrayed in my school years as traitors of the state. The governmental ‘banned’ status, as applied to both Naude (banned in 1977) and Mandela (banned initially in 1952), meant that their images and beliefs could not be published, or appear in any school texts.

Christian religious education was a compulsory part of the school curriculum, yet even members of the Jehovah Witness congregations were viewed as far left wing as they refused to participate in school cadet programs and undergo national service. There was also a large number of clerics from English backgrounds who gained the attention of the security police and were labeled as enemies of the state due to their preaching of sympathy and justice for all, irrespective of race. These clerics, although opposed to Nationalist government policy, were not portrayed in the same radical light as Naude, whose links to the Broederbond and Afrikaner nationalism exaggerated the perception of extremism by his own culture.

The Church, led by the liberal clerics and an upsurge in Pentecostal multi-denominational congregations, did however pave the way for the acceptance of all race groups to gather under one roof for worship, particularly from the 1980s onwards. Whilst many were still unable to attend school or play sport together, the Church finally offered some respite from apartheid principles. This was however not the case for all churches as some were still adamant on having a white only congregation right up until the dismantling of apartheid. From my perspective it was mainly due to the stance adopted by some of the ‘traditional’ churches such as the Methodist
and Anglican, coupled with the efforts of committed individuals such as Naude and clerics like Bishop Desmond Tutu, that religious reform actually occurred. I do not believe it was high on the agenda of the National government.

**A diversity of education systems in South Africa**

It is difficult to accurately comment about the general education system in South Africa under apartheid for many reasons. Just as my perception of it is undeniably tainted by my life-views and prejudices, the perceptions of it by others would be influenced through their experiences of one of many individual systems that all existed as components of a bigger, generalized system. These had differences in significance and impact depending on one’s racial classification. Separate systems were not merely divided by geographical boundaries (for example between states), but instead were supported by different agendas directed at different race and socio-economic groups, and financed on different scales. This aspect is stressed in the 1992 National Education Policy Investigation (NEPI): The Framework Report and Final Report Summaries (1993), which states:

> The present state system of education can best be described as a system of systems, linked together not by any broad educational vision, but rather by the structure and ideology of apartheid (1993, p.155).

The first state education system was established in 1910 for whites only. All other race groups were not officially catered for until after the legislation of apartheid. The Bantu Education Act (No.47, 1953) was arguably the most influential in creating disparity between whites and blacks and their access to education. It led to the establishment of a separate Black Education Department with separate curricula suited to what the government deemed appropriate to the needs of Africans in society (essentially unskilled labor). It was however much earlier than 1953 that those classified non-white were excluded access to white schools. As far back as 1892, the Franchise and Ballot Act placed restrictions on education and financial means for races other than white. The Extension of University Education Act (No.45, 1959) prevented black students from enrolling in universities without specially granted permission from a cabinet minister. Besides inequalities in access to education, at school level there was clear inequity in funding and resources. Naicker (2000) makes clear that:
The fiscal allocation in terms of race, where “white” education enjoyed more funding, resulted in wide-scale disparities with regard to all aspects of education. This included: quality of teacher training, level of teacher training, resources at schools, location of schools, support materials and almost every aspect of educational delivery (2000, p.1).

These aspects were also illuminated by the NEPI of 1992, where it was proclaimed:

State provision of curriculum resources is discriminatory and unequal, with the most obvious differentiation being in terms of race and region. Texts, as with other resources, are provided according to a per capita funding scheme which remains race-defined. Most black schools have few texts, no science laboratories, and often no basic equipment for teaching subjects such as woodwork. In rural areas, problems of access to curriculum resources are compounded by inefficient delivery systems (1992, p.27).

The different education departments were designed by government bodies whose objectives included suppressing certain classes in preparation for a predetermined secondary role in society and the economy. The apartheid government ensured whites were afforded better opportunities and groomed for selected positions of ‘power’ and ‘importance’. As earlier illustrated, it is important to view the system of education in apartheid South Africa in the context from which it developed, first from the foundations of colonialism and British Imperialism, and secondly from within the context of apartheid legislation where it further evolved with a distinct political dimension.

Apartheid legislation arguably influenced every aspect of the education system. The racially segregated education departments transcended the racial classification of students alone, to include teachers and teacher registration. As trade unions were considered politically dangerous by the State, unionism was essentially ‘banned’ (although it still existed in various forms) by the National Government for the greater part of its rule. Teachers were required to register with ‘associations,’ which were deemed less political and powerful than unions, in order to gain the right to teach.
Teacher perceptions, control over their registration, their rights and departmental expectations of them, are all contextual influences that impact on learners and their constructions. The ‘message’ that teachers convey can severely influence the perceptions of learners. This was particularly the case in what I view as typical South African school settings, where students weren’t actively encouraged to challenge the views put forward by teachers.

So why was the government suspicious of unions? There are many obvious responses to this question but in the first instance, the National Party recognized that unionism was an opportunity for groups of black people to show solidarity and stand up for rights they did not have. This was perceived as a political and security threat to the state. Secondly the government did not want to relinquish any control of economic power, which strong unions had the potential to manipulate. Another reason was the perception of union leaders by the government as militant in their approach, and the potential of unions as forums to launch political struggles amongst workers.

Early union organizers, such as Wilton Mkwayi who was later sent to life imprisonment with Nelson Mandela, highlighted the government’s perception of union leaders as major security threats, which prompted an uncompromising government response. Mkwayi, who ardently promoted socialist principles, was instrumental in trying to formalize union activity in the 1950s and was formally charged with treason in 1956. Although he was eventually imprisoned from 1964 to 1989, his treatment by the state reflected their suspicions of the political nature of unionism and its potential role in crippling a National Party-dominated economy.

As the government placed major restrictions on unionism, in many instances their roles were taken by ‘associations,’ which acted as registration boards and a voice for the workers. Unfortunately, the majority of these associations never had open admission policies. Large associations such as SAAME (South African Association for Municipal Employees) and the SATA (South African Teachers Association) were by law for whites only and were classified as non-political organizations. Policies such as this ensured that many non-white workers lacked representation in the workplace and were faced with few rights. Beyond the obvious possibilities for exploitation, the most significant effect was that certain race groups were unable to enter selected professions and trades by virtue of legislation (the 1926 Colour Bar Act prevented
blacks from practising skilled trades). This was not specific to the workplace, but extended to sporting, religious and cultural organizations. Even those people of similar religious denomination, but of different skin colour, were not allowed to worship and attend church together. This was an ironic contradiction to the ‘Christian principles’ on which the government supposedly based their policies.

The registration authorities also determined one’s right to employment. An example with a direct bearing on my life was ‘The South African Teachers Council For Whites,’ formalized through Act 116, 1976. Every white teaching graduate had to register with this authority prior to being granted permission to work in schools. It was to this body that I was affiliated on taking up my first teaching position. The same registration policies were enforced for the racial classifications of ‘coloured,’ ‘non-white’ and Indian, who all had to register with their racial-specific teacher association.

Although councils or associations were the order of the day due to government opposition to unionism, the trade union movement still managed against the odds to develop into a powerful force. In 1979, black trade unions were legalized after a recommendation from The Wiehahn Report, a result of The Wiehahn Commission which was established in 1979 to examine industrial relations in South Africa. Unions uncompromisingly demanded certain rights in an effort to empower non-white workers. Whilst this threatened the security afforded to some members of the white workforce, they gradually began to realize that if the rights of all workers were supported and represented, it would be mutually beneficial.

The large number of immigrants from the United Kingdom, particularly after World War Two, also had a major impact on the workforce and their knowledge of the power of unionism was noted by fellow workers and the state. The union movement slowly developed in the face of government opposition and by the time of the establishment of the Congress of South African Trade Unions (COSATU) consisting of 33 unions in 1985, unionism had become firmly entrenched in the workplace. Workers fiercely supported the role of unionism in opposition to government policy. Security police closely monitored many shop stewards and the vehement opposition by the National Government to unionism was undoubtedly racially motivated. Due to the state’s perception of unionism as a political force, the government remained opposed to the granting of too many rights to the unskilled (predominantly black) workforce right up until
the demise of apartheid. During this era, the skilled workforce suffered similar strict governmental control as the unskilled workforce and teachers were no exception.

A move towards reformation and the emergence of new education models

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Shortly prior to the dismantling of apartheid many education reforms were introduced. De-restricting admission policies was possibly the most notable of these changes. In 1990, the government introduced different school models, each with a different status and degree of financial independence (or dependence) often determined by their geographical positioning and student drawing power. In some respects the new proposal was still in essence a ‘racial model,’ as admission was still largely dependent on the school’s location and determined by the parents of the school.

This aspect is well summed up by Naidoo (2005, p.23) where he states that the Education Minister at the time, Piet Clase, ‘set forth a new admission policy for White state schools in which White parent communities could retain the status quo or adopt one of three models which would give them control over admissions,’ essentially ensuring white schools were not absorbed into the new Department of Education.

This important milestone in education occurred when I had personally already finished school and university. Prior to these suggested changes, the government had relaxed its stance on desegregation in private schools, resulting in private schools accepting increasing numbers of black students, although high school fees still made private schools the domain of the wealthy (Vally et al., 1999, p.82). Other changes in access to ‘white’ education included an increase in the number of private education providers. As ‘the private provision of education grew in South Africa (as elsewhere) in response to the inability or unwillingness of state schools to admit black children’ (Vally et al., 1999, p.82), the economic benefits to schools associated with private education contributed to paving the way for further reforms on open admission policy.
In the state sector, the new system of ‘controlled desegregation’ was first announced early in 1990 by the Department of Education and Culture with implementation due the following year. I have vivid memories of the paranoia that these reforms evoked in certain parent and teacher bodies. I also remember attending emergency staff meetings and parent information sessions where concerned individuals raised every imaginable scenario. These ranged from anxiety about perceived increased levels of violence in schools, to concerns about potential decreased levels of academic rigor. In reality the reforms only meant changes to admission policy. There was no formal provision for curriculum changes taken into account and teachers were offered no support to better understand and deal with different cultural and language issues in the classroom. From my perspective I believed it to be a ‘make-shift’ solution that was entered into with little commitment to true reform.

I recall conversations with colleagues who were skeptical of the changes as being no more than mere token gestures. As most of the black population lived in separate townships away from the white urban areas and were mostly dependent on public transport, many of the ‘white’ schools were logistically inaccessible because of the vast distance separating home and school. This also impacted on democratic decision making by parents who would now have more representation on school governing bodies under the new proposals. Even a decade after the adoption of the changes, access by many disadvantaged students and parents to urban schools still remained an issue. Hofmeyer (2000) in consideration of the impact of the new policies on governance, clearly states:

As parents now live far from many urban schools it has also become increasingly difficult for schools to involve parents meaningfully in school governance and activities (2000, p.17).

Secondly, many of the schools under the new policy were allowed to determine their own fee structure. This in itself was elitist. As a result, it was a typical case of the ‘rich schools getting richer and the poor getting poorer’ as most disadvantaged race groups couldn’t afford the new school fees implemented in some schools. So what were the options under the new proposals?

The government offered schools four options or models under the new system, Model A, B or C (and later Model D came into being).
In Model A (privatization option), the school could close and reopen as a private school run by a management committee or board of governors who could dictate admission; in Model B (state school option) the school remains a state school under a management committee within the DOE regulations and with open admission; and Model C (semi-private/semi-state option) was a state aided school run by the management committee and principal (Naidoo, 2005, p.23).

In hindsight it is obvious that the choice of remaining as a full state school (Model B) was directed at predominantly ‘black’ schools or schools in low socio-economic areas with a high dependence on government funding. Model A had been designed with private schools in mind, whilst Model C fitted schools in privileged white areas.

Full state schools had the greatest dependence on the government for funding, with Models A (private schools) and C having the least dependence on the government. Models A and C were given total control over all assets, fee structures, employment and admission policies. In Model C schools the government only paid the salaries of the teachers and handed over all the assets to the school governing bodies (management committee) or school councils who also could appoint teachers and set school fees (Naidoo, 2005, p.23). Almost overnight some schools inherited assets worth millions of dollars and were allowed to use this as equity for loans, which further generated a huge income in interest after investments portfolios were set up. New admission fees as structured by the school also ensured a generous income. Schools in essence became businesses with profit as a motivation and money as a marketing tool. New clients were attracted by offering better resources and facilities and poorer schools simply could not compete.

By determining their own fee structure (justified by the school due to the facilities they offered) many Model C schools remained the domain of the privileged class, but did start integrating more race groups into the classroom as indicated by Hofmeyer (2000).

Before the early 1990s only independent schools were allowed to be racially integrated, but since Model C schools admitted black pupils and open admission policies were instituted racial
integration has steadily increased in public schools and in general decreased in independent schools (2000, p.15).

Naidoo (2005, p.3) does point out that although not everyone could access these schools, on the positive side there was potentially more parental involvement in governance and that they were legally allowed to admit all race groups was an important step forward.

State schools and Model B schools catered for the less fortunate and in order to maintain a reasonable level of enrolment had to alter fee structures to suit the demands of the needy. As these schools were dependent on the government for funding, so too did they lose autonomy in a number of other areas. Many teachers perceived to be high achieving, were attracted to (or offered positions at) the Model C and private schools, with better resources and facilities, and fewer social and welfare problems often associated with schooling in the lower socio-economic areas. Rural schools were at a great disadvantage having to draw from broader and more sparsely populated areas with high unemployment and low-income levels. Facilities were generally poor and basic amenities were often absent. In some rural areas there was no electricity or running water and many teachers were unqualified, with few resources to support their programs.

Towards the end of 1992 many white teachers faced potential job loss when there was a substantial cut in the budget for white education. This resulted in intensive political debate and negotiations between teacher organizations, the Education Department and the government. The ANC even presented an ‘alternative budget,’ but this too drew criticism because of its main concern with primary education and the suggestion of ‘user charges’ (school fees) which critics believed would disadvantage certain sectors (Curtin, 1993, p.1). In the end it was decided that all schools who were Education Departmentally controlled would become Model C unless parents specifically voted against it. A consequence was fees in these schools increased in order to maintain staffing levels, improve resources and student teacher ratios. This made many existing Model C schools even more exclusive and further out of reach of the masses. However, some of the ‘poorer’ Model C schools benefitted from increased enrolments from all race groups.

These changes ought to have also brought about significant changes to both curriculum content, and policy determining curriculum implementation, yet new legislation regarding curricu-
lum policy at this time was negligible. This aspect is raised in the National Education Policy Investigation (NEPI): Curriculum Project of 1992:

The apartheid curriculum developed separatist strategies for dealing with diversity of race, language and culture. Since the mid-1980s, segregationist policies have begun to crumble and no coherent curriculum policies have developed to replace them (1992, p.24).

In my experience, schools generally did not respond to the new cultural challenges very well. Curricula remained largely unadjusted, bridging programs for different cultures weren’t very evident, employment of teachers was still racially based and professional development of teachers to cater for these changes was almost non-existent. I remember clearly raising this very issue in a staff meeting. After having a few ‘non-white’ students admitted to my classroom for the first time, I suggested that as teachers we were now faced with new challenges to offer substantial, contextually relevant and worthwhile programs to other races and cultural groups, and that we needed professional support in this regard. The unfortunate response was very racist and unsympathetic. It was basically suggested that if I felt that strongly about the needs of a race group other than my own, I should rather explore the opportunities of working within one of those education systems!

These experiences illustrate that there are many and diverse contextual constituents that influence how individuals and collective groups construct knowledge and reality. These contextual forces impact differently on different people depending on further layers of additional contextual constituents. For example, an individual who might share a number of contextual similarities with another, might construct a social issue very differently purely due to the political affiliations or racial views of their parents or teacher, the school where they are enrolled, the resources available at the school or even the expectations of the teacher. This demonstrates that broader contextual categories are inadequate on their own in informing effective education praxis. Instead, as practitioners if we require deeper understandings of how learners construct social issues, there is a need to delve deeply into the notion of context, to expose exactly what forces impact on the meanings and connections learners assign in these constructions, and essentially from where they were generated.
The South African example shows that factors as diverse as the structure of education departments, racial classification, the ‘model’ of school you attend, the era in which you are schooled, political affiliation, gender, location and religion all impact on how certain issues are constructed and perceived. If we are serious about a transformative EE, then the complex forces that constitute certain contexts require comprehensive understanding and consideration. These understandings can inform which pedagogical approaches and strategies can be used to best equip learners to make sense of their constructions and critically reflect on existing structures with the aim of transforming activity that impacts negatively on long-term quality of life. A deeper examination of context can be used as a device to bring about these understandings.

*Environmental Education in South Africa*

*The general state of affairs in education during my experiences*

Although documents from this era are sometimes difficult to source as the present government has attempted to remove remnants of the apartheid system, some formal school syllabi and texts are still available. Nevertheless, from the available documentation, personal experience and government policy, it is possible to build a profile of EE during this era.

I acknowledge that my experiences, interpretations, meanings and perceptions are prejudiced by many factors and I also acknowledge that one’s memory does not always accurately reflect events. Govinden (1996, p.216) reminds one that through telling a personal story it ‘does not mean that we are able to set the past in clear and unambiguous terms,’ but that ‘memory is indeed the weapon not just to reconstruct the past, but to interpret it.’ It is with this in mind that I believe I can ‘show the intersection between the individual and the larger forces of our history,’ to provide valuable insights into my EE experiences (Govinden, 1996, p.215). Although I have endeavored to present an objective reflection of EE in South Africa during my time as a student and teacher, it is through a subjective lens. To support my memory it is perhaps best to document briefly some key events in the evolution of EE in South Africa.

Steyn (2002, p.127) divides significant environmental activity in apartheid South Africa into three eras: 1972 – 1982, characterized by conservation issues relevant to white people; 1982 – 1988, where environmental non-governmental organizations (ENGOs) began to also focus on environmental concerns of other race groups, and 1988 – 1992 where a more radical environmental activism focused on activities harmful to both humans and the environment. Steyn (2002, p.127) also emphasizes that ENGOs in the early stages were apolitical but generally did
cooperate with the government and had almost exclusive white membership. She goes on to state that the period from 1972 – 1982 also saw a significant growth in EE with ‘environmental conservation incorporated into syllabuses of some black, coloured, Indian and white schools’ (2002, p.133). Internationally this too was a period of growth in the field with the Belgrade Charter (1975) outlining a basic structure for EE and UNESCO holding the Intercontinental Conference on EE in Tbilisi in 1977.

Steyn (2002, p.137) views the period between 1982 and 1986 as significant as it was during this time that many ENGOs admitted members of all race groups and changed their focus to ‘reflect the political and social realities of the time.’ 1982 also saw the establishment of the Environmental Education Association of Southern Africa (EEASA) which in turn led to The Council for the Environment setting up a workshop in 1984 where a national policy for EE in South Africa was developed. This was in essence the genesis of the White Paper on Environmental Education, later published in 1989, which was the first time the state had driven the inclusion of EE in the curriculum (Le Grange, 2002, p.84). Steyn (2002, p.141) views the government adoption of an official EE policy and the inclusion of EE in school curricula as two of the most important events of this era, together with swing towards community-based ENGOs projects. But what was the orientation of the curriculum? The earlier focus on the natural environment and nature conservation shifted to include a social dimension, which particularly in the South African context, also meant a political dimension. Lotz-Sisitka (2002) suggests that attention began to be afforded to socially critical EE curricula during the 1990s:

Socially critical orientations became popular in South Africa in the 1990s, particularly in environmental education, and were viewed, along with other versions of critical theory (inspired by neo-Marxist philosophies of consciousness), as possible routes to empowerment and emancipation (2002, p.100).

This era was marked by a general trend across education where ‘educational transformation in South Africa in the early 1990s came to overall the old apartheid education system’ (Msila, 2007, p.2). The political changes in the country impacted on education and policy-making became more participatory, accountable and transparent with the National Education Coordinating Committee initiating the National Education Policy Initiative (NEPI) which was to make policy recommendations to the government (Lotz-Sisitka, 2002, p.103).
Another important development was the establishment of the Environmental Education Policy Initiative in 1992, who was to be instrumental in the development of EE policy alternatives for South Africa’s formal education sector (Le Grange, 2002, p.84). This then paved the way for the inclusion of EE in the 1995 Government White Paper on education and training. In Principle No. 20:22 of the White Paper there is specific reference to the inclusion of EE across all levels and programs so that all South Africans could enjoy long-term quality of life. Le Grange, (2002, p.84) also emphasizes that in the bill of rights of the new Constitution (Constitution of the Republic of South Africa, 1996) it includes the right of every citizen to a healthy environment, and that other key policy documents stress the importance of sustainable development. In the Report of the National Environmental Education Programme – GET Pilot Research Project (Lotz-Sisitka & Raven, 2001, p.2) it states that over a period of time ‘the relationship between social justice and ecological sustainability became clearer,’ and that in the new Constitution ‘it linked environmental issues to human rights and social responsibilities,’ and probably most importantly, ‘the Constitution signaled a national commitment to environmental action.’

In the year following the release of the 1995 White Paper, and prior to the implementation of the new Constitution, I left South Africa. So what was in fact the state of education in the country prior to my departure? The following profile generated by the findings of the NEPI (1992) into curricula in South Africa best sums up the state of education during my employment in the country:

South African teachers work in authoritarian and bureaucratic education departments which largely exclude them from curriculum decision-making. The teachers are receivers, not the creators, of the curriculum. Overloaded syllabuses and prescribed texts further restrict their autonomy. This in turn has discouraged classroom initiatives. Black teachers in particular work in a highly politicized environment, and face large classes with poor resources. Authority relations have broken down in many schools, with the result that relations between teachers and students are often hostile. Visible indicators of success (or failure), such as examination results, offer little encouragement to teachers and their students. Other indicators of assessing effective learning and teaching have not developed under these
circumstances. Such a situation means that teacher-centered classroom activities predominate (1992, p.25).

To add further substance to the above, the policy investigation concludes with the following disturbing statement:

This report has argued that the curriculum is not a neutral or technical account of what schools teach; it is a contextual and historical settlement which involves political and economic considerations as well as competing interests. The curriculum itself embodies the social relationships of its historical context. The racial divisions and identities of apartheid permeate the current curriculum in all its aspects: gender discrimination prevails; decision making procedures are undemocratic; and in a context of profound historical inequalities, current resourcing policies favour whites, who already are the most privileged group. There is little doubt that fundamental changes in curriculum policies are needed to improve the quality of education for the majority of South African students (1992, p.88).

South African education from my experience has evolved not only from extreme political legislation, but also from philosophies and ideologies entrenched in sectors of society stemming from a complex history of power struggles between different cultural groups. The impact of this on education is significant and as Naicker (2000, p.1) points out, ‘ideological interests cannot provide adequate instruments of knowledge.’ The recurrent attention afforded to fundamental pedagogics within CNE, as an education that ‘promoted race, class and ethnic divisions,’ instead of ‘common citizenship and nationhood’ (Naicker, 2001, p.1) no doubt contributed to the continuity of inequalities within society over a significant period of time. The legacy of apartheid will no doubt take generations to dissolve into a level where equal access and opportunity will be reflected across all society. EE in South Africa has not escaped the many deeper complex contextual forces that were generated by political legislation.

As in most countries EE in South Africa is a relatively new entity, especially in its incorporation of social and political dimensions, as opposed to its earlier focus on conservation and the natural environment. Earlier EE models in South Africa were also characterized by a lack of
consultation in policy-making, and a lack of consistency in their implementation. In 1998 Janse van Rensberg and Lotz (1988) stated:

Although the practice of environmental education in South Africa has a history of at least 14 years, past policies were limited by a lack of broad participation and [by the] top down fragmented curriculum development approaches followed by the previous education departments prior to the 1994 elections. In 1992 an Environmental Education Policy Initiative (EEPI) was started to encourage a broad, participatory process of curriculum development for environmental education in South Africa (1998, p.1).

South African teachers worked in highly politicized environments with curricula expressed in terms of content and outcomes as emphasized in the NEPI reports (1992, p.25), it is difficult to accurately assess whether EE as it existed in the apartheid era was in any way ‘depoliticized’ due to the general adoption of an applied science perspective across the social sciences. The emphasis on the ‘pure’ sciences and content driven curricula resulted in little relevance being placed on subjective interpretation, or the encouragement of critical thought and understanding. This had implications for the social sciences and EE, at least up until the 1990s, where as earlier stated, Lotz-Sistika (2002, p.100) suggested an emergence of socially critical EE.

During my time of schooling, tertiary study and employment in South Africa, it is my perception that positivist principles dominated education policy and implementation at both a bureaucratic and local school level. Some of the reasons for the continuities of positivism as a political ‘by product’ have been previously mentioned. Subject content and the manner in which it was presented were undoubtedly tainted by its political purpose of reinforcing apartheid principles. Although it can be argued that all education is by its very nature political, it is not always consciously so. EE in apartheid South Africa too must have been subject to the same complex contextual forces as education in general and these require consideration. Some of the factors or forces influencing EE for example might have included:

- EE as a tool to enforce (or reinforce) specific political agendas.
- Legislation as an influence on certain social and environmental perceptions.
- EE in South Africa as a politicized or depoliticized enterprise. (Arguments have been presented, for example Robottom (1987b:83), that under a traditionally positivist regime EE remains a depoliticized enterprise, in that the field is not viewed within a conceptual frame that includes policies.)
- EE in South Africa as having an inherently political nature because of the government’s ideological agenda.
- The political motivation behind the quantity (or lack thereof) and content of EE in core syllabi.
- The absence of political and social dimensions in earlier models.
- The lack of participatory policy making in the apartheid era.
- The possible lack of recognition by the apartheid government of issues such as crime, violence, HIV and poverty as environmental concerns, with emphasis instead on the natural environment.

EE is not easily measurable and all of the issues raised above potentially play a role in further developing our understandings of the context in which EE manifested in South Africa and the role it had in influencing learners’ constrictions of environmental issues.

There were no doubt political forces that impacted on EE in South Africa, but there too were a multitude of other contextual factors that are also of relevance. I have argued that curriculum content tainted by political ideologies does not best represent the interests of the learner. In South Africa, as different race groups were exposed to dissimilar content and resourcing, environmental perceptions generated in the formal school setting too must have differed between learning contexts. As environmental issues or concerns were themselves not wholly the driving force behind environmental inquiries, it is questionable as to whether the orientation of the curriculum recognized the differing environmental needs of different race groups, and whether it in any way addressed these needs. This in itself did little to promote understandings of environmental issues within specific contexts.

The image thus generated suggests that EE in schools and the general community during the early apartheid era was generally a neglected field, at least up until the 1970s and the more prominent emergence of NGEOs. In my experience environmental activity was mostly driven by individuals with a specific personal interest, and not by education policy. From what I re-
member of personal experiences it appeared to mainly focus on content, and clearly lacked an ‘action’ component. The reasons for this are numerous and can be argued from a number of perspectives.

A sociological perspective

Perhaps the most rational (yet not condonable) of these arguments would be sociological, based on the poor social conditions large numbers of the population were forced to live in. With the focus more on survival than noticeable aesthetics or long-term environmental effects, many people paid little attention to their personal impact on the environment and were offered little support in schools to assist in their understanding of environmental issues. It is also important to bear in mind as Lotz-Sisitka and Janse van Rensburg (2000, p.13) point out, that in South Africa, ‘there is a history of nature conservation efforts which failed to take broad social concerns into account, and alienated many people from environmental movements,’ and that ‘people who were symbolically and physically divided among racial lines undeniably experienced environmental issues differently and were unequally affected by them’ (2002, p.14).

In particular, many non-whites had grown up in areas with poor infrastructure, and that as many had been alienated from their environments (for example due to the government’s ‘homelands’ policy, restrictions on land ownership and specific living locations), this had contributed to a lack of concern and environmental awareness (Lotz-Sisitka and Janse van Rensburg, 2000, p.14). Rural communities also had less access to formal schooling and weren’t as exposed to the media on the same scale as their white urban counterparts. As education and media (alongside other aspects such as family and socialization) play a major role in informing society, this lack of access often translated to legitimate ignorance of human environmental impact in their contemporary setting. Although cultural and intergenerational knowledge plays a role in instilling environmental values and behaviors, it is difficult to translate these to different contexts such as those one might have been alienated from, or from a context that might have been severely influenced by political ideologies or western culture and expectations.

Significant numbers of disadvantaged people also lived in squalid conditions, with ‘more than half the population living below the breadline’ (Lotz-Sisitka and van Rensburg, 2000, p.22) even after the change of government, and blatantly more disadvantaged than most whites. This had implications for the environment. As a clichéd example on a basic level, issues such as litter and refuse made no sense to members of the population who were dependent on discarded
rubbish for survival. Individuals in this setting did not perceive rubbish as a problem, but rather as an asset. However the mere acceptance of this social condition, which arguably existed as a result of political legislation, did not legitimize its existence.

The reality of the situation was that not all children had similar access to education, let alone access to specific environmental programs. The importance of education in developing environmental awareness, sustainable life choices and understanding is clear in EE literature. Lotz-Sisitka & Raven (2001, p.2) emphasize that EE processes are an important part of making sustainable life choices and that they are ‘critical for enabling learners to contribute actively and competently to sustainable development.’ This is also the view of UNCED (1992):

> Education is critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision-making. Both formal and informal education is indispensable to sustainable development (UNCED Agenda 21, 1992).

In the absence of formal education, socialization plays a large part in the development of environmental perceptions. Peers, siblings and extended family all play a role in informal education, and in the South African setting where for some people mere survival in an unjust society was the main priority, this was more likely to take precedence over issues such as custody of, or concerns for, the natural environment. In this scenario, becoming ‘street wise’ or avoiding hunger was more important to the individual than concern for becoming a ‘responsible’ citizen. As a consequence, some young people for example born in urban surrounds or in black townships, had a limited traditional or contemporary understanding of the importance of the delicate, complex relationships and interrelationships existing between humans and the natural environment. This had implications for long-term quality of life, as environmental understandings and issues clearly held different meanings to different sectors of the population, depending on the context in which these constructions evolved.

**A perspective from my personal education**

Ironically, even though I had good access to formal education as a student, I believe some of my teacher’s attitudes were probably more detrimental to my environmental perceptions than
had I not been in school. Although presently I look back in disdain at some of the lessons I was faced with as a student, I experienced some teaching practices that in hindsight were so bizarre they bordered on the humorous.

I remember returning from a rugby game one day with a teacher pointing out a classic example of soil erosion to a group of (urban, white, male) students. He explained to us that the ‘stupid kaffirs’ were ploughing the land in the incorrect manner. No mention was made to why such practices might be detrimental to the environment, the fact that the cattle might have been underfed and weak, that alternative methods existed, or that certain population groups had limited access to land. No reasons were offered as to why the practice was perceived as being incorrect, and there was certainly no promotion of any other understandings to explain such actions. The only message we ‘learnt’ was that ‘kaffirs’ are ‘stupid’ and that the practices of white farmers were superior. From my memory this was a fairly typical type of explanation from my teachers at the time. Even more extreme was the fact that most students readily accepted the teacher’s explanation. The above anecdote reflects the lack of acknowledgement of any positive influences local indigenous knowledge might have played in the agricultural practices of early white settlers, and it also reflects the white, elitist explanations that were so often given to school students.

Whites with their greater access to land were generally portrayed as ‘experts’ in agriculture and of course the wealthier were equipped with the latest machinery and technology. Little opportunity was afforded to indigenous communities to share their knowledge or meanings of natural environment phenomena. O’Donoghue and Janse van Rensburg (2002) affirm this misrepresentation of native people:

Throughout African history indigenous peoples have been seen as primitive, loin cloth-clad noble children of nature who have somehow ‘lost their roots.’ This developing message underpinned the notion of apartheid; separate but equal because different, and to be respected, but seldom treated so (2002, p.11).

In support of this notion, O’Donoghue and Neluvhalani (2002) claim:
The colonial histories of southern Africa are full of cases where indigenous peoples and practices were regarded as barbaric or uncivilized against the more enlightened precepts of colonists (2002, p.22).

O’Donoghue and Neluvhalani (2002, p.22) also claim that indigenous insightful knowledge, referred to as ‘intergenerational common-sense wisdom,’ was often overlooked and marginalized with outsider perceptions transforming it to suit their constructions of reality. It was these elitist white, colonial, apartheid influenced constructions that many of my teachers presented to us as students. Limited acknowledgement was given to the importance of the rich contextual knowledge indigenous peoples were able to contribute to our learning environment.

Elitist and racist views such as these merely reinforced the perception that knowledge was some ‘white commodity’ with the behaviour of indigenous groups simply blamed on not having the same level of intelligence or knowledge as whites. I now have a better understanding of how my individual history has shaped my construction of reality. My perceptions as a young white male were different to those of both many whites and non-whites, but these differences do not mean either is right or wrong. As in other facets of life these perceptions also applied to the environment. Tragically, throughout my school and university life, I did not explore opportunities to enhance my understandings of why certain people or groups acted specifically in the manner that they did. I do not believe I was actively encouraged to look at others’ points of view, but due to contextual forces impacting on my constructions of reality, I accepted one-dimensional explanations of events and actions. To me this was a major flaw in my schooling, or possibly just a reflection of my character. It was only when I reached university that more emphasis was placed on critical thought in my education, but in hindsight it was still insufficient to substantially alter my thinking, as education is but one force impacting on individual constructions and behaviors.

As there are undoubtedly many contextual factors that influence constructions, perceptions and actions I cannot only blame education for my environmental attitude or for my attitude in general for that matter. But perhaps if I as a student was offered more critical skills and pertinent issues to consider, I would have gained a better understanding of differing perceptions, behaviors and socio-cultural constructions of environmental issues. In hindsight I believe I should have had the opportunity to explore specific social issues that were real to my existence and the
social structures that determined the quality of life of other South Africans. Questions such as the following might have deepened my understandings:

- Were many of the environmental behaviors whites perceived as being detrimental misunderstood due to the lack of emphasis placed on understanding these actions within the socio-historical context in which they developed?
- Did disadvantaged people who found themselves in this position simply not care about their environmental impact due to the adverse social conditions they were exposed to?
- Were disadvantaged people possibly ignorant of this environmental impact due to a lack of either formal or informal education? Or, as advantaged whites did we place too much emphasis on formal versus informal education without acknowledging the importance of indigenous environmental knowledge?
- Can their (the disadvantaged) actions be viewed as a political statement against an oppressive regime?
- Did the long-term effects of daily environmental neglect simply slip into obscurity due to the disadvantaged short-term survival commitments?
- Was there a lack of commitment from government and education agencies to deal with environmental issues?
- Was there a hidden political or economic agenda behind policy legislation?
- Why were some environmental concerns well policed (in some areas) and yet in others neglected?
- Did the censorship laws and foreign sanctions of the apartheid era have a role to play in these issues or the public’s perception of these issues?
- Did EE curriculum developers (with their elitist views) have a distorted perception of environmental problems within the country and therefore adopt a biased focus?
- Was EE simply overshadowed by ‘more important’ issues such as the HIV/AIDS epidemic, population growth rates and crime?
- Were education institutions more concerned with training people to meet the economic needs (as determined by political agendas) than giving them skills to appreciate and protect their environment?
- Are future EE programs going to be overshadowed by other pressing issues relating to addressing inequalities resulting from the legacy of apartheid?
As international trade embargoes and sanctions had also been imposed on South Africa during the apartheid era, could these sanctions have forced the country to indulge in certain environmental practices (particularly related to mining, manufacture and insufficiently researched industry development) to support the economy, which might not have been followed in different circumstances as many products were unable to be imported from abroad?

The above certainly could be more comprehensive and I acknowledge it would have been a difficult task for me to provide reasonable responses, even at this stage of my life. However if I had been encouraged to explore such issues at the time, I would have generated a better understanding of the complexities influencing the construction and constitution of environmental issues and as a result appreciated the reasoning behind the diversity of perceptions regarding environmental issues.

**Missing parents and family structures**

Family structures at this time were also different between race groups. Typical white families lived as a patriarchal unit in reasonable conditions with access to work and schools close by. Male black parents were however often forced to migrate to industrialized cities from rural areas in search of work. Those in regional centers faced non-lucrative manual labour or menial positions within business if they were lucky, while rural dwellers often worked for a white farmer in return for basic accommodation and food. In more isolated locations, a rural existence meant the need for self-sufficiency from the land. The system of ‘homelands’ also had an impact. Lotz-Sisitka and van Rensburg (2000) remind one that:

> Land management suffered in homeland areas because men were working elsewhere, on white farms or in the mines, and the women and the elderly staying behind to eke out a living and care for the children were culturally not allowed to make decisions. _And_, it is estimated that between 1950 and 1980 some 1.4 million people were forced off commercial farms and another 90 000 were pushed out of, or migrated from towns other than the 11 metropolitan areas of SA (2000, p.20).
Forced work migration of many males to support an extended family, coupled with the long and low paid working hours of females fortunate to secure employment as domestic workers, meant that in many cases children had little time in the company of their parents. The effects of this on the socialization process cannot be ignored. Barraza (2001b) reinforces the important role of parents in child development:

The role of parents is crucial for the physical, cognitive and affective development of every child. Parents are the first models that children have, and therefore it is at home where knowledge and understanding of the world start… Parents transmit their values and beliefs to their children and pass them on from generation to generation. They have the main responsibility for their education (2001b, p.240).

This suggests that many of the underprivileged black children’s intellectual development was at risk, as a disproportionate number grew up in the absence of parents and had less access to materially rich stimulating home environments due to their financial disadvantage than their white counterparts. As I argue that knowledge is contextually generated, this has significant implications in the South African context. Barraza (2001b, p.240) goes on to cite a number of authors who also stress the vital role of parents in cognitive development and the transmission of values and beliefs. These include Palmer (1995), who ‘emphasizes that knowledge is acquired before the influence of formal education programmes, and [that] it is the home that provides it.’ Also acknowledged is Medina (1989) who claims that the parents of today are the stewards of the world’s natural resources and will determine the quality of the future environment. The impact of absent parents as role models and providers of knowledge cannot be underestimated, and a teacher, sibling or grandparent simply cannot always easily fulfill this role effectively.

The unique social circumstances in South Africa generated by the apartheid system undoubtedly played a role in the pre-school development of children, which was often further reinforced by the inadequacies of racially motivated school curricula upon entering the classroom. There is research, for example Gray (1991), which indicates that the acquisition of cognitive abilities in children is determined by the socio-economic climate within which they grow up. The impact of apartheid on the developmental processes of children is not easily measurable, but it is
reasonable to suggest that it would have impacted more negatively on the disadvantaged race
groups than the whites in a number of ways. My concern is the implications this had for the
environment and the developing perceptions of environmental issues, specifically from a for-
mal schooling perspective.

My personal schooling only reflects the experiences of the white, gender biased, elitist and pri-
ileged minority, which only represents one minor perspective and as Lotz-Sisitka and van
Rensburg (2000, p.14) point out, ‘people who were symbolically and physically divided along
racial lines undeniably experienced environmental issues differently and were unequally af-
fected by them.’ However as my professional career progressed I had the opportunity of work-
ing in more diverse multi-cultural and multi-racial settings. To better understand the complexi-
ties of contexts impacting on students and their generation of knowledge, it is probably appro-
priate to examine my own teaching practices and the environments in which I worked during
the apartheid era to illuminate the diverse contextual influences that impacted not only on my
constructions, but also on those who I taught.

My entry into the teaching profession: Stirling Primary School

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<th>South Africa</th>
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General profile of the city in which the school is situated

On completion of my military conscription, I started my formal teaching career at Stirling Pri-
mary School. Although the school had employed me since I graduated from university, I first
had to endure compulsory National Service before I formally entered the profession.

One year prior to me being offered employment by the school, a new South African constitu-
tion was passed (Republic of South Africa Constitution Act 110 of 1993). This constitution still
did not allow blacks to vote for the government who were responsible for legislating policy,
but instead divided parliament into three chambers. These consisted of the House of Assembly
(with 178 white members), the House of Representatives (with 85 coloured members) and the
House of Deputies (with 45 Indian members). The constitution endorsed compulsory education
for whites and coloureds, but not for blacks who at this stage accounted for over 68% of the South African population.

The school where I started my teaching career is situated in the city of East London in the Eastern Cape province of South Africa. The city is on the N2 national main road that runs from Cape Town to Durban which, as an important economic route, carries high quantities of road traffic. East London is also an integral rail, sea and road transport link between major cities. The city lies between the two former independent homelands of the Ciskei and Transkei. Arguably the homelands were a failed experiment by the National Party government to grant self-rule (theoretically) to groups of indigenous peoples, based on the predominant culture within specific geographical boundaries.

Although not overly rich in mineral wealth, this part of South Africa is home to a healthy motor vehicle, textile and farming industry incorporating both agriculture and stock. There is a lot of industry in the area and the region also is home to some of the country’s most well known schools, many of which have produced some top international sportspersons, academics and politicians. The city also hosts a satellite campus of Rhodes University, whose home base is Grahamstown, approximately 170km away. As the name suggests, the white population is predominantly English with a significantly lower Afrikaner population than its inland neighbours. Historically a number of German settlers have also had an influence in the area with small nearby rural towns having names such as Hamburg, Stutterheim and Berlin.

Despite the traditionally English background of the white population, during apartheid the area was predominantly a National Party stronghold. A small but aggressive opposition from liberal whites aligned to the Progressive Federal Party and the United Party, prior to the establishment of the Democratic Party, did however exist. Perhaps the most famous anti-apartheid activist from East London was Donald Woods, the editor of the Daily Dispatch newspaper. Woods was later forced into exile abroad after publicly opposing apartheid policy and supporting the rights of political activists, such as the late Steve Biko. As many of the city’s white inhabitants came from predominantly liberal English backgrounds, there was perhaps less support for extreme right wing politics than in other similar sized conservative communities.

I am not suggesting that these elements didn’t exist but rather that they weren’t as evident as in some other inland settlements. I do however recall some ridiculous political rallies led by Eu-
gene Terrablanche, a white supremist who it seemed used Hitler as a model for his behaviour, dress sense and public speaking style. I experienced an occasion where he, together with armed men in khaki uniforms, rode on horseback through the city on their way to address supporters on the evils of communism and the ‘swart gevaar’ (black danger) at the Orient Theatre in East London. Their insignia resembled a swastika and it was proudly emblazoned on their military style fatigues. These events were the exception more so than the norm.

But in the context of high levels of violent crime, some ex-policemen and ex-soldiers formed private security companies who tended to be a little ‘trigger happy’ when confronting alleged burglars, particular if they weren’t white. The face of one man in particular, Louis Van Schoor, is still clear in my mind. He shot and killed an estimated 39 people before police acted on his indiscretions (McGreal, 2002). Two of his victims died in the school in which I worked, as Van Schoor was contracted to the school for security purposes. He was a heavily bearded man with ‘control over fate and fortune.’ Some members of the black population called him ‘White Jesus,’ as coupled with his appearance they believed he controlled one’s destiny. I also have vivid memories of his unoccupied car being blown up by who I guess opposed his actions, in a car park not far from where I lived! However, shortly before I left South Africa he was sentenced to a lengthy jail term.

The city has a very diverse population encompassing many cultures, races and religions with broad distinctions existing among numerous socio-economic groups. These divisions are still generally racially bound, with the average white family enjoying a much higher standard of living and better access to services than others. On the outskirts of the city exist two major settlements, which in the apartheid era were zoned for ‘non-white’ race groups. The bigger of the two, Mdantsane, is South Africa’s second largest township. Accurate population figures of non-white townships during this era are difficult to establish as residents were not counted as being part of the greater East London census statistics. The predominant indigenous cultures in the township are from the traditional background of isiXhosa speaking Bantu people, who historically occupied the region prior to colonization. They also belong to the greater tribe into which Nelson Mandela was born, and presently form one of the largest cultural groups in contemporary South Africa. Besides their original conflict with the white British settlers of 1820, they have historically been in conflict with the Zulu, who generally occupy the North Eastern parts of South Africa, known as Kwazulu Natal.
The second township, Duncan Village, borders on the predominantly ‘coloured’ suburb of Buffalo Flats. It is situated slightly closer to the CBD of East London and its population generally consists of black and mixed descent or ‘coloured’ persons. The township is affectionately known as ‘Drunken Village’ due to the high number of ‘shebeens’ (informal drinking establishments) in the area. A large part of the settlement consists of shanty type shacks with very small living quarters highly susceptible to fire and the weather. Although these townships have their own basic infrastructure, residents are almost entirely dependent on the city for all their services and employment. They are in essence places to sleep with poor access to water, electricity, medicine and education. Violent crime rates are still excessively high with general living conditions squalid; a legacy of apartheid.

In my time as a resident of the city the geographic location of these townships ensured vast transport and time commitments to get to the city workplaces, forcing this large portion of the unskilled workforce to travel to and from work in the dark, in some cases even in the middle of summer. The city itself is situated on the Buffalo River, home to a relatively large harbour. The city also hosts a number of substantial factories encompassing both the textile and the motor industry. A vast quantity of grain is also shipped from the seaport. Prior to the dismantling of apartheid, most managerial and executive positions in these industries were predominantly held by whites with the black population forming the bulk of the unskilled labour force. In contemporary times, with a policy of affirmative action in place, these disparities are slowly changing, yet most unskilled labour is still drawn from the townships.

*Education in the city of East London*

During the time of my employment the white residential areas had a broad range of primary and secondary schools that traditionally serviced the privileged classes. Within the system there was also a number of schools which catered for the lower end of the socio-economic scale which geographically was closer to the black residential areas. In the ‘black’ and ‘coloured’ residential areas there were schools who catered for these race groups but they had significantly less resources, qualified teachers and financial support from the government than their white counterparts, as earlier stated.

Changes in the education system in the early 1990s saw varying levels of support drawn from, or offered to schools. This was all against the backdrop of ‘rationalizing’ the school system and opening admission policies in a governmental initiative to create more parity within the system.
resulting in the A, B and C model schools as outlined earlier. These changes were more applicable to state schools than private schools, as private schools previously had more autonomy than their public counterparts. This included their own admission policies, but extremely high tuition and boarding costs put many of these schools out of reach of the average family.

The broader context of my early teaching career
The first school I taught at, Stirling Primary, was a Model C school. It was set in an upper middle class suburb, and with its own swimming pool, buses, tennis courts, rugby fields, gymnasium, lecture theatre, library and computer laboratory, it was an attractive option for many families. It had an enrolment of nearly 1000 pupils in the early 1990s. When the school became classified as a Model C school, school fees were approximately R1000 a year per student, which generated approximately R1000 000 a year in revenue (a significant amount of money in the South African context in 1991). This was a substantial budget considering all salary costs were covered by the government. Further revenue was also obtained from other sources such as advertising hoardings, after school care, music and swimming lessons etc. The school therefore acquired huge assets, which allowed further security for loans for additional extensions and projects. In essence the school was very financially sound and offered excellent facilities. This attracted ‘quality’ pupils and teachers and was a sought after place for employment. It was in such a climate that I worked as a teacher for a number of years.

As previously stated the school first employed me in 1984 but I only took up residence as a permanent teacher at the beginning of 1986, as I had my initial two-year fixed military commitment. This commitment continued for another two years on completion of the first part of service during school holidays, until I had amassed the required 720 post initial service days expected of every capable white male. The option not to do conscription, as taken by some religious or conscientious objectors, was a lengthy jail term or enforced exile abroad. As I had no access to a foreign passport and was not willing to be jailed, conscription was my choice although it contravened my personal principles.

An examination driven system
It was in the summer of 1987 that I began teaching permanently at the school. At this stage the syllabus was determined by the Cape Education Department who developed the educational policy and content. The schools in the Cape Province generally taught towards the final matriculation examination with policy and syllabus implementation reflecting this tradition. With all
the years of schooling essentially leading towards one final external examination, the system was examination driven with more emphasis on content learning than understanding and critical thought. The ability to reproduce learnt facts in an examination context was generally rewarded with good grades. As success in this type of system was measured by ultimately obtaining the ‘Cape Senior Certificate,’ the ‘end result’ was prioritized at the expense of the ‘learning journey.’ This had an immediate and obvious bearing on teaching and learning practices.

Depending on one’s final examination results, the matriculation certificate gave one access to university or other tertiary institutions, or alternatively was a ‘ticket’ to the workforce. Those leaving school prior to obtaining this certificate had little chance of securing a university tertiary qualification with the exception of those who later managed university admission through a mature age exemption. The very academic focus present within this type of system had a number of weaknesses, including little preparation in traditional schools for the apprenticeships and trades available to those not following academic pathways or failing to complete their schooling. The extreme racial injustices within the system predominantly catered for specific cultures and language groups, which advantaged English and Afrikaans speaking whites. There was however a limited number of ‘technical’ schools, focused more specifically on vocational trades as a career option, but these too were racially biased in their accessibility.

A focus on academic subjects and an absence of EE

Prior to the dismantling of apartheid it was my belief that most members of the white population had a good chance of employment with a school leaving qualification such as matriculation, mainly due to systematic discrimination. As a result a lot of emphasis was placed on traditional academic subjects including Mathematics, Science, Biology, Accountancy, History, Geography and the two ‘official’ languages, English and Afrikaans. The subjects offered at most secondary schools were also very gender biased and role driven with subjects such as Typing and Home Economics geared specifically towards girls, as women traditionally did not have as much representation at management or supervisory level as did males. Woodwork and Metalwork were mostly accessible through Technical Colleges that were traditionally the domain of boys. These subjects were also not viewed as holding the academic value afforded to subjects such as Languages, Mathematics and Science.

‘Specialist’ subjects such as Art, Music and Computers (in some instances referred to as ICT or Learning Technologies) appeared during the mid 1980s, but EE was assigned only a minor
place in amongst the rest of the curriculum with no identity of its own. This was particularly

My experience from this era (pre-1989) was that attention afforded to environmental issues at
classroom level was largely dependent on the efforts of passionate individual teachers, more so
than on any push from the government. As a result few environmental issues were examined
and little emphasis was placed on understanding such issues or environmentally responsible
management. The integration of environmental topics into other subject areas was also relative-
ly uncommon. Consequently, it was only in subject areas such as Science and Biology where
environmental topics were considered. Even then little attention was paid to the actual constitu-
tion of environmental issues and their role in sustainable living, future quality of life and eco-
nomics. Few students were equipped with understandings pertaining to their own local envi-
ronment. From my experience it appeared that there existed a general state of apathy amongst
students towards positive environmental action.

Environmental topics that were covered generally leant towards recognizing different catego-
ries or characteristics of fauna and flora, agriculture and to a limited degree, nature conserva-
tion. For example, learning how to label the parts of a flower was considered a reasonable
science lesson with an environmental slant! (When I was in primary school I do however recall
having an ‘environmental table’ in my classroom where students could place an object of ‘en-
vironmental interest.’ We would then have the opportunity to discuss the item with other class
members.)

During the first part of my teaching career senior staff emphasized high academic standards,
measured by content retention and regurgitation in a formal examination setting. In traditional
terms we were led to believe that ‘effective teaching’ was actually occurring in most white
schools as the majority of students achieved their matriculation certificate. The perception of
what constituted effective pedagogy in that era was then quite different to my present under-
standing of it. However, in my research I came across a document that I found to be very inter-
esting and contradictory to the teaching styles I had experienced. The document, ‘Department
of Education Guide for the teaching and examination of Biology in Standards 8, 9 and 10 (Pro-
vincial Administration of the Cape of Good Hope, 1974) it mentions that relating learning to
everyday experiences is important (1974, p.13), as is the facilitation of class discussion and
evaluation (1974, p.5), and it clearly states in section 2.2.2.1:
The formal lecture-type lesson must preferably be limited to an absolutely essential minimum and must only serve as a method of imparting basic unknown fundamentals so that individual study by the pupils themselves can be proceeded with (1974, p.11).

This was truly at odds with my experiences where ‘lecture-type’ lessons were the norm. The document does however state that the emphasis should be on ‘the imparting of factual knowledge’ (1974, p.4), which truly was representative of my experience.

Even in my own university training as a teacher years later, I was not exposed to pedagogical approaches that encompassed transformative learning or the importance of the sophisticated skills required for critical thought/action and preemptive action. Instead the focus was on the transmission of factual knowledge where awareness of certain issues was assigned more importance than the understanding of such issues. Contemporary emphasis on understanding, values, critical thinking skills, civics and citizenship, individual expression and multiple intelligences, attitudes, empowerment of individuals, problem solving skills and reflection, were not considered integral aspects of effective pedagogy. The reasons for this are numerous and I am not sufficiently informed to comment on why they might not have been deemed essential skills in that era. But the point I am making is that as a new teacher I was limited in my professional practice by my perspective on life, my training and by the system within which I worked. This was of course reflected in my dealings with EE, just as in most other subject areas.

**Governmental influence on EE at Stirling Primary School**

In my time at the school not only was EE policy and practice lacking in prominence, but so too was emphasis on other issues in society that in hindsight were equally important. I was also unclear as to what exactly constituted an environmental issue and often struggled with environmental concepts and as to whether social issues were environmental issues or not. This was not unique as Lotz-Sisitka and van Rensburg (2000, p.14) point out that ‘many South Africans (and indeed policy documents) understand ‘environment’ in a narrow, at times naïve, often technicist manner, and fail to adequately recognize the complexity of environmental issues.’ This had repercussions for my classroom. For example, I did not easily equate social and health concerns with environmental concerns, as in my schooling emphasis had been placed on the
natural environment and conservation issues instead. In hindsight, resultant health risks from associated poor environmental conditions are indeed the ingredients for what can be labeled an environmental issue.

As I myself was uncertain of many aspects relating to the environment and which elements were direct results of political legislation, I was probably reluctant to pursue any professional dialogue in this regard although it captivated my interest. As I also did not feel sufficiently knowledgeable in the field, I did not actively purvey my limited knowledge within the classroom. In an effort to try and make more sense of my interest in the field, I enrolled at the University of South Africa for an off campus degree in Sociology. I thought this would assist me in making better sense of social issues in South Africa and to better equip myself for exploring ‘sensitive’ issues in the classroom.

Although I have stated that EE was not highly prioritized at Stirling Primary School I do understand some of the many factors that determined this. However, understanding does not excuse or legitimate a particular practice. I believe that in some instances environmental issues were not recognized as such and therefore not afforded attention, and in other instances politics masked many environmental concerns for the benefit of the government. Compounding on the collective white apathy towards social issues, was that associated problems arising from designated black townships and homelands with poor infrastructures were often viewed as ‘their’ problem not ‘ours.’

These views cannot be blamed on ignorance nor are they excusable, yet they were widely held and impacted on attitudes and practices in education. Politically it was beneficial for the government to instill attitudes in white society which blamed other races and cultures for the existence of certain adverse conditions. Squalor in the townships was not portrayed as a result of apartheid, but almost as a result of their own doing. As another social example, although many whites abused alcohol, alcoholism was not viewed as a problem amongst whites, but rather a problem associated with blacks who ‘wasted their money’ on liquor which then led them to crime. Unfortunately these misconceptions were readily accepted amongst many whites. Schools and the education systems played a role in reinforcing these misconceptions. School texts bolstered the belief of white and colonial superiority. Even when blacks began to be allowed to attend traditionally white state schools in the late 1980s many of the texts remained the same.
Although widespread attitudinal changes slowly emerged after years of civil disturbance, it wasn’t until 1996 that the South African Schools Act (Act no.84 of 1996) and National Education Policy Act (Act no.27 of 1996) formally set out new norms and standards in education that addressed some of these issues. It was only in these acts that it was stated under The Bill of Rights in the Constitution of the Republic of South Africa, 1996 (No.108 of 1996): ‘Everyone has the right (a) to a basic education, including adult basic education; and (b) to further education, which the state, through reasonable measures, must make progressively available and accessible’ (Section 29(1),1996, p.6). The same Act also allowed for compulsory education for all races and a uniform system in the governing, funding and organization of schools. Historically however legislation does not always translate directly to attitudinal and behaviourable changes as evidenced in many of the practices I witnessed during this time.

My time at the school was even prior to the above-mentioned Act being legislated. In 1985 when I started my employment the curriculum was based on the constitution of 1983 which was, ‘built on a powerful historical legacy of racial segregation, provincial control over white education, and the philosophy of Christian National Education,’ where it was also tainted by racism, sexism and void of any principles of equality and equity (NEPI: Curriculum, 1992, pp.3,8).

**Brief overview of broader educational policy whilst I was at Stirling Primary School**

The National Policy for General Education Affairs Act of 1984 promoted racial differentiation in education bodies that allowed for 19 different education departments within South Africa. This was a very complex structure developed to further the principles of apartheid and give little decision-making responsibility to race groups other than white, and then only on a distinctly hierarchical and autocratic level. This, in addition to the other contextual forces influencing my constructions and practices at the school, gave me as a young teacher very little control over what and how I taught.

briefly from a legislative point of view, parliament was structured into two main divisions which were categorized into ‘general affairs’ and ‘own affairs’. Within this system the Department of National Education, which determined general curriculum policy for all, syllabus content and examination, certification and standards, fell under the ‘general affairs’ sector. ‘Own affairs’ included three further divisions based on race classification. These catered for
white education (House of Assembly), coloured education (House of Representatives) and Indian education (House of Delegates), which all had the task and responsibility of implementing curriculum policy (NEPI, 1992, p.10). However the ‘black’ school population which was the biggest of all racial groups fell under ‘general affairs’ and included a further 10 separate education departments based on geographical areas as determined by the National Government. In essence the 1984 General Education Affairs Act allowed for all decision making bodies to reside within the white dominated education structures, while token power was given to the non-white departments whose sole responsibility was to implement curriculum policy. They had no say or input into the curriculum content and policy formulation. The white education bodies determined the national curriculum and syllabus revision on both a national and provincial level without drawing on the knowledge, interests, cultural aspects or expertise from other race groups.

This aspect in particular is highlighted in the findings of the 1992 NEPI:

> Officials and administrators in the white hierarchies dominate the curriculum development process. There is no formal representation of major interest groups such as corporate capital, organized labour, and other groups in civil society. Instead the process occurs outside the public domain, as an in-house and largely non-participative activity...Since the locus of authority for curriculum development lies in the hands of white structures, its philosophy of CNE is able to permeate the curriculum (1992, p.13).

The CNE Act of 1967 had blatantly allowed for the syllabi, textbooks and examination questions to reflect the philosophies and perspectives of Afrikaner nationalism. The only bodies who had relative independence from curriculum decision making bodies were some of the private schools, but traditionally these schools were very expensive and economically out of reach for most people.

It was in this context of racial differentiation, elitist white privilege and gender bias that I taught daily under a somewhat autocratic male principal. The gender bias evident in the core curriculum was also reflected in the general running of the school with many decisions clearly
emphasizing white, male middle class values. There was an emphasis placed on male sports, males dominated leadership positions and there was little input considered from young female teachers in the daily running of the school. As the curriculum was generally content driven with overloaded syllabi, little scope or opportunity existed for teachers to exercise initiative and provide any reasonable alternatives to traditionally accepted practice. Those teachers who did promote environmental initiatives were often viewed as ‘too alternative,’ ‘politically motivated tree huggers’ or in some extreme cases even Socialists or Communists. This was partly due to environmental campaigns generally being dominated by young liberals opposed to apartheid.

**Stirling Primary School structure and organization**

Stirling Primary School consisted of three main departments; Pre Primary, Junior Primary and Senior Primary. Traditionally males did not teach in the Pre and Junior Primary departments, which in itself illustrates gender as a contextual force and the potential impact it might have. The first class I was given was a Standard Three class (students in their fifth year of formal schooling), where at this level the Department of National Education (1998) outlined the following aims:

> In the primary phase…the subject content covers a wide field so that the pupils receive learning experiences in a broad spectrum of disciplines. In addition, pupils have to acquire the important skills of reading, writing, and arithmetic as well as perceptual and physical skills and suitable attitudes such as punctuality, neatness, diligence, conscientiousness, honesty, and many others (1988, p.91).

From my memory, little attention was placed on constructivist teaching approaches, elaboration of skills or concepts. The timetable was very prescriptive and structured around compulsory, core ‘academic’ subjects. The curriculum was dominated by the two ‘official’ languages (English and Afrikaans) and Mathematics. Following in importance, were the subject areas of General Science, History, Health Education and Geography. (In the early 1990s, a third language also was accepted as part of the core syllabus). History had both a European and a South African history component and geography was largely focused on the broader South African context with little or no local or regional component.
In addition to the compulsory subject areas, the following were listed as optional, with four of them required to be included in local school curricula: Art/Arts and Crafts, Arts Education, Family Guidance, Handicrafts, Needlework, Youth Preparedness, Media user Guidance, Gardening, Library and Religious Instruction. Schools falling under the other race statutory bodies also had the choice of African Language, Indian Language and Cultural Studies.

I have previously given an account of some of the political factors that caused EE to lack significance in the formal classroom, but how did the internal formal structures influence its profile at the school? Environmental Studies was officially listed in the Junior Primary phase (first three years of schooling) syllabus but was largely neglected at senior primary level (years 4-7). The huge emphasis on content and set examinations rather than understanding and learning processes, gave little scope for teachers to include an environmental component in their daily teaching or to integrate it into other subject areas. As the system relied on a formal examination system of assessment even at primary level, teachers had to ensure they covered all the necessary content for examination purposes. As a result teachers were very reluctant to move away from the very prescriptive subject content, which essentially meant that EE became a largely neglected area from Standard Two onwards. If EE was given any attention it was generally by teachers who were passionate about the field and were often forced to address the topic outside the formal time-table. As schools in this era didn’t opt for an integrated approach, there were specific boundaries which all fields of study fell into.

A typical structure of the time-table during my time at Stirling Primary School was prescribed as follows:

<table>
<thead>
<tr>
<th>Subject</th>
<th>Periods weekly</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>10</td>
</tr>
<tr>
<td>Afrikaans</td>
<td>8</td>
</tr>
<tr>
<td>Mathematics</td>
<td>7</td>
</tr>
<tr>
<td>Science</td>
<td>3</td>
</tr>
<tr>
<td>History</td>
<td>3</td>
</tr>
<tr>
<td>Geography</td>
<td>3</td>
</tr>
<tr>
<td>Physical Education</td>
<td>1</td>
</tr>
<tr>
<td>Art</td>
<td>2</td>
</tr>
<tr>
<td>Subject</td>
<td>Frequency</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Music</td>
<td>1 period weekly</td>
</tr>
<tr>
<td>Woodwork</td>
<td>2 periods weekly</td>
</tr>
<tr>
<td>Computers</td>
<td>1 period weekly</td>
</tr>
<tr>
<td>Scripture</td>
<td>1 period weekly</td>
</tr>
</tbody>
</table>

Each week would consist of approximately 42 periods of approximately 40 minutes. In addition to this there was a lunch and recess break, sport, assemblies and other ‘normal’ daily school activities.

Comparatively, the National Curriculum Statement published in 1997 three years after I left Stirling Primary, suggested the following time allocations listed in percentages of learning/teaching time:
- Languages – 25%
- Mathematics – 18%
- Natural Sciences – 13%
- Social Sciences – 12%
- Technology – 8%
- Economic and Management Sciences – 8%
- Life Orientation – 8%
- Arts and Culture – 8%

This structure allowed for a school to offer a broader range of subjects that fell within the above categories and were suited to the context specifics of each school. This model was more conducive to the inclusion of EE than the previous timetable structure. Whether this new structure translated into a higher focus on EE in specific schools than before is questionable, and I cannot find clear documentary evidence to support or reject this notion. Bear in mind though, that the South African Department of Environment Affairs had already published the White Paper on environmental education (1989) and the EEPI had between 1992 and 1995 ‘introduced a participatory policy-making process to environmental education curriculum’ (Lotz-Sisitka, 2002, p.97), which should have significantly enhanced the attention afforded to EE at a local school level. Teachers from that time that I have since spoken to, suggest that as teachers were so entrenched in policies and practices that had been the norm for many years, there was a
reluctance to move from a system they deemed successful and was perceived to cover the ‘core’ aspects of primary education.

As illustrated the formal time-table, the structure did not make any specific allowances for EE, nor did the subject area have any ‘subject status’ of its own. This is not unique nor only typical of that era, as this is also the case in some present models. Even in the contemporary international context, environmental bodies are still fighting for EE to be afforded an identity of its own in formal school curricula. (More reference to this is made in Australian case study section of this thesis.) This is not to suggest that EE ought to be taught as a separate entity instead of integrating it across all subject areas, but rather that EE be viewed in inter and multi disciplinary terms as a legitimate and essential subject within the formal curriculum. The main difference in the contemporary setting is that a high emphasis is now placed on an integrated curriculum with less specific boundaries between subject areas, which is distinctly different to the organization of the curriculum in my time at Stirling Primary.

Also of interest in my time at Stirling was that any environmental concerns acknowledged or publicized by government departments still weren’t addressed in the formal school setting. In my memory, a culture of discussing such events certainly was absent. From my recollection environmental matters weren’t afforded major attention in the media either, as the media was largely dominated by political events. This conflicted with the global trend at this time, of growing public awareness and environmental activity, and with many high profile environmental catastrophes making global news headlines.

So in essence any informal EE that occurred in my school certainly wasn’t a response to any apparent risk or issue identified by the public or government, but rather simply limited information ‘about’ an aspect of the environment that a student or teacher broached within the classroom. We were also discouraged by the school hierarchy to raise some environmental issues as they might not have been in line with the government’s agenda or stance on a particular issue. During pre-service teacher training I did not explore a deeper understanding of environmental issues or how they could be addressed from a pedagogical perspective, although a course entitled ‘Social Studies’ was covered in my Higher Education Diploma. The ‘pure’ sciences, governed by hypothesis testing and objective data collection, were viewed as more academically and scientifically legitimate than the social sciences and as such were the focus of most attention.
This highlights the focus on outcomes and set examination results, at the expense of the learning processes and understanding, which was very typical of South African curricula at that stage. As generalist teachers we taught across all subject areas, and did not emphasize understanding, or encourage research, reasoning, response and interaction with the local community and environment. We also neglected the development of contextual knowledge and left students with a need to memorize and retain excessive amounts of content with little conceptual understanding and meaning assigned to their learning. This approach did nothing to assist in their understanding of the relationship and interrelationships that exist between humans and nature. It offered no generation of skills to prevent and solve potential environmental problems and is also probably largely to blame for some of the acute environmental crisis that South Africa now faces.

*What EE experiences were students exposed to after leaving Stirling Primary School?*

Most students I taught went on to Stirling High School. In the secondary phase during the 1970s and 1980s at the school, formal compulsory examination subjects, non-examination subjects, nor the optional examination subjects included any specific environmental focus. The closest that alluded to the field of EE and possibly allowed for some integration were; Agriculture and Natural Science (optional examination subject in Standards 6 and 7), Geography and General Science (compulsory examination subjects in the junior secondary phase), Biology (optional matriculation examination subject) and Gardening (a non-examination subject). It was up to the individual commitment of teachers to try and integrate a ‘form of EE’ into these subject areas where possible. Time constraints, lack of teacher commitment, lack of recognition by education bodies (until the 1989 White Paper on environmental education) of the importance of the subject area, the examination structure and little social pressure espoused by the media, all did little to help this cause.

The mere existence of one formal external matriculation examination (usually provincially determined) clearly illustrates the emphasis on examination-based outcomes and the neglect of contextualized curricula. In hindsight, the skills held by school leavers were only suitable to a very narrow career path which suited the government’s political agenda. The government structured the education system to reinforce these roles to maintain white superiority through control of essential business, industrial and academic institutions. EE arguably did not fit in with this agenda, nor those of the military in which all white males were to spend significant time.
Although a clear relationship exists between environmental factors and economics, this was apparently deemed an insignificant area of study in educational terms judging by the focus of the curriculum during the majority of my time as a student and teacher in South Africa. There was no perceived benefit for the government to have students skilled in understandings in this field, especially at the expense of the traditionally accepted ‘important’ academic subjects. What then did the syllabi address or deem of higher importance?

The Cape Education Department covered a broad geographic area, yet offered only set texts for subject areas irrespective of where one lived. With most emphasis placed on basic literacy and numeracy skills supported by ‘text book teaching,’ addressing broader issues specific to local areas was easily neglected. Although environmental themes were informally addressed in some of the science, biology and geography texts, they usually only played the role of discussion generators that often never went much further than that. Informal EE discussions usually were subjective interpretations which appeared to ‘contradict’ or differ significantly from the scientific and development paradigms typical of many texts of the time. Environmental issues when considered were defined and explained in physical, biological and chemical terms. The political, social and economic determinants of these issues weren’t considered. As environmental themes weren’t integrated into other subject areas students were unable to place environmental issues into social, political or economical contexts. Jackson (2003, p.97) suggests that in instances such as this, students do not understand, ‘who has created them and why, and who will have to solve them and how.’ As a result, students were firstly not encouraged to probe environmental issues, and secondly not equipped with the skills to question them, nor were they provided with strategies to prevent or solve them.

It was however not just the structure of the curriculum, but also the implementation thereof, that influenced students’ environmental constructions. As teachers we did not practise constructivist approaches to teaching, which further limited students in their input into learning. This had further negative repercussions on how students viewed and responded to social/environmental issues. As students weren’t encouraged to criticize or challenge existing structures and behaviors, there was a continuity of accepted practices. This is in conflict with a transformative education that I argue for in effective EE praxis.
To what extent did EE actually exist?

In some texts basic environmental themes were touched upon but not explored in any depth. As texts were an integral part of the learning culture in a content based system, student environmental perceptions were often determined by the politically subjective viewpoints advocated by the generally politically motivated texts.

Beyond the one dimensional perspectives offered in government developed texts, the mere inclusion of environmental themes in texts alone, is however also problematic. Some research shows that simply covering a topic from a textbook is not as effective as practical experiences relating to the topic. Barraza’s (2001a) study examining environmental attitudes and the parent’s role in the development of values, found that the way children learn at school had serious implications for their environmental awareness. Although her study focused on Mexican and English contexts, it still has relevance to the merits or flaws of ‘textbook teaching’ as was typical in South Africa. Barraza (2001a) found:

Results in this study reveal that Mexican children who receive information from a single textbook as a major source, without having the opportunity to experience the concept, do not retain as much information as the ones who assimilate the information by doing a practical activity (2001a, p.251).

This is particularly pertinent to my experience at Stirling Primary where students seldom engaged in any practical environmental activity. This further compounded their inability to potentially solve local environmental issues as they had no practical involvement in them, which compounded their lack of understanding of the constitution of them.

Teachers were generally employed as professionals with little ongoing in-service training to further develop their teaching skills. If a teacher was perceived as doing a ‘satisfactory’ job by the school inspector and the students were achieving favorable results in the examination system, then little support was offered as it was not deemed necessary. Personally I felt more pressure from the leadership team to achieve good results with sporting teams than on the development of improved classroom practice, student understandings or improved academic standards.
Although in hindsight I assumed I had a sound and responsible attitude towards the environment this did not transcend into my teaching or actions in any educative capacity. My limited environmental activity outside the school was also insufficient to influence my students or colleagues in any positive way. My classroom practices were not innovative, but were in essence conservative, traditional and lacked environmental values, which as Barraza (2001a) suggests is not conducive to effective EE:

Only creative and interested teaching will help children to develop the knowledge, skills, values and attitudes for a better understanding and appreciation of, and a sense of caring for, the environment. Acquisition of knowledge could help develop a positive attitude towards the environment, but only if it is oriented towards environmental values (2001a, p.251).

The most evident weaknesses in the EE offered at Stirling can probably be viewed on a number of levels. Firstly policy did not dictate sufficient attention afforded to the subject area; secondly as many teachers themselves did not have an interest or affinity to environmental issues and themes, the topic was largely neglected in the classroom. Thirdly teachers were not supported through PD or encouraged by the school to provide opportunities for students to develop sound environmental values, attitudes, knowledge, understandings and ultimately actions. And, most importantly there was no consideration of further exploring how students constructed their knowledge and reality. In essence, professional learning focusing on how students learn and factors impacting on the learning process did not exist. Encompassing all of the above was the fact that teachers’ environmental perceptions had been shaped by their own socio-historical backgrounds, often totally different to those of their cliental, particularly those of the increasing number of indigenous students in the 1990s.

But what of the immediate learning context? Little or no cognizance was taken neither of the context in which the learning occurred nor from where it evolved. When environmental themes were covered they held little relevance to the immediate environment of the students and local community and certainly were not context specific. Instead they evolved from the constructions of one small minority of the population with a unique socio-political background, generally presented through politically biased texts or the media, which was subject to censorship. The students were simply exposed to fragmented knowledge about certain environmental topics
with no real contextual relevance. (In general, discussions about environmental issues were often generated by events that had been reported in the media, such as severe weather or oil spills, which in most cases had not even occurred in the country.)

I have already considered some of the underlying causes for this approach to EE. Clearly insufficient policy and curriculum support within a content and exam driven system were major contributors, but there too were many other complex influences. Rote learning and an emphasis on knowledge transmission also played a role. But contextual aspects, particularly those historical-politically driven were probably the biggest determinants. Perhaps a focus on a deeper understanding of environmental, political, economical and social issues would have contradicted with the aspirations of the government, where one agenda was the maintenance of a cheap subservient black work force. The inequalities generated by the apartheid regime undoubtedly were reflected in the fragmented education systems and more directly in our teaching during the examined era.

Welcome changes in South African education policy

When the new post-apartheid national curriculum was developed for South Africa, the Minister for Education at the time (1999-2004), Professor Kader Asmal, clearly acknowledged that inequality and poverty were still a major concern in the educational experience. There had however been significant steps made in South African EE from my time at Stirling Primary up until ‘Curriculum 2005,’ the new curriculum framework. These included the ANC’s policy framework for education and training (1994), the 1995 White Paper on Education and Training, the Environmental Education Policy Initiative (1995), the Environmental Education Curriculum Initiative (1996-2000), the Learning for Sustainability Pilot Project (1997-2000), and the National Environmental Education Project for General Education and Training (2000-2002), which all ‘represent major national curriculum intervention in environmental education curriculum development work’ in South Africa (Lotz-Sisitka, 2002, p.98).

Kader Asmal himself played a pivotal role in establishing the National Environmental Education Programme (NEEP) which was instrumental in ‘facilitating co-operation amongst different school-based environmental education initiatives in the country’ (Lotz-Sisitka and Raven, 2001, p.5). In an effort to redress previous aspects of neglect the new curriculum attempted to interweave the goals and values of social justice, equity and democracy across the curriculum. More than a decade after the establishment of a truly democratic republic, how does the Re-
vised National Curriculum Statement compare to policy guidelines at the time of my employment at Stirling Primary? In the preface to the Revised National Curriculum Statement (2002) it states:

This curriculum is written by South Africans for South Africans who hold dear the principles and practices of democracy. It encapsulates our vision of teachers and learners who are knowledgeable and multi-faceted, sensitive to environmental issues and able to respond to and act upon the many challenges that will still confront South Africa in this twenty first century (Department of Education, 2002, p.1).

This contrasts with the traditional subject discipline approach I was encouraged to adopt. The shift towards an outcomes-based education makes it possible for aspects such as indigenous contextual knowledge to be included in the curriculum, the development of key competencies and for more emphasis on constructivist approaches. As the nature and needs of the country have significantly changed since the dismantling of apartheid, so too has the education system adapted to meet these needs. Assumptions of the outcomes-based system of education include:

- All children, irrespective of background, can learn and succeed. (This contrasts significantly with principles favoring success of one racial group over another.)
- Success breeds more success, with students developing on from existing levels of attainment.
- Individual schools can apply conditions to encourage success that meets the needs and interests of the students.
- Outcomes-based education is grounded in constructivist epistemology.
- Students are not seen as passive recipients of knowledge, but rather play an integral role in their learning with the teacher as coach/facilitator.
- Small group work is favored as opposed to whole class instruction.
- Levels of attainment are utilized instead of intellectually graded ‘streaming.’
- An integrated curriculum replaces a subject and discipline-based curriculum.
- Students can negotiate and have input into a context specific curriculum.
Within such an approach traditional outcomes (specific content and subjects), transitional outcomes (encompassing all higher order competencies) and transformative (bigger picture; playing a role in authentic contexts) are all able to be focused upon (Chadbourne, 2006). This allows for exit outcomes to focus on authentic and contextual real life roles, where positive contributions can be made to specific local communities, an aspect virtually non-existent in my teaching at the time.

This was possibly due to the system I operated under being dependent on a high level of formal assessment where it would be difficult to accurately assess those attributes afforded attention in an outcomes-based education. (This is not to suggest that all outcomes-based education models in their entirety are necessarily conducive to effective EE, as some outcomes-based systems still emphasize behavior modification at the expense of critical thought and understanding.)

At Stirling Primary assessment was very competitive and stressed individual ranking and competition. There was a limited range of assessment types, as those other than summative or formal examination were deemed to lack academic rigor. Assessments also seldom included analytical skills where students were able to demonstrate conceptual understanding and a range (multiple) of intelligences. Assessment certainly wasn’t criterion-based, instead the emphasis was on an examination on a set day, at a set time of the year, which only measured a limited performance by an individual. This system would not have taken into account a multitude of contextual factors influencing student responses to set questions in a specific moment in time.

Such models made it difficult to relate knowledge to real life situations and favored those best able to ‘regurgitate’ rote-learnt knowledge. This had little bearing on the essential life skills of problem solving, communication, decision-making, value-judgment, social interaction and civic responsibility. As a result students often found it difficult to think on a global level, or to consider international perspectives, even on completion of their formal schooling, which also had repercussions for potential involvement in local matters. I believe that many white school students in the apartheid era generally developed linear constructions of reality, which together with their family’s access to cheap labor enabling their domestic chores to be done for them, and a confidence of knowing they had better access to the job market than their non-white counterparts, their perception of being superior citizens was continually reinforced. A reliance on domestic labor which made life easy for them, contributed to many of my peers being inept
at some basic life skills and promoted a sense of apathy to involve themselves in basic community action groups and related activities.

As South Africa had been ostracized by the international community for its racial policies, it was also very difficult for young school leavers to travel and experience cultures and communities outside South Africa. This accentuated narrow life perspectives, which essentially suited the government’s aspirations of reproducing citizens who fitted well with apartheid ideology.

*A new direction for both me personally and the country*

During my last year at Stirling Primary the final pillars of apartheid crumbled. Extensive negotiations had taken place between the government and the ANC, Mandela had been released, and the first truly democratic elections were looming. Restrictions were lifted on where race groups could live, the country was re-admitted to international sport and the demographic profile of schools was rapidly changing.

I had just returned from an extensive trip abroad and felt I needed to move from the school where I worked. I applied for and was appointed to the Assistant Principal position at Southernwood Primary School, which was smaller than Stirling Primary with a different demographic. It still involved a large component of generalist classroom teaching, particularly at Year 7 level.

*Southernwood Primary School*

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<tr>
<th>South Africa</th>
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<th>Stirling Primary</th>
<th>Southernwood Primary</th>
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The school is also situated in the coastal city of East London. Although geographically only a few kilometers from Stirling Primary, the school had a markedly different enrolment and was in a suburb that was one of the first in the city to see those classified as non-white take up residence in a traditional white area. Cheaper housing and proximity to lower socio-economic suburbs meant a very diverse enrolment. There was a wide variety of race groups including whites,
coloureds, Indians, Asians and non-whites, as these groups were now allowed admission under new ‘school model’ system implemented in 1991. There was also a diversity of religions and language groups. Tuition in English was standard and Afrikaans was still allocated a similar time to English for formal language instruction (approximately 7 hours a week) although no students spoke Afrikaans as a first language at home. For the first time in my career, Xhosa, the predominant indigenous language of the area, was formally taught by a black colleague, for one hour a week. About 40% of students at the school were from a Xhosa speaking background yet they still had to have some formal instruction in Afrikaans, which in many cases was their third language. Although Christianity was still the basis for religious Education, the school advocated broad religious tolerance as there was a significant number of Hindus and Muslims also enrolled.

The school’s immediate geographical surrounding was still primarily white, which meant that many of the non-white students had to travel extensive distances to school. Some of the students from wealthier families were occasionally set up in apartment flats with a number of other school aged students. In some cases teenagers were given family control and responsibility over siblings and friends during the school week, with the minors only seeing their parents on weekends and holidays. This caused many welfare related issues and a tough life for some students, but families still viewed this as a better option than having their children schooled in some of the harsher conditions of the townships or in poorly resourced rural schools.

The school faced a multitude of social concerns some of which were quite unique. This affected teachers and students alike. Teachers often played the role of social workers and had to visit homes to follow up on truancy issues that developed in the absence of parents and adult role models. Many of the young non-white students also battled to adapt to a different education system that was traditionally structured to meet the needs of a white middle class. Language was also a barrier. Teachers had to make changes to the way they taught and also often ‘simplified’ information and concepts to cater for these language differences. The broad cultural differences amongst the students had a huge impact on the learning environment. Many parents had different expectations based on their own traditional values and students in some cases weren’t quite sure which codes of social behaviour were appropriate for the school setting.

Although there had been recognition of the need for policy reform, the 1995 White Paper on Education and Training (Department of Education, 1995), didn’t really translate to many
changes within my classroom at Southernwood Primary School. There was a desperate need for curriculum change to better cater for the different cultures in order that students could make more sense and take meaning from what they were taught. The implementation of the curriculum at local level simply did not meet the needs of the students. There was also a need for teacher professional development to support teachers in preparing and presenting relevant and meaningful lessons that catered for this cultural diversity, which was not funded by government. From an EE point of view, there was a desperate need for curricula to reflect the environmental context of reconstructive development and the emphasis on social justice in the country at the time, which although acknowledged in the 1995 White Paper, was understandably not immediately apparent in the classroom.

Further policy changes

I certainly do not suggest that Education policy was not a priority of the new democratic government, but rather that significant changes were subject to many complex contextual influences that impacted on the transition process. Almost immediately after the 1994 elections a national forum (the National Education and Training Forum) was set up to revise existing syllabi and establish a single core syllabus devoid of racist and undemocratic principles. In 1995, both the White Paper on Education and Training (DoE, 1995) and the South African Qualifications Act (RSA, 1995) came into being. 1996, the year in which I left Southernwood Primary to immigrate to Australia, saw the release of the first major curriculum statement by the new government. The document, ‘Lifelong Learning through a National Curriculum Framework,’ was a culmination of principles detailed in the White Paper on Education and Training (1995), the National Education Act (No.27 of 1996) and the South African Qualifications Act (No.58 of 1995), which all advocated the transformation of teaching and learning in South Africa with an emphasis on outcomes-based education as detailed earlier. As the release of this new curriculum framework coincided with my departure it had no impact on informing my teaching whilst at the school, although there was generally a culture of democracy and racial toleration very evident within the classroom, which had been absent during my time at Stirling Primary.

While the new Constitution of South Africa was only legislated in 1996 I believe the two years leading up to the legislation saw the most dramatic changes in racial attitudes amongst teachers and school children. The staff and students at Southernwood Primary openly displayed support for democracy and fundamental human rights. These were not mere token gestures and were genuinely reflected on the sportsfield and in friendships both in the classroom and at home.
Success in major sporting events around this time also played a huge role in unifying society. The national rugby team won the 1995 World Cup. Nelson Mandela was present and wore a ‘Springbok’ jersey adorning the captain’s number, which gained international media exposure. The following year, 1996, saw the national soccer team win the African Nations Cup with a team truly representative of all race groups. The national cricket team, captained by Kepler Wessels who had previously turned his back on South Africa in the apartheid years to play for Australia, also met with international success. On a social level the country was taking huge steps forward but the many years of oppression and separate development was still very evident in the noticeable gap between the privileged and underprivileged classes. This too was reflected in education. Although there had been changes to legislation and school admission policies, actual pedagogy and content had remained largely unchanged. Many students still had limited access to reasonable resources, teachers and buildings, and many individuals still lived without basic services and amenities, which were very authentic and immediate contextual forces impacting on their existence and constructions of reality.

At the school where I taught, during the ‘transition’ period towards the new curriculum, many teaching practices and textbooks were still entrenched in principles that reflected the apartheid era. For example I can clearly remember teaching Afrikaans ‘Letterkunde’ (literature) to my Year 7 students. The class was multi-aged, co-educational and consisted of students from at least 4 racial classifications, many of which spoke Xhosa as a first language and English as a second language. Afrikaans was still regarded as a symbol of oppression and apartheid, and the lessons, to say the least, bordered on being embarrassing and farcical. They were of no relevance or interest to the majority of the class and me! (The revised policy now allows for learners to learn their home language and at least one additional language from the list of eleven official languages of: English, Afrikaans, isiXhosa, isiZulu, Sepedi, Sesotho, Setswana, Tshivenda, Xitsonga and isiNdebele. This has obvious ramifications for finding suitably qualified teachers and school timetabling, but would be largely determined by regional contexts specific to different tribal cultures.)

The texts we read had blatant gender bias and colonial overtones. The native people were often cast as ‘uncultured’ or ‘uncivilized,’ and often were portrayed in the roles of slaves or servants, which as earlier alluded to was typical of CNE. With Afrikaans still a compulsory examination subject prior to the release of the Revised National Curriculum, students were constantly reminded of the political aspirations of the previous government even though the ANC had
already been democratically voted into power. In my experience and from my memory, classroom practices were still grounded in text books with ‘lecture style’ teaching practices common at primary level. Emphasis remained on content retention and an examination system essentially testing memory for facts, not understandings. This contrasted significantly with the developmental outcomes advocated in the new National Curriculum Statement (2002) which was later developed to cater for the changes in society.

During my time at Southernwood Primary School, other than the 1995 White Paper, the South African Qualifications Act (1995) which informed the Revised National Curriculum, perhaps had the most bearing and relevance to the content and implementation of curriculum. There was recognition of the need for an emphasis on critical outcomes which endeavored to develop students’ ability to:

- Demonstrate an understanding of the world as a set of related systems by recognizing that problem solving contexts do not exist in isolation.
- Identify and solve problems and make decisions using critical and creative thinking.
- Work effectively with others as members of a team, group, organization and community.
- Collect, analyze, organize and critically evaluate information.
- Organize and manage themselves and activities responsibly and effectively.
- Communicate effectively using visual, symbolic and language skills in various modes.
- Use Science and Technology effectively and critically, showing responsibility towards the environment and health of others.

The developmental outcomes for learners were listed as:

- Develop entrepreneurial opportunities.
- Be culturally and aesthetically sensitive across a range of social contexts.
- Explore education and career opportunities.
- Reflect and explore a variety of strategies to learn more effectively.
- Participate as responsible citizens in the life of local, national, and global communities (South African Qualifications Act, Number 58, 1995).
The above outcomes allowed for a much broader range of learning opportunities than those previously afforded in the earlier stages of my career. The above outcomes also complemented the Learning Areas offered in the National Curriculum Statement (DoE, 1997) published two years later of: Languages, Mathematics, Natural Sciences, Social Sciences, Technology, Economic and Management Sciences, Life Orientation and Arts and Culture. This classification allowed for the easier integration of EE into core subject areas particularly when considered alongside the above-mentioned developmental outcomes.

**Where did EE fit within the policy changes?**

The 1995 White Paper had clearly set the tone for future EE with the promotion of ‘interdisciplinary,’ ‘integrated,’ and active approaches to EE with the aim of creating ‘environmentally literate and active citizens’ (DoE, 1995, p.18). A new emphasis on challenging existing and traditional power relations was also articulated in the White Paper through the inclusion of aspects such as ‘critical thought,’ ‘questioning’ and ‘understanding:’

> The curriculum, teaching methods and textbooks at all levels and in all programmes of education and training, should encourage independent and critical thought, the capacity to question, enquire, reason, weigh evidence and form judgments, achieve understanding, recognize the provisional and incomplete nature of most human knowledge, and communicate clearly (DoE, 1995, p.18).

With particular reference to EE, the Natural Sciences learning area acknowledged that learners in South Africa had a variety of learning styles and that they have culturally influenced perspectives, an aspect clearly neglected in previous policy (DoE, 1997, p.22). Included was support for learner-centered education with learners encouraged to understand scientific knowledge as well as environmental and global issues. There was also a focus on the relationships between Science, society and the environment with outcomes including; learners being able to know, interpret and apply scientific, technological and environmental knowledge, as well as learners being able to demonstrate an understanding of the interrelationships that exist between Science and Technology, society and the environment (DoE, 1997, pp.22,23). Outcomes with an environmental slant were now not only confined to the Natural Sciences, but also included in the Geography outcomes of the Social Sciences learning area.
In addition to a new emphasis on understanding, enquiry and exploring issues, the geography outcomes also stated that the learner was required to make informed decisions about social and environmental issues and problems. Perhaps the most significant aspect with reference to the importance of context is detailed in the Department of Education curriculum overview (2002) definition of Social Sciences:

The Social Sciences study relationships between people, and between people and the environment. These relationships vary over time and space. They are also influenced by social, political, economic and environmental contexts, and by people’s values, attitudes and beliefs (DoE, 2002, p.18).

The definition goes on to emphasize that the Social Sciences are also concerned with how learners learn and construct knowledge where they are able to understand the society and environment in which they live through the development of informed, critical and responsible citizenship. The definition and outcomes of the Economic and Management Sciences also make reference to understanding sustainable growth and development, as well as the recognition of ‘skills and knowledge needed to manage human lives and environments’ (DoE, 2002, p.21).

The new curriculum certainly addressed issues that had been conspicuously absent during my teaching career in South Africa. Whereas there was clearly a need for a change in society there were no outcomes-based education principles evident within the curriculum of the school that supported this. Within the fixed syllabus model it was difficult to clearly contextualize knowledge. This resulted in learners being unable to easily relate knowledge to their immediate setting or culture. Instead learners were typically the receivers of transmitted knowledge from me, their teacher, and from my perspective. An acceptance and then reproduction of my prejudiced and biased interpretation was almost an expectation, which led to continuities in linear understandings of what sometimes were complex issues.

In this scenario the learners had little opportunity to personally interpret, make decisions, evaluate or research issues relevant to their existence. Students certainly weren’t encouraged to think critically about topics that were taught which focused on generic knowledge divorced from their local setting. This was highly problematic. It limited constructive and transformative
learning opportunities as well as promoted limited approaches to teaching. As it was easier for teachers to assess content-based learning, students were seldom required to demonstrate understanding or to critically reflect on issues that might have been immediately pertinent to their existence within a written examination.

I too was a product of the system which in part impacted on my reality. In hindsight, what I thought was ‘alternative’ to the norm in my teaching and assessment, was merely just another ‘rehashing’ of my presentation of the same contrived content. Learners were also measured against each other with a class average calculated for every subject area and sub category. This impacted significantly on students’ willingness to try and present any perspective other than what was in a formal text for fear of failing an examination. Knowledge competence was clearly documented on report cards but essentially did not reflect the student’s actual competence in a specific field of study.

Even in my last year of teaching at Southernwood Primary School, when environmental issues were explored it was often on a superficial level. For example, if as a class we were engaged in an environmental theme, students typically would have had to prepare an ‘anti-litter’ poster or orally present some information about an environmental disaster that happened on ‘the other side of the world,’ which they might have been exposed to through the media. The students were then scored based on criteria that had no relation to their true understanding of the topic they were addressing. The obvious flaws in this sort of approach are blatantly clear, but in an effort to justify my stance at the time, I responded with a sense of apathy and probably assumed as teachers we were merely products of a system, simply complying with policy and acting within the boundaries of tradition.

*Reflection on my final years of teaching in South Africa*

From my experience and perspective, under the apartheid system teaching styles were mostly conservative, were not constructivist in their approach, and relevant authorities in the schools in which I taught often frowned upon alternative methods. In hindsight, teacher attitudes played a bigger role in classroom practice than I imagined at that stage, and most of us stifled any opportunities for transformative praxis. Although at the time I viewed myself as liberal in my political views and outlook on life, I did not have sufficient skills to encourage a critical and an inquiring mind within my students, and I did not give them much ownership of their learning. Students could not negotiate aspects of the curriculum and had little input into their construc-
tions of knowledge. Perhaps this was due to the contextual forces that influenced my constructions and inherent fear I had developed of openly questioning the political motives and decisions of the government.

I did not encourage students to challenge existing power relations and structures, and I certainly didn’t openly promote a critique of many existing traditions and practices. A portion of my teaching career in South Africa was in an officially declared ‘state of emergency’ and in a climate of possible detention without trial. (The first State of Emergency was declared by Prime Minister Botha in July 1985, and the second in June 1986.) That still does not justify my actions. Nevertheless it illuminates the role of political histories and social contextual forces influencing education and the impact it potentially has on students and teachers.

Presently I still reflect on my practices as a teacher in South Africa. I often question why I adopted the approach that I did and consider whether it was simply my age, lack of experience, fear, or was it in fact a direct result of the socio-political context in which I lived. In all probability it was the influence of a number of contextual factors encompassing much more than the few mentioned above. Whilst researching, I came across the work of Costa and Kallick (2000), who possibly addressed some of my questions as to why I had adopted a certain pedagogical approach during my time at Southernwood Primary. Why, after the ‘official dismantling’ of apartheid, had I continued to teach in a similar manner to during the regime? There were a host of complex factors that determined this, but Costa and Kallick’s (2000) ideas helped me make more sense of one aspect. They suggest:

We have often heard that the teaching of critical thinking is especially suitable for a democratic culture because it is the best training for informed and intelligent democratic citizenship. But we have also heard that in certain authoritarian cultures, the critical spirit – which includes asking questions, probing assumptions, and seeking reasons – is not a valued disposition. When students living within these cultures at home encounter critical thinking at school, the experience can cause distress (Costa & Kallick, 2000, pp. 50, 51).
To me this was thought provoking and, to a degree, a confirmation of what I had considered. It was probably the authoritarian and technocratic culture of my own schooling that largely determined my actions, and the continuities of such traditions. Perhaps it was also a result of my initial teacher training, where I spent time in schools observing traditional, non-constructivist teaching practices, which made me comfortable with the approach that I had adopted. Additionally, my teacher training in the apartheid era did not emphasize constructivist theories, leaving me mostly ignorant of the potential of such and critical approaches for social transformation. To me it was the norm to view learners as passive and for teachers to present limited opportunities for them to be engaged in practical learning situations where they could view themselves as agents for change. As I now recognize effective EE is in part dependent on the meaningful actions and active engagement of students in real-life environmental issues, I acknowledge that these were aspects that I did not readily offer.

I believe many of the environmental issues facing contemporary South Africa are directly linked to the education policies, practices and philosophies that existed in the time I taught there. As teachers we did not adequately prepare students with the skills and understandings to actively transform society in a manner that would enhance their long-term quality of life. A number of the present environmental crises could have possibly been avoided if as both teachers and students we instead focused on contextually generated knowledge that related to issues immediately confronting them. As a teacher I did not play the role of a facilitator where I drew on and involved students in experiences directly relevant to their lives. Nor did I encourage children with intellectually challenging learning experiences that developed action competencies that were potentially useful in their immediate existence.

In contrast, from the government’s point of view this was fundamental strength of the previous system as a whole, which simply reproduced individuals to fit into a society within which the government didn’t particularly want to bring about change. In essence, the ‘politics - education - environment’ link was subliminally left unexplored because of an inherent paranoia on a number of levels. We as whites were afraid of losing privileges, the government was afraid of a critical, educated mass urgently needing social transformation; there was public fear of government reprisal for open criticism; and the government’s fear of a discursive democracy no longer oblivious to the deleterious nature of apartheid influenced education in general.
However, it was not only my limited perspective of the ‘bigger picture,’ but also the issues confronting me on a daily basis, such as my fear of the high crime rates and uncertainty about the future, that swayed my decision to leave the country. On an earlier visit to Australia I had been impressed by the comparably more liberal and casual attitudes of people my age, the easier way of day to day life and the apparent social cohesion, which were all appealing to both my partner and me. I researched a little into the education system of Western Australia and also spoke with a number of South African teachers who had made the move to Australia who were positive in their accounts. In the time leading up to my departure I often thought that perhaps I had not given the ‘new South Africa’ sufficient opportunity to prove itself as a new democracy. Unfortunately my decision to leave was confirmed by continued high levels of violent crime that impacted on friends and family, reported incidents of corruption rife at government level and a pessimistic outlook for any future family I intended to have. The government had also strictly implemented a policy of affirmative action in an effort to make right the imbalances of the past, which limited future employment opportunities for me. While I understood the necessity of such policies, in the short-term I selfishly made the decision to leave the country of my birth in search of a brighter future.

**Personal perspective of the long term effects of apartheid on education**

As evidenced in recent visits to South Africa, there has been a lot of progress made on many fronts including greater attention afforded to environmental, social, welfare and educational issues. The present situation in urban schools for the most part appears quite different with multi-racialism seemingly well embraced, yet there still exist many blatant inequalities between schools in different locations. Although there have been many positive changes, the legacy of apartheid is still broadly evident. Conservative estimates of Education Budgets in the apartheid era suggest that nearly twenty times more money was spent on the education of white children as opposed to black children, although the latter formed nearly 80% of the school aged population (Barraclough 1995, p.18). The NEPI (1992) reminds one clearly of the injustices of the system in which I taught:

> The apartheid curriculum highlighted diversity at the expense of commonality; it emphasized ‘cultural difference’ and denied common citizenship. However, whilst embodying a form of ‘multiculturalism,’ the apartheid curriculum did not develop programs for increasing understanding or tolerance of dif-
ference. Instead it heightened racial awareness, if not racism.
(NEPI, 1992, p.77)

These blatant inequalities will no doubt take years to heal. Presently there is more equity in the allocation of funds but many non-white children still simply do not have access to the quality of education and resources that many of their white counterparts take for granted. (This is evident in other Western societies, and is also in part due to demographic factors, urbanization and settlement patterns.) There are still school-aged (predominantly black) children without access to quality education, some of whom have no fixed place of abode, and in some cases are struggling with health issues such as HIV. For ‘street children’ their existence is concerned with survival more so than education, and concerns for the environment are often far from their minds. Positive environmental practices and an understanding of environmental issues still hold little relevance to their immediate existence, due to the daily struggles.

Is the present state of EE much different?
As I am not currently involved in the South African education system I am not qualified to comment ‘first-hand’ on the present state of EE affairs in the country, although it appears there have been significant changes since my experiences in South African schools.

Although in recent years EE has become recognized as an integral part of the curriculum, it appears as though in instances it still does not have high priority in some schools. This aspect was quite evident on speaking to both university and school teachers on visits to South Africa since I have been living in Australia, and also in some literature that I came across in my research. For example, in 2003 the South African Department of Education conceded that the way in which EE has been implemented in the past has been ineffective.

The Department of Education’s National Environmental Project-Formative Monitoring and Evaluation (2003) document has many references in this respect. The document states:

While recognized as a priority in national policy, environmental education was not seen as such on the ground (particularly by CS [Curriculum Support Staff]) in 2002…Better service delivery remains a priority…While environment has been provided for in the national curriculum, the manner in which
the NCS (National Curriculum Statement) is interpreted during training and implementation, is vital, and this output needs further attention (2003, pp.4,5).

It is clear from comments such as these that in the 15 years since I left the country, there was concern that effective implementation of EE might still require attention. The reasons for this are no doubt numerous and can be argued from various points of view. Political and social events such as the establishment of a new government, restructuring of education departments and demographic and social changes have all had a role to play, but even though there is recognition of its importance and need, there is still room for change in EE. (This is not specific to South Africa, and this thesis advocates the need for change in EE praxis in most contemporary settings, if a transformative EE is acknowledged as integral to long-term sustainability.)

To illustrate this point, environmental issues in South Africa are expansive and impact significantly on the lives of many inhabitants. For example, in the Eastern Cape Province environmental issues include, ‘Poverty, unemployment, increasing levels of crime and gangsterism, health (esp. HIV/AIDS), child abuse, lack of basic services, rights (life skills) and land degradation’ (National Environmental Education Project-Formative Monitoring and Evaluation, 2003, p.19). All of these issues have much more of a direct bearing on the immediate daily existence of inhabitants, than for example the long-term effects of global warming which inhabitants of many other Western nations might deem as a crucial environmental issue.

Environmental issues and interpretations thereof are unique to the context in which they manifest. The South African context is faced with environmental issues that are in part a direct legacy of the apartheid system. Affluence has generated excessive consumption and waste in many privileged households. In contrast a large portion of the disadvantaged still live in townships created by the previous government in poor environmental conditions; no electricity, poor water quality and access, litter, insufficient nutrition, poor sanitation and related health issues, as well as poor air quality from the open fires necessary for warmth and cooking. These aspects all constitute a very real environmental issue in this particular context.

The above context is but one of many within the broader context of South Africa as a whole. In another context within the same country, communities might be faced with environmental issues such as the effects of rapid urbanization and the density of the population in informal
settlements close to work prospects. Every context is in itself then also subject to a greater number of determinants in ‘contexts within contexts’ as I have proposed. Each environmental issue requires a separate focus and ultimately, if possible, prevention and solution. As I argue that EE ought to be used as a vehicle to achieve the solution, then I expostulate that each specific context requires an approach (or from an education perspective, a curriculum) that is specific to that context, which takes account of the complex constituents within each context or sub-context. Place-based education is one model that can assist in bringing this about. Such approaches enable a focus on understanding, prevention and solutions to specific environmental issues and contribute to broader and global perspectives. Place-based education on its own cannot however bring about a transformative education. There exist further links with context, what it can reveal about social constructions and the best strategies and approaches to deal with them, before transformative EE praxis can be realized.

2.2 Australia

**Context two: Australia**

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*A new start: background to my experiences in my newly adopted homeland*

After doing a stint of manual labor upon arriving in Australia, I moved back into education first as a casual relief teacher, then contract teaching and finally a tenured teaching position. During this time I continued my university studies and completed a Master of Education degree at Deakin University in Victoria, Australia. It was during this phase of my academic life that I began to pay more attention to the role of context in how it influenced aspects of learning, particularly in EE. Having experienced first-hand both studying and teaching in Australia, and being able to compare it with the South African context, Australia became juxtaposed with my experiences in South Africa, generated interest as an area of further research. My interest in this field of study was further enhanced by a four-year tenure as a Cluster Educator where I worked across seven different schools in diverse settings, yet all within a small geographic area and noticed how differently learning activities were interpreted and implemented. My present role as a school principal has also further developed my interest in the crucial role context can play in informing EE praxis, and how essentially contextual EE is.
The historical context: Australian race issues and parallels I drew with South Africa

Due to my apartheid experiences, on arrival in Australia I was particularly interested in the role that race relations played in the history of the country and in everyday society. I often wondered at what exact point things went wrong in South Africa and whether there were any parallels with Australia. I could not help myself from trying to compare the country of my birth and my newly adopted homeland. It is also probably the reason I have focused on racial issues in the brief historical overview that follows.

As with South Africa, Australia also holds an interesting and complex history with many similarities and yet significant differences existing between the two. It is arguably the impact of colonization that allows for parallels to be drawn between the two countries in their indigenous race relations, and to a lesser degree racial policies. I am constantly reminded of this in my present work context where students with predominantly white European backgrounds often show little understanding of the traditional cultures, values and beliefs of the indigenous population. This is especially evident in my perceived lack of respect and appreciations some students have in their constructions of homogeneous values.

Jupp (ed.) (2001, p.828) suggests that this was not specific to Australia, and that ‘by the end of the nineteenth century indigenous people were almost universally depicted as a relic of human evolution with no prospect of survival in the modern world.’ Colonization has no doubt influenced individual and societal perceptions, but so too has formal education. Historians, politicians and school texts predictably present different accounts of racially motivated events of the past in Australia. As examples, ‘the stolen generation’ (Aboriginal children fostered into white care under official government policy, 1909-1969), the sending of Aborigines to white missionary protectorates in the 19th Century, the impact of infectious diseases on indigenous people after white settlement, and the deaths of Aborigines ‘in conflict,’ can all be presented from different points of view.

Colonists, the present non-indigenous population and indigenous people view these events from significantly different perspectives. Although the government has argued that official policy in the 19th Century was essentially to treat Aborigines as equals, to protect them and convert them to Christianity, the reality was that the British Government did not recognize Aboriginal land titles, and European settlers showed little sympathy for native customs and tradi-

The history of racial conflict in Australia spans a significant period of time and has impacted on many people, with indigenous inhabitants suffering heavy losses. Parish (1977, p.66) estimates that between 1788, the time of the first British fleet to arrive in Australia, and the 1930s, more than 20 000 Aborigines and 2 000 whites were killed in racial and land conflict. This aspect of history, alongside numerous other events, influences constructions of racial relations in Australia.

When drawing parallels between Australia and South Africa I have had to remember that the racial policies of South Africa and Australia are, and have been, quite different and cannot be viewed on similar levels. Although tainted with racial inequality, certain laws were passed in Australia that disadvantaged certain groups (such as the white immigration policy stemming from the 1901 Immigration Restriction Act, and limiting franchise to certain groups through the Commonwealth Franchise Act, 1902), but there was no one ‘blanket’ policy of segregation and separate development as in South Africa. In South Africa the large majority of the present population is black, whereas in Australia the opposite is the case. The Australian Bureau of Statistics estimated that in 2006 only 2.5% of the Australian resident population was indigenous (Australian Bureau of Statistics, 2007, http://www.abs.gov.au/ausstats/ABS@.nsf/e8ae5488b598839cca25682000131612/14e7a4a075d53a6cca2569450007e46c!OpenDocument), whereas in South Africa, ‘Africans’ make up nearly 80% of the resident population (South African Government online, http://www.southafrica.info/about/facts.htm).

It is also a more difficult task to determine specific eras in recent Australian history than in the previous example of South Africa. Most history books use 1788 as a date of relevance that separates pre- and post-colonization, and 1814 as a significant date, as this was when Matthew Flinders suggested the colony be named Australia. From an education perspective this recent history has undoubtedly had an influence on curricula over time. The social, political and economic developments linked to the country’s past, alongside other contextual forces, all play a role in the evolution of general education policy and implementation. EE is no exception.
**My interest in Australia's racial policy and immigration**

On a superficial level South Africa and Australia to me appear fairly similar. But on further investigation of a comparison between the two, one needs to further explore the past in an effort to deeper understand the complexities and differences between these two societies. Of particular interest is the issue of racial divide and multi-culturalism. Beyond the sphere of white and native Aboriginal relations, Australia’s past immigration and racial policies have also had a major impact on education policy and implementation, just as in the South African example. In Australia, through the adoption of British-based schooling and curriculum models, coupled with colonial historical perspectives, one can easily link the system of education to the country’s colonial past. It is often incorrectly assumed that the reason Australian racial policies might not have received as much international attention as apartheid in South Africa, is that they weren’t officially legislated. This was not the case.

I note that as far back as 1901 it was official policy (Restriction Act, 1901) that the enforcement of stringent language and dictation tests in Australia prevented ‘non-whites’ immigrating to the country. According to Bereson (2000):

> This meant that, for example, a Chinese person could be given a dictation test in Greek. If a non-white person passed the test, a second dictation test would be given in another European language. This made it impossible for non-white people to enter Australia (2000, p.6).

Although it took until 1958 (Migration Act, 1958) for common sense to prevail and the dictation system of entry restrictions to be removed, it was only in the last few decades that non-whites were encouraged to settle in Australia through the 1966 abolition of the ‘white Australia policy,’ with the final restrictions removed in 1973 (Australian Government Department of Immigration and Citizenship, [http://www.immi.gov.au/media/fact-sheets/08abolition.htm](http://www.immi.gov.au/media/fact-sheets/08abolition.htm)). In contemporary times there is still vigorous debate surrounding immigration policy which now also incorporates the rights of refugees (many of which are of central African descent) and asylum seekers, as well as elective immigrants. This racially motivated legislation, although on a different scale, had distinct parallels to the South African context.
Just as in South Africa many Europeans migrated to Australia after the Second World War in search of better living conditions than post war Europe. The Southern Hemisphere offered sparser populations, warmer climates and the chance of a new start for many who were essentially homeless refugees. Bereson (2000, p.17) claims that by 1955 over one million migrants had arrived from Britain and Europe, and that by 1956 the Federal Government had agreed to a yearly intake of 90,000. However, assimilation was not easy. The impact of different cultures, language and beliefs was enormous and it was the education system that had to adjust to meet the new requirements of a growing multi-cultural school-going population. In the 1960s the Menzie’s government raised political issues for education which brought about significant changes to the school system, which later resulted in the Australian School Commission (Ayres & Graham, 2003, p.1).

It was also in this era that the Menzie’s Government offered more financial support to private schools, in contrast to previous policy, which saw government support only for the non-secular state schools. History suggests that government support is often linked to the expectation of some form of reciprocity. Although limited by the bounds of this thesis to further explore the relationship between financial aid to private schools and the associated government influence on policy and curriculum, it would be an interesting exercise. It would also be of interest to examine the relationship between financial aid to schools, the economic or political aspirations of the state and the number of indigenous students in private schools.

It is only speculation as to what effect additional aid from the government during this era would have had on the development of EE per se, as arguably the field was still in its infancy. There is no doubt that there are links between increased funding and aspects such as research, additional resources and facilities, all of which benefit education in general. It should also be noted that the post war period was still prior to the emergence of EE in its contemporary form, and the priorities of many governments globally were focused on economic development, stabilization and recovery, with the impact of the war on the natural environment not necessarily as high on the agenda as societal and economic impact. Globally the way in which countries approached the mammoth task of reconstruction was varied. As Australia’s greatest impact from the war was on the economy and human resources, Australia emphasized selective immigration as a primary form of reconstruction. It was the racial slant of the immigration policy that particularly captured my interest and generated questions as to the role it has played in the development of race relations in contemporary society.
My perspective on contemporary racial perceptions

I believe that in contemporary Australia, media representation of Aboriginal social, domestic and welfare issues has sometimes contributed towards a misunderstood and somewhat damaging perception of this minority group. The reporting of incidents of sexual abuse, high levels of alcoholism, drug abuse, unemployment and youth suicide in popular media have all added to negative, stereotyping by some Australians. These issues are clearly documented by the Australian Bureau of Statistics (http://www.abs.gov.au/AUSSTATS/abs@.nsf/lookup/4704.0Chapter 100Oct+2010), where it outlines significant social, education and health issues that are affecting the indigenous population to a higher degree than other Australian inhabitants. (This has done little to dispel their perceived status by patronizing whites as ‘inferior’ citizens with problems specific to their own people.)

The contemporary racial issues still prevalent in Australia highlight inequalities and differences in racial attitudes still existing in society. Although the previous Prime Minister, Kevin Rudd, acknowledged and publicly apologized in 2008 for past injustices to the indigenous people of Australia, the Prime Minister prior to Rudd, John Howard, had emphatically refused to do the same. This stance by government leadership in recent years, coupled with the emergence and support for minority right wing political groups such as The One Nation Party during Howard’s tenure (1996-2007), has sent a message of indifference on racial equity to the public. Arguably insufficient attention has been paid to educating white society of the different social codes, values, traditions and relationships with the natural environment held by indigenous peoples. But in multi-cultural Australia, an ignorance of cultural knowledge does not only exist between ‘black and white,’ but rather extends to encompass the wide range of cultural, racial and religious groups constituting contemporary Australia. It then too is subject to different layers of contexts, or the notion of ‘contexts within contexts’ that I have referred to. In essence as in South Africa, there is no ‘one’ Australian context but many; and therefore multiple constructions of reality.

Politics, alongside other forces, has no doubt played a major role in both history and education in Australia and certainly cannot be ignored, but its direct impact on the education might not be as pertinent as in the South African example. I am not suggesting that Australian education has been free from political prejudice or bias, but rather that the ideology it advocated was not as radical and undemocratic as apartheid, although it still disadvantaged certain sectors.
Australia and South Africa – the parallels I have experienced

Although both South Africa and Australia have been faced with similar historical (early affiliation to Britain and the Commonwealth and complex relations with indigenous peoples) and environmental issues typically associated with traditional indigenous practices, colonization and immigrant populations, they are in essence largely different countries with specific needs associated with unique and complex contexts.

On my part it took time working in schools to unveil more significant differences in society and culture. Soon after arrival in Australia, to me the mere fact that many South Africans and Australians both spoke the same language, drove on the same side of the road, played similar sports and liked cold beer, sank into insignificance. It was all too easy to focus on the similarities in an effort to make the transition from one country to the other as painless as possible. However it didn’t take long for the major differences between the two cultures to emerge, together with the vast geographical contexts of each country to become more apparent.

A hypothetical scenario can further illustrate this point. On a very basic level if one had to look at the lives of two rural indigenous youths of the same age and gender, one from South Africa and the other from Australia, apart from both being indigenous persons, they would have few other cultural similarities. Aside from the minor parallels in history since colonization as an oppressed community with a traditional ‘live off the land’ existence, what might be totally applicable to a young indigenous South African living in a rural setting, might have no relevance or specific similarities to a young Aboriginal Australian living in the Outback. Hypothetically, if one was displaced to the other’s environment and required to find food and survive, he/she would be seriously disadvantaged! Yet, the greater context of their existence has many similarities. These would include skin colour, age, gender, rural existence, impact of colonization and exposure to missionary education, a history of oppression and having been significantly disenfranchised during large portions of white rule, higher infant mortality rates, and no doubt many more. In essence their constructions of reality would be significantly different. It is this notion of ‘similar yet so different’ that illuminates the complexity of context and the forces that influence it.

It is possible to seek out many similarities in their histories or ways of life, but their individual hypothetical existence is in fact poles apart. The meanings that each person in this example
give to their life, or the way in that they might construct their reality are essentially determined by the context in which they normally exist and to which they give meaning. Factors such as religious beliefs, customs, superstitions, needs of their specific societies and traditions, (even their dependence on certain weather patterns), even further determine their construction of reality. Besides the obvious geographic differences, their unique socio-cultural and immediate depth of context is then what essentially sets them apart.

Lotz-Sisitka and Janse van Rensburg (2000, p.25) remind one that our environment is socially constructed and that ‘the environment is not something that has reality outside or separate from ourselves and our social milieu,’ but instead that ‘it should be understood as the conceptual interactions between our physical surroundings and the social, political and economic forces that organize us in the context of these surroundings.’ It is this social construction that makes each setting unique and is of most significance to education. It is at the social level that context becomes more complex and layered, than at any other level.

As the focus of this thesis is on education, the constitution of these unique contexts needs to be constantly borne in mind if one is to relate to the real lives of the learners. This has obvious implications for EE. I argue that for EE to be effective, one aspect of it is that it needs to be meaningful to specific individuals and societies by relating to their immediate existence and their constructions of social or environmental issues, particularly if they are to challenge existing power relations and bring about change. As illustrated in the earlier simplistic example, what might be educationally relevant in one environment might not then be in another if there is no cognizance taken of context specificity, and the complexity of the forces within in it that influences participants’ meanings, connections and interpretations.

The commonalities and differences between Australia and South Africa, as well as my experience living in these similar yet diverse cultures, served as my motivation to explore particular contextual issues and to illustrate them in part through my autobiographical narrative. As my concern is essentially the implications of context for EE, I believe it to be pertinent to briefly consider the evolution of EE in Australia.
The historical context: A brief consideration of the development of Environmental Education in Australia

As in most other Western countries EE as a legitimate field of study only really gained prominence in more contemporary times, specifically in the 1970s. To place this in a political/environmental perspective, Aborigines were given voting rights in 1967; the First Green Ban, which designated and protected Heritage areas was in 1971; and it wasn’t until 1976 that the Aboriginal Lands Right Act was passed.

Together with America, in which Gough (1993b, p.3) claims EE developed more quickly than in Australia, Australia has been prominent in environmental research since the 1970s. The same can be said of EE in various forms at school, where ‘it has been part of Australian schooling for more than 30 years’ (Australian Government Department of the Environment and Heritage, 2005:5). To position prominent events in EE in an historical perspective, a timeline of events in Australia and internationally may assist as a comparative measure of Australia’s development in this field against a global backdrop, I have outlined the most significant of these events, according to the NSW Department of Education and Training (2003, http://www.curriculumsupport.nsw.edu.au/enviroed/index.cfm?u=3&i=127) and Gough (2002), in Figure Four - Key international and national events in EE development.

Although Figure Four does not allow for a definitive comparison of events nationally and internationally that might have shaped EE, it illustrates that Australia’s progression in EE in practice, policy, research and literature remained abreast of those internationally, particularly over the last 35 years. What then was the state of EE in Australia prior to the 1970 ‘Education and the Environmental Crisis’ conference?

The state of EE in Australia prior to 1970

As far back as 1910 the Gould League was established and some informal EE was a focus for its members. However it wasn’t until 1967 that the Gould League formally made a decision to promote EE and that an adviser in conservation was appointed by the Department of Education in New South Wales (NSW). It was in 1974 that the Gould League appointed its first EE officer to the NSW Department of Education. An EE resource writing team was also established in 1974 by the NSW Department of Education. Traditionally at this stage EE existed as a school subject typically known as Nature or Environmental Studies. Content generally included environmental topics with a focus on information ‘about’ the environment and nature. As in the

Internationally, Australia included, in the period leading up to the 1970s western schools customarily emphasized ‘traditional’ subjects with only a little attention given to environmental matters in some of the science based areas. This was possibly due to many global environmental issues not yet recognized as having reached ‘crisis’ proportions, with the finite nature of many natural resources not a foremost concern. As industry and technology developed however, issues such as industrial waste disposal, general pollution and the search for alternatives to natural resources (such as the use of nylon, plastic and Bakelite) gained prominence. These developments still did not occupy much space in the common school curriculum.

As the full human impact on the environment had not yet been fully recognized as being detrimental to our long-term existence, it was not deemed of urgent significance in education. Nature conservation was not a totally neglected domain, but it was not typical of this era for students to be educated in making informed and responsible decisions about their role in protecting the environment or preventing environmental problems from arising. In general this led to students having ‘under developed’ environmental constructions and perceptions, which did little to help responsible environmental practice. EE cannot be considered wholly specific to schools, as there are aspects such as family, cultural and traditional, that can clearly be attributed to community and social forms of education, which also influenced individual environmental perceptions.

The 1970s marked a definitive change in schools in their development and attitudes towards EE programs. This was largely motivated by the 1970 Australian Academy of Science conference which focused on ‘Education and the Environmental Crisis.’ Prior to this, the state of EE in Australian schools is best summed up by O’Neil (1970) who stated:

It is apparent that, at present, most of the environmental education in our schools is being given at the discretion of individual teach-
ers…There is, at present, no State in which a specific and co-
ordinated syllabus has been devised with a purpose of producing a
generation of young people who are educated to understand the
ecological implications of the environmental situation, and also
motivated to believe that environmental quality in its fullest sense
must be restored and conserved…This apparent failure of our
educational authorities to react in a positive way to the environ-
mental crisis stems partly, I believe, from a tendency for Australi-
ans to feel that these problems really concern people in other
places…My personal opinion is that there is an urgent need for our
educational authorities to assume a more positive role in rela-
tion to the environmental crisis…The present incidental, uncoo-
dinated and haphazard treatment is totally inadequate (1970,
pp.45-47).

The necessary changes in attitudes and focus of EE saw a move towards a more multi-faceted
approach to EE. New perspectives in EE were generated by the realization of the need to equip
students with a broader range of skills applicable to life outside the classroom and the recogni-
tion of the need for a more coordinated and coherent approach to EE in schools. Environmental
literature of this period in Australia is characterized by the emergence of references (previously
untypical) promoting a balanced and multi-dimensional being through involvement in envi-
ronmental activities. This is a clear shift away from merely ‘studying nature,’ or focusing on
conservation.

This was evident in both curricula and teacher training texts. The following examples are fairly
typical of texts from this period: The 1971 fourth edition of ‘School Horticulture,’ published for
Victorian State Schools, begins with:

School gardens are not intended to create gardeners or farmers,
but to afford growing girls and boys an opportunity for many-
sided development (Murnane 1971, p.1).

Texts for teachers in the 1970s such as, ‘Teaching through adventure – a practical approach’
(1976), contains references like:
We believe schools need to provide periodic experiences which allow the students to integrate and make connections between the various aspects of their beings. Some of these integrative experiences should be short. For example, a several hour experience walking in a swamp gathering biological data, helping and being helped by other people in the group, and developing an appreciation of the swamp’s subtle hues (1976, p.14).

Such approaches illustrate a shift in focus, especially with attention afforded to ‘appreciation’ and ‘interaction’ with the environment which contrasted to earlier emphasis on simply learning about the environment. But this was not the case in its entirety.

Many of these texts still had teaching objectives that in instances contradicted their goals and were still very much grounded in environmental learning distanced from real-life environments. The above-mentioned text, ‘Teaching through adventure - a practical approach’ (1976), includes objectives that still focused on observation, scientific methods and an emphasis on hypothesis testing which typical of the time, which did not emphasize understanding, interaction and action.

Clearly these objectives have a strong applied science foundation and lean towards an ‘education about the environment’ approach; more so than ‘education for the environment’ approach. Although observation is important, present objectives encourage interaction and pro-activity, instead of observation on its own. Additionally, most contemporary EE forms do not emphasize scientific hypothesis testing but encourage and allow for subjective interpretation.

*A change in direction for EE*

The growing awareness of human impact on the environment is reflected many of the early 1970s texts. This is illustrated in the 1971 publication, ‘Conservation,’ edited by Australian academics Costin and Frith (1971). Included is the article by Sinden (1971) that begins with:

Man is an integral part of the environment. He applies his labour and skills to the management of natural resources and receives in return products such as fish, and services such as leisure opportunities, which satisfy his wants. This interaction between man’s
abilities, man’s demands and the environment is central to all conservation problems (1971, p.248).

Although the emphasis was still on man (sic) manipulating nature to meet his needs, there was growing recognition that humans were the underlying cause of environmental problems.

Literature from this period has a marked increase in references to environmental quality. Costin and Frith (1971) emphasize:

In particular, there is a need to recognize the fact that, despite the increasing pressures for land, the amount of land is fixed, and that there should be basic ‘ground rules’ for its use as well as the more accepted economic and political criteria (1971, p.302).

The realization that political and economic agendas were having a negative effect on the environment was certainly not a central theme in most topical literature prior to this period.

Prior to this in 1960 only two Australian states had legislation in place governing effective conservation measures, but by 1970 the national parks and wildlife services were operating more effectively across all states (Costin and Frith, 1971). The decade of the 1960s clearly marked a significant change in environmental attitudes, which by the early 1970s became evident in policy and associated environmental literature. This was particularly noticeable in more awareness and emphasis being placed on the conservation of resources and the natural environment. Costin and Frith (1971) begin the closing chapter, entitled ‘Summary and Prospect,’ with:

It is clear from the preceding chapters that, despite the short history of white settlement and development in Australia, problems of resource conservation are already matters for concern, and that we must act without delay if crises are to be averted (1971, p.300).

The final page of the book states:
In the global environmental crisis which now confronts much of mankind, Australia is still in a relatively favourable position. If the job is to be done properly, conservation must become an integral part of our individual, national and international way of life (1971, p.316).

The recognition of a global environmental crisis that required attention was emphatically stated over thirty years ago by Australian academics slowly translated into reviewed education policy and subject content. It was probably academic research alongside formal education in general and the social movement generated by the media that all contributed to a greater social and environmental conscience. Perhaps demographics also played a role by generating a ‘social paranoia’ about unprecedented population growth. American academics in the early 1970s such as Turk and Wittes (1972) found that two thirds of all the world’s population born since 1500 were still alive in 1970, and that the world population increase from 1950 to 1970 was approximately twice the size of the world population in 1650. These statistics weren’t shock tactics, but demographic facts. Although somewhat distant to the Australian context of a vast country with a small population, the perception of a problem on global terms with a growing world population, along with the recognition of the scarcity of global natural resources, alerted people to a potential crisis.

**The changing face of EE in Australia**

Irrespective of the motivating factors that brought about changes in social attitudes there appeared to be an international trend, or realization, of a potential environmental crisis that required attention to the changed attitudes, understandings and behavior necessary to make a positive impact. This generated changes in formal education systems including EE curricula in Australian education institutions including changes to both the role and objectives of EE. It focused on our relationship ‘with’ and ‘in’ the environment in an effort to deeper understand environmental problems. There was also recognition that action to restore previous mismanagement of the environment was required in addition to simply changing existing practices. A new culture had to be generated where values such as respect, appreciation, knowledge, understanding and responsible management of environmental aspects became paramount. Schools, particularly through EE, would need to fulfill this role in order to supplement broader community education in an effort to bring about change.
There wasn’t one specific event or date that specifically marked these changes. The 1970s can be considered an era of a gradual, global change in social attitudes, which culminated in the acceptance of different values that had their roots in the previous decades. Environmental attitudes were no exception.

Effective environmental programs in schools are often dependent on support from community groups, businesses, governmental agencies and legislation. Such bodies act as an extension of the formal programs offered in schools. It was these types of programs that emerged in the 1970s and 1980s to develop into contemporary ‘action’ and information groups such as: Landcare, Australian Trust for Conservation Volunteers, Greening Australia, Waterwatch, Young Landcare and The Australian Conservation Foundation. Contemporary government initiatives include: Australian Nature Conservation Agency, Biological Diversity Program and Endangered Species Program. Besides the managerial function of these programs, they also play a role in informing the public in environmental issues and the coordination of conservation activity. Governmental departments are also active in research and the gathering of data, the promotion of community involvement and the management of biodiversity.

Many of these organizations form or provide a vital link in bringing together students, communities and authorities to improve and promote environmental practices. As I presently acknowledge, they all have contextual significance in that they actively involve participants in programs specific to one’s daily existence, generally within an environment relevant to one’s own experience. This was however not typical of the era preceding the 1970s. The lack of these support structures and the influence they have on shaping societal attitudes, local communities and schools, is evident in the restrictive approaches to EE during the earlier stages of its formalization in school curricula.

*The present situation in EE*

However, even after 35 years, EE still battles acceptance as a key subject or learning area in many Australian schools. Although EE’s profile has increased since this time, it still is a non mandatory component of the curriculum in all states and territories with the exception of New South Wales. In the context of my present work position in Victoria, even the new Victorian Essential Learning framework (VELS), implemented in 2006 has not granted EE or any form of sustainable related education an identity of its own. (See Figure Two – Structure of VELS).

The lack of focus on this crucial area of learning has generated ongoing discussion and disa-
agreement between the Victorian Association of Environmental Education (VAEE) and the Victorian Curriculum Assessment Authority (VCAA). This has culminated in the VAEE even drawing up exemplary scope and sequence EE units of work for the VCAA, which the VCAA did not acknowledge in the new curriculum framework. This has significantly impacted on whole-school approaches to EE where they potentially may become the exception rather than the norm.

On a national level however, a new plan: ‘Environmental Education for a Sustainable Future: National Action Plan’ (2009), is the first legitimate attempt to call for more integration of EE into mainstream school curricula in Australia. National goals for schooling in Australia were originally outlined in the ‘Adelaide Declaration’ (1999). This policy document takes cognizance of the need for developing a ‘stewardship for the natural environment,’ and emphasizes ecologically sustainable development, but it is ultimately up to each state and territory to develop their specific curricula. This generated mixed levels of commitment to environmental inclusion within the curriculum, but at least placed EE is on the national agenda. The existence of the ‘National Action Plan, Environmental Education for a Sustainable Future (2000),’ which has an emphasis on the future, also reflected the Department of Environment and Heritage’s contemporary commitment to Sustainable Education in Australian schools.

It was within the development of this context that I was and am employed in Australian schools. Educational policy and practices of the past have a distinct bearing on present EE, but my entry into education in Australia was undoubtedly at a time of evolution in this field, which had its beginnings in the 1970s. It is therefore appropriate to continue with my direct experiences in Australia. In the next section I relate my time in different Australian school settings.

My Australian experience: Early days in Australian schools

|----------------------|------------|-----------------------|-----------------------------|-------------------------------|----------------------------------------|

Moment in time: ******
When I emigrated I first settled in Western Australia. I spent time doing casual labour and also worked as a commercial painter. I registered with the Western Australian Education Department as a teacher, but welcomed a break from the classroom situation.

It was on a cold morning in the middle of a Perth winter when I received a phone call from the Education Department offering me a position at Hilton Primary School to replace a teacher for a term. The school attracted students from a fairly low socio-economic group and I was faced with some difficult situations from the very first day. Having taught in some radical situations in South Africa, I thought that a few ‘tough’ Australian kids would be no problem, but I must confess that I found my time at the school rather challenging. However, my time at the school exposed me to a broad range of practices, which as an emigrant were quite different to my experiences in South Africa. Not only was I exposed to a different clientele of students and teachers, but also different policies, culture and attitudes.

My first impressions were clearly that of a less formal and more child-centered approach to teaching. Secondly I was amazed that none of the students were ‘poor’ by African standards and no matter how disadvantaged they might have been, they essentially still had access to welfare benefits of varying degrees and had basic shelter and services. Issues such as hunger, primary health and access to basic amenities were not the daily concern to students and teachers that I had become accustomed to in my last South African school. Essentially I found myself working with a comparably ‘privileged’ group of students even although this was a lower socio-economic school in the greater Perth metropolitan area.

This had a major impact on me. Not only did it confirm the unfortunate existence of many African children, but it also forced me to adopt a different approach to my teaching. No longer were forces such as hunger, a safe place to sleep at night and clothing major contextual influences that impacted on student constructions of reality. Instead, most students in my care were from my perspective typical of a First World society with access to the basics that many African students were deprived of. This was particularly evident in relation to material possessions and school resources. Students didn’t particularly show a lack of appreciation but often took things for granted. I had to keep on reminding myself that this was the only life that these students knew. To them I assumed it was normal.
How did this reflect on their environmental attitudes, understandings, perceptions and their interaction with the natural environment? My subjective view of it was that Perth appeared clean, well-resourced, and had large green areas. This gave me the impression that most people displayed a healthy respect for the environment, but I wasn’t sure whether I had gained an accurate perspective or if I continually compared it to some parts of South Africa. I also wasn’t too clear as to what to expect from the students and how to respond to any extreme attitudes expressed by students or fellow staff members, as my constructions were still largely influenced by my South African experiences.

As I had previously been fortunate enough to travel to other parts of the world, I had been exposed to many different cultures and societies, but my perceptions had only been shaped through the eyes of an adult and that of a visitor. Now I was in a classroom with a need to relate to school students and to view the world from their perspective if I was to develop and present worthwhile and authentic learning opportunities. It was always at the forefront of my mind that my life-view had obviously been tainted by my privileged, prejudiced and conservative upbringing in apartheid South Africa.

In an effort to try and gain a deeper understanding of the geography and culture of my newly adopted homeland, I enrolled in a Travel and Tourism certificate course whilst also teaching. In hindsight this was a very valuable experience. I learnt a lot about the country from many different perspectives and the course gave me a deeper insight into Australian history and multiculturalism. I spent many nights reading literature about the country and tried to better familiarize myself with the content of school curricula. Of particular relevance was the SOSE (Studies Of Society and Environment) syllabus, which to me was a great blend of the equivalent History, Geography and Biology syllabi in South African schools. The more time I spent in schools the more familiar I became with the Australian way of life. Children exposed me to details of Australian culture at different levels to my adult friends and my previous experiences as a visitor.

Towards the end of the third term in I received another call from the Education Department offering me a position for the fourth term of the school year at Attadale Primary. I remember visiting the principal on campus and immediately being impressed with his pleasant disposition and the great facilities on offer. I was given a Year 7 grade and it wasn’t long before I felt well accepted and started to once again enjoy my time in the classroom. The staff were enthusiastic,
the students responsive and the parents generally supportive. I have fond memories of attend-
ing a school camp and marvelling at the differences in attitudes and appreciation of the students
compared to the term before. Teachers were given a fair amount of scope to interpret the cur-
riculum in a manner that I believe was conducive to effective learning, and there existed oppor-
tunities to develop interesting and informative work units within an integrated approach. I
really enjoyed my time at the school and was saddened by the fact that I would be leaving at
the end of the academic year.

After spending two full terms at different schools as a contract teacher I thought I was begin-
ing to get a grasp on and understand Western Australian education policies and curriculum
implementation. I also developed a better understanding of the students’ interpretation of aca-
demic content and their civic and social attitudes. This was obviously on a reasonably shallow
level dictated by limited experience and time in two diverse urban schools. (However, this was
the only Australian education experience that I took with me to the Abrolhos Islands where I
later found myself in a very unique and interesting school location.)

It was towards the end of the final school term that I saw an advertisement outlining teaching
positions on the Abrolhos Islands. I went to see the principal of the school where I was work-
ing and asked for more information. He thought it would be an excellent opportunity and wrote
me a glowing reference. I was also fortunate that my wife at the time was a qualified teacher
and had been doing some work as an emergency teacher in Perth. She had previously taught in
secondary schools in Africa and to complement her teaching qualifications, held an honours
degree in psychology as well as a degree in social work and English. As the positions on the
islands required a partnership team, I thought we stood a reasonable chance of securing the
jobs.

Disappointed by an initial rejection of our application, we later received a message from a re-
cruiting officer at the Mid-Western Education Department in Geraldton, 400km north of Perth.
A three-way telephone interview was conducted, references were checked and a few days later
we were offered the jobs.

We had a great Christmas holiday knowing we were to shortly teach on the islands. We trav-
elled across Australia to visit friends and relatives, returning in time to go through an initiation
period of professional development with the Mid-Western Education Department. We arrived
in Geraldton not quite knowing what to expect, but quickly were introduced to other teachers who were going to some of the other islands. We also met with past teachers and soon had a clearer idea of what to expect working in remote locations. After establishing how supplies were brought by carrier boat to the islands on a weekly basis, we had to go about setting up accounts with the local supermarket, newsagent and liquor store.

We then went through a process of visiting the local schools and speaking to the teachers of some of the students we would be working with. This assisted us in building a profile of the students, their expectations, welfare issues and the work requirements set by individual schools. Basically we had to follow the syllabus as laid down by the Western Australian Education Department, but there was obvious scope for utilising the natural resources at our disposal and adapting our practices to suit the setting. We were faced with students from the preparatory year level to Year 7. After gathering what resources we could, we finally prepared for our flight to North Island. Most of our belongings would come over later on the carrier boat, so we could only pack the bare essentials. The experience was to be especially unique in that we were to live and work in a remote location within a diverse community and environmentally rich context. We were excited by the islands’ colourful and tragic history and looked forward to the wonderful opportunity to provide education for the children on the island. I was employed as head teacher of the school and my wife worked as both a teacher and teacher-assistant.

*General profile of the Houtman Abrolhos Islands*

North Island School is situated on North Island in the Houtman Abrolhos Islands approximately 60km off the coast of Geraldton, Western Australia. Although there are 122 islands classified as belonging to the chain, they are divided into three main groups; Wallabi, Easter and Pelsaert. As far back as 1840, the archipelago was charted and named by Lieutenant-Commander Stokes of HMS Beagle, who had carried out extensive reconnaissance of the eighty kilometers over which the islands are spread.

The island’s interesting history, natural beauty and wide environmental diversity of fauna and flora certainly makes the island a sought after destination. Tourists are only allowed as guests of island inhabitants. It is only populated for a designated period of each year, determined by legislation controlling the cray-fishing industry, so the only human environmental impact over time has been from the fishermen themselves.
There are 22 islands inhabited for the duration of the season, but schools are only opened on four of the islands. There are no permanent occupants. At the height of the season it is estimated that approximately 500 people occupy the islands. Teaching in one of the island schools is a unique experience. The North Island School varies in number of enrolments each year but generally caters for around 20 students from the preparatory year to the end of Year Seven. Teacher accommodation is attached to the school with basic amenities.

**Living conditions and industry on the Houtman Abrolhos Islands**

Due to environmental regulations the islands are not permanently inhabited. Only persons in possession of certain categories of commercial cray-fishing licenses are allowed to build structures on the islands and inhabit them for restricted times of the year. There are strict limits on the number of the licenses available and they are very expensive and often passed down between families. The license holders for this stretch of coastline are generally residents of the mainland town of Geraldton and its surrounding settlements. A huge cray-fishing cooperative is in existence, which also controls a lot of the fishing activities, purchasing, processing and sale of products. The actual species fished is the Western rock lobster. The industry produces approximately 1.5 million kilograms of lobster each season worth about $40 million between 15 March and 30 June each year.

The lucrative yet highly controlled cray-fishing business is generally very difficult to break into, even if one manages to successfully get through the strict governmental regulations and associated bureaucracy. It is in such an atmosphere that an air of exclusivity exists on the islands. There is a highly apparent social segregation between license holders and operators (skippers) and their workforce (commonly known as ‘deckies’ or deckhands), although many would blatantly deny any such segregation. The school teachers, as outsiders to the industry, are generally well received by residents of the island.

The islands have no motor vehicles, telephones (mobile reception did not exist), shops, doctors, electricity other than generators, water other than rain tanks, post offices or police. Houses are essentially ‘shacks’ by normal urban standards and are only fitted with basic furnishings. Supplies are ordered via carrier boats that collect crayfish from the smaller boats, and any medical emergency case has to be transported to the mainland via light airplane or boat. Nurses make monthly visits and police from the mainland investigate any criminal activity. A social club
sells alcohol and offers some forms of entertainment such as snooker and table tennis, but residents generally use the island’s resources for leisure and recreation.

The island school and its immediate surroundings

Whilst the school is subject to the exact same policies, guidelines and regulations of the mainland schools, there is a lot more scope for curriculum interpretation as opposed to the mainland. Many of the parents have an active involvement in the school (particularly the mothers who don’t work on the boats in a male dominated industry), whose help is advantageous in some regards, but also a problem when they demand more input and control of activities than is expected in a ‘normal’ school situation. In general, it is a perfect setting for some very interactive EE.

The geographic environment is on first impression very harsh, but soon it becomes evident that it is a very delicate and fragile eco-environment with few trees, limited fauna, low scrub, few beaches and the highest point on any one island recorded at just over 15 meters. Although rich in bird and sea life, on land the most common animals to be seen are wallabies and a number of lizard species. There are no natural resources with one even dependent on rain tanks for water. It is also prohibited by law to bring from the mainland any animals or plant materials without special permits, other than consumable food, scraps of which are burned or buried.

North Island School: My Abrolhos teaching experience

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<th>Australia</th>
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<th>Perth</th>
<th>Abrolhos Islands</th>
<th>Torquay Primary</th>
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As we flew in towards a basic airstrip constructed from gravel brought over from the mainland, we were immediately surprised by the sparseness and remoteness of the islands. Some were literally little clumps of rock and reef that were only just exposed from the ocean. We were fortunate in that our island had sand dunes, a gravel runway, lagoons and beautiful swimming beaches. On arrival, a respected matriarch in the community, who had been coming to the islands for many years and had seen all her children go through the island school, greeted us. We
were shown our shack and given the key to open the school, which was attached to our accommodation.

After a few discussions, we set about going through the cupboards to see what facilities were available, set up the two rooms in what we thought would be a stimulating learning environment and then tried to work out some sort of workable, interactive and interesting timetable. We set up meetings with some of the parents and got a good idea of how the school had been run in the past. Some parents had themselves been through the island school system and had a strong sense of ownership and ideas on how the school ought to function.

The Education Department was trying to establish mainland standards in all the island schools, and we were in the difficult position of attempting to please the parents, offer a broad range of students a worthwhile and interesting program that met these standards of the Education Department, and yet we also wanted to take advantage of the unique setting. It was especially suitable for EE that was interactive, authentic and could be integrated across the curriculum.

My wife at the time, a secondary school teacher in South Africa, had only limited experience in primary education. She had spent some time as a relief teacher in Perth at some local primary schools, but only had a restricted knowledge of the content of the school syllabi and how to implement it. Retrospectively this was great. We were able to design curricula unique to the context in which we found ourselves and used departmental guidelines to give it structure. We were obviously dictated to by the policies of the Western Australian Education Department and were constantly reminded that students needed to fit comfortably back into their mainland schools at the end of the island season. (The schools on the island were only opened for one semester each year to coincide with the cray-fishing season. The students stayed for varying lengths of time, largely determined by their parents’ restriction to specified quota and other limitations placed on their commercial fishing permits.) So in this regard we didn’t have total control over what we taught, but we had a fair amount of scope in the way we presented it. As the students ranged from the preparatory year to Grade 7 we had a mammoth task to provide a meaningful and interesting program that met all their needs. The younger students also required solid grounding in basic numeracy and literacy to ensure they never fell behind their mainland counterparts academically.
The ‘Operational Policy and Guidelines’ (1998) document prepared by the Mid-Western District listed in our job description:

This will require a person who can work collaboratively with parents and be accountable to an offsite line manager. They will need to adopt a cooperative teaching learning style as this is the approach taken across the school (1998, p.3).

The document also listed as specific required competencies:

Demonstrated flexibility and adaptability in the school environment...Staff must be prepared to: Extend the outdoor education component of learning; Provide an open door environment; Introduce time table flexibility; and introduce developmental programs of work rather than grade related (1998, pp.4,5).

As illustrated, the guidelines suited alternative forms of education and specifically encouraged outdoor education and making use of the environment. We still had to comply with all the safety requirements and the correct teacher/pupil ratios on any excursion or outdoor activity as applicable on the mainland, and this was to prove an inhibiting factor.

*Education policy in Western Australia and its influence on my practice*

At the time of my employment in West Australia, the school system on the Abrolhos Islands was based on two main policy guidelines that had been formulated nearly a decade earlier, namely: ‘Better Schools in Western Australia: A programme for Improvement’ (1987) and ‘School Development Plans: Policy and Guidelines’ (1989).

These guidelines stated that the principal was responsible for the management of the school and the quality of student outcomes, as well as being accountable to the District Superintendent, who would visit the island twice during our tenure. The role of the superintendent was to ensure that schools operated within the policies as laid down by the Ministry. As far as input from the community was concerned, there was an official parent body which had a say in the school development and planning process.
Western Australian education policy has always been designed in a unique geographical context. Although the state occupies almost one third of the continent’s landmass, only about 9% of the Australian population live there. As a result, once away from the Perth metropolitan area, there are often huge distances between settlements and a number of schools in remote locations with isolated populations. However, the education system is based on central administration, employment and curriculum development. Administrators in Perth are responsible for the curriculum development of a school that hypothetically might be over 2000km away, due to the sheer size of the state. This hypothetical school might have a high proportion of indigenous students and have a completely different geographical and cultural setting: the attitudes, values and beliefs of the local population possibly vastly different to those of the curriculum developers. The consequences for effective education catering for specific student needs in this scenario are vast. It is worth noting that The National Report on Schooling in Australia (Australian Education Council, 1989, p.96) stated that approximately one third of Aboriginal students attended schools with an 80% or greater proportion of Aboriginals than other population groups. This is in spite of Aboriginals only making up 2.7% of the population of Western Australia at that time (Australian Bureau of Statistics, 1989).

Nevertheless, in an effort to try and combat the inadequacies of centralized syllabus development, centrally produced support materials do theoretically take into account geographical specificities. At the time of my employment within the system, processes were in place for schools to have increased decision making to suit the requirements of the school, with a particular focus on outcomes as opposed to inputs in curriculum terms. This gave schools a sense of individuality where syllabi could be structured to suit certain outcomes without having to cover generic curricula in the same format as every other school. (i.e. Explicit statements of policy were expressed in outcome terms specific to individual schools, although the curriculum was centrally generated). The implementation of these new or revised syllabi was generated as far back as 1989, but was only scheduled to be in place by 1994. From my experience of the schools I visited prior to my island tenure, it appeared some were still struggling with the concept of matching context specific objectives to expected outcomes, although it was three years on from the implementation of the revised syllabi.

Specific initiatives aimed at contextual difference that influenced my practice
The late 1980s and early 1990s saw changes in policy directed at addressing the specific needs of schools brought about by the vast contextual differences within the geography of the state.
These included: ‘Better Schools in Western Australia: A Programme for Improvement’ (1987), curriculum reviews into Social Studies and ESL, the establishment of the Unit Curriculum (1989), the First Steps program for teacher development, new curricula for English and Mathematics (1990) and the establishment of a School Development Grant to fund professional development activities. It is not exactly clear as to whether these initiatives were attempts to remain abreast of advances in education in general, or whether they genuinely focused on the unique contexts within which education in Western Australia occurred. In any event the 1980s and early 1990s saw an increased focus on activity oriented teaching, thinking processes, problem solving and investigations in the Western Australian curriculum.

Traditionally the Western Australian Ministry of Education has actively promoted that all students within their government system should achieve the highest possible standards of education, and advocate teachers should ‘believe every student is capable of achieving success at school and they (teachers) do all they can do to find ways of making each student successful’ (Department of Education and Training, West Australia, 2009, p.2). Historically they have experimented with initiatives that can be considered quite unique. Examples from the 1980s and 1990s include special commitments to the needs of Aboriginal students, an official Commission mandating the inclusion of an ‘appropriate’ education for students across all areas of the state, school based projects aimed at gender equity (like the provision of residential facilities for girls at agricultural institutions previously the domain of boys), and the 1987 establishment of ‘The Organization Development Unit.’ This unit was designed to empower and support schools in controlling their own planning, specific to their needs.

The real impact of such initiatives is both questionable and difficult to measure, but nevertheless, there was acknowledgement by The Ministry that centrally generated curricula did not suit the needs or specifics of all school communities, especially considering the size of the state. In 1998, the year that I taught on the Abrolhos Islands, the new ‘Western Australian Curriculum Framework’ document was released. Although this document advocated constructivist principles and the use of materials and methods suited to the specific needs of individuals and groups, it had not yet been fully implemented at the time of my appointment. The new curriculum framework was more flexible than any previous release and gave teachers the opportunity to take more ownership of the development and implementation of local curricula. The emphasis was on being able to make curriculum changes that enabled students to better connect with their world and to improve all student learning by acknowledging that all students perceive and
process information differently. This also contrasted with what I had been accustomed to earlier in my career.

*Curriculum at North Island School*

In outlining the scope and context for teachers in Western Australia, the Education Department (1996) states:

> The aim of the Education Department of Western Australia is to ensure that all students within its schools develop the understandings, skills and attitudes which are relevant to individual needs, thereby enabling them to fulfill their potential and contribute to the development of our society (1996, p.14).

*Appendix Three* of the document also states that students need to achieve optimum educational outcomes irrespective of their background or geographic location (1996, p.14).

It was the words, ‘relevant to individual needs’ that drew my attention to the situation I was faced with. Beyond any other constraints I realized it was possible to structure curricula based on official policy and guidelines that was in fact context specific. All I had to do was ensure it was ‘relevant to the individual needs’ of the students in our care. The main concern was that we couldn’t deviate too far from what the students would normally be covering in the mainland schools, as they would need to be on similar levels to their counterparts on return, but this still allowed for a unique integrated approach. We were fortunate enough to have a rich learning environment at our disposal as the island offered a broad and diverse array of learning opportunities outside of the classroom.

Coupled with this was that many of the students were returning students from previous seasons and were well adapted to living on the island and already had an understanding of the delicate eco-systems in existence. This was reinforced by the practices of their parents who knew well that their future continued existence on the islands was dependent on minimizing the impact of their residency each year. After all, they certainly did not want to risk losing access to their lucrative income. Nature conservation officers closely monitored the islands and some West Australian university students conducted a number of environmental impact assessments and stu-
dies of the islands while we were there. As a result harmful environmental practices were frowned upon and there was a lot of social pressure to ‘do the right thing.’

The specific systems in place for waste disposal, water conservation, revegetation and the prevention of unwanted species introduced from the mainland were strictly followed. These topics in themselves were the genesis of many interesting discussions and the focus of many learning tasks in our school. Alternatives were often researched by the students which presented a challenge to existing practices. The students were also encouraged to consider sustainability issues and assess traditional practices of the island dwellers. We also promoted critical reflection on traditional behavior patterns of island inhabitants. The typical response of, ‘we’ve always done it like this,’ was discouraged and new solutions and preventative measures were researched for identified, harmful environmental practices.

By not having access to the internet on the island students were able to practically research aspects specific to their immediate environment in a ‘hands on’ manner. This almost forced them to come up with relevant and personalized solutions that they themselves had to source. They were also able to discuss with other members of the island community how the island might have changed over the years since its inception as a commercial fishing base. In this regard, we used to invite some of the older community members into the school to broach such topics. Many of the females who accompanied their husbands/partners to the island each year were a wealth of information on a broad range of environmental topics and were well utilized in the school. We often used these topics as the basis of a weekly theme where we related the formal ‘academic’ subjects to the topic at varying levels to suit the intellectual abilities of the students. We also invited visitors from the mainland who had specialist knowledge about the island to conduct special programs. For example we conducted a study, with the aid of ‘experts,’ on the identification and use of the vegetation on the island as a food source for birds and other animals.

The fishing, migratory birds, access to boats, diving, wildlife (many species of lizards and wallabies), reefs and flora all provided opportunities for students that many children on the mainland did not have easy access to. This allowed for ‘homework’ projects to have a very real and practical focus based on their island existence. As teachers we tried to incorporate as many of these features into our programs as possible. From an EE perspective the setting and circumstances were almost ideal for what we believed effective learning to occur. The immediate
access to a ‘vast outside classroom’ and the creation of a uniquely structured curriculum allowed for an interesting and contextually relevant program.

One of the limitations was that as teachers we weren’t as familiar with the setting as many of the students, and as such only realized many of the possibilities towards the end of our tenure on the islands. In general though we tried as much as possible to relate any work in the classroom to the environment in which the students lived, in an effort to allow for a greater understanding of their existence on the island and that existence’s relation to nature. We also encouraged reflection on human impact and the critical questioning of many existing and traditional practices. This was a highly sensitive and political issue in itself as I felt inadequately equipped with local knowledge to seriously challenge some practices that from my perspective needed changing, although there weren’t many.

However, by actively involving myself with the students in the learning process and still adhering to Departmental guidelines, we developed an informal ‘student negotiated’ approach to some topics of interest and what they further wanted to research. To say the least, the results appeared outstanding and the levels of understanding very different to those of similar aged students I had previously taught. The understanding demonstrated by some students, coupled with their critical attitudes to some of the environmental practices was highlighted in the original and thoughtful solutions that were offered to some of the identified environmental issues specific to the island. This also indicated to me as a teacher (facilitator) the effectiveness of a contextually relevant education program, and the transformative role it could play if the students were active participants in their knowledge creation and if the learning was authentic and meaningful directly to them. The students were consumed in their existence and realized they could actively contribute to their immediate environment and bring about change. They also discussed ways in which they could apply this knowledge to life on the mainland. This had a huge impact on me as I realized that this was in essence transformative education. It was a form of learning that I had not previously witnessed the power of.

To assist in illustrating further illustrating how environmental themes were integrated across all subject areas, I have included an example of a typical work unit negotiated with students.
Example of an integrated work unit at North Island School with a predominant Environmental Education focus.

The basic layout of our small school was one big classroom, divided into areas catering for two main age divisions. These were Preparatory Year to Year 3, and Year 4 to Year 7. For some activities and introductory sessions all pupils would be involved together, whereas for more specific academic tasks we would use these two main groups. We also used a mentoring program where students would be assigned a child from a different age group to work with. This was particularly beneficial as students used this opportunity to learn from one another. We encouraged open dialogue and asked students what they would like to further research and why.

Work unit topic focus: Migratory Birds using North Island as a breeding ground

Although this was a broad topic that the students wanted to research, it allowed for a diverse range of learning activities suited to all age groups. Each age group had levels of involvement appropriate to their intellectual development, but some activities encompassed all students. We also encouraged students to consider their residency on the island and the potential impact it might have on the bird life and breeding. This was in an effort to get them to possibly challenge existing practices if they deemed their stay on the islands impacted detrimentally on the bird life. Essentially we wanted them to critically assess whether they needed to transform existing attitudes or behavioral patterns. We as teachers made the point that we would learn with them and merely facilitate the learning process.

Introduction

1. We began with general discussions in a whole group setting focusing on what the students already knew and noticed about the bird species on the island. We also encouraged them to think about and draw ‘mind maps’ as to whether their existence on the island might impact on bird life and breeding. We had starter questions that the students also designed as discussion generators to engage them further and assess their existing knowledge. These included questions such as:
   - Do you think the birds live on the island all year round?
   - Do you think the bird life would be any different if there were no humans on the island, and why?
   - What impact do humans have on the birds existence?
What changes to the resident’s attitudes and behaviors might improve any negative impact on bird life?
Where do you think some of these birds may come from or go to?
Why do you think they might visit the island?
What have you seen that might tell us they come here for a reason?
Are there lots of different species? Would there be more if humans weren’t on the island?
What about their appearance tells us where they might stay or what they might eat on the island?
What have you noticed about their beaks and feet?
What colours are they and have you ever picked up any of their feathers?
Why might they make so much noise when we walk close to them?
Why have they chosen this time of the year to be on the island if they don’t live here all year round?

2. From this point we went for a walk to certain points on the island which the students had identified as being rich in bird life. We briefed the students on being as unimposing as possible and discussed what they thought would be appropriate behavior on the field trip and why! They were then encouraged to observe different bird behaviors, sizes, identify colours and species and sounds, try and assess if there were any chicks/nests/eggs in the vicinity (obviously without disrupting or damaging anything) and make rough sketches of some of the birds. While all this was happening we posed questions and gave guidance in some of their responses, particularly with some of the younger students.

3. The next stage was to invite one of the local identities, who has a grand reputation on the island for her knowledge of birds, to visit the school. Most of the students knew her and often took injured or sick wild life to her for assistance. She brought an amazing amount of literature and charts with her and together with some parents and us chatted about bird life on the island in general. This was followed by the students looking at their own drawings and trying to identify different species by comparisons with the charts and books brought in by her. (Later in the week as part of our art program the children did paintings and papier mache models of some of the birds.) We encouraged students to ask her questions about how bird life might have changed over the years and if she had noticed anything differently the longer humans had been on the island.
4. We then integrated this environmental theme across a number of subject areas. It was at this point that more intellectually specific activities were introduced. Examples of an integrated curriculum approach using this initial and contextually relevant ‘bird’ theme included:

- Geography – specific mapwork related to location of species on the island and migratory routes, weather, seasons, countries birds may be going to or coming from etc.
- Mathematics – multiple activities encompassing measurement, grids, distances, time, coordinates, number, graphing etc.
- Biology – eggs, reproduction, feathers, food groups etc.
- Science – flight, movement, physics etc.
- History – exploring history of flight, extinction of bird species, changed migratory patterns, human impact etc.
- Visual arts – painting, drawing, modeling etc.
- Performing arts – drama presentations, role play etc.
- Literacy – classifications, documentary writing, letters to island inhabitants, non-fiction and fiction writing, oral presentations, debates about existing practices and how they could change to improve the environment or lessen impact on bird life.

Students were able to choose from a grid a number of different activities that they wanted to focus on, or that more specifically met their interests. Most had a theoretical and practical component, and an ‘inside’ and ‘outside’ the classroom component. Some activities focused on how their waste disposal, fishing lines and nets might negatively impact on the bird life and an examination of what could be done to change this.

This list could be even more comprehensive but it sufficiently illustrates how a meaningful context promoted deeper understanding for the students, which in turn translated into multiple meaningful learning activities that the students easily acquired ownership of. Through questioning existing practice they were able to offer alternatives that transformed the way they acted.

By involving members of the local community and the local environment, the learning experiences transcended the classroom and impacted on a larger audience, allowing for a greater number of perspectives and discussion generators. By empowering the students they
believed they had a direct influence on environmental activity on the island and that their
creative and new found knowledge could have an impact on their immediate existence. It
was this contextual relevance that ultimately determined the success of the integrated work
units we undertook. It also gave us as teachers multiple opportunities to assess the work on
a number of levels without the need for any formal examination. As the integrated units
catered for multiple intelligences, students were able to select from a range of activities that
they had input in designing that best suited their learning styles. Students were also exposed
to the wealth of knowledge in the greater community and recognized the strength of com-
community involvement in sound environmental practices and knowledge generation. It was
also in essence transformative, as the students were learning skills that challenged existing
behaviors and brought about change to some traditional practices.

What I learnt from this experience
My time on the island was valuable in many ways. It taught me the many benefits of contex-
tually relevant work programs, the strength of constructivism, critical teaching approaches and
their potential for transformative EE praxis. Contextual knowledge generation by far surpassed
any derived from a textbook, and most importantly it revealed to me how it enabled transfor-
mation of attitudes and behavior. By using real world and experiential teaching strategies I no-
ticed how much more meaningful the activities we offered were to the students compared to
previous settings, and this allowed them to play an active role in their constructions of know-
ledge and take ownership of their learning. The students recognized that they could make a dif-
fERENCE and that their values and interpretations were appreciated and mostly encouraged by the
adults on the island. They developed a firm belief that they could transform some of the exist-
ing harmful practices they identified on the island by educating the older people in a respectful
way. To me this was a powerful realization of what transformative environmental praxis was
all about, but more importantly that it depended on a constructivist approach to our teaching in
order for it to be effectively realized.

A constructivist approach at the school had a huge impact on the students’ interest and com-
mitment to tasks and their general day to day enthusiasm. Students took great delight in chat-
ting to me about ‘school related topics’ even while we might have been doing other activities,
like fishing or diving after hours. Fish were often identified, weighed and released. The child-
ren only took home what they definitely were going to eat; quite different to many students on
the mainland. There was almost a blur in their minds between ‘official’ school work and mere topics of interest, as most of their (and my) learning revolved around their (our) daily existence.

Environmental thinking became a daily phenomenon because we continually explored issues that had relevance and meaning to our daily island existence and encouraged the students to construct and interpret their knowledge about their existence on the island. This promoted deep levels of thinking and learning, as issues were explored in an open ended manner where we didn’t stress any one correct answer. As a result the students often pursued multiple preventative strategies and solutions to topical issues. Even the very young students’ responses were appreciated and valued as they had often worked with an older student or community member to research issues and construct worthwhile responses. Their input was rated just as worthwhile as anyone else as we encouraged multiple perspectives and democratic decision-making. This also taught me just how important dialogue at all levels was, as opposed to ‘instructional’ forms of teaching, and it also highlighted the significance of students as co-constructors of knowledge in a transformative learning process.

The whole experience also made me realize the importance of playing the role of a facilitator as opposed to an instructor. I learnt with the students and actively researched and explored issues with them. (After all, it too was my immediate environment.) The time on the island gave me deeper insights into the power of local community involvement in formal education and how important it was for learning to transcend the classroom. The power of the collective community effort by all on the island was easily recognized, and we soon noticed the important role of individual commitment and action in the broader community if we were to transform attitudes, opinions and behaviors. But probably most importantly, the experience highlighted to me that context, critical and constructivist teaching approaches are inextricably linked in effective, transformative EE.

At the end of the cray-fishing season we left the island and moved to the state of Victoria, where I still live and work as a school principal. My experiences in this state form the next part of my story, first as a teacher at Torquay Primary School, followed by a contract as a ‘Cluster Educator’ working across seven schools, and then in my present capacity as a school principal.
**My Victorian experience**

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<tr>
<th>Australia</th>
<th>Perth</th>
<th>Abrolhos Islands</th>
<th>Torquay Primary</th>
<th>Cluster Educator</th>
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**Changes in Australian education policy and its effect on my practice**

Moving to Victoria saw my role change again as did the policy that dictated much of what I did in schools. Although education in the state compared to some of my previous experiences appeared ‘progressive,’ there had been few formal, notable changes from the initial Education Act (1872, reviewed in 1958, and then again in 2006 becoming the Education and Training Reform Act, implemented 2007). As such there was a desperate need to update policy to remain abreast of emerging global trends in education. Perhaps the most relevant recent initiative was the emergence and implementation of the 2003 Blueprint for Government Schools. Within this was a new curriculum framework, the Victorian Essential Learning Standards (VELS), which has largely determined how I’ve gone about my business in Victorian schools.

In the broader Australian context, ‘The Adelaide Declaration on National Goals for Schooling in the Twenty-First Century’ defines the national goals for Australian curricula. In this document EE is not referred to as a separate learning area, but it is included under the section entitled ‘national goals.’ The Ministerial Council on Education, Employment, Training and Youth Affairs (1999) states:

> Schooling should develop fully the talents and capacities of all students. In particular, when students leave school they should:

- 1.7 have an understanding of, and concern for, stewardship of the natural environment, and the knowledge and skills to contribute to ecologically sustainable development (1999, p.2).

This broad guideline gives scope for both general and specific curriculum interpretation and implementation, yet does not define how this guideline should (or could) be applied when formulating site specific policy and syllabus content.
As the document doesn’t prescribe how EE should be implemented, and also does not afford EE the status of a separate subject area, it creates potential for EE to be neglected in some instances. In Victoria, prior to the implementation of VELS, the earlier Curriculum and Standards Framework Two (CSF 2) afforded EE only a negligible part of the Studies of Society and Environment, and to a limited degree the Science subject learning areas. Broad rather than specific principles were applied to the actual teaching and content. In the latest curriculum framework, VELS, the Studies of Society and Environment learning area has been replaced by the ‘Domain’ of ‘Humanities’ which incorporates economics, history and geography. In addition, the ‘Domain’ of ‘Civics and Citizenship’ also includes the ‘Dimensions’ of ‘Civic knowledge and understanding’ and ‘Community engagement’ which allow for EE incorporation. (See Figure Two – Structure of Victorian Essential Learning Standards.)

At primary level in Victoria the largest portion of time is allocated to Literacy and Numeracy blocks which often results in EE being ‘lost’ in the integrated curriculum where it competes with a host of other subject areas. Even in the VELS framework EE is not given status as one of 16 key ‘Domains’ or as one of the further 39 sub categories called ‘Dimensions’. Irrespective of the status EE is officially afforded, the structure of VELS does however allow further scope for incorporation into a number of the 39 ‘Dimensions’ outlined in the framework as is later illustrated. My personal experience suggests that learning areas that aren’t promoted at the forefront of curriculum policy often lose ground to those prioritized by the government, education departments, formal curricula and syllabi. This is particularly evident if individual teachers lack personal interest, commitment or knowledge of a specific subject or cause.

_A shift in EE emphasis within new curriculum framework_

Concerns over the present state of EE are not new. As far back as 1992, the Economic and Social Research Council suggested that EE required urgent review. These sentiments are echoed by Iozzi (1990, p.8) who as far back as 1990 suggested that EE had received insufficient attention in education sectors. In Victorian schools that I have been associated with, there has however been gradual but ongoing change to the way EE has been viewed and implemented.

As previously mentioned the CSF 2 made only minor references to EE. These applied mainly to the understanding of the relationship between people and the environment, fostering respect and care (which are all positive attributes) but placed little focus on actual critical thinking skills and social inquiry. Although the new VELS document addresses some of these issues,
there still is a lack of distinct emphasis on the development of skills to not only deeper understand environmental issues, but also to respond to them through prevention, or solve them in a critical and effective manner.

There are however aspects within the VELS framework that are open to subjective interpretation within specific contexts. Clearly references to ‘reflection,’ ‘reasoning,’ ‘interpretation,’ ‘inquiry,’ ‘understanding,’ ‘evaluation’ and ‘metacognition’ (VCAA, 2005b) lend themselves to a diversity of pedagogical responses. These interpretations, ultimately determined by the context within which they exist, can all lead to different learning outcomes and experiences for both teacher and learner. Hence as I advocate, it is the contextual factors more so than the actual policy or curriculum framework that determines the learning experience and is what attention should be focused on.

My research and experience in a number of settings suggests that although education policy in general advocates an understanding of the relationship between human existence and the environment as being important, the broad principles defined in policy documents do not take into account the importance of context specificity or more essentially, the contextual influences on learners’ constructions. In Victoria for example, the closest mention to specific contexts is limited to references to separate communities and community engagement. The Board of Studies (2000a) illuminates the importance of local community in EE in broad statements such as:

   Participate in activities that enhance community life, particularly in making decisions about civic projects and in ways of achieving ecologically sustainable development (2000a, p.5).

These statements are positive for EE in principle and are also open to subjective interpretation which allows for multiple applications depending on the context in which they are interpreted and applied.

*Environmental Education in Victoria – a broader perspective and background to my experience*

Although one of Australia’s smallest states, it has the second largest population in the country with the cosmopolitan city of Melbourne the state capital.
Victoria has in many ways remained abreast of emerging trends and initiatives in EE both locally and in the most part internationally. Arguably, only New South Wales has been more progressive in EE policy and curriculum development in Australia. An important milestone in EE was the establishment of the Victorian Environmental Education Council (VEEC) in 1989. From its inception in 1989 to its demise in 1993, it developed a strategy consisting of nine actions for EE practitioners in Victoria (VEEC Strategy, 1992).

Reviews of EE such as The Department of Sustainability and the Environment’s ‘Evaluation of Environmental Education in Victoria, 2004’ suggest that the VEEC Strategy was not well known or used by many practitioners, but it did outline guiding principles that underpinned changing EE practices and also formed the foundation for environmental initiatives in Victoria. The basis of the strategy was, ‘Learning to Care for our Environment,’ which essentially was a cross sectoral framework for EE. The role of the VEEC was to monitor, advise and facilitate the development of EE across the state. The VEEC main successes were regarded as having developed the ‘Environmental Education Strategy’ (1992), establishing an ‘Education Grants Program,’ and developing an environmental ‘Communications Program.’

The principal foci of the 1992 VEEC Strategy was to establish environmental learning programs with community involvement, and to generate curriculum and professional development in EE. The development of EE across all education sectors with an inclusion of EE in environmental initiatives was also emphasized. This was supported by research and evaluation programs that were planned to guide the future direction of EE in the state.

The overall impact of the VEEC Strategy was not clearly identifiable in Victorian schools, yet formed the foundation for more recent initiatives such as, ‘Investing in the Future: Environmental Education for Victoria’s Schools.’ This more contemporary framework focuses on including EE as an essential and integral part of the school curriculum, where students are equipped with skills for life-long learning through the development of the student’s capacity to think and reflect critically, problem solve and understand their learning.

In an attempt to measure or more clearly identify the impact of the 1992 strategy, the Department of Sustainability and the Environment (DSE) carried out a study in 2004 to evaluate and assess the implementation of EE in Victoria. An interesting finding was that there was no
common view about the state of EE in Victoria with some practitioners positive about what has been achieved, and others considering any change as being ‘patchy.’ It was also revealed that there was major confusion over the language used to describe this area (DSE, 2004:4). However there seemed consensus on what was required in Victoria with regards to EE. In summary, it was agreed that the following was necessary:

- Policy needed to be updated with a clear strategy for implementation.
- Research and evaluation of best practice was required.
- There was a need for relevant PD.
- Long-term funding was important.
- Formal education policies at present did not support EE (DSE, 2004, p.4).

In light of the above, the study then made recommendations, which included:

- Conducting an audit of contemporary practices.
- Establishment of a cross-sectoral statutory body.
- Research and recognition of best practice.
- Greater coordination of professional development to a broad sector.
- Establishment of long-term approaches to initiatives.
- Development of a state-wide implementation program.
- Policy and strategy development based on a shared vision.
- EE to be recognized and integrated into formal education policies (DSE, 2004, p.5).

The study emphasized that there appeared to be no one common approach to EE. This is also highlighted by the following:

As a result of these uncoordinated developments, the implementation of environmental education and sustainability programs is fragmented. Any new government policy and strategy should build on the work already being implemented, nurture further development and bring together groups to improve resource ef-
ficiency, improve statewide coverage and ensure programs are best practice (DSE, 2004, p.12).

Also stressed in the study was the necessity for the state government to provide legislation legitimizing EE and for them to provide more leadership and coordination at state level.

The ‘Inquiry into Sustainable Communities’ released in June 2005 is perhaps the most pertinent document detailing the present state of EE in Victoria. The key findings of this inquiry by the Environment and Natural Resources Committee (2005) are categorized into 10 aspects, which are followed by recommendations. The findings can be summarized as follows:

- EE and behavioral change programs play a fundamental role if they are a component of a range of sustainable policies.
- EE is lacking in the upper secondary and tertiary levels of formal education.
- The outcomes of practical demonstrations of sustainable projects need effective monitoring as they are powerful tools to demonstrate sustainability.
- There are a small number of households active in locally based programs.
- Local sustainability programs need to be effectively evaluated, have sufficient resources and time frames if they are to achieve their objectives.
- Ongoing funding is required for long term success of community environment programs.
- Most EE programs don’t have effective performance measures.
- EE programs in Victoria lack coordination and strategic direction, and are diverse and fragmented, often resulting in duplication.
- There is a need for an EE audit in Victoria.
Information regarding community knowledge and attitudes is unavailable, yet is essential to developing effective EE programs (Environment and Natural Resources Committee, 2005).

If this was the state of EE in Victoria in 2005, how does the evolution of EE at Torquay Primary School (the setting of personal experience) sit with EE praxis at state level?

**Torquay Primary School – local profile**

On arrival in Victoria we settled in Jan Juc, a small coastal community alongside the coastal resort town of Torquay. After doing substantial work as a casual relief teacher in the area, I secured a job at Torquay Primary School.

The town has an international reputation for the sport of Surfing and lays claim to the world-renowned Bells Beach. This attracts a large number of transient visitors but the local surf industry also supports a healthy local work force. A number of residents have opted for a coastal lifestyle and commute to the larger cities of Geelong and Melbourne on a daily basis allowing for a local fixed population of approximately 11 000 people.

Although the area has a large influx of holiday makers over the Christmas and Easter periods, the town and neighboring Jan Juc and Bellbrae, support sufficient numbers for the existence of three primary schools. Torquay Primary is the biggest of the three, boasting an enrolment of around 750 students. The school uses a system of multi-age grouping and is divided into 4 main sections: Preparatory, Junior (Years 1 and 2), Middle (Year 3 and 4) and Senior (Years 5 and 6). At the start of 2009 the school also began a Year 7 program which will extend to Year 9 by 2011 with the school’s name changing to ‘Torquay College.’ (In mid 2009 it was also announced that ultimately the school would cater for all year levels in the near future.) It is a state school and draws from a variety of socio-economic backgrounds but is predominantly middle class. As coastal land prices have steadily increased in sync with the ‘sea-change phenomenon,’ the number of new young families moving to the area has slowed, as many cannot afford the high property prices. Over the 2001-2003 period enrolments at local schools dropped marginally but are growing again now and it is anticipated that numbers will steadily increase over the next few years. The diversity of programs offered by the school, complemented by the
strong community links the school has forged, has made the school an appealing option to stu-
dents and parents alike.

State school educational policy is defined by the Victorian Board of Studies which is also sub-
ject to broader policy determined by the state government, currently Liberal (2010). The aca-
demic curriculum was based on the CFS2 document that outlines 8 KLAs (Key Learning
Areas) but has now implemented the new Victorian Essential Learning Standards (VELS), a
new whole-school curriculum framework. (See Figure One – Victorian Essential Learning
Standards.)

The school is over a hundred years old and has recently moved to a new campus. Much atten-
tion was paid to a number of environmental aspects during the planning of the new buildings
and grounds, which transcended the actual architectural design of the buildings and impact on
the land, to include the provision of areas to be utilized for environmental purposes, such as the
establishment of a wetland region. In 2004, the school received the State Schools Garden
Award and has separate areas designated as Asian, Native and Aboriginal gardens.

The school previously listed EE as a Charter Priority focus area in the 1998 – 2001 School
Charter. Within the Charter the Vision Statement states that ‘Sustainability Education is educa-
tion IN, FOR and ABOUT the environment. All members of the school community will be
empowered to connect to their world and develop confidence in caring for it’ (Torquay Primary
School, 1998).

Although only one small aspect of the SOSE learning area (in the CSF2), and integrated into a
number of ‘Domains’ (in VELS), EE has attracted a lot of attention from students and teachers
and there are a number of environmental action groups in existence. This is partly due to the
commitment and effort of a minority of staff members, but it has resulted in a relatively high
profile for EE at the school and in the local community. The school staff is committed to pro-
fessional learning, but there has not been a specific or formal focus on EE in this regard. In-
stead the environmental focus of the school in general has exposed teachers to a large degree of
informal, or almost subliminal, environmental awareness. The school has also recently adopted
the motto of ‘Learning and Living by the Sea,’ and has finished building a designated envi-
ronmental centre. In addition to the activities of the local students, there are a number of envi-
ronmental action groups active in the local community. Many of these groups involved surfers
in their formation, with large international corporations such as Rip Curl and Quiksilver sponsoring activities and even involving their own staff members in environmental activities.

Although all major political parties in Australia have an environmental policy, the Greens political party, although a minority party, is most conspicuous in their environmental activities locally. The party places environmental issues high on their agenda and actively opposes what they perceive to be any negative environmental activity in the local community. The Greens have been particularly active in attempting to prevent further logging of certain tree species in regional forests, revegetation, stabilizing sand dunes, sustainable living and general coastal care. In general they play an important role as a ‘watchdog’ for environmental issues and are in part responsible for the high level of environmental awareness in the region.

As there are no major industries in the area, other than a power station and coal mining activity in neighboring Anglesea (approximately 20km away), automotive and petrochemical industries in a regional city, Geelong (also approximately 20km away), and local surfwear manufacturing factories, most students in the region are generally exposed to relatively proactive environmental practices within their immediate environment. The Surfcoast Shire has an active re-cycling program in place and affords environmental issues a relatively high profile. With a lot of emphasis on outdoor sport and recreation, the general environment appears well respected and managed.

Environmental Education at Torquay Primary School – a detailed perspective

On arrival at the school my attention was immediately drawn to the high level of environmental activity and action within the school. I wondered how and why the school was so involved with EE if it was subject to the same policy as other local schools who did not display the same interest and commitment to EE.

It soon became apparent that the sustainable ‘culture’ that existed at the school had developed from a number of years earlier, when some committed staff, students and parents actively went about raising the profile and activity of the school in environmental issues with support from the school leadership team. There was a distinct focus on ‘I can make a difference.’ The school’s geographic location also allowed for easy access to waterways, beaches, sand dunes, rockpools and a diversity of vegetation, which was ideal for excursions and EE activity. The principal and leadership team promoted and encouraged a range of environmental activity, the
inclusion of EE into the integrated curriculum and even employed some teachers who had previously worked in the education services of the Melbourne Zoo. EE was also supported financially and was allocated a separate budget in line with other subject areas. In short, EE was recognized as an essential part of the curriculum and teachers were encouraged to integrate it into all subject areas and promote student environmental action. I was also impressed with the efforts the school made to promote collaborative action and partnerships with both the broader and local community.

The school also hosts a number of visitors for environmental events including teacher professional learning, students doing practical activities in the Wetlands, the ‘Animals In The Classroom Program,’ SEA Group (Students for Environmental Action), Frog Breeding and species identification, plant propagation and there exists a tree nursery on the campus. The school has been accredited as a ‘Sustainable School,’ which is further elaborated on below.

**Torquay Primary – Background to my experiences at the school**

**Sustainable Schools Project**

The Sustainable Schools program is run by the Gould League and CERES (Center for Environmental Sustainability). A consultant from Gould League / CERES works with the school to help it run in a sustainable manner and encourages the children to learn about sustainability and how to live in a way that will leave a lighter footprint on the planet. The school developed a vision and a four-year plan that ultimately saves the school money, engages students in some practical activities and helps the environment through positive environmental action.

As part of the Sustainable Schools Program, Torquay Primary School was successful in obtaining $8500 for the development of the wetland area in 2002. The wetland provides important infrastructure for the channeling and storage of roof water and additionally filters stormwater. This provides greater biodiversity in the form of vegetation types and the various animals that are attracted to it. The wetland contains boardwalks, seating and a bird hide. Stored water is utilized for the watering of lawns and school gardens. The wetland provides a valuable teaching tool in curriculum areas that involve water conservation, eco systems, stormwater education and ‘life and living.’

The Program is now funded by: EcoRecycle Victoria; Environment Australia; EPA Stormwater Unit; Victorian Department of Education and Training; William Buckland Foundation; Tele-
There is obviously a strong correlation between programs such as these and the environmental policy of the school. As previously mentioned, EE was considered a School Charter priority/improvement area in the 1998-2000 period, but has maintained a high profile right through to the present. The inclusion in the School Charter as a priority/improvement area is acknowledged by the leadership team to commit to EE and set the tone for future involvement in this field.

**The evolution of EE at the school**

As EE was already fairly active at the school on my arrival, I was interested in its origins. I examined specific policies and a range of documents relating to EE at Torquay Primary School. It emerged that EE at the school was in essence a fairly recent phenomenon and can be divided into distinct eras. These eras are defined by set actions and events that have happened at certain times and are considered as:

<table>
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<th>The start of contemporary EE era – early 1990s</th>
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<tr>
<td><strong>Starting points</strong></td>
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<td>• In 1992, a teacher at the school was instrumental in establishing the following environmental activities:</td>
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<tr>
<td>1. Environmental energy audit.</td>
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<td>2. Environmental video production in association with Deakin University.</td>
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<td>3. Environmental booklet production.</td>
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<td>4. Revegetation and planting directed by local Koorie community members.</td>
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<td>• Formation of SEA group (Students for Environmental Action) an environmental action group supported by Deakin University staff and parents.</td>
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<tr>
<td>• ‘Artist in Schools’ project videos of Torquay and interviews with local identities.</td>
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Mid 1990s

- SEA group reformed with emphasis on action not awareness.
- Whole school Environmental Education Day.
- Charter Priority and Improvement Area in 1998.
- Indigenous Nursery established.
- Numerous field trips.
- Planting of vegetation on sand dunes at Whites Beach.
- Birds of Australia Atlas Project.
- OECD global environment, schools and active learning involvement.
- Environment Australia ‘Frog Symphony.’
- Shortlisted for: ‘Ford 1 planet top 12.’
- Students in curriculum negotiation with SOSE teachers.
- SEAGROUP visited other local environmental groups.
- 1st Student Conservation Conference.
- Rubbish Free Lunch programs.
- Litter taskforce established.
- Integrated Units and daily planning incorporating EE.
2000 -2005

- Conservation camps and Environmental Conferences including all schools in the Oberon Coastal Cluster.
- Science Teacher of the Year award.
- Animals In The Classroom Program.
- Landcare planting and revegetation.
- Zoo PD – involving other schools from the region.
- ‘Frogs Project.’
- New school campus preparation – 1000 trees planted on new site.
- Olympic Landcare planting program.
- SIS (Science In Schools) Environmental Excursion.
- Integrated Curriculum PD at Museum.
- Sprockets and Flares (ICT competition focused on environmental issues.)
- Establishment of Wetlands.
- Ongoing series re Professional Development in EE.
- Recycling Program put in place across entire school.
- Establishment of chicken shed where student food scraps are recycled for food and eggs sold to the community.

2006 – Present
The present era has largely focused on consolidating on previous programs and the integration of EE into the curriculum in line with the VELS framework. The development of a new Environmental Centre with a designated teacher has also been an aspect of considerable attention. The new facility completed in mid 2009 incorporates student environmental learning, professional development for teachers, two and three dimensional exhibitions, live animals, interactive displays and a plant nursery. The building is adjacent to the present ‘wetlands’ and bird viewing area, and will also host local community environmental groups and neighboring schools. The school is recognized as a
As can be seen from the environmental activity and policies in place at the school, little attention has been paid to the limitations imposed by formal education policy. The school has been active in ‘exploiting’ broad and generic guidelines through the development of contextualized EE learning.

The role of broader educational policy in the background to EE at the school

Much of the environmental activity at the school developed prior to the CSF 2 document, released by the Board of Studies in 2000. Further environmental initiatives developed within the period between the CSF2 and the VELS, the present curriculum framework. Although EE was recognized within the CSF2 with acknowledgement of support for education ‘about,’ ‘in’ and ‘for’ the environment, its profile was very low in all of the eight Key Learning Areas (KLAs). This meant that a lot of EE was absent in the development of formal work units and instead became the domain of interest groups as an extra-curricula activity which impacted on students and teachers’ ‘spare’ time. What was of significance though in CSF2 was the recognition that students needed to develop skills that enabled them ‘to be active and informed participants in environmental decision making policy’ (Board of Studies, 2000a, p.10). This coupled with the promotion of a ‘for’ the environment approach marked a distinct shift towards students being more actively involved in environmental matters on a local level.

Torquay Primary School took these EE references within broader policy and applied them in a contextualized manner to be the foundation of their local policy. The school also actively sought partnership arrangements with a number of other environmental groups and encouraged the integration of environmental themes across a number of subject areas. In this way other subject areas weren’t compromised through reduction of teaching time at the expense of EE. This resulted in increased environmental activity and the establishment of an active environmental ‘culture’ within the school.

In contrast, many other schools in the area instead focused on CSF2 goals such as ‘the increased importance of literacy and numeracy’ (Board of Studies, 2000a, p.5), which meant EE

leading player in EE within the region and continues to host a biannual three day student environmental conference. An article outlining the event was published in ‘EINGANA,’ the Victorian Journal Of Environmental Education (Volume 27, No 2, September 2004).
was generally regarded as an ‘add on’ and received little attention at all. As literacy and numeracy were recognized as top priority by the government they were also supported by vast PD resources and consumed most ‘face to face’ teaching time. This meant that if EE wasn’t integrated into other subject areas it was largely neglected. (A typical primary school day in Victoria consists of a literacy block followed by a recess, numeracy block followed by lunch, specialist, integrated studies or other subject areas until school closes. This means that approximately 80% of teaching time is dedicated to literacy and Numeracy.)

As EE is still not recognized as a separate learning area, it is very easy for it not to find its way into the formal curriculum as it isn’t allocated a specific teaching time. Torquay Primary School’s environmental activities developed out of the more restrictive curriculum framework (CSF2) than the framework that presently guides Victorian schools. Although the CSF2 made mention of approaches to teaching and learning in SOSE (Studies Of Society and Environment) that included a focus on critical questioning and active investigation (Board of Studies, 2000a, p.30), this was not specifically directed at EE so many teachers failed to apply this to environmental matters. The CSF2 goals also emphasized that students on leaving school should have analysis and problem solving skills, but as this was also not presented in the context of EE it too was seen as specifically relevant to subjects like mathematics and science. It was also only at Level 6 (end of Year 10) that the CSF2 made mention of the development of strategies to manage and sustain the environment, which some teachers interpreted as being insignificant at primary level.

This illustrates that it was not formal policy specifically that dictated involvement in EE at local schools, but rather personal interest and commitment instead. Torquay Primary School opted for a high environmental profile and manipulated formal policy to meet the needs of their unique context. Other local schools were subject to the same policy, but chose other areas of attention instead.

In the context of VELS the contemporary curriculum framework, there exist more opportunities for EE, but as it still does not have an identity of its own it is still prone to neglect in the classroom. Torquay Primary School has however embraced the new curriculum framework to further develop and enhance its environmental program. This is particularly noticeable in their application of the VELS domains (see Figure Two – Structure of VELS) of ‘community engagement,’ ‘building social relationships,’ ‘science knowledge and understanding,’ ‘reasoning,
processing and inquiry,’ and ‘reflection, evaluation and metacognition’ to their EE program by way of a multi-disciplinary approach with an emphasis on integration across all subject areas.

The school has clearly embraced some of the principles and characteristics of effective EE that I have considered in this thesis. This is particularly evidenced in their environmental action groups, community participation, contextualization of curricula, and the development of programs that present environmental problems as societal issues where students, teachers and communities can all be actively involved in preventative and solution seeking strategies. When one enters the school grounds or visits classrooms it is difficult to miss the bold environmental themes and activity in the school. Most classrooms have environmentally related displays (live animals, posters, models, biospheres etc.), an active water saving policy is in place (buckets placed under drinking fountains), food scraps are fed to the chickens whose eggs are sold to parents and staff, recycling is very evident with colour coded bins, plants are propagated on site and very importantly, the students manage and control all these activities. In short, change of existing practices where they can be improved is encouraged.

EE is also very prominent across a range of work units and is conspicuous in most subject areas. There is a distinct emphasis on deep levels of understand and the critical analysis or evaluation of many local environmental behaviors. This all gives ownership and meaning to the students and assists in their understanding of global environmental issues. The ongoing student ‘Environmental Conferences’ held by the school are indicative of the school’s commitment to contextualized forms of EE that are of direct and meaningful relevance to the students, teachers and greater community, and ultimately are beneficial to the environment.

The success of the school’s EE program has been dependent on some of the factors outlined above, and most significantly on the emphasis placed on students applying their knowledge and understandings in the local context to bring about change. The management of the school also leads by example in their promotion of the sustainable use of resources and their efforts to reduce their ecological footprint. The teachers are also supported by relevant and meaningful PD directly linked to their daily practice.

The relevance and importance of ongoing professional learning became even more apparent as I left the formal classroom context to become a ‘Cluster Educator’ in 2004. My main role in this capacity was to source and provide PD for teachers across seven local schools. A signifi-
cant emphasis was placed on mathematics and science, under which EE inevitably fell. After four years in this role, I then took up the position of school principal of a small school on the Bellarine Peninsula, about 35 kilometers from Torquay. In this role too, I was heavily involved in the promotion of ongoing professional learning for my staff and environmental activity for students. Contemporary professional learning for teachers is yet another contextual force that impacts on EE praxis, and has an important role to play in our understandings of how learners construct issues, and the skills and strategies practitioners can equip them with to respond to these issues.

Professional development (PD) for teachers

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<tr>
<th>Australia</th>
<th>Immigrated</th>
<th>Torquay Primary</th>
<th>Cluster Educator</th>
<th>School Principal</th>
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<tr>
<td>Abrolhos Islands</td>
<td>1998</td>
<td>Ongoing</td>
<td>tertiary</td>
<td>studies</td>
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Perhaps one of the most recent and significant developments in Australia with regards to teacher professional learning, has occurred in the state of Victoria. In May 2007 the Department of Education and Early Childhood Development (DEECD) announced that as from 2008, all teachers would be required to undergo a minimum of 100 hours of PD over every five year period to maintain their eligibility for registration with the Victorian Institute of Teaching (VIT), the state teaching authority. Another commitment suggested by the VIT is that half of the minimum hours of PD should incorporate research and knowledge sourced from outside the immediate work or school setting. This is a positive move in principle, but it is ultimately the content, the focus of the research and delivery of the professional learning that will have the greatest long-term impact. It will also be interesting to note whether EE becomes a priority teacher learning area or if the traditional emphasis on literacy and numeracy will continue to underpin departmental initiatives.

In the 2003 Victorian ‘Blueprint for Government Schools’, teacher PD was granted separate status as one of seven individual ‘Flagship Strategies.’ However the area of main focus underpinning this strategy was still to ‘enable teachers to enhance their content knowledge’ (Blueprint for Government Schools, 2003) with little attention afforded to how this knowledge can
best be utilized to apply critical skills in student learning. This adds further substance to the ‘content’ versus ‘skills’ debate in how student learning outcomes are best improved.

To a limited degree these questions are addressed in recent Australian education curriculum and policy initiatives. As an example, in ‘The Blueprint for Government Schools’ (DET Victoria, 2003), specific principles of effective teaching and learning are identified. These have become known as ‘POLT’ (Principles of Learning and Teaching). The principles describe what best supports student learning, and are listed as:

1. The learning environment is supportive and productive.
2. The learning environment promotes independence, interdependence and self-motivation.
3. Students’ needs, backgrounds, perspectives and interests are reflected in the learning program.
4. Students are challenged and supported to develop deep levels of thinking and application.
5. Assessment practices are an integral part of teaching and learning.

These principles address many of the key aspects required for what is perceived as effective education to occur but yet, as I propose, are not always evident in contemporary practice. In a multi-cultural society such as Australia with large migrant populations, it is essential for educational programs to cater for diverse cultural ‘needs, backgrounds, perspectives and interests’ as reflected in ‘POLT 3’ above. Yet personal experience and empirical evidence suggests that this is not always taken into account. More typical have been the implementation of generic programs within the curriculum framework designed by a central office to suit the needs of the ‘average’ Australian student of ‘average’ intellectual ability in an ‘average’ socio-economic situation.

This is not to suggest there have not been reforms and innovations in Victorian education, considering the 1872 Victorian Education Act (reviewed only once in 1958), which determined education policy and legislation, was in force right up until July 2007, when the new Education
and Training Reform Act 2006 officially came into being. As the official Education Act has always been viewed as dated, contemporary school education has largely been influenced by, and based on the Blueprint for Government Schools (2003) instead of the Act itself, because of the Blueprint’s specificity for teaching and learning. This document emphasizes interdisciplinary learning and the development of meaningful understandings across a range of learning areas, as well focuses on effective teaching and teacher professional development.

Another characteristic of the Blueprint for Government Schools (2003) is that it provides more opportunity to respond to student diversity, different needs, backgrounds, contexts and interests of learners. This is reflected in the three interrelated core strands in the standards, namely: ‘Physical, Personal and Social Learning,’ ‘Discipline-based Learning,’ and ‘Interdisciplinary Learning.’ (See Figure Two – Structure of VELS). These strands are then further divided into domains, for example Health and Physical Education, The Arts, Science, Mathematics, Communication and Thinking, which are then further divided into dimensions. Examples of the dimensions in Mathematics include Number, Space, Measurement, Structure and Working Mathematically.

The new emphasis on ‘Interdisciplinary Learning’ at policy level has vast implications for the field of EE, as there is now more emphasis on integrating subject areas, and a move towards understanding, critical thought and problem solving skills, more than emphasizing teaching traditional subject areas. The VCAA (Victorian Curriculum and Assessment Authority, 2005b) states that:

> Students need to develop a set of knowledge, skills and behaviours which will prepare them for success in a world which is complex, rapidly changing, rich in information and communication technology, demanding high order knowledge and understanding, and increasingly global in its outlook and influences (2005b, p.2).

To support this, the State of Victoria’s Office of Learning and Teaching (2004, p.7) suggests that it is necessary to conduct; ‘an audit and analysis of current curriculum provision to build an understanding of the learner profile, community, partnerships and values, beliefs and under-
standings,' in an effort to set the context for future curriculum planning that will enhance and support student learning.

This thesis is in agreement with taking the above characteristics (amongst others) into account when designing curricula (particularly the learner’s profile, community, values and beliefs), when considering the development of future effective EE programs. However, transformative education cannot come about without also taking cognizance of the learner’s individual needs, taking into account individual interests and constructions of reality and also teaching approaches that cater for these constructions. If as practitioners we strive for learners to challenge existing power relations and to adopt a critical stance, then we need to be serious in accepting and understanding their values, beliefs, opinions and decisions. However, analytical and interpretive skills and understandings need to be developed within the learner to inform their decisions and enable constructive criticism of existing structures, so that change (transformation) can be realized.

The Torquay Primary School example illustrates the potential of other forms of place-based education in bringing about change that aren’t on the scale of those covered in the Literature Review which were in essence planned environmental initiatives. Even within a curriculum framework that does not specifically promote contextualized learning, a focus on student action, constructivist teaching approaches, environmental understanding, community involvement and the development of critical skills, have all contributed towards effective EE praxis at the school, although it might still be lacking in some of its transformative aspects. From my experience it appears that the school’s approach to EE still has only made significant impact on the committed individuals that are members of the environmental action groups. This suggests that not all teachers might employ similar teaching approaches and strategies, and that not all teachers might actively promote sustainability within their classrooms even though there is a whole school commitment to sustainability. Within certain classes though, the distinct relationship between constructivism, place-based learning and transformative education is from my perspective very evident. It is this relationship and other implications for future transformative EE praxis that have arisen from my personal experiences that I now further explore.
SECTION THREE

3.1 Issues and implications for transformative EE praxis arising from the narrative and literature

My research questions focus on context and the contextual complexities affecting and informing transformative EE praxis. They include an exploration of the link between constructivism/social constructivism, social critical approaches and transformative EE praxis, as well a consideration of how autobiographical narratives can further our understandings of contextuality in EE praxis.

Analysis of contextuality in Environmental Education

A theme that has clearly emerged in my educational experience is that I perceive learning opportunities are generally geared towards the ‘average’ student, often across a wide geographic area, irrespective of the unique influences that potentially impact on every learner. This, coupled with curriculum designs aimed at broad cohorts of students, (with an assumption that their learning needs are often similar), has led to the (mis)belief that generic curriculum forms adequately meet the learning needs of most students. This is not necessarily specific to EE, but is evident across many learning areas. I believe this assumption is fraught with potential problems and is not conducive to effective and transformative EE. Reid (2007) cautions on generic pedagogical approaches:

> Whatever happens, we have to ensure that teachers can devise curriculum that suits the needs of kids in their particular contexts, and we have to be very wary of prescriptive, one-size-fits-all approaches (Reid, 2007, p.5).

The American National Research Council also reminds one that ‘learning is influenced in fundamental ways by the context in which it takes place’ (2000, p.25).

If one is in agreement with the above proposition, then there are substantial implications for education both in the formal and community sector. The context in which the learning takes place is undoubtedly determined by a number of complex factors. As the narrative illuminates, aspects such as culture, political history, geographical elements, gender, social norms and traditions amongst others, all contribute in the creation of a unique learning context. These exam-
ples constitute only a shallow layer of further contextual determinants that all impact on the learner’s construction of reality and knowledge. As a response, this thesis proposes that through a deeper exploration of these influencing forces, context can be used as a tool to reveal the meanings and connections learners assign in their constructions to inform the design and implementation of transformative EE praxis.

If specific contextual factors are not taken into account, then students are embraced by an environmental consciousness that has been formulated on a global scale with little or no relevance to their unique or specific setting (Mahoney, 1998, p.141). This has implications for a transformative EE. If the learner is unable to apply broad knowledge and understandings to the local context, then their individual potential to bring about change is severely compromised. The notion of ‘think global act local’ is often touted in contemporary EE initiatives, but thinking globally is of most significance if it translates to constructive ‘local’ action. Conversely, local environmental action can also contribute to global perspectives. So more importantly I believe is the learner’s understanding of local issues first, that can then be positioned alongside global issues to make more sense of them. This can only come about through authentic and contextualized learning opportunities that promote the development of deep understandings of immediate real-life contexts. As I have intimated, these understandings have to be seen relative to the complex contextual factors that determine them, and be taken into account in the structuring of meaningful learning experiences.

It cannot be assumed that there is consensus in the understanding of sustainability. Sustainability means different things to different people and although practitioners might have broad objectives that inform EE praxis, they are often formulated from the perspective of the practitioner and not the learner. These objectives might be applicable to a number of scenarios in different contexts, but in essence, contexts are defined by specifics not generalities. It is this distinction, the recognition and acknowledgement of unique specifics and the constitution of separate contexts, which ultimately determines the efficacy of EE, and more particularly its potential to transform society.

I do not suggest that there is no value in non-context specific EE, but rather that contextualized and constructivist approaches are more conducive to transformative EE praxis than transmissive forms. There are advocates of a wide variety of alternative approaches to EE, many of which are grounded in different epistemologies, which I do recognize as having significant
contributions to add to the debate on the constitution of effective EE. The scale of differences in perspectives is quite extreme and confusions in interpretation can exist purely by the manner in which EE models are termed. For example ‘global EE’ that in name suggests direct opposition to models framed by contextually generated knowledge, supports both contextual and universal generated knowledge. These such (global EE) models do not necessarily adopt a positivistic instrumental view on human behavior, but by the same token generally tend more towards behaviorist than non-behaviorist perspectives.

The diversity and credence in a range of learning philosophies and perspectives illustrates that there is not simply a ‘black or white’ model where one approach can be considered wholly right, and the other wrong. Instead there exist a range of interpretations of EE that will each have support from proponents aligning with specific orientations who would argue the merits and efficacy of their adopted stance. This not only generates healthy debate, but also offers insight into potential weaknesses, strengths and interpretations of different approaches. Mahoney (1998, p.137) reminds one that it is advantageous to view environmentalism as encompassing a broad spectrum of world-views. These positions might exist anywhere between human-centered and nature-centered poles and represent various paradigms.

But for those paradigms falling under the umbrella of a ‘global’ model, is there scope for transformative EE praxis, or is transformative EE only the domain of contextual, critical and constructivist models? Selby (1999), inspired by the ‘quantum worldview,’ presents a number of varieties of global education, but in essence sums it up as:

Global education is an holistic paradigm of education predicated upon the interconnectedness of communities, lands and peoples, the interrelatedness of all social, cultural and natural phenomena, the interpenetrative nature of past, present and future, and the complementary nature of cognitive, affective, physical and spiritual dimensions of the human being (1999, p.126).

Global education theory need not be viewed in direct conflict to those theories challenging existing structures (for example critical theory), as it also proposes the transformation of social and learning institutions and embraces environmental responsibility. There are further commo-
nalities, and although expressed in holistic and interdependent terms, global education essentially still subscribes to social justice, a diversity of perspectives and has a future-orientation.

Although global approaches stress interconnectedness, it is the individual uniqueness of these interconnected environments that are of integral importance. Clearly aspects such as the geographical, zoological and biological specifics of a particular natural environment are insufficient distinctions on their own in determining context. The contextual elements on many complex levels, essentially the ‘contexts within contexts’ need to be considered integral parts of the dynamics of a specific environment as there exist multiple and unique forces that impact on constructions of reality.

This is not to suggest there are no collective interpretations that can generate action. The existence of specific meanings assigned to reality can also exist simultaneously with a commitment to common goals by individuals and community. (For example, people have very different individual compositions, yet might share similar objectives or goals. In the South African example, the collective commonality of oppression amongst non-white race groups, was a powerful motivating force to cripple apartheid even though the individual differences of those involved in the struggle were uniquely different.) Shared beliefs by different communities do not necessarily negate other individual differences that are evident within those communities. Although they might have shared domestic pursuits, the logistics in realizing these pursuits also might differ substantially between communities. This also has implications for EE.

Recognition of commonalities, together with the recognition of the unique identities and diversities of specific contexts, is then essential in gaining an understanding of individual and group constructions of reality and how they might respond to these constructions. These understandings have a direct bearing on transformative EE. As a diversity of aspects on many levels are all constituents of a particular context, so too do they all influence constructions of reality and perceptions of environmental issues. Knowledge and understandings of these contextual constituents is valuable in informing the design and implementation of transformative EE.

It is not always logistically possible to consider of all these contextual determinants in EE design, but the broader central and socio/cultural contextual elements ought to form the foundation. Exploration of the deeper contextual forces that impact on the learners’ constructions of issues should however determine the pedagogical approaches that are employed in the imple-
mentation of the curriculum. This essential socio/cultural contextuality of EE is supported by Ruiz (1994) who cites a paper by Sauvé focusing on the post-modern era of EE:

The *grass-roots environmental education* movement emphasizes the importance of associating environmental education with a dynamic of community change that takes into account the specific social and cultural characteristics of the people and the particular context in which they live (1999, p.14).

If research into such issues is important in informing effective EE praxis, where does this sit within EE research perspectives? From a critically-oriented research perspective, where there is an emphasis on developing a greater understanding of existing educational theories, practices, and the contexts within which these have meaning, the recognition of context as a legitimate determinant in EE program development and policy formulation is then central.

Post-modern social theorists view EE as a process of social change, with environmental concerns open to a range of educational responses. As societies have themselves constructed these environmental problems, societies also need to develop innovative ways of dealing with them. If context is a device to expose how environmental issues are constructed and education is a tool in realizing possible solutions to environmental concerns, then EE needs to be in synchrony with social change. Janse van Rensburg (1994a, p.3) supports this notion by suggesting ‘educational responses are shaped by changing social contexts.’

Further concern for effective EE development is whether the models evolve with changing social contexts, or are they rather shaped as a response to change. A mere response to an ‘already changed context’ may not best meet the needs of the learners, as opposed to an education that is developed within the evolution of social change, its context and determinants. A focus on developing skills and understandings that can be assigned to a range of applications is then more applicable in coping with social change than a content-driven education as a retrospective response to change. (Responding to a process of change while it is occurring is more likely to suit the changing needs than a response after the event has happened.) From a critical perspective, Robertson (1994) proposes context can also assist in a greater understanding of educational models and practice:
Critically oriented research, which makes problematic aspects of the context in which knowledge is individually and socially constructed and mediated, has much promise to inform our understandings of current practices (1994, p.29).

Within non-behaviorist paradigms there is recognition of the relationship between the context in which one exists and the creation of knowledge as there is a belief that one’s perception of reality and one’s generation of knowledge is determined experientially and contextually. What an individual perceives as reality is only a construction created by the values, beliefs and principles they might possess, and by the complex constituents determining those perceptions. These are all influenced by the specific environmental context in which they exist and the societal norms and activities of which the individual forms part. If researchers and practitioners accept that environmental problems are essentially social constructions created by individuals as members of society, then a more specific approach to deal with these environmental issues ought to be formulated and structured to the specific context in which they exist.

Gauthier et al., (1997, p.168) cite theorists such as Janse van Rensburg (1994) and Bardwell et al. (1994) as supporting the notion of environmental issues originating from values held by particular societies and their specific social practices. Robertson (1994) states:

They are socially constructed, in terms of their conceptualized effects on human individuals, groups and other living things and systems (1994, p.29).

If as I propose environmental issues are socially constructed, then the context in which they are constructed requires scrutiny to assist in the comprehension of them. Similarly, the context in which they are constructed should have a direct bearing on curriculum design, policy and practice particular to the context in question. As constructivists’ concern is with the theory of learning and the construction of knowledge, it is informed by the context in which the learning and social constructions occur and therefore is applicable to transformative EE praxis.

Constructivism and effective EE

This thesis advocates constructivism (due to the recognition of contextual learning and the individual as an active participant in the learning) as crucial to effective, transformative EE prax-
is. In support of constructivist approaches there exists a vast body of literature and research that challenge the traditionally adopted positivist based models, particularly on behavioral terms. This is accentuated by theorists who stress that EE should not be defined or monitored in terms of specific behavioral outcomes, but rather in terms of generating critical and constructive thought, which in turn transcends into action and potentially transformation.

Within constructivism there are two main interpretations; psychological (advanced by Piaget) and social constructivism (advanced by Vygotsky). Both interpretations I believe have a bearing on transformative EE as transformation cannot come about unless the learner’s cognitive development, interests and needs are taken into consideration (the psychological aspect), as well as the culture and the context (the social aspect) of the learning environment. Constructivist approaches promote a link between immediate reality and ‘bigger picture’ abstract concepts. Social-constructivist approaches acknowledge learning as a social process and the learner’s interaction with the environment and others as part of this process, which can potentially bring about change to the life of the learner, society and the environment.

Pruneau et al. (2001) promote the merits of a social constructivist approach to bring about transformation:

This socio-constructivist method ensures awareness, elicits interest, and favours the evolution of concepts without forcing learners to espouse the teachers’ or scientists’ beliefs…Future education exerts a role of empowerment: learners realize they hold the power to modify the future (2001, p.141).

This ‘power’ to modify the future is dependent on learners being encouraged to challenge existing power relations to bring about changed social attitudes and informed behavioral changes. An approach informed by socio-constructivism promotes change and recognizes the input of the learner by relating environmental issues to an immediate and tangible context, that of one’s own biography, community and environment, and therefore links well with transformational aspirations. Change to existing unsustainable activity is closely linked to critical understandings of life issues and an awareness of informed behavioral choices. It essentially cannot come about without a changed perception, insights and understanding of existing activity.
An individual who is able to relate their own practices to a particular issue is more able to give it worth and value, and can then easier recognize their potential influence on that issue, than something distant or removed from their existence. (The emphasis in this scenario is on intrinsic motivation for change through increased understandings of issues, and not as an extrinsic response to an issue.) Solving and preventing environmental issues are then dependent on identified, collective individual actions where the learner critically reflects on the impact of individual and collective behavior. Learning opportunities then need to focus on the development of skills and understanding that equip individuals to bring about change and recognize their input in bringing about the change. If an individual is unable to critically identify and understand environmental issues it is unlikely there would be recognition of the need for change.

The importance of accurate identification and a critical understanding of perceived problems and concerns then are central in the provision of effective EE. As without realization of the existence of an environmental issue, little can be done to remedy that particular situation. Barraza (2001b, p.139) emphasizes the importance of identifying environmental perceptions in young learners and suggests that by ‘identifying children’s concerns about the world and the environmental situation,’ it can assist practitioners to ‘orientate educational efforts’ towards reinforcing good environmental practices. The emerging message is that practitioners need a comprehensive understanding of how learners create issues and the forces that impact on these constructions if they are to provide an effective EE.

The complex context in which learners grow up and are educated forms the basis for their construction and perception of reality. These social constructions are dependant on context specific perceptions where ‘the development of values is primarily a socialization process’ (Barraza 2001b, p.240). The immediate context in which these perceptions and values germinate, ultimately determines the learner’s attitude towards social/environmental problems, and if an environmental issue can be related to their immediate real-life existence, the learner is able to associate with it, and produce a more rational or worthwhile response.

If we accept that many environmental issues and crises are the result of human attitudes towards the environment as Barraza (2001b, p.140) suggests, then it is essential that educators employ strategies that assist the learner to modify these attitudes through the promotion of critical thought and environmental understanding, so that learners can adequately prepare for a sustainable future through informed choices. Transformational activity is compromised if
learners aren’t actively engaged in informed decision-making about their future, where their concerns and perceptions are taken into account. The comments of Barraza (2001b) exemplify this aspect:

To create possibilities, schools need to incorporate a future dimension into the curriculum in order to embrace exploration, evaluation, and critique of emerging ideas. Education for the future provides the opportunity for empowerment, so that children can work towards their chosen future (2001b, p.140).

By giving learners a voice in their ‘chosen future’ they become very relevant to their own existence and hold authentic meaning to their lives. The provision of EE then needs to allow for both the ‘critique of emerging ideas,’ and the empowerment of students as mentioned above. The recognition and perception of environmental problems are dependent on the learner’s awareness of them, and their recognition of their power to bring about change. If environmental issues are explored and integrated into the general curriculum in a manner that arouses awareness and understanding as well as emphasizes skill enhancement, ultimately any resultant decisions (actions) will be made in an informed and critical manner.

A critical understanding of both the causes and the potential ramifications of environmental issues on a particular society, plays a significant role in the action it may generate as a preventative measure or as a response to the identified issue. The skills required to adequately address environmental issues are not inherent, but require development through the learning opportunities we present in EE programs where students are active and have ownership in their construction of knowledge. As a response I propose EE programs should then focus on the generation of such critical skills and not merely the transfer of knowledge about environmental issues, and this is where critical and constructivist approaches provide a suitable platform to bring this about.

Studies by Barraza (2001) examining the perceptions of social and environmental problems by school children, clearly illustrate that both teachers and children from different contexts respond to environmental issues in different ways. If as practitioners we are to understand these responses then we need to further explore the contextual forces impacting on them. These forces are complex and numerous and not simply a result of geographical and socio-cultural
differences. As responses to environmental issues are determined by the perceptions of those who constructed them, the specific meanings assigned by participants in the construction of them need to be taken into account in the learning process. Constructivist approaches allow for cognizance to be taken of these meanings through the learner’s active involvement in the learning process where their specific needs and interests are taken into account making it relevant to their real-life world.

Barraza (2001a) reminds one of the importance of the learner’s direct life experiences in the learning process:

> Many factors have to be considered such as: pedagogical approach, training, resources, methodological tools, but most important is the cultural context… Results showed that children’s perception of the world and environmental problems are related to their direct experience of the problem itself… and reflects the cultural, social, and political situation of the society (2001a, p.152).

It is only if understandings of these issues exist as real-life experiences within learners, can authentic new knowledge be constructed that can generate transformational activity. Learning informed by constructivism promotes these real-life learning experiences which is crucial for it to be meaningful, relevant and authentic and to potentially bring about change. Constructive, long-term and informed transformation is to a substantial degree dependent on the learning processes that students are involved in, and the adoption of particular pedagogical approaches that support transformation within that process is crucial to the product or outcome of the process. Constructivism is then one link in transformative EE praxis that requires recognition in practitioner’s selection of pedagogical approach.

If pedagogical approaches do not take into account the unique specifics of contexts, including the interests and real lives of the learners and the meanings they assign in their social constructions, transformational praxis is potentially compromised. Cognizance of context, the development of critical skills, an inquiring mind and the confidence to challenge existing power structures are all integral aspects of transformational EE praxis. However, this is not the domain of formal education alone. EE is prevalent in many settings outside the formal school structures.
Local community is one setting that allows for EE to transcend some of the factors that I perceive to be inhibiting effective EE, such as traditional science approaches, politicization and a focus on specific educational outcomes. Local community as a social forum can act as a link between learners, the school and broader societal real-life issues that individuals can productively relate and respond to. Local community is an integral constituent of specific contexts, and as such it is perhaps a crucial medium for informal environmental learning aligned with social constructivism to be realized. Through interaction between members of society, the unique cultures, needs, interests and backgrounds of the learners are inadvertently taken into account in the social learning process.

**Community and environmental education**

Local community can be strongly linked to the formal learning context through such activities as home-school partnerships, learning opportunities in the local environment, the inclusion of local identities in learning, involvement in local environmental initiatives, student negotiated curricula and the formation of student action groups. These opportunities provide a solid platform for local community to be an integral part of EE and for the learner to construct or reconstruct new knowledge based on his/her real-life interactions and experiences within the community. It is also local community that can provide the link between the complexities of local context, social issues and the formal learning setting.

It is ultimately our social connections that determine our traditions, values and beliefs, and it is these that essentially determine our worldviews. The existence of an environmental/social issue within a specific context is then a construction shaped by a specific worldview or knowledge that has been generated through subjective interpretations within individuals connected to a specific community. This is what essentially determines the potential strength of community-based EE as a transformational activity. As it occurs within a relevant and meaningful context to the learner, the generation of a preventative measure or response to a perceived environmental issue that is real for that specific community takes cognizance of the complex context from which it evolved, an aspect that formal school curricula generally cannot take total account of. Community-based EE enables investigation through a curiosity and interest of issues affecting the real-life of the learner, where the life-view of the learner determines the response to the perceived issue.
As these responsive actions are intrinsically motivated and framed within the complex context within which they exist, there exists more probability of long-term transformational activity. The adoption of an inquiry oriented or issues-based approach to EE in the formal school setting assists in linking it to the social, cultural and political aspects of EE that are more prevalent in the informal or community EE setting. This I believe is more conducive to social transformation as changes at societal level are dependent on recognition for the need for change that evolve from the complex contextual determinants governing individual and collective perspectives, more so than from formal education.

Community-based EE is by its very nature contextual, and allows for students to make more sense of their environmental consciousness, as they are able to relate to issues on a local level. This is not to suggest that a global perspective impairs understandings of such issues, but rather that more meaning can be assigned to localized environmental matters as they relate to immediate real-life situations for the learner. Importantly too, it allows for individuals to see direct results of certain practices. For example, it is easier for a community to see the results of a re-vegetation program on local sand-dunes, than it might be to see the impact of them reducing their greenhouse gas emissions. Mahoney (1998, p.141) reminds one that ‘people are concerned about environmental matters that affect them personally.’

My experience suggests that this is an area requiring further development as local communities aren’t always viewed as integral to formal EE programs. The reasons for this are numerous and would include factors such as timetable structures, teacher commitment, transport availability, financial constraints, departmental directives, fear of litigation and individual school policy to name but a few. But irrespective of these factors, the role of community cannot be underestimated in effective contemporary EE, nor can its alignment to social constructivist learning theory. Through the social interactions between the learner and members of the local community, knowledge is able to be constructed that allows for informed and purposeful responses to real-life issues as transformational practice. Social interactions and interpretations of social issues are however influenced by many contextual determinants, and the significance of culture cannot be underestimated.

**Significance of culture**

The examples I have utilized in this thesis have all occurred in different settings, some of which are totally different, and some of which share similarities. Even in diverse cultural set-
tings, there did however exist commonalities that supported effective EE, but for example in South Africa the impact of culture and history on EE praxis was more evident. Consideration of the cultural and historical influences in constructions of reality and knowledge can further our understandings of effective and transformative EE praxis.

Cultural context plays a role in determining one’s connection with the universe, social identity, civil obligations and our sense of kinship, which contribute to the determination of our actions (Brenner & Hoag, 1988). This is because cultural and historical circumstances influence our thought patterns and decision-making strategies (Kim & Park, 2000; Paul, 1993). Different cultures have value and belief systems specific to themselves, which dictate or influence codes of behavior within the specific context in which they exist. These values and belief systems influence moral traits which ultimately play a role in existential perception and construction of reality. According to Hall & Hall (1990):

> Culture is a complex construct of influences that signals to the individual who he or she is, what constitutes a good and satisfying life, the resources available to achieve it, and the principles or guideposts (symbols, institutions, rituals or values) that guide behavior (1990, p.216).

Moemeka (1988, p.125) also states that ‘concepts of self and others are not seen as separate from, but as molded by, ongoing social contexts.’ Social and cultural contexts then inevitably shape the meaning we give to our existence. The examples in the autobiographical narrative all indicate that effective EE is largely dependent on cognizance being taken of the context in which the learning takes place, particularly if the learning is meaningful and relevant to the lives of the learner. Culture is a main contextual player in giving meaning to the learner which confirms that effective EE does need to be culturally specific and relate to the cultural understandings of social issues. But if transformation and the generation of global perspectives is to occur, then students require critical skills which will enable them to apply their culturally located knowledge and understandings to a range of disciplines and settings that transcends their immediate existence.
The essence of what is considered crucial in contemporary pedagogy, critical thought and understanding, is very much culturally and contextually specific which potentially impacts on the generation of broader or global perspectives. Brenner & Parks (2001) explicitly state:

> All cultural practices may not be equally valuable or effective in enhancing critical thinking. However, within a culture’s own context or perspective, what may be accepted as effective critical thinking may not be judged similarly in another culture (2001, p.216).

In multi-cultural societies (such as those in Australia and South Africa) where multiple cultures can exist within one learning setting, it is not always possible to design learning opportunities that are immediately culturally specific. However, through the adoption of pace-based approaches the learning can still have direct relevance to the existence of the learner irrespective of the diversity of cultures that might exist in that specific setting. This is where EE informed by socially critical theory and social constructivism has a significant role to play in making learning more meaningful to the real-life context of the learner. If we as practitioners promote learning as a social process, meaning is created through the learners’ interactions with each other that can transcend cultural boundaries. As the learners in this scenario might have different cultural backgrounds, they can bring these different perspectives into the social learning process that effectively can contribute more significantly to problem solving than when an issue is approached from a single perspective.

**Broader education policy and successful Environmental Education in practice**

From my perspective the success of EE is largely determined by its ability as an agent for change. It has emerged that there are multiple complex forces that can individually or collectively shape or impact on the efficacy of EE. The narrative illustrates that policy is one contextual force that can influence the manner in which EE is designed and implemented. If policy is too prescriptive or subject to strong contextual forces, with for example economic or political agendas, it can hinder transformational EE praxis and render it ineffective.

I have used defining principles and characteristics to assist in conceptualizing the constitution of effective EE, and I have included a transformational component, but this is in itself my own subjective interpretation. In general terms, how can one measure the efficacy or success of an
EE program? Recent EE policy in Australia appears to lack clear direction and implementation strategies, which can impact on its efficacy. The Victorian Department of Sustainability and Environment (2004) claim:

> Across all sub sectors there is a lack of policy direction and clear guidelines provided with respect to effective implementation of Environmental Education (2004, p.30).

As a measure of success, the Commissioner for Environmental Sustainability Victoria suggests that if an education program achieves what it set out to do, then it can be deemed successful (2006:5). If there is consensus that sustainability depends on a change to existing practices, and that successful EE programs can bring about this about, then change will be the measure of success.

It is not my belief that a set of ‘checklists’ acting as an audit can accurately determine whether an EE program is successful or not. This also generates the question as to whether EE is in fact measurable, which in itself would be the essence of generous discourse. Perhaps in assessing my interpretation of effective EE, one should go as far back as the goals and objectives that were outlined and endorsed at Tbilisi (UNESCO-ENEP Intergovernmental Conference, 1977) and use these as a guide instead of a measure. The endorsed objectives included awareness, knowledge, attitudes, skills and participation. Some of the goals focused on creating new patterns of behavior (in part a transformational aspect) and protecting and improving the environment. These are still particularly pertinent to the contemporary setting although little attention is afforded to ‘critical understanding’ and ‘the constitution of the learning context.’

Do these align with current perspectives and my view of effective EE? The Commissioner for Environmental Sustainability Victoria states that if education programs are to make a positive contribution to sustainability, then environmental, social and economic outcomes also need to be addressed (2006, p.5). However, if effective EE is to occur, what else is required? The Commissioner (2006) adds that:

> Education needs to go beyond awareness…Changes in attitudes do not necessarily lead to changes in actions…Two-way com-
munication is required...Education needs to be empowering...Education should not be done in isolation (2006, p.6).

This provides a framework for contemporary EE that includes an acknowledgement of the need to empower learners to bring about change. From my experience the profile of EE in schools has increased in recent times, yet there still exist a range in the quality and quantity of attention it is afforded in schools of similar profiles. I have witnessed an increase in the profile of EE, an increase in research activity and increases in the availability of learning resources (for example the internet) which illustrates that there are a number of theoretical support structures in existence, yet this has not necessarily translated into more transformative education occurring in schools that will bring about long-term significant societal changes? The autobiographical narrative illuminated the types of forces, some of which have deep seated roots in the complex context from which they evolved that can impact on change. The contemporary setting too is subject to many contextual factors on different levels that impact both on the implementation of EE and the existential constructions of the learners.

There exist numerous views on how to best bring about deep seated societal change, but in relation to EE, this thesis consistently advocates for insight into the complex constituents of the learning context, learners’ constructions of issues and the adoption of appropriate and contextualized pedagogical approaches to bring it about. If policy in part determines how EE practitioners go about their business, then policy ought to promote contextual teaching and learning that empowers learners to bring about change, as well as emphasize a critical reflection of existing environmental practices and the way in which we equip learners to respond to them. Only then can the agenda for social transformation be realized.

Learners need to be able to construct their knowledge in a context that has taken into account their unique constructions and perceptions, as well as their intersubjective and shared understandings of social issues. If learners are aware of how their knowledge has been generated and the traditions and values that have influenced this knowledge, there exists more chance for collective responses to identified social issues. Social context and real-life meanings derived from the multitude of contextual determinants impacting on both collective and individual perspectives are then integral in bringing about change. Human activity and interaction constructs learners’ realities and consideration needs to be taken of the contextual forces governing consensus of agreed meanings if we are to better understand how issues are constructed or shaped.
This is where the link exists between social constructivism, critical thought and transformative EE praxis. The learner is able to actively construct knowledge in a meaningful social and cultural context, critically reflect on their personal experiences through understanding the processes that generated their knowledge, and then identify the implications of this knowledge for change. The development of critical skills within the learner is crucial to identifying and challenging existing power structures that will bring about deep seated change.

Future EE programs can no doubt evolve to incorporate aspects that might presently not be evident in traditional EE. As I have stressed more cognizance should be taken of the complex constituents of context and social constructivism, but acknowledge there are a host of other aspects that also require consideration. For example the evolving concept of ‘ecoliteracy’ might become a more significant component of future EE programs. With advancements in technology perhaps more emphasis on ICT (Information and Communications Technology) will become apparent. As new environmental issues emerge, new approaches will need to evolve to meet their needs.

However, the evolvement of EE curricula is dependent on a transformation of not only how we view effective EE, but also changes to existing attitudes, teacher training, policy development and present PD practices. It also requires support from ‘top-down’ with an acknowledgement at government level of the importance of sustainability in school curricula and how societal transformation can bring about long-term quality of life. Policy should not dictate how EE practitioners go about their business, but instead allow for interpretation that meets the needs of the learners and their constructions. Context specific learning requires more professional respect to be granted in teacher decision-making, more teacher autonomy in the design of learning activities, and less prescription from departmental policy. Hargreaves (2007) states:

> Teacher practices should have more autonomy from school mandates, and schools should be more autonomous of government policies. Ultimately, society must change the way in which teachers are perceived and valued, to more genuinely invest in future society (2007, p.39).

These comments suggest that it is not just the way we view learners that requires change, but also that there exists a need for societal changes in teacher perception and greater confidence in autonomous individual school decision-making. This is significant for constructing contex-
virtualized curricula that take into account the active role of the learner, the contextual forces influencing the learner, and the provision of interactive learning opportunities that enable meaningful and authentic learning experiences and knowledge generation.

**What does this mean for contemporary EE curricula?**

Different approaches or methodologies assign varying levels of significance to *what*, *how*, *why* and *where* it is taught. I contend that cognizance should be taken of all these aspects and that they ought to be able to transmute to meet the needs of a particular learning community. The inadequacies of a centrally developed generic curriculum lie in the general neglect of constructivist approaches and the unique contextual constituents influencing not only each setting, but each learner, which is detrimental to transformative EE praxis. One set content (*what*) does not suit the needs of all learners, just as one set approach (*how*) or learning environment (*where*) or policy (*why*) does not fit the needs of all learners, as all individual constructions of reality are based on their unique socio-cultural history, unique interpretations and life experiences. For learning to be meaningful and transformative, it needs to relate to these meanings and interpretations they have assigned in their unique constructions of reality.

Learning also needs to evolve to meet and challenge the existing power relations in society. Mere content knowledge is insufficient to bring this about. Learners require empowerment through the acquisition of critical skills and understanding that can be applied across a range of contexts. Stevenson (1999) reminds one that not all facts and concepts remain with us throughout life and that EE should incorporate the development of critical and analytical skills if we are to remain abreast of environmental changes:

> Therefore, we should focus not on teaching an extensive body of environmental knowledge, but on developing habits of environmental thoughtfulness. As environmental issues change and our knowledge of human environment interactions changes, future citizens will need a disposition to carefully and thoughtfully analyze new evidence and new concerns in order to make informed decisions that will sustain and enhance the quality of life on our planet (1997, p.198).

It emerges that for EE to be truly effective the entire EE process requires consideration. One cannot focus on only one aspect such as individualistic outcomes, or content knowledge as Ste-
venson (1997) suggests, if deep societal transformation is the end goal. EE is essentially contextual and therefore all the complex aspects that determine context require consideration in the learning process as context can expose how learners construct issues. Context gives one a unique insight into the constitution of environmental issues allowing for the development of EE strategies that are best suited to address these issues.

By giving students more ownership of the learning process, the notion of a negotiated and contextualized curriculum where factors specific to the context in which the education manifests determine what, where and how it is taught, is conducive to transformative EE praxis. A student negotiated curriculum promotes a strong connection with the students’ life-worlds and interests and therefore is more meaningful. In essence, student input and acknowledgement of the student as an active constructor of knowledge is essential. In turn student input requires the support of appropriate and relevant pedagogy to enhance these connections. This has implications for, as examples, the selection of topics, use of language, the learning environment, pedagogical approach, lesson presentation, research methods, assessment methods and teacher expectations.

The learning context is obviously different for every community, and as demonstrated in the narrative, there are sub-groups or contextual layers all within one community. I do not propose an entirely separate curriculum for each and every context, as this is logistically out of reach. Instead I advocate that by consideration of how knowledge is socially constructed through a diversity of life experiences, and through the consideration of a range of contextual determinants, a curriculum can be negotiated and modified that will have immediate relevance to a particular setting. Only then can ownership be taken of real-life environmental issues and the meaningful involvement therein. This can be on a number of levels including management, prevention strategies, solutions and further research. When the transformation of societal culture is the end goal, transformational EE can focus on the development of informed, environmentally conscious and critical thinking individuals. In summary, I propose that transformative EE praxis is in part dependent on authentic, interactive and learner-centered teaching where connections are made between constructed knowledge and how it can approach perceived environmental issues. Explorations of context can reveal how these issues are constructed and inform EE in the design of the best strategies to address them and bring about change.
I have on previously often alluded to the link between critical thought and transformative EE praxis. Critical thinking is vital for the role it plays in processing and analyzing information to better enhance understanding and give meaning to an issue. It has been defined by Ennis (2001) as:

Using basic thinking processes to analyze arguments and generate insight into particular meanings and interpretations; develop cohesive, logical reasoning patterns and understand assumptions and biases underlying particular positions; attain a credible, concise, and convincing style of presentation and argument (2001, pp.49,50).

As environmental issues are social constructions and usually culturally specific, then the type of thought that encompasses logic, reasoning, insight and interpretation is necessary to provide feasible solutions to, and the further prevention of such issues. In support of my stance, Ennis claims that it is, ‘thinking that is reasonable and reflective, and is focused on deciding what to believe or do’ (1998, p.30). In addition he comments that critical thought should not be biased, although it can obviously be culturally determined or culturally specific. In essence critical thought is a cultural matter. According to Costa & Kellick (2000, p.51), in whatever culture the critical thought occurs, it should be objectively worthwhile and employ a range of intellectual behaviors. Throughout the relevant literature, critical thought, meaning for the learner, relevance to real life and understanding are all central themes in the constitution of effective EE. I propose that ‘context’ encompasses all these aspects and is therefore the platform from which all EE ought to develop.

Critical thought is also central to learners’ understandings of the need for change in order to achieve long-term quality of life, as I believe this is ultimately the aim of all EE. UNESCO is explicit in recognizing this goal (2005a):

There can be few more pressing and critical goals for the future of humankind than to ensure steady improvement in the quality of life for this and future generations, in a way that respects our common heritage, the planet we live on. As people seek positive change for ourselves, our children and grandchildren; we must do it in ways that respect the right of all to do so. To do this we
must learn constantly – about ourselves, our potential, our limitations, our relationships, our society, our environment, our world. Education for sustainable development is a life-wide and lifelong endeavor which challenges individuals, institutions and societies to view tomorrow as a day that belongs to all of us, or it will not belong to anyone (UNESCO, 2005a).

My experience of schools is that there is a preoccupation with maintaining status quo which reinforces existing power structures. This aspect coupled with others (such as some teachers finding comfort in traditional teaching approaches) can detract from the transformational activity necessary to attain long-term quality of life. If we accept that present attitudes and practices are unsustainable, then change is required. EE praxis should be primarily concerned with the development of skills in learners that will generate change, and it is this transformational aspect that has not sufficiently been explicit in past defining characteristics of EE. In Australia over the last five years particularly there has however been more recognition of the need for social change in the guidelines and principles outlining effective EE practice.

The draft submission into ‘Developing a Sustainability Education Strategy for Victoria – Key Success Factors’ (Educators for Sustainability Group, 2004) suggests that an effective education strategy for Sustainable Education is dependent on a comprehensive and coordinated approach that includes ‘constructive questioning and critical thinking,’ ‘active involvement,’ and the design of an ‘holistic change program’ (2004, p.2). Some of the other recent documents emphasize set principles and outcomes.


- Transformation and change.
- Education for change and life-long learning
- Systems thinking.
- Envisioning a better future.
- Critical thinking and reflection.
- Participation.
- Partnerships for change (Commonwealth of Australia, 2009, p.9).

I certainly do not suggest that every EE program ought to be audited against a set list of principles, but guidelines or strategies that take into account ‘critical thinking and reflection,’ ‘transformation and change,’ and ‘education for change and life-long learning’ are clearly more conducive to transformative EE praxis than the traditional orientations of earlier EE models.

Set principles and outcomes can however be interpreted as being prescriptive by some schools in which I have had experience. This potentially results in practitioners attempting to develop ‘set recipes’ in order to meet the outcomes, or to approach learning and assessment in a transmissive manner where learners aren’t active participants in their knowledge construction. This then too can impact on transformative EE praxis, particularly if generic and traditional approaches are adopted to achieve the outcomes or to ‘tick off’ the principles at the expense of authentic, interactive and learner-centered approaches.

If as practitioners we recognize the need to empower learners for future quality of life, we then ought to embrace the evolution of EE as moving from knowledge-based, to experience-based, to action-based, to arguably its present form, participation-based and draw from these orientations the aspects that can best bring about societal change. In order for this to eventuate, practitioners need to re-evaluate existing EE practices and incorporate aspects that are closely linked to the learners’ perceptions, understandings and constructions of knowledge. As practitioners, the insights we have gained of their social constructions through exploration of context ought to guide the design of EE. As learners construct their reality based on what is meaningful to them, practitioners need insights into these meanings and interpretations, and these can only be revealed through a deep cognizance of context and its constitution.

Jickling (1997, p.96), in his defining characteristics of education for the environment, specifically acknowledges that EE should ‘focus on real-world problems and participate in real issues,’ and ‘realize that humans can act collectively to shape society.’ If one views these characteristics alongside the guiding principles of the ENSI Project as outlined by Elliott (1991, pp.28-35) where he suggests ‘students need to reflect on their personal actions in their immediate environment’ and that ‘practical problems associated with personal actions should form
the focus of the Environmental Education curriculum,’ together with those advocated by the New Zealand Parliamentary Commissioner for the Environment (2005, p.46) of the ‘recognition that learning occurs in many different contexts, and that there are a number of influences that shape the way people behave and think,’ then context and individual knowledge constructions can more easily be addressed and related to transformative EE praxis.

Do generic Australian education principles acknowledge contextual and transformative learning?

Recently there has been significant acknowledgement of the importance of context in EE including some of the dominant contextual forces impacting on it that I have already considered, for example culture, policy and curriculum frameworks. In literature the work of for example Barrazza et al. (2003), Hattam (2007), Luke (2007) and Lotz – Sisikta & Schudel (2007) all consider how these contextual forces impact on EE. But is this taken into account in contemporary guidelines and principles that inform practice?

The Australian Commonwealth Government’s view of principles for good teaching practice is outlined in the Quality Teaching Program (2003, p.13) and includes references to learning through interaction and cooperation, the teaching of concepts in a context relevant to the students, utilizing their backgrounds, interests and recognizing and building on prior learning and experiences, as well as raising awareness about social and community issues and practices that influence and impact on students’ lives.

These guidelines are generic and were not developed specifically with EE in mind. However there is a lack of emphasis on the promotion of critical thought and understanding with no acknowledgement of developing global perceptions whilst promoting change in a local context.

With reference to my specific work setting, ‘The Blueprint for Government Schools in Victoria’ (State of Victoria, 2004) defines the ‘Principles Of Learning and Teaching’ (POLT) as:

1. The learning environment is supportive and productive.
2. The learning environment promotes independence, interdependence and self-motivation.
3. Students’ needs, backgrounds, perspectives and interests are reflected in the learning program.
4. Students are challenged and supported to develop deep levels of thinking and application.
5. Assessment practices are an integral part of teaching and learning.

The ‘POLTs’ are then further divided into components that additionally describe learning environments where the teacher reflects on the principle. For example in principle one the first component reads: ‘In learning environments that reflect this principle the teacher builds positive relationships through knowing and valuing each student’ (State of Victoria, 2004, p.13). There are a total of 24 components that further elaborate on the main principles. The ‘context’ in which the learning takes place is implicit across all ‘POLT’s, particularly in principles three and six that relate directly to the learner’s construction of reality.

Broader perspectives on effective education in general are valuable to how we approach EE, but principles and defining qualities should not be the starting point. Rather, I suggest, begin with the identification of learning objectives (to challenge existing structures to bring about change) and then work backwards from that point. Although generic principles can form a base from which to develop specific and contextualized strategies, it appears that existing approaches are not meeting the needs for transformative EE praxis. The Australian Research Institute In Education For Sustainability (2006) states there is a need to shift from traditional approaches.

Learning for Sustainability represents a paradigm shift seeking to transform education and such requires pedagogical approaches that are very different to traditional teaching styles (2006, p.24).

So if there is a need to re-think existing practices to achieve a transformative EE, what is being done about it?

Is transformative EE on the agenda in contemporary EE policy development in Victoria?

The Victorian Association of Environmental Education (VAEE) has recently been instrumental in identifying and addressing the inadequacies of the VELS curriculum framework. After ongoing work and collaboration with organizations such as the Gould League, the Zoo Education
Service and the Water Industries, the VAEE formally applied to the Chief Executive Officer of The Victorian Curriculum Assessment Authority (VCAA) to offer assistance in the holistic implementation of the curriculum framework governing Victorian schools.

The main concerns were that although sustainability had been listed as a ‘value’ in the framework, teachers still did not have the environmental conceptual and content knowledge necessary to ensure students developed the deep environmental understandings that would lead to transformational action. In an effort to address this, the VAEE suggested developing exemplary work units that would enable teachers to realize how sustainability could be integrated across the whole curriculum. The VAEE included articles highlighting the present state of the environment and the crucial need to address environmental behavior as motivating factors in their letter to the VCAA. VAEE working groups set about providing materials and resources for use in schools and endeavored to include sustainability as an explicit term in the new curriculum framework. They also offered the VCAA feedback in an effort to align the new framework with best practice in contemporary EE.

The VAEE then developed a Sustainability Scope and Sequence document with a curriculum focus to present to the VCAA. In the draft document it was stressed that students need to learn ‘about the knowledge, skills, attitudes and values that will enable people to make critical, informed decisions about the environments in which they live; to undertake positive actions on behalf of those environments; and to understand the implications of such actions on quality of life’ (VAEE, 2005), which is not explicit in the official curriculum framework. However The Department of Education and Training (Victoria) acknowledges that:

In a world that is rich in information and communication technologies, and characterized by complex social, economic, cultural and political interactions, young people need high level problem-solving skills and an ability to apply knowledge to new and different situations (2005, p.13).

In Victoria, transformational pedagogy is not explicitly promoted in contemporary EE policy. As it is a Departmental expectation that local curricula are firmly entrenched in formal policy with little allowance for deviance from set guidelines, it is easy for transformative learning to be neglected. I do not entirely support prescriptive policy, but if formal policy strongly encour-
aged the inclusion or integration of sustainability across the curriculum, it would promote the development of local work units that focus on environmental issues immediately relevant to the real-life experiences of the students, and ultimately encourage transformational activity.

Policy does however go beyond the contextual factors of content, teaching and learning curriculum. I have briefly considered the principles, guidelines and characteristics that can assist in the interpretation of policy and its subjective implementation, but transformative EE does however need to extend beyond the consideration of pedagogical approaches, as they are but one contextual force that influences praxis. Gilley (2005) considers some additional areas that I believe practitioners and policy makers should also take into account if we are to equip students with the skills required to bring about societal change:

1. We need to rethink children’s capacities as creative learners. We badly underrate their capacity to learn and to contribute to the solution of local problems and more broadly to rethink our future.

2. We need to re-design our schools, to maximize the learning opportunities for students and community members.

3. We are much too conservative in our learning and teaching practices. We need to move beyond traditional and progressivist notions of learning and teaching, to embrace approaches that will help transform society including, for example, the improved use of ICT as a servant of change.

4. We need to design our buildings according to best industry practices in sustainability; using the buildings and their external environments as a source of learning and teaching about sustainability.

5. We need to move beyond traditional notions of what constitutes a school, towards new living and learning centers that bring together providers of education and training and their communities, through approaches such as co-location and
Aspects such as school and building design, increased ICT use, co-location, shared facilities and the immediate external environments are not at the forefront of most EE programs I have had experience with, although the establishment of the wetlands in the Torquay Primary School example illustrates a practical application of this suggestion. These are areas that could enhance future EE praxis and be incorporated into formal policy.

Teacher interests and partnerships as contextual influences

Beyond policy, curricula and approaches to the implementation and design of the learning process, the role of individual teachers in transformative EE cannot be underestimated. The autobiographical narrative illustrated that some highly effective EE programs and initiatives are occurring, but that they are not necessarily driven by policy, instead by the individual or collective interests of specific teachers or groups of teachers and students. These groups might subconsciously adhere to sound and effective EE strategies without purposefully setting out do so.

This commitment to, and interest in EE, also lends itself to involvement in a broad diversity of external programs that not all schools might readily access, that can positively impact on EE in the formal setting. Commitment and passion for EE also contributes to better community and industry partnerships for schools. Examples in the contemporary Victorian context include access to programs such as, ‘Sustainable Schools’ and ‘Wastewise Schools,’ ‘Land for wildlife,’ ‘Coast Action/ Coast Care,’ ‘Waterwatch / Saltwatch,’ ‘Landcare,’ and ‘Landlearn.’

The Australian Research Institute In Education For Sustainability states that program partnerships are linked to the success of EE.

A review of whole-school sustainability programs around the world reveals that partnerships are key components of program design and implementation and in many cases are seen as critical to the program’s success (2004, p.19).

For interested schools there exist opportunities to develop partnerships with both non-government organizations and government agencies. In Victoria examples include the Departments of
Primary Industries, Sustainability and the Environment, the Environment Protection Authority and the Department of Infrastructure. Programs developed in partnership with organizations and agencies have, ‘provided students the experience of action learning and bring together the learner and the community using the environment as a suitable context’ (Department of Sustainability and Environment, 2004, p.31). All of these partnerships contribute towards effective and transformative EE but are dependent on the commitment, interest and enthusiasm of individuals more so than policy. To support teachers in developing networks, access to partnerships and to enhance EE skills, understanding and interests, accessibility of relevant PD is important.

**Professional Development (professional learning) as a contextual influence and transformative EE praxis**

Professional learning, as all other aspects of the learning process, is itself a contextual influence impacting on EE that is subject to other diverse contextual determinants. These forces all influence for example, presentation, content, affordability, agenda and access. The broader and specific context in which it occurs therefore constantly needs to be borne in mind when considering professional learning design and purpose.

Ongoing and innovative professional learning relevant to the learners’ needs is crucial if we intend ‘best practice.’ This thesis advocates ‘best practice’ to include the provision of an effective EE directly relevant to the real-life of the learner which will bring about deep societal change for a sustainable future. For this to occur I put forward that practitioners require to be well versed in socially critical approaches, based on constructivist and social constructivist learning theory with a transformative agenda. The development of professional knowledge, skills and capabilities are all important to transformative EE praxis. Just as learners cannot be equipped to bring about change through knowledge generation alone, so too do teachers need to be equipped with understandings of the learners’ constructions in order to develop the necessary strategies and skills to generate authentic transformational learning activities.

Socially critical EE approaches encourage the questioning of existing power structures and can contribute as an agent for change. Practitioners afforded the opportunity to develop their skills in such approaches where it ‘promotes reflection about the social, cultural and economic factors, which underlie environmental issues’ can play a significant role in equipping students to better understand how issues are constructed and the constitution of them (Australian Research Institute In Education For Sustainability, 2005, p.38).
Professional learning for transformative EE praxis should incorporate developing knowledge, understanding and competencies in teachers so they can effectively provide ‘learners with the skills to take action to address environmental issues’ (Australian Research Institute In Education For Sustainability, 2005, p.38). The starting point is however that of teachers reflecting on existing practices and recognizing that as teachers they are ‘core agents of change in the innovative and transformative educational processes’ (Australian Research Institute In Education For Sustainability, 2004, p.22), and therefore themselves also need the critical skills to challenge existing power relations and structures if they are to be an effective part of a transformative EE.

Throughout this thesis I have emphasized approaches to EE that involve the learners as active participants in their knowledge construction. There is however concern that PD programs might not adequately address this aspect in EE. The Australian Research Institute In Education For Sustainability (2004) states:

However, some research indicates that there is still a bridge between theory and practice, and whilst teachers think they are undertaking EE or EFS, what they do in practice is not aligned with the participatory pedagogical approaches advocated by the literature (2004, p.22).

Other research, for example Wilson-Hill (2003), suggests that teachers lack skills in areas crucial to EE. Whilst working personally as a Cluster Educator and school principal, I have had to source and provide relevant PD programs for significant numbers of teachers and from this experience it has become apparent that teachers in general do not have sufficient opportunity to develop EE competencies in both pre-service and in-service training. This is due to many contextual factors including aspects such as cost, the focus on more ‘traditional’ learning areas such as Numeracy and Literacy, the lack of independent subject status or identity of EE, the availability of skilled PD presenters in EE, the lack of personal interest in sustainability issues, the lack of partnerships with community and non-government organizations, industry and business, the relatively new status afforded to EE, and the lack of acknowledgement of the potential of participatory action research.
As a result it is often up to the efforts of individual and committed schools, teachers or environmental organizations to provide informal PD in this field. Sometimes teachers with no or little training in this area are used as ‘experts’ purely due to their enthusiasm and commitment. In my experience there has been little PD provided by the Education Department in EE, leaving it up to the schools themselves to source and provide professional learning in this field. When this occurs it is often directed at issues such as recycling, revegetation and litter control. These are of benefit as ‘awareness campaigns,’ but still do not promote opportunities to develop deep understanding of how learners construct issues and the constitution of them, nor provide the opportunity to develop the expertise necessary to equip students with the problem solving skills and critical thought processes to prevent and solve such issues.

Recent changes in professional learning

There has however been acknowledgement at state level of the inadequacies existing in present PD programs. The Victorian State Government in 2005 recognized as a priority the need to support PD for Education and Behavior Change (E&BC) for practitioners and managers on a coordinated and state-wide basis. The government supported the use of a range of organizations as PD providers to emphasize learning approaches that assist in building aware and active communities focusing on the environment. Acknowledgement that sustainability outcomes can be achieved through education and student action is a large step in the future provision of appropriate and relevant PD. The VAEE has provided input into the initiative and has termed the proposed program, ‘Professional Development for Sustainability Outcomes.’ The VAEE believes that collaboration between experienced practitioners and managers is crucial if a PD program is to meet with success, and information is needed to demonstrate what constitutes effective practice.

The Australian Research Institute in Education for Sustainability (2004) explicitly states:

The professional development of teachers is a critical component to whole school approaches to sustainability in order to develop and improve EE and EFS competencies. ENSI identifies teachers as core agents of change in the innovative and transformative educational processes promoted by EFS (2004, p.22).
The document goes on to state that teachers ought to take PD within the context of EE as it supports teachers to build up environmental knowledge whilst increasing skills and competencies in this field; gives support and motivation to bring about change; it improves approaches to learning and teaching; and builds capacities for institutional change (2004, p.22). Barraza (2001a) also reminds one of the importance of developing a ‘whole school’ culture of sustainability and the generation of teacher interest:

The teacher’s own interest and attitudes towards the environment seem to be crucial for the development of an environmental awareness in school children (2001a, p.252).

PD alone cannot bring about changes in the interest and attitudes of teachers. Attitudinal change can only come about through the transformation of the existing culture that dominates many schools and societies: that of individuals lacking a deep understanding of environmental issues, their causes and possible solutions. Teachers are products of society and irrespective of policy or curriculum support, in many cases may be inadequately equipped or genuinely concerned for the need for change.

The Australian Research Institute In Education For Sustainability also recognizes that ‘few teachers have the knowledge and capacity to develop EE or EFS in schools,’ and that PD ‘is mostly focused on raising awareness and improving the EE knowledge of teachers,’ which does little to promote critical and reflective thinking in a specific learning context (2004, pp.23,24). For transformative EE praxis to be realized, I believe professional learning should include familiarity with action research, inquiry learning, higher order thinking skills, reflective thinking skills, critical thought, engagement in real life issues that are particularly relevant to the immediate contexts of student’s lives, and very importantly, ways of assessing these sorts of skills which the students they are teaching are expected to display, as in instances teachers are sometimes unfamiliar with concepts and skills that they might teach.

**The value of action research as a constructivist PD process for transformative EE praxis**

As constructivism is concerned with the active role of the learner (in this instance the teacher) developing and furthering understandings within a specific context through interaction, action research provides a forum for this to occur. Action research also enables an ongoing and long-term focus on practice, which is not typical of traditional teacher professional learning.
Hargreaves (2007, p.37) proposes that the flaws existing in contemporary PD have arisen from ‘increased accountability and the comodification of the education sector.’ This he suggests has caused schools to design PD programs that meet the short-term needs of accountability to bureaucracy, parents and politicians, at the expense of long-term learning with insufficient input from staff (2007, p.37). I advocate that by participating action research, teachers are enabled significant input allowing more focus on the long-term learning that Hargreaves (2007) believes is often undervalued.

The benefits of action research were outlined earlier in this thesis. From my experience informal professional interactions/dialogue/observations amongst colleagues has a significant impact on practice and is an undervalued form of professional learning. By formalizing this process to action research, practitioners can work with colleagues as ‘critical friends’ to reflect on their practices, improve understandings, and ultimately transform practices identified as requiring change. This process enables critical reflection on existing EE praxis and promotes contextual knowledge sharing amongst colleagues. The National Research Council (2000) states:

> Because action research is a constructivist process set in a social situation, teacher’s beliefs about learning, their students, and their conceptions of themselves as learners are explicitly examined, challenged and supported. When action research is conducted in a collaborative mode among teachers, it fosters the growth of learning communities (2000, p.199).

As action research is concerned with a community of learners and interaction amongst them, it provides the ideal platform for teachers with specific environmental interests and knowledge to share, support, teach and create professional dialogue with each other, potentially generating improved curricula and praxis. Action research also paves the way for local (classroom or community-based) research projects specifically designed to meet the needs of the context in which the learning occurs. Over 20 years ago Robottom (1987b) viewed action research as the foundation for teachers to critically question and explore the relationships that exist between theory and practice as theory is not separated from practice, and the teacher both the researcher and practitioner. From my experience there are still teachers who are not familiar, nor entirely
comfortable with the concept of action research and its potential benefits. This aspect could in part be addressed through the generation of greater understandings of the research methodology at both pre and post-service teacher training level.

It is in this regard that I believe constructivist action research has a significant role to play in contributing to transformative EE praxis, whereas traditional forms are in most instances not conducive to achieving the long-term objective of transformation. Action research’s ongoing nature does not present the same weaknesses as ‘one-off’ lecture styles, with an ‘authority’ in a specific field presenting subjectively interpreted information, in most cases to a passive audience. Instead it is context specific, encourages professional dialogue and promotes reflection of practice focusing on change. As such, it is a form of professional learning that is particularly suited to transformative EE. It is also void of many of the constraining factors that often limit teachers accessing PD in typical circumstances as earlier alluded to, as it is context specific, participatory, cost effective and can be integrated into daily professional practice.

3.2 What new understandings can this autobiographical experience bring to transformative EE praxis?
This section is structured to coherently align with the research questions. The focus is on the complexity of context and its relationship with transformative EE praxis. The merits of autobiography as a research methodology for EE are also briefly considered.

Following my consultation of relevant literature, issues that emerged in the autobiographical narrative and my ongoing experience, it has become apparent that EE is essentially contextual and a deeper understanding of context can reveal connections and meanings in the construction of environmental issues. This is crucial in the development and design of transformative EE, as well as being directly relevant to the strategies practitioners employ to generate transformational activity. I propose that central to our understanding of the potential of context to provide insights into transformative EE praxis, there is a need to:

- Link contextual complexity, social critical approaches, constructivism and social constructivism to transformative EE.
Explore the complexity of contextual forces impacting on transformative EE praxis to better inform the provision of authentic learning opportunities that can generate transformation.

Further examine the complexity of context to expose how it can be used as a device to reveal the meanings and connections learners assign in their constructions of issues.

Due to its ability to expose subjective meanings, interpretations and insights into how context impacts on EE, the recognition of the potential of autobiography as a methodology for research in EE should also be acknowledged.

With reference to implications for future EE, I acknowledge that I cannot make broad recommendations based solely on my limited experiences in the field. As such I place attention more particularly on the context in which I presently work, and from the tenet that if we are to mitigate human environmental impact, ‘we will have to ensure that education be rapidly adaptable, making an immediate shift to transformative environmental education and sustainable development learning’ (Johnston, 2009, p.149).

Overview - What is the connection between contextual complexity, constructivism, social constructivism and transformative EE praxis?

The autobiographical narrative sought to illustrate that EE is subject to numerous and diverse complex contextual determinants. Every aspect pertaining to the learning process, for example professional learning, policy, curriculum development, teachers and learners’ constructions of reality, partnerships and policy are all influenced by unique contextual forces on different levels. (In essence, all of these aspects are in themselves contextual forces that impact on EE, as they all are linked by forming part of the broader EE context. This illuminates the complexity of context.) I argue that if we explore these contextual forces and gain deeper understandings of their relationships and inter-relationships, we can use context to reveal the meanings, connections and interpretations learners use in constructing their reality.

Guba and Lincoln (1994) emphasize the importance of these meanings in understanding human activity:
Human behavior, unlike that of physical objects, cannot be understood without reference to the meanings and purposes attached by human actors to their activities (1994, p.106).

The implication of this for EE is that contextual examination can reveal insights into these meanings, so that we can better understand human behavior, which in turn can inform transformative EE praxis.

This is of significance because if one is in agreement that environmental issues are social constructions, then we as practitioners need to better understand how they are constructed and the meanings assigned to them, in order to better prepare learners with the skills and strategies required to address them. Environmental issues and their meanings are part of a constructed reality that has come about through human activity and social interaction. This is in essence social constructivism. The ontological assumption of social constructivism is that many realities exist, and all these realities are socially constructed by individuals.

Epistemologically then, the assumption is that learners construct their knowledge through social activities and that learning is a social process, which impacts on the way in which practitioners ought to develop and implement EE curricula. I have also proposed that for EE to be truly effective it needs to be transformative and closely relate to the student’s real life constructions. We also need to acknowledge that for these constructions to have real meanings to the learner, the learners need to be active participants in the development of knowledge that informs these constructions, which aligns with the epistemological assumptions of constructivism. As practitioners an understanding of the forces influencing these constructions and how the knowledge has been generated to inform them, is then crucial in the development of authentic learning opportunities in EE. Through constructivist approaches, the learner can actively construct and reconstruct knowledge to make meaning through their interaction with people and their environment to create new realities. The creation of these ‘new’ realities is dependent on social interaction to gain relative consensus and generate new perspectives. These new perspectives or realities affirmed through relative consensus are essentially challenges to existing ones, which potentially can generate transformational activity if there is an identified need for change through the acquisition of new knowledge.
If one is in agreement that the construction (or reconstruction) of these ‘new realities’ are challenges to existing ones, the construction of the knowledge and meanings informing them can be enhanced through a social critical pedagogy. In this scenario teaching approaches present strategies and learning opportunities to equip the learner with the critical skills and understandings to confront and interrogate existing power relations in order to generate transformation.

The complexity of this is that although I link constructivism, social constructivism and social critical pedagogy to transformative EE praxis, they do not completely align in their ontological and epistemological assumptions. Ontologically social constructivism and social critical theory both assume multiple realities, whereas constructivism is more concerned with the relative and specific constructions of reality. Epistemologically social constructivism assumes knowledge generation is a social process gained through interactions and experiences, whereas social critical theory focuses on ideological critiques of dominance and power. Constructivism views knowledge generation as an active and subjective construction by the learner, but ‘sees knowledge as created in interaction’ between the learner, other people and objects in the environment (Guba and Lincoln (1994, p.111).

These differences in assumptions are important to acknowledge, but if the learning activities presented in EE are informed by social constructivist and social critical principles, together with a deeper contextual understanding, they can collectively link to bring about a transformative EE. The mere transmission of knowledge by a teacher does not adequately relate to these individual constructions and the learner’s deeper understandings of issues affecting their realities, and for example only focusing on generalities such as the social and cultural backgrounds of the learners, is insufficient for practitioners to make sense of these meanings.

My experience indicates that It is typical of contemporary practice for schools to make use of a centrally developed ‘generic’ curriculum with little emphasis on place-based contextual learning. Johnston (2009, p.152) states explicitly that ‘place-based learning tends to be a missing element in many educational jurisdictions.’ This means that many learning settings are not exploiting a learning opportunity conducive to learning informed by constructivist or social constructivist theory, where learners can construct knowledge and derive meaning through context specific social interactions and active individual learning. Place-based learning contributes to connecting the learner and real-life. This is of particular significance if we accept that envi-
Environmental issues are in essence social constructions with specific relevance to particular individuals and contexts.

The narrative and my contemporary experience reveals that effective and engaging curricula should emphasize authentic learning opportunities that are not only closely connected to the student’s real world, but also very relevant to their future existence and quality of life. This connection to their reality can more readily come about through the adoption of constructivist principles where the learners are accepted as co-constructors of their knowledge, than through transmissive approaches. However, as societal transformation is dependent on both individual and collective action where real-life issues are constructed through human activity, social constructivism also needs to be taken into account to incorporate the social processes of learning. In this scenario the perspectives unique to each learner’s background can be collectively used to bring about transformation.

Transformation can however only come about through the identification of the need for change. Multi-disciplinary approaches that encourage critical thought and an ideological critique of existing power relations expedites this identification and motivates change. Generic curricula are typically not conducive to learners posing questions, challenging existing structures and seeking solutions to environmental issues specific to their local setting, so in essence are not transformational. In contrast context specific curricula and learning activities informed by social constructivism allow for more creative, critical approaches and the investigation of preventative measures and solutions to real issues confronting the learner. This enables a connection between what they are learning and their daily existence as it the epistemological assumption of social constructivism that the learner constructs knowledge through understanding the meaning of the learning experience.

_Environmental Education is essentially contextual in nature_  
In the relevant literature previously considered, the merit of place-based education has been illustrated through the inclusion of examples from the ENSI Project, and acknowledged through the work of for example, Rae & Pearse (2004), Gruenewald (2003), Swayze (2009) Green (2008) and Gruenewald & Smith (2008). Personal EE experience portrayed in the autobiographical narrative confirms that EE is highly context dependent and therefore effective and transformative EE approaches ought to take this into account.
It has been illustrated that context specific curricula can lead to high levels of student engagement and involvement in local environmental issues, which ultimately can lead to change or transformation. I have also put forward that traditional approaches in instances do not adequately respond to the context dependent existential social constructions of learners in particular settings. As a result, there needs to be a shift in emphasis away from transmissive forms of education towards transformative approaches (see, for example Table Five) where more emphasis is placed on localized and meaningful knowledge for the learner informed by individual and social interpretations.

Broader acceptance and utilization of transformative and place-based models requires systemic transformation and a re-assessment of the merits of existing models by policy makers and practitioners. Through the continued adoption of traditional centralized approaches that advocate the dissemination of generalized knowledge, practitioners are at risk of potentially being mere technicians more concerned with predetermined outcomes than the individual needs and interpretations of specific settings.

The autobiographical narrative revealed that although some schools present EE programs that are grounded in the geographical and socio-cultural context of their implementation, this is often the exception and not the norm, and even in these instances there are still numerous contextual complexities that are not taken into account in the learning process. The success of these programs is often determined by the passions and commitment of individual teachers, more than being curriculum or policy driven. As far back as 1993, Greenall Gough and Robottom’s (1993) research suggested that school EE curricula and policy did not necessarily engage and explore local sustainability issues with a meaningful contextual relevance to students, yet in my contemporary experience in some schools this has not changed. These forms of curricula are not conducive to meaningful learning and a deep critical understanding of the contextual forces impacting on sustainability issues.

Even recent initiatives in Victorian education still promote generic principles and curriculum forms with little attention afforded to the unique setting in which the learning occurs. The Global Development Research Centre (2005) emphasize that the practical application of sustainability principles needs to focus on cultural appropriateness and local relevance. Organizations such as the VAEE also stress the significance of localized community-based learning. This implies that in the construction of EE programs we ought to evolve and transform our
thinking to focus on the development of localized knowledge and the development of critical thinking skills. This requires a shift from teacher-centered, fact-retention approaches to learner-centered transformative approaches. The ‘National Environmental Education Statement for Australian Schools,’ state that re-assessing effective EE has implications ‘not only for what we learn but also how we learn’ (Australian Government, 2005, p.6).

Literature and experience indicate there are signs that the field is responding only slowly to this notion of the essential contextuality of EE. The concern is both the pace in which this change is occurring, and the lack of research into the deeper contextual factors impacting on transformative EE. Over a decade ago researchers such as McClaren (1997) spoke out against national approaches ‘repressing creativity, invention, innovations and criticism,’ whilst Wals & van der Leij (1997) explicitly noted the need ‘for students, teachers and learning communities to develop their own knowledge, ideas and concerns allowing for contextual differences.’ Achieving these changes can only come about through a transformation of both policy and praxis, where practitioners are encouraged to reflect on existing practices and be supported in bringing about changes through a focus on learners constructing meaning and knowledge through their interactions with the environment and each other.

Local community as a link between the learner and understandings of environmental issues

The large scale political and economic issues that confront policy legislation and curriculum development at national level do influence and filter down to local policy as evidenced in the South African example. There are however instances where they are able to be ‘manipulated’ at local level to meet the needs of particular settings, as evidenced in some of the other environmental initiatives considered in the narrative and Literature Review incorporating local community involvement.

This suggests that local community involvement plays a role in contextualizing the learning environment and inadvertently brings social constructivist principles into the learning process. The meaning that learners create in their interactions with each other is very evident in community and place-based learning, and the Department of the Environment and Heritage of the Australian Government (2005) acknowledges the importance of these interactions:

The goal of sustainability has redefined the role of schools and their relationships with the community. The focus has shifted
beyond ‘what to teach students’ and ‘how they are behaving’ to seeing schools as a focal point where children, adults and the community interact and learn together (2005, p.8).

There is then a need then for practitioners to provide links with the local community for learners so that social activity can generate meaningful, contextual knowledge. Localized knowledge with authentic significance to the learner can in this scenario act as a scaffold to better understand and respond to environmental issues in an ever increasing global and technical world.

Local community can play a crucial role in the development of critical thought and higher level thinking through incorporating culture, context and the collective generation of knowledge in furthering understandings of social/environmental issues. This is in essence social constructivism ‘at work.’ By actively and constructively involving learners in local issues as a social learning process, local community can effectively aid in the development and competencies identified by the VCAA as crucial in developing skilled, flexible, responsible and creative young people, able to apply knowledge to a range of contexts (VCAA, 2005b, p.1). It is the development of these skills, together with the social and inter-subjective constructions of knowledge that can ultimately bring about transformation. Through the development of stronger ‘home-school’ and ‘community-school’ partnerships, the local community can play a significant role in school-based transformative EE praxis. Duggan et al. (2009, p.1) state that in the ‘educational context, ‘transformation’ is dependent upon interactions between the school and its stakeholders,’ and as community is a significant stakeholder in education, we cannot underestimate its capacity to bring about transformational change.

Why an emphasis on transformation in effective EE?

I propose that for EE to be effective, it needs to be transformative as existing environmental practices are unsustainable. Johnston (2009, p.150) claims that education needs to revisit its goals and ‘that the future of humanity is, to a large part, in the hands of educators.’ Responses to increased population and associated environmental impact, diminishing non-renewable natural resources and the speed in which technology is evolving in an increasingly globalised world, cannot come about simply by learning experiences ‘that can be ‘tacked on’ to existing curriculum in order to provide a ‘green glow’ to the program (Duggan et al., 2009, p.2). To respond to this scenario, education needs to focus not only on environmental awareness, but on
presenting students with authentic learning situations and equipping them with skills and understandings that they are able to apply in specific as well as non-specific situations to bring about change.

This essentially requires an education which is transformational and enables students to change fundamentally their social situation. It also means focusing on skills (both practical and theoretical) to challenge fundamental aspects that determine their life through a transformative learning platform. I propose that this can only come about through an EE that is underpinned by students’ understandings of the environment, the meanings they assign to their existence, and an insight into the forces that impact on their constructions of knowledge and reality. It is only through a comprehensive examination of context that these connections can be exposed. Generic assumptions and curricula formulated by a central education body cannot adequately aid in the development of competencies that promote practical and informed environmental preventative measures and solutions, as they do not always relate to the real-life of the learner.

Central to my proposition for a transformational EE is the realization by learners and teachers that significant changes are required in our environmental attitudes and activity. As practitioners, we need to make more sense of the learner’s notion of the environment and then provide them with the necessary competencies to effectively bring about transformation in society. A belief and focus in empowering individuals with the relevant skills to be active and informed environmental citizens is insufficient in itself to bring about transformation. It takes more than a change in beliefs and attitude to transform perceptions and actions.

Ultimately a ‘moral transformation’ is required to change individual and societal perceptions of environmental issues and ways to potentially solve them. It is easier to bring about this ‘moral transformation’ when there is a contextual and personal relevance to the learner, and the learner is able to recognize and understand their individual ability to actively do something to prevent or solve an environmental issue. In effect the learner’s values need to reflect a desire for change and a realization why the change might be necessary. One of the main implications for practitioners is the provision of learning opportunities that encourage students to look at local issues that might impact on their own existence with a view to changing them, and this is where transformative education models have a significant role to play.
Personal experience as a practising school principal, reveals that in Australia few central education bodies formally promote transformative education models (probably in part due to the government’s trepidation of challenges to existing power relationships), which has contributed to the continuity of teacher-centered approaches, which from my observations are more common in the secondary school setting. The existence of many traditional teaching approaches indicates there has been reluctance for change across the board which also impacts on EE. It is of interest that the Australian Research Institute In Education For Sustainability found that ‘the school education sector in Australia has been the most resistant to change towards sustainability,’ and with regards to policy that States have all ‘been slow to react to this thrust in EE’ (2005, p.1). However, recently in parts of Australia there has been a small, but recognizable shift towards a transformative education within divisions of central bodies.

In the state of Victoria particularly, The Innovation and Next Practice Division of the Department of Education and Early Childhood Development have started focusing on transformational learning. The Innovation and Next Practice Division has identified and outlined specific variables that they believe ought to be considered in an innovative and transformative education (DEECD, 2009):

- An emphasis on deep and transferable knowledge.
- Enabling students to work independently through problem solving processes.
- Practitioners having a clear knowledge of how students learn.
- Teaching methodologies aligning with individual learning styles and thinking preferences.
- Encouraging inquiry, project-based learning with scope for problem solving, questioning, investigating and exploring.
- A focus on higher order thinking with students playing the role of researchers in order to develop a capacity for metacognition.
- The development of a differential curriculum that caters for multiple intelligences with ICT routinely and creatively used.
- The systematic sequencing of content, materials and tasks (scaffolding).
The recognition of the value of a transformative education in Victoria appears to have emerged through union concerns of the inadequacies of existing practices in preparing students for 21st Century learning. In 2004 The Australian Education Union (AEU) unveiled an innovative project to address the needs of future education. The document, ‘Educational Leadership in the Twenty First Century: A Desirable Scenario,’ (2004) essentially challenged education in its present form. It advocates one fundamental principle; that in order to meet the well-being of individuals, education should be transformational.

Martin (2006) emphasizes that the document subscribes to a different education:

“It’s a future which looks at society rather than simply the economy. The fundamental principle of the AEU has always been that education is transformational. That’s to say that each part of education is about creating greater equity in society; meeting the needs and wellbeing of individuals, rather than just the wellbeing of industry (2006, p.13).”

Individual and societal well-being is largely dependent on the way we deal with environmental issues and how we equip learners to deal with them. If we are to transform existing practices we need to change the manner in which we approach learning in formal education sectors and as the starting point acknowledge that education should be transformational. This I propose is the fundamental criterion for effective EE, that for it to be effective, it ought to be transformational. Mere acknowledgement of this notion is insufficient to bring this about.

A change in attitudes, perspectives, policy and pedagogical approaches are all aspects that require consideration in realizing transformative EE praxis. As practitioners though, there is little we can do about policy, but we can contribute to attitudinal change and transform the way we go about our business. Students themselves need a voice in negotiating a curriculum relevant to their needs, interests and constructions of knowledge if they are to be engaged in authentic learning experiences. Transformative approaches need to take this into account and promote such experiences through recognizing the individual needs of learners within specific contexts. (We do need to note however that although individualized learning is more prioritized in trans-
formative models than within transmissive models, all individualized learning is not necessarily transformative.) As practitioners we need to explore the contextual forces that impact on the learners’ constructions of issues and exploit these insights to provide learning experiences that are fundamentally aligned to these constructions.

Within transformative approaches we should focus on constructivist learning, conceptual understanding, problem solving and capacity building as primary objectives. The learner in this scenario is encouraged to critically assess and question existing practices/relationships with a view to transforming them. This contrasts with generic information/knowledge learnt by collective groups in the same manner, and at the same pace, from the same source in specific, segmented subject areas. Generic curriculum models are not conducive to the generation of deep knowledge, critical thought and understanding, as they are generally designed for the needs of broad cohorts of students with little reference to the subjective constructions determining their real lives. As such, they are not geared for transformational activity.

I acknowledge that recently there have been reforms in the development of school curricula in Australia, but traditional approaches are still however a contemporary phenomenon. I regularly encounter non-constructivist approaches with an emphasis on textbook teaching and content ‘regurgitation’ in both primary and secondary school classrooms which is consistent with findings from research conducted over a decade ago. The National Research Council (2000) found that:

At the same time, students often have limited opportunities to understand or make sense of topics because many curricula have emphasized memory rather than understanding. Textbooks are filled with facts that students are expected to memorize, and most tests assess students’ abilities to remember the facts (2000:8). And, Many forms of curricula and instruction do not help students conditionalize their knowledge (2000, p.43).

As a result, students are often unable to apply ‘learnt’ knowledge to their real life context, and are not skilled in using this knowledge to better understand broader or global issues. The National Research Council’s (2000) findings are reminiscent not only of my teaching experiences
in South Africa, but alarmingly also of my observations in some contemporary classroom visits in my present role:

Many designs for curriculum instruction and assessment practices fail to emphasize the importance of conditionalized knowledge. For example, texts often present facts and formulas with little attention to helping students learn the conditions under which they are most useful. Many assessments measure only propositional (factual) knowledge and never ask whether students know when, where and why to use that knowledge (2000, p.49).

This is particularly pertinent as environmental issues require a comprehensive understanding of all the forces impacting on them for effective prevention and resolution. Environmental issues manifest in a range of forms and no one ‘formula’ can be adopted or learnt to resolve them. At best then school curricula ought to offer EE models that focus on the development of deep levels of understanding and critical thought, which can equip students with the skills to confront environmental issues in an effective manner locally, and better understand global environmental issues. This is not to imply that a sound knowledge of environmental facts or matters cannot contribute to environmental issue resolution; factual knowledge can undeniably contribute to understanding, but it is a combination of factual knowledge, critical problem solving skills, understanding and the ability to apply this knowledge (through action) in a range of situations that ultimately determines how effectively an environmental issue can be approached. We are however reminded by Sterling (2002) that we should not mislead students into believing that environmental problems can simply be solved by using problem-solving approaches. Instead, the Australian Research Institute In Education For Sustainability suggests that a ‘comprehension of the complexities of action’ and the ‘influence for change’ might be more beneficial for learners as we need them to engage with environmental issues to bring about change (2005, p.27).

Real-life experiences hold more value to understanding than mere theoretical proposition. If students can actively engage in reasoning and activity relating to an environmental issue to which they assign meaning, they are more likely to problem solve effectively, than applying content-based knowledge to hypothetical situations they might have only learnt facts about. Deep understanding is more likely to transform factual knowledge into usable knowledge, than
simply knowing disconnected facts which are unlikely to generate critical and informed challenges to existing power structures.

Transformative EE and social critical pedagogy

This thesis has revealed that many contextual factors can impact on traditional EE models lacking in transformative aspects. Transformative EE praxis that will bring deep rooted societal change is, I believe, dependent in part on a socially critical pedagogy that empowers students to participate in a democratic transformation of society, as advocated by Gough (1993, p.43). This notion is not new with Australian Research Institute In Education For Sustainability claiming that socially critical approaches evolved from the recognition of the need for an education ‘for’ the environment (2005, p.38). Such approaches are however conspicuous in their absence in my contemporary EE experiences, although it was over 20 years ago that Kemmis (1986, p.19) suggested students need to not only develop a critical understanding of society, but also have an informed commitment to engaging in and improving society in their immediate context.

The emphasis in socially critical education on locating and interpreting culture within an historical context has been illuminated in the autobiographical narrative. By taking notice of the political history of a specific context, I have endeavored to stress the importance of developing in learners the ability to question and understand the power relationships existing within their unique society, and I also assign importance on the recognition of prejudicial contextual influences on constructions of reality. It is these aspects that determine perspectives and constructions of societal/environmental issues, and particularly determine responses to them. Social critical approaches aid the learner in challenging domination and critiquing oppressive regimes (for example apartheid in South Africa) which is integral to bringing about change.

Drawing on the above-mentioned setting, for example the legacy of apartheid can only truly be eradicated through a transformation in culture, values and behavior; hence the need for a social education that is critical of society. Students need the skills to question, investigate, strategize and problem-solve in order to bring about transformation. This is dependent on students developing personal perspectives on preventative strategies, solutions or causes of environmental (which are in essence social) issues, through both constructivist and social critical approaches to EE.
The value of socially constructed knowledge in EE

Kemmis, Cole & Suggett (1983, p.11) suggest that knowledge is essentially politically, historically, culturally, socially and economically located, and only has particular significance within defined contexts. This leads me to contend that the recognition of knowledge as a social construction, with meaning specific to particular contexts, is of significance for transformative EE praxis.

Campbell and Robottom (2008, p.23) point out that sustainability issues are complex and take on different forms in different contexts, and stress that as ‘they are shaped and constrained by social, cultural, political, historical and environmental elements, they are unavoidably socially constructed.’ If environmental issues are social constructions, then cognizance ought to be taken of the context in which the knowledge is generated in identifying or constructing the issue.

This has implications for both teaching and learning on a number of levels. On one level both the teachers and learners need to recognize EE as encompassing social, economic and environmental aspects, and on another level, if students require historical, social and critical perspectives in order to give their acquired knowledge meaning, then more emphasis ought to be placed on active and experiential learning where students also play a role in negotiating their learning experience and learning with/from each other. Only then can the learning have social significance and generate more meaning for the individual within the constructs of a specific context, which is then more conducive to transformation.

This contrasts with forms of EE emphasizing behavioral change, as these forms do not necessarily address the actions, understandings and skills required to prevent and solve environmental issues. The recognition that within behaviorist EE models existing power relationships are merely reinforced with little emphasis placed on developing a capacity in learners to critique existing structures is not new, with Wals and van der Leij (1994, p.41) reminding one of this over a decade ago. It is acknowledged that within such models learners are generally viewed as ‘consumers’ of knowledge and not co-constructors, which potentially results in the learning experience being isolated from their real lives. This I propose is not the most effective way to develop deeper understanding and the generation of preventative measures or potential solutions to ‘real-life’ environmental issues. (When a teacher’s role is that of an instructor transmitting knowledge, and the learning method and content is generic and centrally determined, there is little scope for the generation of contextual and experiential knowledge by the learner.)
Non-behaviorist constructivist models focus more on informed subjective interpretations and the learner playing an active role in the construction of their knowledge. This makes it more meaningful to their real-life context, creating a climate more conducive to transformation. Constructivist approaches in particular are grounded in the premise that learners are active participants in constructing their own perspective on the world and that learning ought to occur in realistic settings. This enables a greater emphasis on real-life problem solving as opposed to the mere generation of particular behaviors within learners. It is in this regard that I propose an action competence (AC) approach (as outlined by Jensen & Schnack, 1997) as a worthy inclusion in transformative EE. An AC approach recognizes the essential contextuality of EE and environmental issues as being susceptible to a broad range of meanings because they are interpreted differently in different contexts and require action for change.

**Transformative EE praxis and a place for Action Competency (AC)**

I understand AC as a transformative process that allows students to act in a manner that brings about positive changes to society and the environment. In this scenario the generation of knowledge is considered a social and contextual process rather than an object for students to merely internalize, and is therefore personally meaningful. Within an AC approach there is an emphasis on the development in learners of a broad range of skills, principles and values. These include fostering student self awareness and autonomy, promoting a critical consciousness, decision-making, collaboration, authentic student participation and social guidance to assist in building student perspectives (Simovska, 2000a). Although it is a difficult task to take all of these attributes into account in every learning experience, by developing in students the ability/capacity/competence to question and understand existing structures, we are essentially empowering learners to become more active, informed and responsible environmental citizens.

If as I propose, effective and transformative EE is in part dependent on the generation of life-long learning through contextual and experiential knowledge, then as practitioners we should focus on the understanding of the constitution of real-life environmental issues within the learning experience. This requires a multi-disciplinary approach. In this scenario an inclusion of both practical and cognitive experiences in the process of learning will enhance the creation and construction of contextualized knowledge. But what are the key competencies required for life-long learning? Rychen (2003, p.3) cited in Rutherford (2004), suggests that in order to ‘successfully meet complex demands in a particular context through the mobilization of know-
ledge, cognitive skills, but also practical skills, as well as social and behavior components such as attitudes, emotions, and values and motivations,’ are the key competencies required. There does however need to be a balance between ‘action capabilities’ and ‘cognitive capabilities’ within a multi-disciplinary approach for effective EE to come about (Barker, 2007).

As AC is essentially grounded in a socio-cultural perspective, importance is also assigned to interpersonal relationships in which dialogue plays a role in reflection and the construction of shared meanings. Within this perspective the social and relational nature of learning is stressed and cognizance is taken of the interaction between practice, cognition and context (Simovska, 2000a).

The autobiographical narrative illustrates that even in some schools which have active EE pursuits the core forces generating environmental issues are sometimes still not addressed. This is in part due to the little attention afforded ‘to the cultural, political, social and economic aspects of sustainability and how these are interconnected’ Duggan et al. (2009, p.2). This is not only confined to schools but also other environmental activities where actions are often a response to negative environmental impact and not necessarily directed at the prevention of environmental problems. This indicates that in many students the true constitution of environmental issues is not entirely understood. AC as a pedagogical approach potentially has a role to play in addressing this flaw. Jensen & Schnack (1997) remind one that:

As environmental problems are becoming some of the big challenges to democracy and humanity it is of the greatest importance to critically reflect upon their pedagogical implications (1997, p.163).

If contemporary approaches aren’t effectively addressing the associated environmental challenges, practitioners need to rethink the pedagogical implications. It is in this context that AC potentially qualifies as one justifiable approach in confronting environmental issues.

AC opposes mere behavior modification as an educational assignment and is in conflict with traditional science-oriented approaches to EE, instead emphasizing social transformation incorporating changes on both an individual and societal level. Within this approach there is significant importance assigned to developing students’ abilities and skills to effectively act on
environmental issues/concerns through informed and critical decision-making. The development of these competencies is dependent on two main aspects, namely: changes to traditional views of education that stress academia and behavior modification; and the necessity for students to understand and analyze the nature of environmental issues.

Jensen & Schnack (1997, p.163) state that if it is a fundamental assumption that environmental problems are structurally anchored in society and our ways of living (essentially social constructions), then a necessity exists for solutions to these problems to be found through changes at both the societal and individual level. The implications for transformative EE are that students ought to be equipped with the competencies to pre-empt and respond to social issues on both a societal and individual level. As these responses are societal and individual, they refer to the immediate context of a participant’s existence, and are therefore essentially contextual. It is in this scenario that learning approaches grounded in social constructivism best meet the needs of the learner to equip them with the necessary skills and understandings to bring about transformation within the context of his/her existence as they can gather collective knowledge and draw on a range of perspectives to confront an issue.

There has been significant research activity and publications relating to action competencies linked with EE and the merits of such an approach. These include Jensen & Bruun (2002), Coiquhoun (2000), Csobod (2000), Fien & Skoien (2002) and Wals & Jickling (2000). Although somewhat dated, the views of Jensen & Schnack (1997) illustrate well the role AC has to play in transformative EE.

They claim that the aim of EE ‘is to make students capable of envisioning alternative ways of development and to be able to participate in acting according to these objectives,’ because relevant solutions to environmental problems lie in both quantitative (less consumption) as well as qualitative changes (1997, p.164). As a response they suggest that teaching needs to change to incorporate social interests where students are encouraged to become active citizens in a democratic society (1997, p.164). Integral to this is that intrinsic factors based on insight and understanding ought to be the motivating force for change (transformation) where the link between experience and action is recognized.

This implies that all legitimate environmental actions need to target both prevention and solution. In basic terms if school students are taken on an excursion to clear litter/pollutants from
water drains so that they do not end up in the ocean, it is in reality doing nothing to actively prevent further litter/pollutants from entering the drains in the first instance. This is neither preventing nor solving the issue. An AC approach would instead focus on students understanding the implications of such actions (allowing litter/pollutants into the drain) and the impact it has on the environment, which would then act as the deterrent. Intrinsic (understanding and insight) as opposed to extrinsic (fines, misdirected environmental activity) motivation is central to developing transformative environmental action. The recognition of the distinct link existing between understanding and prevention is more important than a response to an existing problem.

In other words, an action must be targeted towards solutions of the problem that is being focused upon. The focus must be a change perspective (Jensen & Schnack 1997, p.169).

If we agree with this tenet, then transformative EE ought to focus on actions that have a problem solving aspect and are of immediate relevance to the participants. Jensen & Schnack (1997, p.170) suggest that this is the difference between an environmental action as opposed to an environmental activity. They draw a distinction between the two with environmental activities not addressing the source of a problem, while environmental actions aim at prevention and solution. They consider two levels of action; direct action (contributing to solutions and focusing on relationships between people and the environment), and indirect action (influencing others to assist in solving the environmental issue focusing on relationships between people).

But why is it often the norm for traditional EE to emphasize environmental ‘activity’ at the expense of ‘action,’ and does this suggest that environmental ‘activity’ is not beneficial? Certain environmental activity obviously has positive environmental value. For example, collecting discarded plastic from a waterway does not prevent the problem arising again, but it does potentially prevent future harm to some water life. This is in itself difficult for younger students to conceptualize as it is not always easy to distinguish between different preventative strategies and reactions to existing problems. But what has generated typical environmental ‘activity’ approaches? I have previously outlined some of the complex contextual factors that impact on EE, but according to Jensen & Schnack (1997) traditional science approaches are in part to blame for the lack of ‘action components’ in EE:
The traditional, science-oriented approach to environmental education has been criticized for leading to knowledge about the existence of environmental problems, about their scope and size, but still not leading to action competence (1997, p.171).

They acknowledge that mere awareness and teaching aimed at behavior modification is ineffective, that the emphasis on academic dimensions has led to the neglect of action-oriented approaches and that the root causes of environmental issues and possible solutions is neglected due to the dominance of scientism. If we as practitioners are aware of the shortcomings of science-oriented approaches, has much changed thirteen years on from the above comments by Jensen & Schnack (1997)? From my contemporary experience, I believe not. Johnston (2009) explicitly states that ‘the world urgently needs transformation – on an emergency basis,’ and that ‘our education systems in general, and environmental education in particular, have failed the Earth and the future (2009, p.150).

If there is a tendency to continue with science-oriented approaches, then learners will inevitably have little ownership of environmental initiatives with some students perceiving themselves powerless to address environmental concerns and to bring about transformation. This has significant implications for community-based responses to local issues and student involvement therein. I have accentuated the significance of collective and communal actions, but traditional science approaches compromise such actions as they typically do not promote contextual knowledge generation, subjective interpretation and individual involvement in the construction of knowledge.

The essential components of AC outlined by Jensen & Schnack (1997) emphasize knowledge, insight, commitment, vision and action experience as important and necessary in the development of such an approach. They postulate its dependence on certain conditions:

To sum up it can be concluded that several conditions should be provided in order for environmental actions within environmental education classes to contribute to developing action competence. A critical perspective is necessary and must be related to concrete action. Additionally, the actions that are initiated must
be directed at, and also put into perspective of, the problem that is being worked on (1997, p.173).

Within an AC approach students clearly need to be intrinsically motivated and committed to preventing and solving environmental problems. They too should be encouraged to analyze how an environmental problem arose, which is in essence its constitution, as well as consider context specific solutions through the development of a vision of how their concrete actions might address the conditions they would like to change. The key aspect of such an approach is its direct and meaningful relevance to the context in which the participants (students/teachers/community) exist. It takes into account the individual’s construction of reality, and therefore their perception of an environmental issue, and provides possibilities for the prevention and solution of environmental problems where they can personally witness the benefits of their actions. These constructions and perceptions are all influenced by contextual forces, so it is these forces that we need to further explore to ensure the learning experiences we provide align with them and are meaningful and authentic. It is this authenticity that is a strong force to potentially bring about change.

An AC approach in EE assists in illustrating the link I advocate in this thesis, that of contextual significance, critical pedagogy, social constructivism and transformative EE praxis, as aspects of all are players in AC in varying degrees. For EE to be transformative however, there requires more emphasis on the understanding of contextual forces impacting on learners’ constructions, and AC approaches do not sufficiently emphasize or expose the meanings learners assign in these constructions.

**Transformative learning**

Based on personal experience and the research I have conducted for this thesis it has emerged that for EE to be effective, it needs to be transformative. Essentially EE ought to bring about change towards more sustainable action. So far I have outlined the need for a socially critical pedagogy, cognizance to be taken of the complexities of context, and the merits of an AC approach in order for EE to be more ‘effective.’ If one is in agreement that current environmental practice is unsustainable and that environmental issues are in essence social issues, we require a ‘transformative’ form of education based on social constructivist learning theory to bring about change. There is also a need for clarity of interpretation between ‘transformative’ and ‘transmissive’ learning.
Sterling (2001) identifies key elements that form the differences between transformative and transmissive education. The key difference lies in instructive approaches that are behaviorist in their orientation, and constructivist approaches that are non-behaviorist in their orientation. It is my belief that effective EE lies within a constructivist framework and Sterling’s (2001) views on transformative education outlined in Table Five (overleaf) can assist practitioners in their understandings of the broader forces contributing to transformative learning.

The emphasis on construction of meaning and local knowledge, intrinsic motivation, conceptual understanding and democracy, Sterling’s (2001) interpretation of transformative education aligns with the broader framework of effective EE which I propose. The alignment with participative action approaches also positions it conceptually within AC approaches. I do not believe that this model is adequate on its own as a specific framework for effective EE, but suggest that it can aid in the overall conceptualization of the development of a localized curriculum that takes into account the specifics of the context in which the learning takes place.

Sterling’s (2001) views on transformative learning supports some of the key aspects that I propose as critical to effective EE, namely: local community involvement/participation, real-life participatory learning experiences, ongoing learning, democratic networks, multi-disciplinary approaches, open-ended enquiry and social transformation. For transformative EE praxis to be realized, the above need to be entrenched into syllabi with an allowance in policy for individual schools to contextualize both content and practice to suit the needs and specifics of the exact setting in which the learning takes place. This is not to suggest the focus of the learning ought to only be on specific settings, but also that students should be encouraged to ‘think global, act local’ to generate the development of broader environmental perspectives. UNESCO (2005a) clearly stresses the need for understanding and a response to worldwide sustainable issues through education:

ESD involves learning how to make decisions that balance and integrate the long-term future of the economy, the natural environment and the well-being of all communities, near and far, now and in the future (2005a, p.1).
Table Five: Transmissive versus Transformative Education (adapted from Sterling, 2001)

<table>
<thead>
<tr>
<th>TRANSMISSIVE</th>
<th>TRANSFORMATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructive</td>
<td>Constructive</td>
</tr>
<tr>
<td>Instrumental</td>
<td>Instrumental/intrinsic</td>
</tr>
<tr>
<td>Training</td>
<td>Education</td>
</tr>
<tr>
<td>Teaching</td>
<td>Learning (iterative)</td>
</tr>
<tr>
<td>Communication (cf ‘message”)</td>
<td>Construction of meaning</td>
</tr>
<tr>
<td>Interested in behavioural change</td>
<td>Interested in mutual transformation</td>
</tr>
<tr>
<td>Information – ‘one size fits all”</td>
<td>Local and/or appropriate knowledge</td>
</tr>
</tbody>
</table>

### Education for Change (Practice)

<table>
<thead>
<tr>
<th>TRANSMISSIVE</th>
<th>TRANSFORMATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructive</td>
<td>Constructive</td>
</tr>
<tr>
<td>Control kept at centre</td>
<td>Local ownership</td>
</tr>
<tr>
<td>First order change</td>
<td>First and second order change</td>
</tr>
<tr>
<td>Product oriented</td>
<td>Process oriented</td>
</tr>
<tr>
<td>‘Problem-solving’</td>
<td>‘Problem – reframing’</td>
</tr>
<tr>
<td>Time bound</td>
<td>Iterative change over time</td>
</tr>
<tr>
<td>Rigid</td>
<td>Responsive and dynamic</td>
</tr>
<tr>
<td>Factual knowledge and skills</td>
<td>Conceptual understanding</td>
</tr>
<tr>
<td></td>
<td>and capacity building</td>
</tr>
</tbody>
</table>

### Education in change (Policy)

<table>
<thead>
<tr>
<th>TRANSMISSIVE</th>
<th>TRANSFORMATIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructive</td>
<td>Constructive</td>
</tr>
<tr>
<td>Imposed</td>
<td>Participative</td>
</tr>
<tr>
<td>Top-down</td>
<td>Bottom-up (often)</td>
</tr>
<tr>
<td>Directed hierarchy</td>
<td>Democratic networks</td>
</tr>
<tr>
<td>Expert-led</td>
<td>Everyone may be an expert</td>
</tr>
<tr>
<td>Pre-determined outcomes</td>
<td>Open-ended enquiry</td>
</tr>
<tr>
<td>Externally inspected &amp; evaluated</td>
<td>Internally evaluated through process, plus external support</td>
</tr>
<tr>
<td></td>
<td>On-going process</td>
</tr>
<tr>
<td>Time-bound goals</td>
<td>Language of appreciation</td>
</tr>
<tr>
<td>Language of deficit and managerialism</td>
<td>and co-operation</td>
</tr>
</tbody>
</table>
The development of broader environmental perspectives is an important aspect in transformative EE. Involvement in, and understanding of, issues at a local level undeniably assist in giving learners a more informed perspective of global issues, as they are able to experience first-hand and make sense of some of the forces impacting on broader macro-level environmental issues and recognize the role of individuals in bringing about change.

Clarity on the constitution of transformative learning, global perspectives and the recognition by learners that they are players in bringing about change are but a fraction of the larger contextual forces necessary to drive transformative EE praxis. Also of significance is obviously the role of teachers, as they are undoubtedly one of the main influences that can impact on transformative EE.

**Teachers and transformative EE praxis**

As the state of Victoria’s examples in the autobiographical narrative illustrate, it is often up to the school itself and individual teachers to ‘manipulate’ broader education policy for effective transformational learning to occur in EE. I strongly suggest that effective transformational teaching and learning would be more widespread if there was more support for action, learner-centered and transformative models with an emphasis on social critical pedagogy in general education policy.

From my experiences in Victoria some the reasons for a lack of prevalence in transformative EE models are wide and varied. Perhaps if more attention in policy was paid to aspects such as the recognition that long-term quality of life is dependent on the need for change, and that furthering understandings of the complex contextual determinants impacting on the learner’s construction of reality can assist in bringing this about, this would not be the case. Other factors such as the granting of EE a separate status in VELS, an emphasis on context specific curricula, social justice, basic human rights and the promotion of critical approaches to EE would also all contribute to more transformative EE praxis.

From my perspective presently there is little recognition by policy makers that the social context of the learning setting might be quite different to the social context of where policy is formulated. There is also possibly insufficient commitment by policy makers because of the potential of transformative and critical learning approaches to challenge the status quo and bring about change that might have political and economic ramifications. With more reference to
teaching and learning, if teachers acknowledged that environmental issues are socially con-
structed and viewed them as social problems that learners can actively respond to, then learning
activities could be designed that develop the skills required to competently confront them. This
requires sustainability issues to be integrated into the ‘whole-school’ curriculum and acknowl-
edgement that EE is in a dynamic state with constantly evolving needs that cannot simply be
based on ‘set,’ generic principles, which is in essence both a policy and school governance is-
sue.

The policy reform agenda has also not responded adequately to the equipping of teachers with
the necessary skills to bring about broad changes to many existing daily teaching practices. (In
my experience, many classrooms and schools aren’t very different to those I attended as a stu-
dent.) Recent PD requirements for teachers in Victoria, Australia emphasize a commitment to a
certain number of hours over specific time periods, but do not focus on a commitment to ac-
tively change the way many practitioners approach their teaching.

The Victorian Institute of Teaching (VIT) has identified general ‘professional standards,’
‘mentoring programs for beginning teachers’ and ‘promotion and regulation’ of the profession
as more important than an explicit focus on changing teacher practice. I strongly advocate that
quality learning is highly dependent on quality teaching, and presently there is insufficient at-
tention afforded to professional learning activities that promote transformative education mod-
els. This potentially has a direct impact on the effectiveness of EE in general, as much PD still
concentrates on ‘discipline-based’ and ‘transmissive’ learning and does not exploit the poten-
tial of action research as ongoing professional learning. Teacher capacity in the development of
effective EE is another important factor requiring consideration.

Research by the Australian Research Institute In Education For Sustainability (2005c) reveals
that:

Many teachers are keen to engage with EE and EFS and indeed use the terminology. However, all of the programs reviewed explicitly recognized that few teachers have the knowledge and capacity to develop EE and EFS in schools. (2005c, p.23).
It is clearly apparent that the emphasis needs to shift from mere environmental awareness, to in depth understanding and skill development for effective EE to occur. The National Research Council (2000, p.27) suggests that many PD programs are failing in their objectives and ‘consistently violate principles for optimizing learning.’ They claim that this is because professional learning is often not learner-centered, is not knowledge-centered, nor community-centered.

In Victoria Australia, The Department of Education and Training (2005, p.2) acknowledges that the best way to improve teacher effectiveness is through high quality professional learning. They also advocate the necessity for teachers to continually remain abreast of new knowledge about teaching and learning, and that teacher pedagogical and conceptual skills require continual refinement, yet this is not typical of the professional learning activities I am regularly exposed to. Once again the reasons for this are numerous and could range from factors such as political rhetoric, to inadequate support structures to actively ensure teachers are engaged in ongoing professional learning.

The Department of Education and Training (2005, p.5) also state that effective teachers need to: ‘draw out and work with the pre-existing understandings that the students bring with them,’ and ‘focus on the teaching of metacognitive skills, integrating those skills into the curriculum in a variety of subject areas’ (2005, p.5). School leadership is also encouraged to establish a school climate that facilitates, encourages ‘and enables teachers to work together to identify problems, find solutions and apply them’ (2005, p.14). This is positive in that it promotes a culture of participatory action research where feedback and reflection is integral in the ongoing review and transformation of practice. By provoking critical thought in the teacher and acknowledging the need for collaboration, reflection, ‘top-down’ support, and for teachers to take account of the learner’s pre-existing knowledge and understandings, there are aspects that lean towards a transformative pedagogy.

However, more attention is still afforded to the teacher and not the learner. There is still insufficient emphasis on the learner’s own environment and the contextual forces impacting on it, a balance between theory and practice, and the importance of developing critical thought and transformational skills within the learner, all aspects requiring attention in the promotion of transformative EE praxis. Besides the constitution of effective PD, there also needs to exist professional learning opportunities that focus specifically on sustainability.
The ‘National Review of Environmental Education and its Contribution to Sustainability in Australia,’ (2005c) stresses that for a number of years UNESCO has advocated the necessity for teacher training to promote effective learning for sustainability:

Teacher education programs underpinned by this paradigm would introduce teachers not only to a systematic view of economy, environment and education, but also develop their experiential, hermeneutic and critical knowledge which would result in socially useful and empowering curricula (Australian Research Institute In Education For Sustainability, 2005c, p.54).

In essence then transformative EE principles need to be addressed in both pre-service teacher programs as well as in professional learning for practising teachers. Action research is a powerful tool to assist teachers in developing further skills and understanding in EE allowing for the evaluation of their own work through personal critical reflection, but it alone cannot bring about transformative EE praxis. The development of specific teacher competencies that focus both on environmental knowledge and understandings, as well as the learner (how they learn and construct knowledge and issues), also have a role to play in bringing about a transformative EE.

Internationally standards have already been developed in some countries for teacher competencies in EE. In Australia there has also been some progress in this regard with the state of Queensland having developed sets of competencies that focus on various aspects relating to ecology and the environment. These include: understanding major concepts and principles in ecology and social ecology, a focus on environmental issues and solutions, an emphasis on action to improve life quality and the environment, and a further set of generic qualities encompassing application of knowledge to achieve goals, the utilization of current theories of learning, relating curricula materials and learnt knowledge to lifestyle choices, infusion of EE curricula into other disciplines and the development of effective planning and evaluation of EE curricula (Australian Research Institute In Education For Sustainability, 2005c, p.58).

The development of similar sets of competencies within each state would assist teachers in approaching transformative EE in a more confident, informed and effective manner, but this is
dependent on consensus or recognition of the need for change. It is however at a local level where this change can readily come about if supported by school leadership. In professional learning at school, the adequate provision of time to focus on deeper understandings of the learning context is necessary if there is a serious commitment to transformative EE.

The use of targeted Professional Learning Teams can be used to explore the notion of context and what it can reveal about the learners’ constructions and how these insights can inform praxis. Deeper examination of the actual learning context can reveal its constitution, limitations and potential for EE, whilst exploring the dominant contextual factors impacting the students’ (learners) and teachers’ (facilitators) constructions of knowledge and reality can assist in informing teaching strategies and curriculum designs in reference to these constructions.

In Victoria analysis of available data such as the students’ ‘Attitude to School Survey,’ the ‘Learning Preference Survey,’ and the ‘Staff Opinion Survey’ can all inform practitioners more about context and the meanings learners assign to their learning activities. This impacts significantly on the way we ought to go about EE design and implementation. Researching ways that official policy can be ‘manipulated’ to align with the needs of specific students as identified through contextual examination is also valuable in the development of localized and context specific curricula. Transcending the classroom, the inclusion of local community and the forging of local partnerships in the learning process is also integral to the success of a transformative EE as this assists in linking the learning with the identified need for change that impacts directly on the real lives of the learners. The above suggestions certainly aren’t comprehensive but provide an example of a platform for further exploration of how context can reveal connections and interpretations impacting on the learning process in the local setting.

This sort of activity is in essence contextualized professional learning promoting an emphasis on the learner and the teacher’s understandings of the learning process within specific settings, more so than on how to teach EE as a practical activity. As environmental issues hold different meanings for different people in different settings, one cannot simply provide a prescriptive approach for teachers to adopt in EE. An emphasis on teachers gaining a comprehensive understanding of an issue and how the learner perceives it, and then empowering the learner with transformational skills to address issues, is central to transformative EE.
In order to generate a comprehensive understanding of issues in a local context and the meaning they have for learners, teachers will have to draw on a number of disciplines other than EE. Besides taking account of the contextual forces impacting on the learner’s constructions of reality, teachers might for example have to draw on the incorporation of psychology, sociology, urban planning and development, ecology, technology, management, health and values education that can all contribute to the better understanding of how learners perceive environmental issues, which requires both multi and inter-disciplinary approaches.

In summary, for professional learning to contribute to a transformative EE, it should consider transformative and collaborative practices that are located in the specific contexts within which the learning takes place, but framed by a global perspective. In this scenario the educator or facilitator focuses on the transformation of existing perspectives and practices through informed decision-making, critical thought, engagement and a high level of understanding of local issues, but within the broader framework of a global perspective. In short, professional learning ought foremost to focus on the learner and contextual forces influencing their constructions. Secondly it ought to be critical, collaborative, contextual, participatory, transformative, systems-oriented and located in practice if it is to contribute to transformative EE praxis.

**Autobiographical research as a methodology in EE**

First and foremost I acknowledge that subjectivity is inevitable in my interpretations of events. I have purposefully and consciously tried to remain aware of how my personal constructions of reality have shaped my research and outcomes of this thesis.

In doing so I consulted literature by Gadamer (1975 & 1984) concerning hermeneutical aspects of my research and further explored the notion of reflexivity to ensure I remained aware of my subjective input into the research process no matter how objective I endeavored to be. I have taken into account Sammel’s (2003, p.258) point that ‘Gadamer insists all interpretations are anchored in our social and individual histories,’ and ‘they serve as the foundations for our values, assumptions and relationships.’ Throughout this thesis I have also considered the comments made by Peshkin (1988, p.17) that ‘one’s subjectivity is like a garment that cannot be removed. It is insistently present in both the research and non-research aspects of our lives,’ and that irrespective of how aware I am of my subjectivity, it is ‘beyond our control in the research process.’ I have also taken account of Peshkin’s (1988, p.20) suggestion that ‘by moni-
toring myself, I can create a laminating, empowering personal statement that attunes me to where self and subject are intertwined.

Bearing the above in mind, in researching and presenting this thesis I have demonstrated the potential of autobiographical research as a methodology to create new/further understandings in the field of EE. The efficacy of such a methodology is illuminated by the researcher (myself) being able to experience firsthand a diversity of approaches to EE in various contexts over a prolonged period of time. This has not only allowed for a degree of comparison and interpretation of both policy development and practice, but also enabled me to demonstrate explicitly that transformative EE is essentially context dependent.

As EE cannot be viewed in the same terms as an applied science, experience and participation in actual events in specific settings can contribute effectively to a greater understanding of policy interpretation and practice within EE. The merits of autobiographical writing are illustrated through my personal accounts of EE in action. My experience has enabled observations, participation, comparisons, analysis and a critique of multiple interpretations of EE whilst constructing my own perceptions. As a result I can assign a very specific meaning to different settings, which is normally a difficult exercise if the researcher is only exposed to the literature or third person accounts of past events. My first hand knowledge of the context in which some social and environmental events outlined in this thesis have occurred, has allowed for an in depth humanistic understanding of actions and perceptions in different eras and identified sociocultural settings. Autobiographical research has also enabled the rich descriptive accounts of events and the interpretation and synthesis of individual actions that constitute EE as a whole.

3.3 Conclusion and final substantive outcomes of research

3.3.1 New understandings and insights

Table Six – Elements inextricably linked to Transformative EE, outlines the link between the main forces that I believe impact on transformative EE praxis. Although all elements are linked and are dependent on each other in bringing about transformational action, constructivist/social constructivist approaches, social critical pedagogy and place-based education are main players in transformative EE praxis.

One aspect alone does not generate transformative praxis, and it is the examination of the deeper levels of context that are crucial to practitioner’s understandings of how learners make
connections to their life-worlds and interpret conditions affecting their existence, that will impact most significantly on how we view effective EE. Without an insight into this aspect of the learning process the provision of authentic learning experiences that can lead to societal transformation is compromised. Context then needs to be seen as a device that can reveal the meanings that learners assign to their knowledge construction and realities to ensure that EE learning activities are relevant, authentic, participatory, meaningful and offer the opportunity to develop new perspectives (or realities) that will generate change.

I acknowledge that authors have already argued a case for context or place-based EE and have advocated the merits of transformative education. I also acknowledge that the autobiographical narrative covers limited EE experiences and is insufficient to provide policy recommendations.

What I have done is revisited the idea of effective EE as a transformative education based on an enhanced understanding of the complexity of context and how the learners’ constructions of knowledge impact on their perceptions of social/environmental issues and their responses to them. Drawing on this I am now in a position to go beyond existing discourse on this topic and offer what effective and transformative EE is. If it is commonly acknowledged that existing environmental practices are unsustainable then a sense of urgency exists for change if we are to ensure long-term quality of life or inter-generational equity. EE undoubtedly has a role to play in this regard.

My proposition then is that in order for EE to be effective it needs to be transformative, as otherwise it does not meet the needs of an ever changing and evolving society that is placing increasing pressure on finite global resources due to current unsustainable practices. Mere awareness of issues or environmental knowledge does not solve or prevent environmental issues. The constitution of transformative EE praxis is however complex and ‘governed’ by a multitude of complex contextual factors that impact on the entire learning process. These contextual forces cannot be isolated to specific aspects, but need to be considered as connected through the inextricable link existing between the learner, pedagogical approaches, philosophies of learning, learning theory and transformation. In essence, context cannot be isolated from the learning process, as it is a part of the process and links all the components of transformative EE together through its influence on all constituents of the entire learning context. (See Table Six overleaf.)
Table Six: Elements inextricably linked to Transformative EE

Other Complex Contextual Forces Impacting on Learning Process

*Anthropological - Social Level*
- For example:
  - Gender
  - Race
  - Religion

*Intermediate Level*
- For example:
  - Teacher professional learning
  - Technology
  - Learning resources

*Transformative EE Praxis*

*Social constructivism and constructivism*

*Social critical pedagogy*

*Place-based and action competence models*

*Immediate Level*
- For example:
  - Spontaneous interest
  - Daily mood
  - Peer pressure

*Central Level*
- For example:
  - Geographic location
  - Education policy
  - Dominant student culture
No one has argued to the same extent of the complexity and role of context as being crucial to reveal interpretations and connections that learners make in their constructions, and how these meanings influence their constructions of knowledge and reality, which in turn ought to inform transformative EE praxis through our design and implementation of learning opportunities aligned to these constructions. Existing understandings of context are more centered on aspects such as place-based learning and the socio/cultural aspects in which it is located. These understandings and the approaches generated by them are important, but inadequate on their own to bring about societal change.

The identified individual constituents of effective EE, such as place-based learning, constructivist and social constructivist learning opportunities, social critical pedagogy and an exploration of the forces impacting on the learner and learning context, will also not on their own necessarily bring about the realization of transformative EE praxis. A link exists between these elements, and their collective employment together with enhanced understandings of the deeper influences impacting on context, can instead potentially bring about effective EE. Context is however the key to linking learners’ constructions to transformative EE praxis. It is only through an examination and comprehensive consideration of the complexity and constitution of context, that the meanings, connections and interpretations impacting on individual and collective constructions can be revealed. A deeper understanding of these forces that impact on the construction of both knowledge and reality then has implications for the design and implementation of transformative EE, as they are an inextricable component of the entire learning and transformative process.

I acknowledge the merits of individual constituents of effective EE that I have proposed, and appreciate the value of, as examples, action competence approaches and the emergence of a transformative agenda in policy, but also recognize that on their own they are inadequate to bring about change. I accept that what I propose is subject to criticism from theorists aligned with conflicting paradigms, but I offer my interpretation of how to go about effective EE as but one alternative that exploits understandings of the contextual forces that impact on our constructions and practice.
An examination of the complexity of context has revealed that contextual forces impact on both individual (subjective) and collective/social (intersubjective) constructions and interpretations which has implications for the design of learning opportunities that align with ‘reality’ or ‘multiple realities.’ I am well aware of the constructivist proposition that reality is an individual construction and that therefore multiple realities exist, and that this differs from the social constructivist notion of reality as a social construction, which comes about through human activity where meanings are constructed through interaction and social interpretation.

It would however be unwise to simply dismiss either one of constructivist or social constructivist informed approaches at the expense of the other, as irrespective of our ontological or epistemological assumptions, we will never totally know how our reality might be similar or different, or exactly whether knowledge is an individual construction or a human product generated through social processes. However, the main aspect pertaining to constructivism that I propose we do need to take account of, is the notion that knowledge is not objective, and that constructivists don’t discount the social transmission of knowledge. With regards to social constructivism, what needs to be borne in mind is that although it does focus on the collaboration amongst learners, it does not necessarily discount individual interpretations and individual knowledge construction.

As such, in our design of learning opportunities, we have to make provision for learning through the engagement of learners in individual and social activities, and for learners who are individually active in their subjective constructions of knowledge, but are able to draw on the experiences and perspectives of others, where the actual learning context is central to the learning process. In essence, the individual interests and needs of the learners need to be considered, as well as the social and cultural context in which they learn. As practitioners we need to recognize that contextual forces impact differently on different people, sometimes resulting in individual constructions, and in other instances collective constructions. Learning can therefore be both an individual and/or a collective process, and in the provision of authentic learning opportunities, this needs to be taken into account. For example, if there is an acknowledgement of the social transmission of knowledge and the intersubjectivity of meaning, then the deeper contextual forces impacting on social processes need to be considered in the design of authentic learning experiences. Or, if we acknowledge the individual as an active participant in the subjective construction (and reconstruction) of knowledge, then the contextual forces influencing relativism and these individual constructions need to be considered.
There are aspects of constructivism and social constructivism that are open to criticism, particularly by advocates of behaviorist philosophy. Constructivism, I concede is subject to relativity, but does focus on individual interpretation and the meanings individuals develop from their experiences, so certainly cannot be discounted as a learning theory by practitioners wanting to make more sense of how learners structure their world and the forces impacting on individual thought and these constructions. It also allows for learners to experience the ‘open-ended’ nature of science and that as active participants in the learning process they too are ‘scientists!’ Essentially constructivist approaches do not remove the learner from the learning process, but instead encourage the learner to be part of the inquiry process where their decisions and judgments count. This is essential for student engagement and involvement in the learning process where their views can be respected, appreciated and contribute in our quest for sustainability.

With this in mind, if we do want to cater for individual constructions of knowledge and how learners make meaning from experience, there is a case for constructivism, although it is open to critique. Just as one example, Saxe (1999, p.6) suggests constructivist approaches lack an emphasis on the social aspects, because in constructivism ‘the interplay between social life and cognitive development is not a core concern.’ However, if we also incorporate social constructivism into learning opportunities, we can take into account social context, values and culture in the development of understandings and knowledge, as the learning and social context are central constituents of the learning process. But for example, on its own it does not sufficiently allow for the multitude of other complex contextual factors that I have illuminated that impact on the individual learner and his/her associated relativism, so it should not be viewed as the ‘only’ philosophy to inform our approach. It certainly does have a place in transformative EE, although it too will have its critics. (Earlier in this thesis I elaborated on some of the perspectives conflicting both ontologically and epistemologically with the assumptions of social constructivism, such as the argument put forward by critical realists.)

It is therefore necessary for practitioners to closely link the individual and social constructs of learning with the deep rooted complex contextual forces (that are in essence individual-specific) impacting on the entire learning process to comprehensively understand the construction of knowledge within specific settings. It is not just one learning theory or pedagogical approach on its own that is important to take into account for transformative EE, but rather notice
should be taken of how contextual forces impact on the learning process, and how these forces can link approaches and theories together to collectively bring about a transformative EE.

In light of this I have redefined what effective and transformative EE ought to take cognizance of, and I have also illustrated how teacher practice and professional learning can be modified on a local level to link the complex constituents of the learning context to transformative EE. The new knowledge I have developed regarding the essential contextuality of EE centers around the complexity of the forces that impact on learners’ constructions of knowledge and reality that incorporates the construction of social/environmental issues. Existing literature has focused predominantly on the social, historical, political, economic and cultural aspects that impact on these constructions. I have put forward that there exist many more complex constituents that also need to be taken into account. As such I put forward the need to further examine and take into account the ‘layers’ within contexts, or as I term it, ‘contexts within contexts’ to better inform EE praxis.

Throughout this thesis I have demonstrated that all teaching and learning is generally located in the social and cultural context in which it occurs, but the constitution of context is multidimensional. Learning and knowledge are subjective and intersubjective constructions, so irrespective of the socio-cultural context in which they have developed, might only have specific meaning to individuals or those who share in common interpretation. Exploration of context has the potential to reveal the meanings that both individuals and collective groups (who might share predominant, or central contextual determinants), assign to their existence and social constructions. Further examination of context can also reveal the contextual forces that are very individual-specific but impact on the social processes that generate collective empowerment to bring about change.

But if transformation is the objective then these understandings of the deeper learning context have to be supported by relevant pedagogy. It is here that I propose a social critical pedagogy to assist in equipping learners with the skills necessary to bring about transformation. If environmental crises are essentially social crises, there is a definite need for a socially critical approach as a core constituent of EE to challenge existing power structures in an effort to generate change. Transformative EE is dependent on the ideological critique of power where by developing in learners the necessary critical skills and perspectives to transform society, through
informed choices and decision-making they can contribute to a sustainable future and long-term quality of life.

**Contextual forces impacting on EE as revealed through the narrative**

I used examples from my South African experiences in the narrative to illuminate that exploitative human relationships can be the genesis of environmental (social) problems and illustrated how political agendas may be linked to the continuity of positivistic epistemologies. This example also demonstrated that students need to further develop their understandings of the economical, social and political causes of environmental issues (essentially the nature of environmental issues) and further explore how they are constructed. It revealed that if they are to prevent and address potential solutions in an effective manner it is largely dependent on developing critical skills to re-frame problems that can be actively applied to their real-life setting, yet be related to a global perspective. The South African example in particular exposed that as practitioners it is our moral and environmental responsibility to provide an EE that empowers students to take action, address injustices and make appropriate changes to their life-worlds to ensure inter-generational equity and societal transformation. The development of these skills in the learner is however dependent on a comprehensive understanding of how the learners construct their realities and through the provision of curricula that are contextual, experiential and challenge existing power relations.

The Abrolhos Island example in the narrative illuminated that the contextual forces impacting on the lives of the learners themselves (individual) as well as the specific island community (collective), had to be incorporated into the provision of the curriculum for any transformation to come about. But this too was dependent on appropriate pedagogical approaches to bring about any change. This demonstrates that transformative EE praxis needs to take into account the link between the pedagogical approach (from my perspective, social critical), the learning theories or philosophies underpinning the adopted approach (from my perspective, constructivist and social constructivist), the complex context (forces impacting on the construction of reality/knowledge) and the identified need for transformation for a transformative EE to be realized. This example also illustrates the strength of place-based learning, student negotiated curricula and authentic learner-centered approaches in effective EE.

The Torquay Primary and ENSI Project examples revealed that policy and Departmental directives can be subjectively interpreted to engage in place-based EE with an action component
that links learning with the real-life of the learners. But even coupled with whole-school support and the integration of sustainability across other subject areas, we need to acknowledge that place-based education alone does not necessarily bring about transformational action. These examples also illuminated that it is the individual interests of teachers more so than policy or official curriculum frameworks that often generate EE activity, and it is the forces influencing their constructions and practice that also require consideration. These examples illustrated the importance of engaging the learner in real-life environmental initiatives, the importance of local community and the scope for subjective interpretation of policy and formal curricula for student and teacher professional learning.

This example, as in the Abrolhos Island example, demonstrated that by involving the local community into the learning process more meaning and significance can be assigned to the understanding of local issues. The community is an essential component of the learning process and inadvertently links social processes with cognitive development in the learner, which exposes the practical application of social constructivism. This is a crucial component of contextually generated curricula that are interdisciplinary and highly relevant to the students’ lives. It is this real-life significance that contributes to societal and personal value characteristics being better understood and explored in relation to the impact they have on environmental issues. This is important to transformative EE as it is ultimately the individual (or collective forces of individuals) that are central to transformation, and it is only through a comprehensive understanding of the contextual forces impacting on subjective and intersubjective constructions that an effective and transformative EE be developed and employed.

3.3.2 Complexity of Context

Contemporary EE literature reveals that current understandings of context are underdeveloped and the significance of contextual forces impacting on transformative EE praxis requires further examination. This thesis has elucidated the notion of context as complex, dynamic and offering different meanings, relevance and interpretations to both individuals and collective groups. Although the concept of a ‘context’ can be defined, it is however a subjective or intersubjective construction with diverse constituents or variables that holds unique and circumstantial relevance to the individual or collective group. The exploration of context is valuable to EE as a ‘device’ to reveal influences, connections and interpretations that all have implications for EE praxis.
Context can both give meaning and/or influence meaning depending on social interpretation and circumstance. However, these subjective or intersubjective interpretations are also influenced by contextual forces. In one setting or circumstance, the relevance of particular perspectives, words or concepts might hold an entirely different meaning than in another. (For example specific actions or events hold different meanings depending on the context in which they occur, as contextual forces impact on the way they are interpreted.) This is of particular relevance to EE when as practitioners we try and make sense of meanings and understandings learners give to their constructions of reality, which are inevitably influenced by the forces shaping the context in which they exist. Exploration of the forces that constitute existential contexts can reveal deeper understandings and hidden meanings of these constructions and the implications they might hold for transformative EE praxis. In essence, context can reveal the meaning behind social constructions as through contextual examination, we can gain insight into how things are socially interpreted.

Context is also highly relevant to the notion of ‘think global, act local,’ as learners’ perceptions of issues are generally particular to specific settings and hold more meaning if they impact on their real lives. In essence there is no one set reality, but instead there can exist multiple interpretations that are socially constructed by individual learners. As such learners will not be able to generate legitimate global perspectives unless EE is firstly informed by considering the forces shaping their meanings and perceptions within their own existential constructions. EE learning activities have to directly relate to these real-life constructions and provide opportunities to further develop their critical understandings of them. Effective EE is therefore dependent on practitioners first gaining deeper insights into how learners construct social/environmental issues within their immediate context and the meanings they assign to them, before we can design EE curricula that focus on the development of effective strategies and critical skills that generate authentic and informed global perspectives.

For effective EE to occur, learners need to understand the meaning behind and the relevance of their skill development (essentially why they are learning something), before it is truly applicable to their reality. Practitioners therefore need to clearly expose the ‘learning intent,’ and the practicalities of skill application in the local setting, before understandings of how these skills might relate to global issues can be fully developed. This can only come about through the identification of appropriate and meaningful learning activities that generate the required skills and understandings necessary for transformation, and this identification is dependent on an ex-
amination of the contextual forces impacting on the construction of local issues, social processes and the interpretations affecting meaning.

Contemporary understandings of contextuality in EE focus predominantly on recognition that all teaching and learning is located in the social and cultural context in which it occurs, and that place-based education can provide contextual and meaningful learning experiences where the learner can make connections and impact on his/her real-life world. The broader notion or implications of context for transformative EE is not widely examined in literature. Although there is recognition of the importance of the connections, meanings and understandings learners construct in specific settings, current discourse does not explore or expose links to transformative EE praxis through the deeper examination of context and its complex constitution.

It has been established that EE is highly context-dependent and therefore pedagogical approaches need to take this into account. This requires an acknowledgement of the deep and complex contextual determinants in the nature and construction of environmental issues and perceptions thereof, and the development of context-informed learning and teaching strategies to address these issues. Consideration of context allows learners to make connections between the genesis of their constructions and how their meanings are affected by social interpretations that are subject to multiple contextual forces. It also gives meaning to how their knowledge is generated and an understanding of how their perspectives are constructed. These understandings are crucial in informing learning activities within a social critical pedagogy where equipping learners with the skills to challenge and transform existing power relations is a central objective.

Examination and exploration of context then has implications for both our ontological and epistemological assumptions, as forces impacting on context influence the nature of reality and the generation of knowledge. If transformative EE praxis is to be realized, then the more insight practitioners have into the learning process and the generation of knowledge, potentially the more effective the practice will become. Contextual examination can then be viewed as a tool or device to reveal these crucial understandings and contribute to changing the way we currently view and implement EE.

The autobiographical narrative has demonstrated that contextualized and constructivist/social constructivist approaches are often compromised, by for example an examination driven sys-
tem or an emphasis on the collection of measurable data by central education bodies. The narrative also exposed that in the absence of a social critical pedagogy where students fail to examine and understand not only the political, economic, social and cultural processes that impact on the constitution of environmental issues, but also the forces impacting on their own constructions, transformative EE is severely compromised. Through the consideration and exploration of the influential contextual determinants impacting on the learning process, both teachers and students can be better equipped for transformational environmental action, as understanding how we view or perceive our world will shape or influence how we respond to it.

3.3.3 Teachers, approaches to learning and transformative EE praxis

In the formal school setting, teachers and the way they go about their business impacts significantly on effective EE, but they too are influenced by diverse contextual forces which shape their perspectives and practice. The narrative exposed that teachers are generally able to ‘manipulate’ policy and adopt approaches to learning that are contextual and relevant to the real-life of the learner where they can be equipped to respond ethically to challenges of long-term sustainability. This requires experiential learning opportunities where students can construct and co-construct their knowledge individually or through social processes, build on existing knowledge, draw on others’ experiences, interact with their environment, are empowered to bring about change and develop global perspectives.

It is clear that for transformation to come about, learners need to explore the relationships that exist within nature and consider the links between social and ecological problems. This thesis has demonstrated that as practitioners we should encourage learners to explore the economical, social and political aspects of environmental issues and to question existing power structures. Their role is neither to manipulate nor to exploit the environment but to be actively involved in the preservation of it, and to take action in the prevention of potential problems or concerns that may arise, where social equality, justice and conscience is an intrinsic motivating force.

This thesis has revealed that the learning opportunities mentioned above are dependent on flexible approaches that are context dependent (place-based), critical, constructivist/social constructivist and framed by social/historical/cultural constructed epistemology where the deeper contextual forces impacting on the entire learning processes are taken into account. The development of deep, creative and critical thinking individuals that are empowered to challenge existing power structures and their own attitudes and beliefs, is central in bringing about worth-
while social change, and needs to be incorporated into all learning to achieve transformational objectives.

To assist in realizing transformation, the inclusion of an action-competence component and local community involvement to link the learning process to the real-life existence of the learners is important. Local community involvement can further understandings of inter-generational equity, as the social processes of learning in this scenario incorporate values, traditions and beliefs specific to the learning setting, and therefore is integral to contextual learning. This intimates that a valuable inclusion for effective EE is also a ‘values’ component that examines which attitudes and beliefs have the potential to drive desired transformation, promote active responses to the needs, commitments and interests of specific communities, and provide insights into how they shape social constructions.

For this to occur support is required from policy and school governance that does not advocate centralized curricula with a ‘one size fits all’ approach. Instead, transformative EE praxis can be best supported by sustainability being integrated across all learning areas and through the adoption of a ‘whole school’ approach to sustainability. This means the provision of learning activities that cater for individual and collective needs, interests and abilities, but where living sustainably is central to all learning. In general this requires a fundamental systemic transformation and a change in the thinking and attitudes of practitioners for this to be realized, as my research and experience indicates that typically EE in schools is currently more often driven by committed individuals than by policy or departmental initiatives.

The autobiographical narrative confirms that EE is highly political by nature and is in a constant dynamic state where not only different political ideologies undeniably influence EE policy and practice, but as revealed, a host of other complex and diverse contextual forces. As EE as a transformative process conflicts with many traditional approaches to learning and challenges existing power structures, practitioners need to take into account how political agendas impact on sustainability, the attention it is afforded and the manner in which it is publically presented. As such the professional learning of practitioners needs to be transformative itself to interrogate existing pedagogical understandings and practice in order to develop deeper understandings of the forces impacting on learners’ constructions of environmental issues, as well as how students in a specific context best learn and think.
Through the use of context as a device to expose the connections and interpretations existing within specific learning contexts that give meanings to the learners, we can design curricula and learning activities that cater for the individual and social interpretations used in these constructions of their meaning. As an exploration of context can generate deeper understandings of the learners and the entire learning process, less emphasis can be placed on the practicalities of teaching and more on the design of relevant, engaging and authentic learning activities with the teacher a facilitator of the learning process.

To assist in generating new perspectives on the role of teachers in EE, I have advocated action research as a professional learning methodology to critically reflect on and change existing practices to best serve transformative EE praxis. When professional learning for teachers is also place-based, critical, participatory and collaborative there is more scope for it to be ongoing, relevant to teachers and learners’ needs, and supported through enhanced school and community partnerships. Professional learning can then respond to the attributes of specific communities and focus on the generation of a ‘whole-school’ sustainability culture that transcends into the student’s home and family setting, potentially bringing about societal transformation. In essence, many of the attributes of effective EE that I have proposed for student learning, is also highly relevant to teacher professional learning.

3.3.4 Autobiography as a research methodology

My research has revealed that the writers of autobiographical narratives need to carefully examine aspects particularly pertaining to reflexivity and hermeneutics in presenting subjective interpretations of events, and to make readers aware of how perspectives and prejudices influence these interpretations that give meaning to personal constructions.

It has also been established that autobiographical research has significant potential as a methodology to generate new understandings in EE as it allows an ongoing development of perspective in specific contexts, and through the promotion of reflection on the part of the author, it provides deeper understandings of the interrelationship between past and present.

The autobiographical narrative revealed unique insights into specific settings, which allowed for personal interpretations of life experiences that exposed how contextual forces impacting on EE can be explored and understood to inform contemporary practice. Although subjective and culturally situated, it can assist in the development of a deeper comprehension of the com-
plex contexts in which we exist and the complex contextual forces impacting on these settings and our constructions of reality. The narrative also disclosed subjective experiences to a broader audience where through a blend of personal experience and scholarly research, insights into the individual and social interpretations affecting the meanings learners and practitioners assign to their immediate settings was also exposed. The adopted research methodology enabled an interpretation of changes in specific contexts over a space in time and was not subject to an interpretation of an occurrence at a set moment as in many other scientific forms of research.

Personal research into the constitution of quality autobiographical accounts gave deeper insights into how subjective and intersubjective interpretations of issues and events impact on our constructed meanings, and that these meanings impact significantly on the way learners learn, construct and respond to issues. With this in mind, merely examining the merits of autobiography as a research methodology gave me as both researcher and practitioner, an enhanced understanding of the constitution of effective, transformative EE praxis.
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APPENDICES

**Figure One - Whole school curriculum planning framework for Victorian schools**

*(Victorian Curriculum and Assessment Authority, 2005b).*

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**VICTORIAN ESSENTIAL LEARNING STANDARDS**

**A WHOLE SCHOOL CURRICULUM PLANNING FRAMEWORK**

Three interwoven purposes

To equip students with capacities to:

- manage themselves and their relations with others
- understand the world and act effectively in that world
- to prepare them for success in education, work and life.

This is achieved through the three core, interrelated strands of

- **Physical, Personal and Social Learning**
  Knowledge, skills and behaviours in Health and Physical Education; Personal Learning; Interpersonal Development; Civics and Citizenship

- **Discipline-based Learning**
  Knowledge, skills and behaviours in The Arts; English and Languages Other Than English; The Humanities; Mathematics; Science

- **Interdisciplinary Learning**
  Knowledge, skills and behaviours in Communication; Design, Creativity and Technology; Information and Communications Technology; Thinking

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**Underpinned by educational purposes, principles and values to form**

**Victorian Essential Learning Standards**

a framework for whole school curriculum planning

Schools plan their teaching and learning programs, using the three strands, to enable their students to achieve the essential statewide learning standards.

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*Figure 1: Whole school curriculum plan*
**Figure Two** – Structure of Victorian Essential Learning Standards (Victorian Curriculum and Assessment Authority, 2005a).

**Structure**

Within each strand of learning, the essential knowledge, skills and behaviours are organised into **domains** with further divisions into **dimensions**. Standards are written for each dimension. The relationship between the strands, domains and dimensions is shown in Table 1.

<table>
<thead>
<tr>
<th>Strand</th>
<th>Domain</th>
<th>Dimension</th>
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</thead>
<tbody>
<tr>
<td>Physical, Personal and Social Learning</td>
<td>Health and Physical Education</td>
<td>Movement and physical activity</td>
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<td></td>
<td></td>
<td>Health knowledge and promotion</td>
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<td></td>
<td>Interpersonal Development</td>
<td>Building social relationships</td>
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<td></td>
<td></td>
<td>Working in teams</td>
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<td></td>
<td>Personal Learning</td>
<td>The individual learner</td>
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<td></td>
<td></td>
<td>Managing personal learning</td>
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<td></td>
<td>Civics and Citizenship</td>
<td>Civic knowledge and understanding</td>
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<td></td>
<td></td>
<td>Community engagement</td>
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<td>Discipline-based Learning</td>
<td>The Arts</td>
<td>Creating and making</td>
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<td></td>
<td></td>
<td>Exploring and responding</td>
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<td></td>
<td>English</td>
<td>Reading</td>
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<td></td>
<td>Writing</td>
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<td></td>
<td></td>
<td>Speaking and listening</td>
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<td></td>
<td>Languages Other Than English</td>
<td>Communicating in a language other than English</td>
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<td>Intercultural knowledge and language awareness</td>
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<td></td>
<td>Economics</td>
<td>Economic knowledge and understanding</td>
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<td>Economic reasoning and interpretation</td>
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<td>Humanities</td>
<td>Geographical knowledge and understanding</td>
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<td>Geospatial skills</td>
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<td>Geography</td>
<td>Historical knowledge and understanding</td>
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<td>History</td>
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<td>Space</td>
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<td></td>
<td>Measurement, chance and data</td>
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<td></td>
<td>Mathematics</td>
<td>Structure</td>
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<td></td>
<td>Working mathematically</td>
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<td></td>
<td>Science</td>
<td>Science knowledge and understanding</td>
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<td></td>
<td></td>
<td>Science at work</td>
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<tr>
<td>Interdisciplinary Learning</td>
<td>Communication</td>
<td>Listening, viewing and responding</td>
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<td></td>
<td></td>
<td>Presenting</td>
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<tr>
<td></td>
<td>Design, Creativity and Technology</td>
<td>Investigating and designing</td>
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<tr>
<td></td>
<td></td>
<td>Producing</td>
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<tr>
<td></td>
<td>Information and Communications Technology (ICT)</td>
<td>Analysing and evaluating</td>
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<td></td>
<td>Thinking</td>
<td>ICT for visualising thinking</td>
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<td>ICT for creating</td>
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<td>ICT for communicating</td>
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<td></td>
<td>Reasoning, processing and inquiry</td>
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<td></td>
<td></td>
<td>Creativity</td>
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<td></td>
<td></td>
<td>Reflection, evaluation and metacognition</td>
</tr>
</tbody>
</table>

Table 1: The structure of the essential learning strands
**Figure Three** – Extension of Wals and van der Leij’s analysis showing additional paradigms in Environmental Education (McClaren, 1997).

<table>
<thead>
<tr>
<th>Focus</th>
<th>Behaviouristic</th>
<th>Non-Behaviouristic</th>
<th>Synthetic/Ecologiste</th>
<th>Ekozoic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epistemology</td>
<td>Objectivist/Positivist</td>
<td>Subjectivist/Constructively</td>
<td>Synthetic/Objective/Subjective</td>
<td>Biologically Connective</td>
</tr>
<tr>
<td>Knowledge Generated</td>
<td>Propositional/Linear/Universal</td>
<td>Experiential/Non-linear/Contextual</td>
<td>Universal/Contextual/Applied</td>
<td>Integrative Transformative</td>
</tr>
<tr>
<td>Structure</td>
<td>Subjects/Disciplines</td>
<td>Issues/Life-world</td>
<td>Disciplinary/Historical/Case</td>
<td>Holistic</td>
</tr>
<tr>
<td>Teacher’s Role</td>
<td>Expert/Instruction</td>
<td>Facilitator/Co-learner</td>
<td>Facilitator/Tutor/Co-Learner</td>
<td>Mentor/Advisor/Model**</td>
</tr>
<tr>
<td>Role of Learner</td>
<td>Consumer/Creator of Knowledge</td>
<td>Expert/Researcher/Critic</td>
<td>Communicant/Celebrant</td>
<td></td>
</tr>
<tr>
<td>Teaching Strategies</td>
<td>Lectures on Theory/Modular/Instruction</td>
<td>Real-world/Experiential</td>
<td>Experience/Case Study/Learning/Through Action</td>
<td>Expriential/Meditative/Reflective</td>
</tr>
<tr>
<td>Research Style</td>
<td>Experimental R&amp;D model (linear-expert driven)</td>
<td>Participatory/R is D-model (non-linear-practitioner driven)</td>
<td>Contextual/Synthetic/Practical</td>
<td>Multi-Sensory/Observation/Opening</td>
</tr>
<tr>
<td>Role of Researcher</td>
<td>Producer of Knowledge &amp; Solutions/External Expert</td>
<td>Co-creator of Improvements/Participant</td>
<td>Guide/Team Member/Problem Solver</td>
<td>Recipient/Openness to/Insght</td>
</tr>
<tr>
<td>Research Goal</td>
<td>Abstract Knowledge</td>
<td>Local Theory and Action for Change</td>
<td>Ecologically Connected/Action</td>
<td>Enlightenment/Insight/Harmony</td>
</tr>
<tr>
<td>Power Relationships (PR)</td>
<td>Reinforces/ Existing PR</td>
<td>Challenges/Existing PR</td>
<td>Analysis of PR/Political Action</td>
<td>Harmony/Deeper Power</td>
</tr>
<tr>
<td>Focus of Reflection</td>
<td>What do I now Know?</td>
<td>Who am I Becoming?</td>
<td>What is possible/How to obtain it</td>
<td>Relaxed/Open to Insight</td>
</tr>
<tr>
<td>Fit With Schooling</td>
<td>Good/Situational/Qestionable</td>
<td>Situational/Questionable</td>
<td>Situational</td>
<td>None/Little</td>
</tr>
</tbody>
</table>

**Nature** is considered the ultimate teacher.

*Fit with contemporary schooling: This category reflects the extent to which the particular model or domain of environmental education is likely to be implemented in a K-12 school system in the USA and Canada. Goodness of fit indicates that the model can be described in terms which reflect current educational terminology, could be implemented within the administrative and curricular structures of typical schools, and whether or not student learning could be assessed/demonstrated by examinations or by authentic assessment. A situational rating means that whether or not the particular model could be implemented/adapted would depend on local/state/provincial policies, the existence and support of local champions, the interest of teachers in particular schools, and viable funding, space, time, and logistic support. In the case of the ecozoic model, there is really no fit with contemporary schooling and the model implies a new set of cultural arrangements for educational development.
1969 – Club of Rome published ‘Limits of Growth.’


1975 – The Belgrade Charter developed under the auspices of the UNESCO and United Nations Environment Program (UNEP) which outlined specific objectives and guiding principles for the implementation of environmental education.


1978 – Intergovernmental Conference (organized by UNESCO-UNEP) on environmental education in USSR resulted in ‘The Tbilisi Declaration.’


1987 – UNESCO-UNEP (Tbilisi +10) Conference in Moscow as follow up to Tbilisi Conference. The report of the World Commission on Environment and Development is published.

1990 – United States Congress passed National Environmental Education Act of 1990 which authorized amongst others, EE grants, student fellowships, the formation of National Environmental Education and Training Foundation and the President’s Environmental Youth Awards.

1992 – The United Nations Conference on Environment and Development (UNCED) held in Rio, known as the Earth Summit, which prepared a framework for international action known as Agenda 21.
Chapter 36 entitled ‘Promoting Education, Awareness and Training,’ called on nations to integrate environmental education throughout all levels and sectors of society and stressed the role of education in sustainable development.

1996 – US Environmental Protection Agency’s National EE Advisory Council formally releases a report that details an assessment of Environmental Education in the USA.

1997 – Thessaloniki Conference (UNESCO Tbilisi +20)

1998 – In the USA, The State Education and Environment Roundtable formally released, ‘Closing the Achievement Gap: Using the Environment as an Integrating Context for Learning.’

2002 – Johannesburg Summit held by UN Commission on Sustainable Development.


2009 – United Nations Climate Change Conference, Copenhagen, Denmark.

AUSTRALIAN - NATIONAL

1970 - Australian Academy of Science held a conference entitled: ‘Education and the Environmental Crisis.’

1972 – Federal Labour government elected against a backdrop of significant references to the importance of environmental issues and the necessity of education in this area.


1974 – Formation of: Curriculum Development Centre Environmental Education Committee. Survey conducted of national needs for EE.

1975 – Seminar on Education and the Human Environment held by Australian National Commission for UNESCO.
1976 – Formation of Curriculum Development Centre Study Group on EE.

1979 - Australian Association of Environmental education (AAEE) formed.

1980 – Prof. Bill Stapp (American EE consultant) conducted in-service courses in environmental education awareness around Australia.

1981 – Curriculum Development Centre disbanded.

1983 – First Environmental Education Unit established by the Commonwealth Department of Home Affairs and the Environment.
The development of a ‘National Conservation Strategy for Australia.’

1987 – Curriculum Development Centre. National Curriculum in cooperation with the states targeted environmental education.
Victoria releases a state conservation strategy.

1988 – ‘Hobart Declaration,’ aims at developing an ‘understanding of and concern for balanced development and global environment.’


1991 – National mapping of Environmental Education.


1999 - ‘Adelaide Declaration’ provides national goals for schooling with distinct references to ecologically sustainable development and the need for students to better develop understandings and concern for the natural environment.


2001 – Implementation of Environmental Science and Outdoor and Environmental studies units at VCE (matriculation) level.


