

**STRATEGIES TO INTEGRATE EDUCATION FOR
SUSTAINABLE LIVING IN THE ARTS AND CULTURE
LEARNING AREA**

by

THANGAVALOO COOPSAMY NAICK

**Submitted in partial fulfillment of the requirements for
the degree of**

**MASTER OF EDUCATION – WITH SPECIALISATION IN
ENVIRONMENTAL EDUCATION**

at the

UNIVERSITY OF SOUTH AFRICA

SUPERVISOR: PROF. C P LOUBSER

JUNE 2006

Student number: 523-360-7

I declare that:

“Strategies to integrate education for sustainable living in the Arts and Culture learning area” is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

.....

SIGNATURE

MR T C NAICK

.....

DATE

SUMMARY

The Revised National Curriculum Statement of 2002 does not emphasize the need for Education for Sustainable Living (EFSL) in the Arts and Culture (A & C) learning area. Although the RNCS envisages a learner who respects the environment, the curriculum does not cater for the needs of the educators who are relatively new to environmental education and especially EFSL. Educators are faced with a multitude of barriers and constraints. This research attempts to identify the barriers and provide strategies and recommendations to integrate EFSL in the Arts and Culture area.

The barriers were identified through a questionnaire that was given to educators in the Port Shepstone region. To make the research more valid some questionnaires were given to schools in the urban areas, in the Durban South region, since most of the schools in the Port Shepstone region are in a rural setting. The strategies and recommendations are highlighted using the researcher's personal experience in the education setting, use of literature and the researcher's encounters at the International Children's Conference on the Environment in Connecticut, USA in 2004 and the World Environmental Conference in Japan in 2005.

KEYWORDS

Integration, sustainability, culture, art, values, constructivism, Revised National Curriculum Statements, reflective teaching, outcomes based education

CONTENTS

Summary	i
Keywords	i
Contents	ii
Acknowledgements	vi
Abbreviations	vii

Chapter 1: Setting the scene

1.1	Introduction and background	1
1.2	A rationale for the integration of Education for Sustainable Living (EFSL) in the school curriculum with special reference to the Arts and Culture (A & C) learning area	3
1.3	Aims of the study	5
1.4	Statement of the problem	6
1.5	Stating the hypotheses	8
1.6	The methodology applied	8
1.7	Chapter division	9

Chapter 2: Steps taken to integrate education for sustainable living in the South African education system

2.1	Introduction	11
2.2	Impact of international trends and declarations	11
2.3	Curriculum initiatives	14
2.4	Critical analysis of the revised national curriculum statement (schools) policy with specific reference to the senior phase (Grades 7 – 9)	16

2.5	Conclusion	18
-----	------------	----

Chapter 3: Definitions and Clarifications of Important Concepts

3.1	Introduction	19
3.2	Sustainability	20
3.3	Development	21
3.4	Sustainable development	22
3.5	Education for sustainability	25
3.6	Education for sustainability and its environmental dimension	26
3.7	Education for sustainability and its economic dimension	27
3.8	Education for sustainability and its political dimension	29
3.9	Integration	29
3.10	Arts and Culture learning area	30
3.11	Conclusion	31

Chapter 4: Research Design and Findings

4.1	Introduction	32
4.2	A qualitative analysis	32
4.3	Instrument	32
4.4	Sampling and data collection	33
4.5	Data analysis	33
4.6	Validity and reliability	33
4.7	Analysis of responses	34
4.7.1	Analysis of school and personal details	34
4.7.2	Frequency distribution of responses to section B	37
4.7.3	Frequency distribution of responses to section C	39
4.7.4	Frequency distribution of responses to section D	42
4.7.5	Frequency distribution of responses to section E	45

4.7.6	Frequency distribution of responses to section F	49
4.7.7	Frequency distribution of responses to section G	52
4.7.8	Frequency distribution of responses to section H	55
4.7.9	Conclusion	57

**Chapter 5: Strategies and recommendations for the integration
of education sustainable living (EFSL) in the Arts and
Culture (A & C) learning area**

5.1	Introduction	58
5.2	Barriers experienced in schools with regards to the integration of education for sustainable living (EFSL) in the A & C learning area	58
5.3	Strategies and recommendations	60
5.3.1	Strategies for school policy and management	61
5.3.2	Strategies for educators	63
5.3.2.1	Teaching strategies	64
(a)	Reflective Teaching	64
(b)	Constructivism	65
5.4	Practical ideas and methods to integrate EFSL in the A & C learning area	67
5.4.1	Dance	68
5.4.2	Drama	69
5.4.3	Music	70
5.4.4	Visual art	70
5.5	Limitations of the study and implications for further search	70
5.6	Conclusion	71

Bibliography	73
Appendix A	81

ACKNOWLEDGEMENTS

The completion of this dissertation would not have been possible without the support, understanding and tolerance of my wife, Veni and two children, Kelicia and Nashlin. Acknowledgements also go to Troy Govender and Nad Naidoo, for their assistance, general help and encouragement during this research and report compilation. I am indebted to Vijaykumari Naicker for the final editing of the dissertation. I am also grateful to Professor C.P.Loubser for his guidance and confidence in seeing the value of this dissertation.

Dedicated to my late parents and brothers, Jaya and Sharma Naick.

“The earth provides enough to satisfy everybody’s needs, but not every person’s greed, when we take more than we need, we are simply taking from each other, borrowing from the future or destroying the environment and other species.”

Mahatma Gandhi

ABBREVIATIONS

A & C	Arts and Culture
C2005	Curriculum 2005
DEAT	Department of Environment Affairs and Tourism
EECI	Environmental Education Curriculum Initiatives
EEPI	Environmental Education Policy Initiatives
EFSL	Education for Sustainable Living
NCS	National Curriculum Statements
NEEP-GET	National Environmental Education Project for General Education and Training
NGO	Non- Governmental Organisation
OBE	Outcomes Based Education
RNCS	Revised National Curriculum Statements
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation

Chapter 1

Setting the scene

1.1 Introduction and Background

There is an urgent need to stress the importance of education for sustainable living (EFSL) in formal and non-formal education sectors. Many writers highlight the need for education for sustainable living. According to Fox (1994:46) some of the most scientific world-views have destroyed forests and the souls of human beings. Ecological disasters are prevalent today because of the changes brought to nature by human knowledge systems. There is a reason to believe that whatever happens to this earth is outside one's control and that science will offer solutions to the problems. Giddens (1992:127-138) and Bowers (1995:4) relate this thought of thinking to Marxist Philosophy which states that man can control what he has created.

Concurring with the above writers and implicitly arguing the need for EFSL, Orr (1992:155) states that we, in making progress have "wandered up blind alleys". The pursuit of knowledge is not free from stupidity, arrogance, personal ambition and wrong-headedness. Bowen (1994:43-47) states that environmental degradation is made worse by science and technology. Science and technology produce goods and services without concern for a sustainable environment. Harman (1988:107-111) makes sense in stating that we place much emphasis on economic security. Although this may seem economically sound, it is ecological foolish. Earth would become a futile planet if we think that it is economically sound to place a premium on the maximum rate of using up resources. This idea is also mooted by Okeem (1990:24) when he states that liberal capitalism causes "a rapacious consumerism damaging the planet and the human spirit".

Furthermore, Capra (1983:23) in analysing rational thought also believes that we have forgotten how to think with our bodies and souls and how to interact with living organisms. There seems to be an absence of expressive and emotional forms of education mainly because thinking has become scientific. There is a need to stress on culture, values, and the aesthetic aspects of the

environment. The importance of values and subjectivity in education cannot be overemphasised. Higgs (1995:5) is correct in stating that logical empiricism, in its attempt to bring about logical reasoning for education has failed because it does not see the scientist as a human being.

According to Harman (1988:10) a dominant paradigm in society depends on how people in that society think, perceive value and react to reality e.g. medieval society was not interested in the value of technology. Today, most people are dependent on technology and lack the basic skills and knowledge essential to a bioregional and community-centered life style (Bowers 1995:5).

Perceiving the world today as a mechanistic system as it was during the Scientific Revolution, the Enlightenment and the Industrial Revolution is limited and is in need of drastic change. Reality depends on the spiritual realm also and takes into account values, beliefs, truth and beauty. These aspects can be seen practised in Hinduism, Buddhism and Taoist cultures (Capra 1983:12-13). Bowen (1994:118-121) also emphasises the need for sensitivity to the environment and the interconnectedness of the planet. One should examine ones values and lifestyles and take action to live sustainably.

The researcher agrees with Fox (1994:145) and Bowen (1994:7) that the earth must be seen as a whole (Gaia hypothesis) and that all human beings are participants. Rationalistic thinking must be turned around and education must revere nature and stress the beauty and mystery of the earth. It is with this in mind that our new education system must agree with the statement in Local Agenda “think globally, act locally”. Harris (1996:4); Harman (1998: 114); Capra (1988:15); Drucker (1993:212) and Giddens (1992:1) agree that any ecological problem is a macro-problem. Ecological disasters do not only affect one part of the earth but they have planetary dimensions.

Bowen (1994:57) uses the term “ecolacy” alongside “numeracy” and “literacy”. EFSL must permeate all aspects of education, must not be compartmentalised and must be collective (Fullan 1982:136). Ed Clark, the person who coined the term “ecoliteracy” in 1981 (Bowers 1995:207-208)

states that in “ecoliteracy” students, teachers, administrators and parents work together to design curricula and programmes. This partnership empowers these groups of people with full ownership and responsibility.

One of the principles for the education programme, described above, is sustainability. The other principles include interdependence, ecological cycles, energy flows, partnerships, flexibility, diversity and co-evolution (Bowers 1995:206-207). Moral education is an important part of the school curriculum. The study of ecosystems can improve moral education. The ultimate reference point for understanding aspects of the cultural and natural world is the question of whether human practices contribute to sustainable relationships within the larger system they are dependent upon. The basic principles outlined above forms the basic principle for understanding different aspects of culture (Bowers 1995:208-209).

1.2 A Rationale for the integration of Education For Sustainable Living (EFSL) in the school curriculum with special reference to the Arts and Culture (A & C) learning area.

The National Curriculum Statement (NCS) for grades R-9 consists of eight learning areas. They are Languages, Mathematics, Natural Sciences, Social Sciences, Arts and Culture, Life Orientation, Economic and Management Sciences and lastly Technology (DOE 2002:2). Although a critical analysis of the revised national curriculum appears in chapter two, the researcher feels it important to highlight the main purpose of the Arts and Culture (A & C) learning area as stipulated in the NCS grades R-9 (schools) Policy (DOE) (2002:4). This is highlighted so that the reader could see the extent that EFSL is entrenched in the NCS. The main purpose is to: -

- Provide exposure and experience for learners in Dance, Drama, Music, Visual Arts, Craft, Design, Media and Communication, Arts Management, Arts Technology and Heritage;
- Develop creative and innovative individuals as responsible citizens, in line with the values of democracy according to the Constitution of South Africa

- Provide access to A & C education for all learners as part of redressing historical imbalances;
- Develop an awareness of national culture to promote nation-building;
- Establish, develop and promote the creativity of South Africans as a rich and productive resource;
- Provide opportunities to develop usable skills, knowledge, attitudes and values in Arts and Culture that can prepare learners for life, living and lifelong learning; and
- Develop an understanding of the Arts as symbolic language.

The affective dimension is vital in the A & C learning area. The importance of the aesthetics in education and especially in EFSL is emphasised by many writers. Rader and Jessup (1976:353) maintain that beauty and harmony in the environment foster harmony and beauty in the soul. In this era of diminishing resources, the aesthetics is important. The transformation to a new paradigm of education must include a moral and aesthetic trans-valuation - the cultivation of which is a long step toward both personal fulfilment and a better world order (Rader & Jessup 1976:380-385). Becker (2002: 127-135) highlights the importance of A & C in the education curriculum. Art alerts us - by emotions, perceptions and symbols – about the fragility of the environment.

Stuhr (2003:301-308) states that art education should be connected intimately to the student's life and the curriculum. It should be an ongoing process where critical investigation and cultural production can be facilitated by educators to assist learners to inquire into the complexities and possibilities for understanding and expressing life in new ways. Education for sustainable living is essential, through arts and culture, for “we have lost sight of this essential teaching mission, of life's meaning, and we may have become bogged down in the teaching of school subjects or disciplines in a way that they are no longer connected to the students' lives in contemporary institutional education”.

Tarr (2003:6-11) emphasises the image of the child as a producer of culture, values and rights and one who is competent in living and learning. The

curriculum must truly engage children and educators must not lose sight of their concrete experiences, their actual capabilities, their theories, feelings and hopes. It is, therefore, important that educators see not only the genius in every child but also to advocate for every child's creative development. Creative thinking is part of a common language that has the capacity to transcend race, country, culture, and economic aspects.

Hicks (2004:13-17) emphasises the need for integration of the arts into everything we teach. This is also important for EFSL. He proposes various reasons for the integration of arts into the curriculum: -

- There is an overload of information caused by advanced technologies. Visual imagery is required to solve this problem since the languages, mathematics and science are too limiting.
- Our rapidly changing society emphasizes metaphor, symbolism and interpretation and our brains and nervous systems have become accustomed to the bombardment of multiple meanings.
- In our age of abstraction (movies, computer software, television and electronic equipment), abstract imagery has become more important than reality for the majority in various cultures. Art education is essential to help learners understand their rapidly changing world and create ways and means of living sustainably.

1.3 Aims of the study

According to the European Chemical Industry Council (2003:1) by 2050 our planet will need to support some ten billion people- compared to about six billion today. This raises huge challenges. One has to take into account the needs of the society (the social perspective); the efficient management of scarce resources (the economic objective) and the need to reduce the load on the eco-system in order to maintain the natural basis for life (the environmental objective). The challenge is how we provide food, clothing and shelter for this rapidly growing population without depleting the world's natural resources and eroding the inheritance of future generations.

The answer to most people is sustainable development, a concept that seeks to balance economic and social progress with concern for the environment and the careful stewardship of natural resources. The achievement of sustainable development calls for action by governments, business organisations, educational institutions and ordinary people around the world. Sustainable development cannot be realised without education for sustainable living. The need for environmental education for sustainability was identified and agreement was reached among scholars and researchers that environmental education for sustainability must re-orient itself towards improving the quality of life of all citizens (Bornman 1997:59).

This study will aim to provide strategies for the integration of EFSL in the A & C learning area with special reference to the senior phase (grades 7 to 9). Within the framework of the above aim, this study seeks to reach the following goals:

- (a) Determine to what extent EFSL is integrated in the school phase
- (b) Identify the methods used to integrate EFSL in the A & C learning area
- (c) Identify the barriers experienced in schools with regards to the integration of EFSL in the A & C learning area
- (d) Make recommendations and suggest strategies for the effective integration of EFSL in the A & C learning area.

1.4 Statement of the problem

This decade is the United Nations decade of sustainability. Education is critical for achieving environmental ethical awareness, values, attitudes, skills and behaviour which is consistent for sustainable development (Fien 1993:27-28; DEAT 1999:46; IUCN 1991:12).

The issue of sustainability and its vast body of knowledge has resulted in numerous controversial issues (Fien 1993:14). Jickling (1999:62) asks the question “Is it educationally justifiable to implant a new normative system into the minds of students?” He sees this as indoctrination where learners become “autonomous thinkers” (Fien 1993: 5). However, Jickling (1999:62-65) agrees

that education should be creative and open-ended. He also states that it would be justifiable if one speaks of ‘education and sustainability’ or ‘education concerning sustainability’ and education “consistent with Agenda 21”. The researcher asks the following questions with regards to Jickling’s views: Is not the present South African education system indoctrination? Would not the integration of ESFL in the A & C learning area be about “creating possibilities, not defining the future for our students” (Jickling 1999:62)?

The researcher agrees that ‘sustainability and sustainable development are just glimpses of environmental thought’ as proposed by Jickling (1999:62). The integration of education for sustainable living in the A & C learning area is not indoctrination since learners have the opportunity to discuss lifestyles, worldviews, and cultural, spiritual, and aesthetic values. There is an opportunity for learners to “discuss cultural identities, society-nature relationship, tensions between intrinsic and instrumental values and other ideas that lie beyond sustainability” (Jickling 1999:65).

Sections 1.1 and 1.2 highlight the importance of ESFL. The dropping of ‘environment’ as a phase organiser in the curriculum further amplifies the need for education for sustaining living (Committee for the Review of C2005:2000). Although the NEEP-GET Project (NEEP-GET: 2001) aims at instilling an environmental focus for each learning area, the researcher envisages numerous barriers in the implementation of education for sustainable living.

With the above discussion in mind, this study attempts to answer the following questions:

- (a) Is ESFL integrated in the senior phase in schools?
- (b) What methods are used to integrate ESFL in the A&C learning area?
- (c) What barriers are experienced in the integration of ESFL in the A & C learning area?
- (d) What are the effective strategies schools could implement in the integration of ESFL in the A & C learning area?

1.5 Stating the hypotheses

Hypothesis One

The researcher hypothesises that although environmental education is integrated in the South African school curriculum, EFSL is not fully incorporated.

Hypothesis Two

The researcher hypothesises that EFSL is based more on the learners' cognitive development than emotional development.

1.6 The Methodology applied

Mouton and Marais (in Bornman 1997:22) distinguish between three kinds of research, namely explorative, descriptive and explanatory research. Other authors e.g. Gay (1992) and Mason and Bramble (1996) distinguish between scientific, historical descriptive, correlational, descriptive, and experimental research.

This study will use the descriptive research. It involves collecting data in order to test hypotheses or answer questions concerning the current status of the subject of the study (Gay 1992:13). It involves the collation of descriptive data through a questionnaire survey. Descriptive research can be divided into two broad categories representing quantitative and qualitative approaches. Quantitative research uses measurements, statistics and models and emerges from the positivist view that order exists among elements and phenomena in the world regardless of whether humans are conscious of the order (Mason & Bramble 1996:36). Qualitative research deals with observations, impressions and interpretations.

Since this study is concerned with problems in the real world, action research will be implemented. The results of action research have direct application to real-world problems and both quantitative and qualitative approaches can be found in such studies (Mason & Bramble 1996:37).

Furthermore, critical theory is used in this study for it provides a framework for answering important questions and directs attention towards an analysis of the causes and consequences of problems (Fien 1993:6). The methodology applied in this study is explained succinctly by Fien (1993:7):

“A critical theory of education for sustainability would be scientific in the sense of providing comprehensive explanations of the environmental condition of the planet and its relationship to contemporary society. It would be critical in the sense of offering a sustained evaluation of the role of contemporary society in causing and continuing environmental decline. And it would be practical in the sense of stimulating teachers, students and their community to transform their lives and social conditions by fostering in them the sort of self-knowledge and understanding of ecological and social processes which can serve as the basis for such a transformation”.

1.7 Chapter division

In **Chapter 1** a philosophical outlook concerning the need for EFSL is discussed. A rationale for the integration of education for sustainable living in the A & C learning area was given. The aims, statement of the problem and the hypotheses have been outlined. The methodology applied as well as some important terminologies were explained.

Chapter 2 will review steps taken to integrate education for sustainable living in the South African education system. This will entail a critical analysis of the National Curriculum Statement (NCS)(Schools) policy with specific reference to the senior phase (grades 7-9), international perspectives and their impact on the curriculum and various curriculum initiatives which will impact on the integration of education for sustainable living in the A & C learning area.

Chapter 3 will highlight the research procedure.

Chapter 4 presents the research results and discussion on the findings.

Chapter 5 presents the strategies and recommendations for the integration of EFSL in the A & C learning area. The limitations of the study, testing of the hypotheses and implications for further research will also be discussed.

Chapter 2

Steps taken to integrate education for sustainable living in the South African education system

2.1 Introduction

According to Le Roux (2001:151) mankind needs to perfect and promote an ethic for living sustainably. There is a need for education programmes to reflect the importance of an ethic for sustainable living. Porrit (1990:1) emphasises the need for education to deal with the problems of the earth that were brought about by humans. The focus must be to provide answers to the challenges facing humans to bring about a better, more just and ecologically sustainable world.

There is an attempt to address these challenges in the South African education system. This chapter will highlight the international perspectives and various curriculum initiatives that will have an impact on the integration of education for sustainable living in the A & C learning area. There will also be a critical analysis of the NCS (Schools) policy with specific reference to the senior phase (Grades 7-9).

2.2 Impact of international trends and declarations

Various International Reports and Declarations contain guidelines about the implementation of sustainable living in the education curriculum. These have important criteria or indicators that have broad acceptance that could assist curriculum developers.

Before one looks at the international reports one has to understand which recommendations would guide the education process in South Africa. All the recommendations would not be suitable for South Africa since South Africa has its unique challenges. One has to scrutinize the state of habitats, biological resources, physical resources, chemical processes and other aspects because these form the vital functions necessary to sustain the people of South Africa (Balance & King 1999:17).

The following reports, events and conventions have guidelines on education for sustainable living:

- Declaration of the United Nations Conference on the Human Environment (1972). This was a recommendation to establish an international programme in EE encompassing all levels of education.
- The Declaration and Recommendations of the Tbilisi Intergovernmental Conference on Environmental Education (1977) organised by UNESCO and UNEP in 1977, provide fundamental principles and categories for EESL in South Africa.
- Publication of the “World Conservation Strategy (1980)” which emphasises conservation policy as the maintenance of essential ecological processes and life support systems, the preservation of biological diversity and the sustainable use of species and ecosystems.
- Publication of “Our Common Future (1987)” which links poverty and environmental concerns as central to sustainable development.
- Caring for the Earth (1991) acknowledges the role of economics, culture and tradition in practices affecting ecology.
- The Earth Summit - United Nations Conference on Environment and Development (1992) produced five major documents and introduced the idea of Education for Sustainable Living. The documents concerned a biodiversity treaty, convention on climate, Rio Declaration, Statement on Forest Principles and Agenda 21.
- NGO gathering at the Earth Summit (1992) stressed on value-based EE for social transformation.
- State of the World Report (1997) accused western governments of destruction of oceans, atmosphere, and land.

- UNEP Report (1997) dealt with population growth, soil erosion, overfishing of oceans, species loss and pollution.
- Earth Summit + 5 (1997) was created to monitor implementation of Earth Summit agreements.
- Earth Summit + 10 (2002) concerned with sustainable development (Le Roux 2001: 271- 272).

Education for sustainable living should help learners to:

- acquire awareness and be sensitive to the total environment and its problems.
- develop the ability to perceive and discriminate between stimuli.
- process, refine and extend these perceptions.
- use the perceptions in a variety of contexts.
- acquire a basic understanding of how the environment functions, how people interact with environments and how issues and problems dealing with the environment arise and how they can be resolved.
- acquire a set of values and feeling of concern for the environment and the motivation and commitment to participate in environmental maintenance and improvement.
- acquire the skills needed to identify, investigate and contribute to the resolution of environmental problems and issues.
- acquire experience in using their acquired knowledge and skills in taking thoughtful, positive action toward the resolution of environmental problems and issues (Ramsey, Hungerford & Vlok 1992:36)

The guiding principles include the following:

- Basic education to reduce illiteracy rate.
- Environmental awareness and development awareness in all sectors of society.
- Education from primary school age through adulthood.
- Emphasis on local context, further training and decision-making.

- The contribution of non-governmental organisations in education for sustainable living.
- Educational authorities should promote educational methods and educational settings. This is especially important in the Outcomes Based Education (OBE) system in South Africa.
- Cross - disciplinary courses.
- The affirmation of the rights of indigenous people and to use their experience for sustainable development.
- The use of media to support education for sustainable living (UNCED: 1992:264-269).

The various indicators in the reports suggest a framework for the integration of education for sustainable living in the school curriculum. The framework should include the cognitive dimension, affective dimension, determinants of environmentally responsible behaviour and personal or group involvement in environmentally responsible behaviours (Bluhm & Champean 1994:1-2). One should refer to important statements as reflected in the Rio Conference and the Johannesburg Earth summit of 2002.

2.3 Curriculum initiatives

Curriculum intervention in environmental education will have a major impact on education for sustainable living. According to Lotz-Sisitka in Hattingh, Van Rensburg, Lotz-Sisitka & O'Donoghue (2002:97-98) the following represent major national curriculum intervention in environmental education:

- The Environmental Education Policy Initiative (EEPI).
- The Environmental Education Curriculum Initiative (EECI)
- The Learning for sustainability Pilot Project
- The National Environmental Education Project for General Education and Training.

The EEPI (1995:2-3) had four main policy options. These include environmental education as a local, problem solving curriculum action; environmental education as an integrated approach to environmental education (an environmental perspective within separate subjects); environmental

education as a separate subject and environmental education as a component within a subject. A key decision made by the EEPI was that the curriculum will develop the understanding, values and skills necessary for sustainable development and an environment that ensures healthy living (Hattingh, *et.al* 2002:104).

The EEPI had little value when outcomes- based education (OBE) was introduced. This change led to the EECI which was an extension of the EEPI with a curriculum initiative. The EECI were guided by the EEPI working group using the following framework:

- Challenges to be proactive with process and structural reforms in curriculum policy
- The need to understand environmental education issues within policy and curriculum reform processes
- To develop initiatives that will enable teachers to make correct decisions, to take responsibility and to engage in creative, challenging action to solve local problems
- To use education to address local and global needs so that there is social justice and change towards sustainable living (Hattingh *et.al* 2002:106-107)

OBE led to difficulties concerning assessment-driven interpretation and in the interpretation of learning outcomes. This led to a shift towards school-based curriculum development and became a focus of the EECI and the Learning for Sustainability Pilot Project (a donor-funded pilot project which focussed on the professional development of teachers to enable them to enhance their skills for learning programme development in a context of rapid curriculum change). This shift never materialised because more emphasis was placed on curriculum design activities.

The NEEP-GET initiative thus focussed on an applied, reflexive model for professional development. This was also donor-funded aimed at providing professional development to curriculum advisors and teachers to enable the integration of environmental learning in schools.

In 1997, the EECI produced a document that described environment as one of the six phase organisers of the curriculum. The Committee for the Review of C2005 criticised that the curriculum was over-designed and phase organisers were dropped. This led to the designing of the revised National Curriculum Statement (NCS) which clarified an environmental focus to each learning area (Hattingh, *et. al* 2002:108 –110).

2.4 Critical analysis of the revised national curriculum statement (schools) policy with specific reference to the senior phase (Grades 7 – 9)

The critical outcomes outlined in the National Curriculum Statement (NCS) are inspired by the Constitution of the Republic of South Africa (Act 108 of 1996). The following critical outcomes appear in the NCS (DOE 2002:1):

Learners must be able to

- Identify and solve problems and make decisions using critical and creative thinking.
- Work effectively with others as members of a group, team, organisation and community.
- Organise and manage themselves and their activities responsibly and effectively.
- Collect, analyse, organise and critically evaluate information.
- Communicate effectively using visual, symbolic and/or language skills in various modes.
- Use science and technology effectively and critically, showing responsibility towards the environment and the health of others.
- Demonstrate an understanding of the world as a set of related systems by recognising that problem solving contexts do not exist in isolation.

A closer look at the outcomes makes it clear that all can be related to education for sustainable living. The example of “recycling” can be used to illustrate this point:

Learners can be taught to identify this problem in groups and decide how to manage this problem. They could work effectively with other stakeholders e.g. the community and collect and critically evaluate the information through

various communication efforts. Learners could discover and devise other sustainable methods of packaging by using science and technology. This critical and creative process would allow learners to discover that the world is a set of related systems and that problems do not exist in isolation.

The kind of learner that is envisaged is one who will develop values so that they would act in the interests of a society. The lifelong learner will be confident and independent, literate, numerate, multi-skilled, compassionate, with a respect for the environment and the ability to participate in society as a critical and active citizen (DOE 2002:3).

The NCS places a lot of emphasis on the diversity of cultures in the A & C learning area. This is so because of the legacy of cultural intolerance in the past. The learning outcomes presented overlap and do not operate in isolation. There are four learning outcomes:

- creating, interpreting and presenting artworks
- reflecting on cultural practices and Art activities
- participating and collaborating in A & C activities
- expressing and communicating through various art forms (DOE 2002:6)

The researcher feels that these outcomes will present problems in the integration of education for sustainable living. The outcomes are not specific and educators who are not aware of the importance of education for sustainable living may omit such a topic. Even the organising principles omit education for sustainable living. The framework is based on developmental skills, age and national imperatives such as cultural diversity, human rights, environmental concerns, nation-building, heritage and power-relations between global and local cultures (DOE 2002:7)

The organising principles are arranged in the following manner:

- Foundation Phase (Grade R-3) – the learner in own and local environment

- Intermediate Phase (Grade 4 – 6) – physical, natural, social and cultural environments
- Senior Phase (Grade 7 – 9) – national, African and global environment

A closer look at the breakdown for the senior phase suggests room for the integration of education for sustainable living. The breakdown includes human rights, heritage, nation building, marginalized cultures, art industries, careers, popular culture, local to global culture, technologies, mass media, power relations and marketing (DOE 2002:7-8). Educators need to break down the aspects related to heritage, local to global culture etc. to discover the links to education for sustainable living. One of the important aspects of the senior phase is that the learner is required to organise, present, perform and market artworks. Very little emphasis is given to EFSL (DOE 2002:65).

2.5 Conclusion

From the foregoing one can see that many steps were taken to include environmental education in the school curriculum. The integration of environmental education in the school curriculum posed and still poses many problems such as lack of resources, lack of in-service training etc. Hardly any attempts have been made to integrate education for sustainable living in the school curriculum. The writer hopes to seek strategies for the integration of education for sustainable living in Chapter Five.

Chapter 3

Definitions and clarifications of important concepts

3.1 Introduction

This chapter will attempt to define and clarify important concepts pertaining to the research. The following concepts will be discussed: -

- Sustainability
- Development
- Sustainable Development
- Education for sustainability
- Education for sustainability and its environmental dimension
- Education for sustainability and its political dimension
- Education for sustainability and its economic dimension
- Integration
- A & C culture learning area

The above concepts are discussed because they make reference to the research topic. The various dimensions of the term “sustainable” are highlighted because education for sustainable living incorporates all these aspects.

Agenda 21 (Rio Documents) explains inter alia that population; consumption and technology are the primary driving forces of environmental change. It lays out what needs to be done to reduce wasteful and inefficient consumption patterns in some parts of the world while encouraging increased but sustainable development in others. It offers policies and programmes to achieve a sustainable balance between consumption, population and the Earth’s life-supporting capacity. It describes some of technologies and techniques that need to be developed to provide for human needs while carefully managing natural resources.

Agenda 21 provides options for combating degradation of the land, air and water, conserving forests and the diversity of species of life. It deals with poverty and excessive consumption, health and education, cities and farming. There are roles for everyone: governments, business people, trade unions,

scientists, teachers, indigenous people, women, youth and children. Agenda 21 does not shun business. It says that sustainable development is the way to reverse both poverty and environmental destruction.

We currently gauge the success of economic development mainly by the amount of money it produces. Accounting systems that measure the wealth of nations also need to count the full value of natural resources and the full cost of environmental degradation. The polluter should, in principle, bear the costs of pollution.

A major theme of Agenda 21 is the need to eradicate poverty by giving poor people more access to the resources they need to live sustainably. By adopting Agenda 21, industrialized countries recognized that they have a greater role in cleaning up the environment than poor nations, who produce relatively less pollution. The richer nations also promised more funding to help other nations develop in ways that have lower environmental impacts. Beyond funding, nations need help in building the expertise — the capacity — to plan and carry out sustainable development decisions. This will require the transfer of information and skills and especially EFSL.

Agenda 21 calls on governments to adopt national strategies for sustainable development. These should be developed with wide participation, including non-government organizations and the public. Agenda 21 puts most of the responsibility for leading change on national governments, but says they need to work in a broad series of partnerships with international organizations, business, regional, state, provincial and local governments, non-governmental and citizens' groups. As Agenda 21 says, only a global partnership will ensure that all nations will have a safer and more prosperous future.

3.2 **Sustainability**

According to Glavovic (2000:6), sustainable simply means long-lasting. The Webster Comprehensive Dictionary (Marckwardt, Cassidy & McMillan (eds.) 1992:1264), uses the following terms to define sustainability: - “to keep”; “to endure”; “to maintain” and “to uphold”. The question remains: what should be

sustained? It requires that resources and natural cycles of renewal and replenishment are used in a way and at a rate that does not lead to their long term decline. This is essential to maintain their potential to meet the needs and aspirations of present and future generations (DEAT 1996:31). The meaning of the term “sustainability” is not precise. One general meaning might be the continued satisfaction of basic human needs such as food, water, shelter, as well as higher-level social and cultural necessities such as security, freedom, education, employment and recreation. Another meaning might be the continued productivity and functioning of ecosystems. Regardless of the various meanings it is clear that the term has implications for ecological, social and economic systems (John Lemons in Bandhu, Bongartz, Ghaznawi and Gopal (1994:243).

Bak (1995:57) states that according to the World Commission on Environment and Development “sustainability” is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. This definition is in contradiction with the definitions given above and also conflicting with the definition of “development” as one would see below. One has to ask whether “sustainability” is synonymous with “development”.

3.3 Development

The Webster Comprehensive Dictionary (Marckwardt, Cassidy & McMillan (eds.) 1992: 350) defines “development” by using the terms “expand”; “enlarge”; “productive”; “evolve”; “advance” and “grow”. Bartelmus (1986:3) states that development is generally accepted to be a process that attempts to improve the living conditions of people. This also includes non-material wants as well as physical requirements. The IUCN defines the term as the modification of the biosphere and the application of human , financial, living and non-living resources to satisfy human needs and improve the quality of human life (Bak 1995: 57). The White Paper on Environmental Management Policy for South Africa defines the term as a “process for improving human well-being through a reallocation of resources that involves some modification of the environment” (DEAT 1997:9). The term addresses

basic needs, equity and the redistribution of wealth. It focuses on the quality of life rather than the quantity of economic activity.

The Reconstruction and Development Programme in South Africa was the response to development. Development is only real if it makes our lives better. It is real when it contributes to a long and healthy life, when it meets essential needs for jobs, food, energy, and water, when there is adequate access to education, political freedom, guaranteed human rights and freedom from violence. It is focussed on the economic, social, cultural, political and other needs of individuals and societies (DEAT 1996:10; Glavovic 2000:16; Hurry 1992:31; Tolba 1992:245).

3.4 Sustainable development

In the report, “Our Common Future”, the World Commission on Environment and Development (WCED) introduced the concept of “sustainable development” as a focal point between the interests of development and the interests of resource conservation. It entails providing for the needs of the current generation without compromising the ability of future generations to provide for their own needs. The report states that humanity has the ability to make development sustainable. The concept does imply limits – not absolute limits, but limitations imposed by the present state of technology and social organization on environmental resources and the ability of the biosphere to absorb the effects of human activities (DEAT 1999: 4-5).

“Sustainable development”, therefore, has meaning beyond the individual words “sustainable” and “development” on their own. Sustainable development is basically the pursuit of human development with ecological integrity (Glavovic 2000:16).

Sustainable development does not cost the earth. Environmental pollution and resource pollution are ancillaries to economic development. Sustainable development refers to handing down to future generations not only man – made capital e.g. roads, schools and historic buildings and human capital e.g. knowledge and skills but also natural or environmental capital e.g. clear air,

fuel, water, rain forests, ozone layer and biological diversity. According to the Brundland Report sustainable living means living on the earth's income rather than eroding its capital (Glasson, Therivel & Chadwick 1996:8-10).

There is some debate about the contribution of economic growth to sustainable development. Some argue that economic growth is the fundamental basis for all environmental policy and management. Others believe that growth is incompatible with long - term sustainability. Some argue that the challenge is to promote types of growth and development that provide the means for satisfying the social and environmental foundations of sustainable development (DEAT 1996:31).

D.H.Bennet in Bandhu, Bongartz, Ghaznawi and Gopal (1994:108) state that “constantly reiterating that sustainable development is ecologically sustainable development is an attempt to make an honest whore of sustainable development”. Sustain implies “to keep in being, to cause to continue in a certain state” and development, implies change or growth.

Hurry (1992:32-33) distinguishes between “sustainable development “and “development”. Environmental education (EE) is focussed on practice that is concerned with maintaining or improving the capacity of the environment to sustain life, development is focussed on the political and socio-economic needs of individuals and communities. The long-term survival of individuals and communities and the long-term sustainability of the environment are interlinked and interdependent. There is a need to link development with EE so that the goals of each are in harmony with one another. There is, therefore, a need for development education. Development education is a process that enables people to participate effectively in the development process through effective and relevant training and education programmes so that the same people are able to solve problems and prevent new ones. It also motivates people to contribute through their daily activities to long-term environmental stability and sustainability.

Sustainable development is based on the understanding that the natural environment is the resource base upon which all other development depends. Because all parts of the environment are inter-linked and form natural systems or ecosystems, one cannot consider one part of the environment without thinking about how our actions will affect other parts in the environment. The environment, development and quality of life are inter-related (Urquhart & Atkinson 2001:4). The key principles of sustainable development are

- Wise management and use of the environment is necessary for our survival - it is not an obstacle.
- Opportunities to develop must be available to all people, with particular emphasis on the poor and disadvantaged.
- Ecological limits to human activities must be respected.
- Development must be broader than economic growth and has social, cultural, environmental, political, moral and spiritual dimensions.
- People must be given the opportunity to participate in all activities and decisions that affect their lives.
- Environmental considerations must be integrated into all planning and developmental processes.

Five broad criteria for an emerging new paradigm of sustainable development were identified at the Ottawa Conference on conservation and Development.

- Integration of conservation and development
- Satisfaction of basic human needs
- Achievement of equity and social justice
- Provision for social self-determination and cultural diversity
- Maintenance of ecological integrity (Engel 1990:8)

According to Mitra and Hale (Bandhu, Bongartz, Ghaznawi and Gopal 1994:337) one of the problems with the concept of sustainable development is that it is an ideal which is difficult to align with the organisation of the present political systems. Democracy may be said to be not entirely compatible with sustainable development. Participatory democracy is the best system for fairly allocating and managing environmental resources. But modern democratic governments are geared to the wants and needs of voters. Until the majority of

the voters understand and support the aims of sustainable development then governments will not put this at the top of their priorities.

Some authors use many symbolic languages to describe what sustainable development is. Some of the words used are “authentic integral development”, “ecological/holistic world view”, “reverential development”, “ecosophical development”, “noosphere”, “just participatory ecodevelopment”, “communalism”, and “desirable society”. “Sustainable”, by definition, means not only indefinitely prolonged, but nourishing, as the earth is nourishing to life and as a healthy natural environment is nourishing for the self-actualising of persons and communities. The word “development” need not be restricted to economic activity, much less to the kind of economic activity that now dominates the world, but can mean the evolution, unfolding, growth, and fulfilment of any and all aspects of life. Therefore ‘sustainable development’, in the broadest sense may be defined as the kind of human activity that nourishes and perpetuates the historical fulfilment of the whole community of life on earth (Engel 1990:10-11).

3.5 Education for sustainability

The British Environment, Development, Education and Training Group’s report, *Good Earth-Keeping: Education, Training and Awareness for a Sustainable Future* define education for sustainability as follows:

“Education for sustainability is a process that is relevant to all people. Like sustainable development, it is a process rather than a fixed goal. It may precede but always accompany the building of relationships between individuals, groups and their environment. All people are capable of being educators and learners in the pursuit of sustainability. Education for sustainability is a process which

- *Enables people to understand the interdependence of all life on this planet, and in the repercussions that their actions and decisions may have both now and in the future on resources, on the global community as well as their local one, and on the total environment.*

- *Increases people's awareness of the economic, political, social, cultural, technological and environmental forces which foster or impede sustainable development.*
- *Develops people's awareness, competence, attitudes and values, enabling them to be effectively involved in sustainable development at local, national, and international level, and helping them to work towards a more equitable and sustainable future. In particular, it enables people to integrate environmental and economic decision-making.*
- *Affirms the validity of the different approaches contributed by environmental education, and development education and the need for the further development and integration of the concepts of sustainability in these and other related cross-disciplinary educational approaches, as well as in established disciplines" (Fien 1993:14).*

Education for sustainability will be successful when there is a series of transformations to more sustainable paths of development. These include:

- A technological transition away from today's resource-intensive, pollution-prone technologies to a new generation that places less stress on the environment.
- An economic transition to a world economy based on reliance on nature's "income" and not on depletion of its "capital".
- A transition to greater social equity aimed at alleviating poverty.
- A demographic transition to a stable human population no more than twice the level of today.
- A transition in consciousness to a more profound and widespread understanding of global sustainability.
- An institutional transition to new arrangements-among governments and peoples - that can achieve environmental security (Fien 1993:25)

3.6 Education for sustainability and its environmental dimension

The term "environment" means different things to different people. The White Paper on Environmental Management Policy for South Africa (DEAT 1999:5)

labels the term as the conditions and influences under which any individual or thing exists, lives or develops. These include:

- the natural environment including renewable and non-renewable natural resources such as air, water, land and all forms of life.
- The social, political, cultural, economic, working and other factors that determine people's place in and influence on the environment.
- Natural and constructed spatial surroundings, including urban and rural landscapes and places of cultural significance, ecosystems and the qualities that contribute to their value.

Culture, economic systems, social systems, politics and value systems determine the interaction between people and the environment, the use of natural resources, and the values and meanings that people attach to life forms, ecological systems, physical and cultural landscapes and places. People are part of the environment and are at the centre of concerns for its sustainability.

3.7 Education for sustainability and its economic dimension

There is a close connection between environment and development as it is implicit in the definitions above. The environment can be seen as an integral part of development, since any impact on the environment also influences the state of man's well-being. Environment and development are linked together so intricately that separate approaches to either environmental or developmental problems are piecemeal at best. The relationship between environmental and economic systems confirms the need for integrated policies (Bartelmus 1986:9).

Economic development provides the individual with shelter, food, clothing, the basic material necessities and the luxuries of life. Environmental health is manifest in a beautiful countryside, clean rivers and lakes, pristine beaches, land that remains bountiful for centuries and towns that are well laid out and free of pollution. Economic development, environmental health and quality of life are necessary for a fulfilled life. In South Africa, the ideal of sustained development and education for sustainable living can only be approached through a path of sustained economic growth. Individual rights and freedoms,

underpinned by common law, private ownership of resources and a free-market economy, go hand in hand with sustained economic development (Huntley, Siegfried & Sunter 1990:12-14).

According to Tolba (1992:245) development is a multidimensional concept. Economic problems cause or aggravate environmental despoliation and this in turn makes economic and structural reforms difficult to achieve. In the early 1970's there was a debate concerning economic growth and environmental protection. Any mix of the two involved a trade-off where more environmental quality meant less economic growth or vice versa. Education for sustainable living should take into account the new expressions i.e. alternate patterns of development and lifestyles, eco-development, environmentally sound development, development without destruction and sustainable development (Tolba 1992:247). Tolba (1992:248) states that a new type of fairness and equality need to be taken into account when one looks at sustainable development. The "inter-generational equity" he speaks of is an important aspect for education for sustainable living.

"In the past it was commonly assumed that the next generation would inhabit a planet like the current one. This assumption is no longer justifiable. The present generation is the first to have the power to alter planetary ecosystems radically, to present its offspring with a planet very different from the one it inhabited from its own forebears-different in atmosphere, soils, water systems, plants and animals. But inter-generational equity is a difficult goal. The need for environmentally sound and sustainable development means that this generation must accept responsibility for future generations".

Economic development is a style of development which stresses specific solutions to particular regions taking into account the different ecological and cultural contexts as well as short term and long term needs. Education for sustainability therefore must emphasise a change or adjustment in lifestyles where there is rational use of lifestyles (Tolba 1992: 247).

3.8 Education for sustainability and its political dimension

According to Robinson and Shallcross (1998:198) education for sustainable living is a meta-concept. Integrating existing cross-curricular issues such as health education, personal and social education, economic and industrial understanding and environmental education. Education for sustainability should bring about an understanding of the structural and ideological forces, which circumscribe people's current choices and actions. This would lead to political literacy.

The concept of education for any community is essentially political since it is a process in which the collective experience and expectations are articulated and reconciled educationally.

Huntley et al (1990:119) stress the importance of politics in education. Man-made ideologies, which simplify life, are bound to fail in the end. Life involves both self-interest and togetherness. Ideologies which stress these qualities to the exclusion of others are self-defeating. People possess a social conscience – both ethnicity and nationalism. We cannot disregard any aspect of nature. It is a mixture of opposites, and each of us finds our own balance between them.

3.9 Integration

Education for sustainable living should adhere to the principles stated in the White Paper on Environmental Education (1989:5-6). It comments on considering the environment in its totality, and being interdisciplinary in approach. The integration of education for sustainable living in the A & C learning area finds grounding in one of the policy options of the EEPI (1995:2-3) and the Core Syllabus Committee in the discussion Document of 1993 (Loubser 1997:21). It sees environmental education as a perspective within separate subjects. The interdisciplinary and holistic nature offered by environmental education programmes is important for EFSL in the A & C learning area (Engelson in Ramsey, Hungerford & Vlok 1992:36).

Loubser (1997:21-22) clarifies the term cross-curricular. Integration refers to the common characteristics of the subject in communication with other subjects. An interdisciplinary approach looks at a theme through the eyes of several disciplines. The multidisciplinary approach implies that various disciplines may benefit from information drawn from environmental education when they are taught.

According to Van Rooyen (1998:120-125) there is scarcely a school subject, which does not have a bearing on environmental education. In South Africa OBE has made it possible for all learning areas to be enhanced by the principles, processes and concepts offered by environmental education. The critical cross-fields outcomes are generic and cross-curricular. This thought will also apply to EFSL since environmental education forms part of EFSL.

3.10 Arts and Culture learning area

The NCS Grades R-9 (Schools) Policy (2002:4) state that the A & C learning area is integral to life since it embraces the spiritual, material, intellectual and emotional aspects of human endeavour within society. Culture is dynamic and expresses itself through the Arts and through lifestyles, behaviour patterns, heritage, and knowledge and belief systems.

The A & C learning can be clarified by the following definitions as given in the Webster Comprehensive Dictionary (Marckwardt; Cassidy & McMillan 1992):

Art refers to “the application, or the principles of application, of skill, knowledge, etc., in a creative effort to produce works that have form, beauty, aesthetic expression of feeling, etc., as in music, painting, sculpture, literature, architecture, and the dance”.

Culture refers to “the sum total of the attainments and activities of any specific period, race, or people, including their implements, handicrafts, agriculture, economics, music, art, religious beliefs, traditions, language, and story”.

3.11 Conclusion

Kothari (Engel 1990:27-28) acknowledges that there must be an ethical shift to make sustainable development a reality. In the absence of an ethical imperative, environmentalism will be reduced to a technological fix. Thinking and acting ecologically is basically a matter of ethics, respecting the rights of other beings, both human and non-human.

The primary criteria for sustainable development, according to Kothari (Engel 1990:34), when it is conceived as an ethical ideal are a holistic view of development; equity; participation and an importance of local conditions and the value of diversity. The same criteria must apply to education for sustainability.

From the above definitions one can see that education for sustaining living is education of the total learner. Through Art the learner will be involved in discovering what to value, make sense of what to know and feel, relate to attitudes and reflect an assumed relationship to the natural world (Cunliffe & Crickmay 1976:6).

Chapter 4

Research Design and Findings

4.1 Introduction

The aim of this study is to provide strategies for the integration of EFSL in the A & C learning area with special reference to the senior phase (Grades 7 to 9). This study seeks to reach four goals as outlined in Chapter One). The researcher hopes to answer the four questions as outlined in Chapter one by analysing responses to questionnaires given to educators and either accept or reject the two hypotheses as stated in Chapter One.

This chapter will highlight the instrument used during the research, the sampling procedure, data collection and analysis and discussion on the research findings.

4.2 A qualitative analysis

Schumacher and McMillan (1993:461) state that qualitative analysis is mainly an inductive process of organising data into categories and identifying patterns or relationships among the categories. By analysing the participants' meanings one is able to understand the social phenomenon from the participants' perspective (Burgess 1985:4-5) so that the researcher could elicit strategies and recommendations for the integration of education for sustainable living in the A & C learning area.

4.3 Instrument

A questionnaire (Appendix 1) was used to collect data so that the research will be valid and reliable (Collins et.al. 2000: 88). The Lickert scale (Collins et.al. 2000:189) was used to formulate a number of statements relating to the above aspects.

A pilot survey was undertaken in the Scottburgh District to test questions for *inter alia* ambiguity and vagueness. Ten educators from five different schools participated in this survey. Many items were modified after feedback from

educators. Permission was sought from the Scottburgh district office to administer the questionnaire.

4.4 Sampling and data collection

Schools were chosen randomly. All schools included A & C in their curriculum. Questionnaires were sent to fifty schools in the Port Shepstone Region and thirty-four schools responded. The majority of these schools are in rural settings. It was for this reason that the researcher randomly selected twenty schools in the Durban Region, which are all in urban settings so that external validity with regards to this research will be adhered to. This was also essential since previously disadvantaged schools have a bearing on environmental awareness and ethics. The researcher also took cognisance of the fact that poverty, socio-economic conditions and the legacy of apartheid could influence the level of environmental literacy in the schools sampled. Thirteen schools responded. In total forty-seven schools responded. The researcher stipulated that the questionnaire be completed by level one educators who had taught A & C in 2004. This was mainly due to the fact that numerous changes were made to the national curriculum and furthermore educators who did not teach Arts and Culture will not be able to respond to the questions in the questionnaire.

4.5 Data analysis

Analysis was done mainly through content analysis. This entailed identifying, coding, and categorising the primary patterns in the data (Miles & Huberman 1994; Strauss & Corbin 1990). The data of the questionnaires was coded and totals and percentages were listed in each response category for each item. The statistics gave an indication of the extent to which sustainable living is included in the teaching of the A & C learning area.

4.6 Validity and reliability

Internal validity refers to the internal logical relationships between goals, reasons and meanings. According to Hammersley (1983:179) the validity of qualitative research lies in its internal validity rather than its external validity.

Therefore in this research it is the relationships of the observed responses that matter.

External validity refers to the extent to which findings in one school correlates with other schools (Schumacher and McMillan 1993:394). This aspect is important to the researcher since different schools have different needs and strategies for the integration of EFSL in the A & C learning area will differ for each school.

4.7 Analysis of responses

4.7.1 Analysis of school and personal details

From the forty-seven schools selected thirty were primary schools, twelve were secondary schools and five were combined schools. There were thirty schools, which had a rural social setting and seventeen with an urban social setting.

TABLE 1: Number of Educators in Schools

Number of educators	Number Of Schools
1-10	18
11-20	13
21-30	13
31+	3
TOTAL	47

TABLE 2: Number of Learners in Schools

Number of learners	Number Of Schools
0-100	0
101-300	7
301-500	18
501+	22
TOTAL	47

TABLE 3: Highest Qualification of Educators

Qualification	Number Of Educators
Matriculation	7
Teaching diploma	25
Undergraduate degree	10
Postgraduate degree	10
Postgraduate certificate	3
TOTAL	55

TABLE 4: Area of Qualification

Area Of Qualification	Number Of Educators
Early childhood development	1
Foundation phase	2
Primary	21
Intermediate	10
Senior	24
FET	1
TOTAL	59

TABLE 5: Grades Taught In 2004

Grades	Number Of Educators
4	9
5	10
6	11
7	30
8	4
9	13
10	8
11	11

TABLE 6: Learning Areas Taught In 2004

Learning Areas	Number Of Educators
Languages	16
Mathematics	9
Natural Sciences	17
Social Sciences	29
Life Orientation	24
Economics and Management Sciences	9
Technology	14
Arts and Culture	47

The total for Tables 3 and 4 are more than the sample size because some educators have more than one qualification.

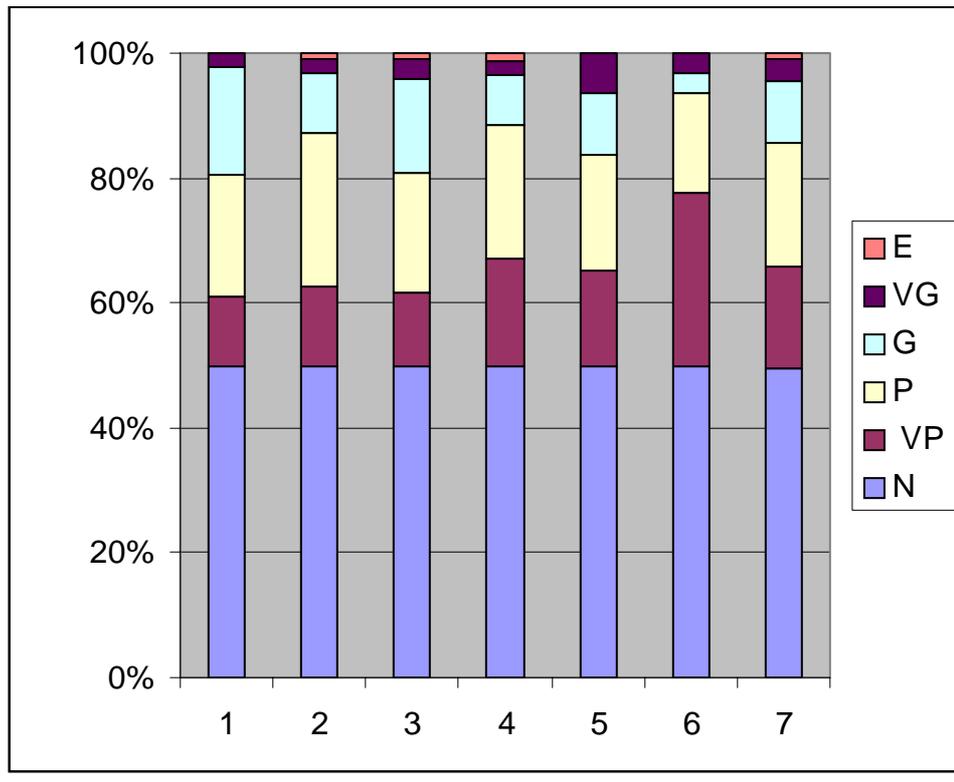
4.7.2 Frequency distribution of responses to section B

WHAT IS ENVIRONMENTAL EDUCATION (EE) LIKE IN YOUR SCHOOL?

Very Poor (VP) Poor (P) Good (G) Very Good (VG) Excellent (E)

	n	VP	P	G	VG	E
1. There is a philosophy and policy regarding the implementation of EE	46	10	18	16	2	0
2. There is a curriculum plan for EE based on the developmental need and characteristics of learners.	47	12	23	9	2	1
3. Various learning programmes are used in implementing the instructional programme.	47	11	18	14	3	1
4. Administration and teaching staff members have received instruction in EE to help them to fulfil their responsibilities		15	19	7	2	1
5. Assessment and evaluation have been developed and maintained.	46	14	17	9	6	0
6. Sufficient funds to plan and implement the programme are provided.	47	26	15	3	3	0
7. Affective outcomes are an important part of EE	45	15	18	9	3	1

GRAPH A: What Is Environmental Education (EE) Like In Your School?



From the above graph one can deduce that in every category the responses for “very poor” and “poor” were more than the other responses. Educators have a negative perception of what environmental education is like in their schools. It is important to note that only 28% of schools emphasize affective outcomes as an important aspect of environmental education.

4.7.3 Frequency distribution of responses to section C

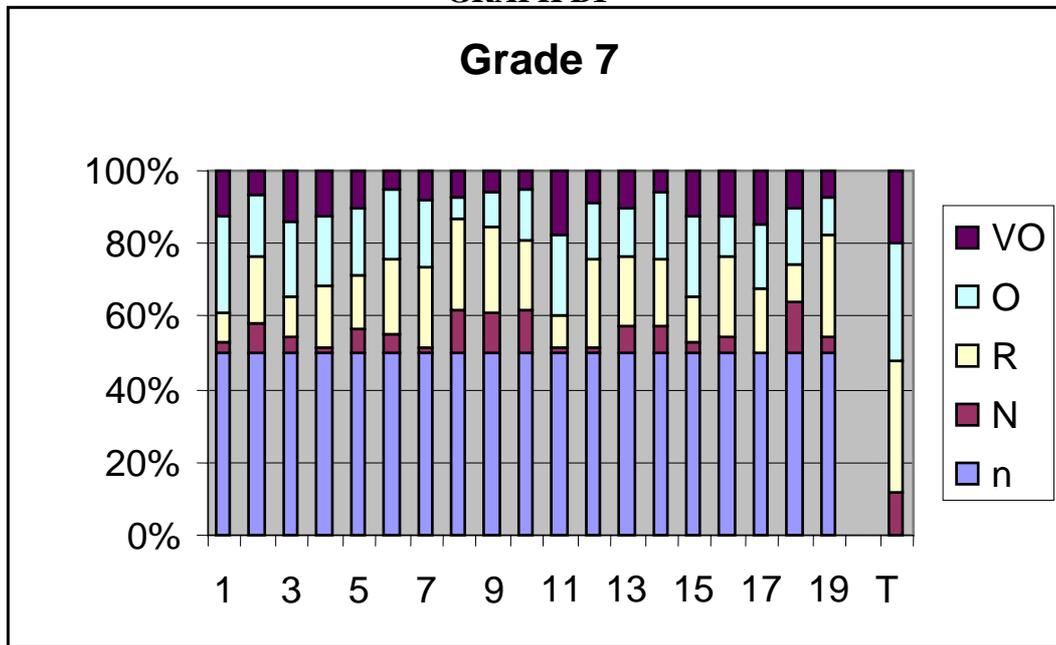
TO WHAT EXTENT HAVE YOU INCLUDED THE FOLLOWING ASPECTS DURING THE TEACHING OF THE ARTS AND CULTURE LEARNING PROGRAMME IN 2004?

Never (N) Rarely (R) Often (O) Very Often (VO)

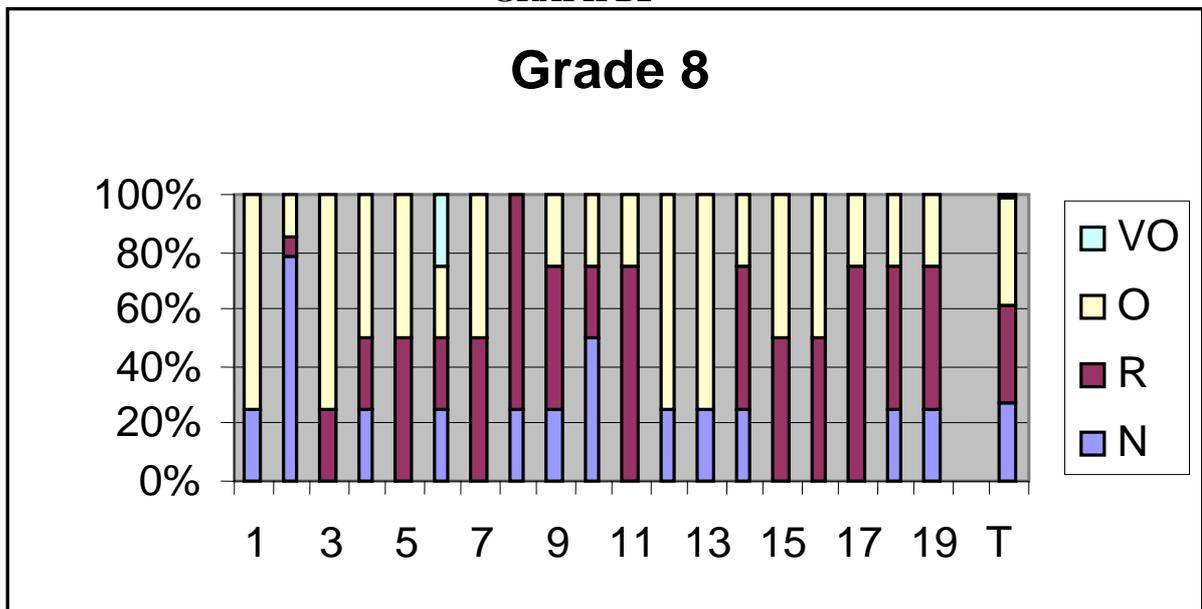
	Grade 7				Grade 8				Grade 9			
	N	R	O	VO	N	R	O	VO	N	R	O	VO
1. Human Rights	2	5	17	8	1	0	3	0	1	2	6	3
2. Local to global culture	5	11	10	4	11	1	2	0	0	4	6	2
3. Heritage	3	7	14	9	0	1	3	0	0	3	7	1
4. Technologies	1	11	12	8	1	1	2	0	0	1	4	6
5. Nation building	4	9	11	6	0	2	2	0	0	2	8	2
6. Mass media	3	13	12	3	1	1	1	1	2	4	5	1
7. Marginalised culture	1	14	12	5	0	2	2	0	2	5	3	1
8. Power relations	8	17	4	5	1	3	0	0	2	7	3	0
9. Arts industries	8	17	7	4	1	2	1	0	2	5	4	1
10. Marketing	9	15	11	4	2	1	1	0	3	3	5	0
11. Careers	1	6	15	12	0	3	1	0	1	3	3	5
12. Popular culture	1	16	10	6	1	0	3	0	1	3	3	5
13. Fantasy and play	5	13	9	7	1	0	3	0	1	5	3	2
14. Imagination in the learner and the learner's environment	5	12	12	4	1	2	1	0	0	7	3	1
15. Immediate environment	2	8	14	8	0	2	2	0	0	7	4	0
16. Ideas, feelings and moods	3	14	7	8	0	2	2	0	2	3	6	0
17. Natural and physical resources	0	12	12	10	0	3	1	0	1	3	5	3
18. Sensory perception and literacies	9	7	10	7	1	2	1	0	1	8	3	0
19. Wider social, historical and cultural environment	3	19	7	5	1	2	1	0	1	5	4	2
20. None of the above	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	73	226	206	123	23	30	32	1	20	80	85	35

GRAPHS B1 TO B3: To What Extent Have You Included The Following Aspects during The Teaching Of The Arts And Culture Learning programme In 2004?

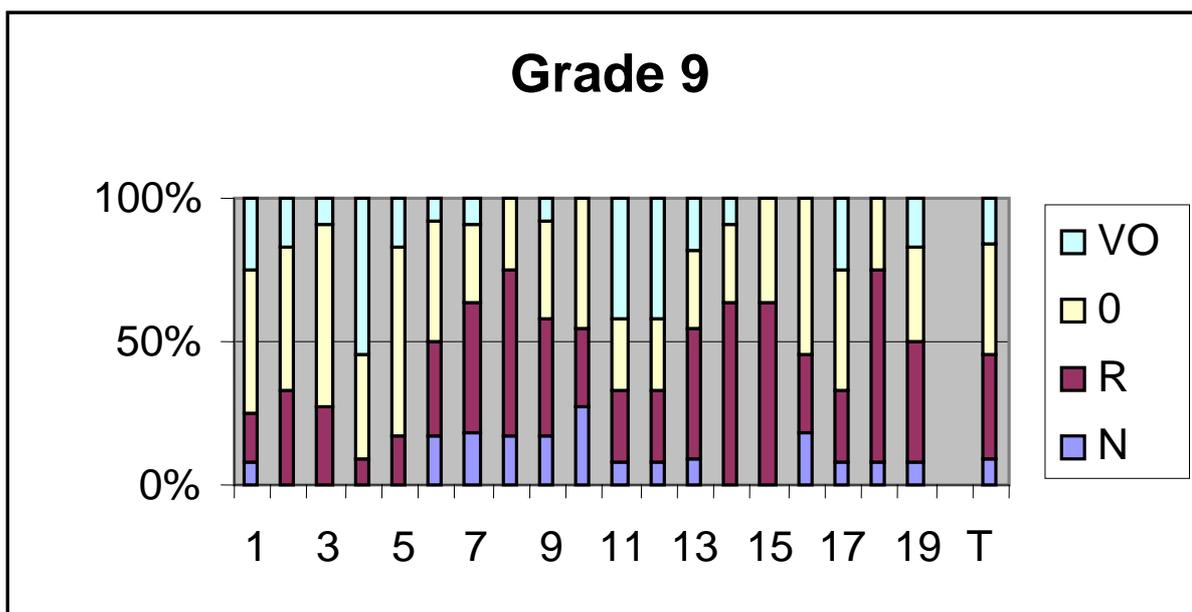
GRAPH B1



GRAPH B2



GRAPH B3



The following items are more prominent in the teaching of the A & C learning area:

- Item 1 - Human rights
- Item 3 - Heritage
- Item 4 - Technologies
- Item 6 - Mass media
- Item 11 - Careers
- Item 12 - Popular culture
- Item 13 - Fantasy and play
- Item 15 - Immediate environment

The following items are not prominent in the teaching of the A & C learning area:

- Item 2 - Local to global culture
- Item 7 - Marginalised culture
- Item 8 - Power relations
- Item 9 - Arts industries
- Item 10 - Marketing
- Item 18 - Sensory perception and literacies

4.7.4 Frequency distribution of responses to section D

EDUCATION FOR SUSTAINABLE LIVING (EFSL)

Below are ten statements about education for sustainable living. **Rank** these statements from 1 to 10 that best describe what you think education for sustainable living should be like in your school.

(1 = Most important; 10 = least important)

		Most important					Least important				
	<u>n</u>	1	2	3	4	5	6	7	8	9	10
1. EFSL is relevant to all subjects	46	12	3	2	3	3	2	0	3	8	10
2. EFSL is about conservation and development	46	14	8	3	2	3	3	5	2	2	4
3. EFSL is about satisfaction of basic human needs	45	7	10	6	4	1	2	3	5	3	4
4. EFSL is about achievement of equity and social justice	43	3	4	9	7	3	3	6	3	2	3
5. FSL is about provision for social self-determination and cultural diversity	43	4	5	0	7	7	4	3	4	7	2
6. FSL is about maintenance of ecological integrity	44	5	2	3	3	7	10	4	3	2	5
7. EFSL focuses on the quality of life rather than the quantity of economic activity.	45	6	4	6	3	3	5	9	5	1	3
8. EFSL is concerned with ethics and values	46	9	2	6	4	2	6	3	7	5	2

education											
9. EFSL should be taught by all educators	44	15	1	3	2	3	4	2	4	8	2
10. EFSL includes environmental education	51	11	3	4	5	5	2	7	5	3	6

The above table was decoded as follows:

Those items ranked from 1 to 5 were regarded as **important** and those from 6 to 10 as **not important**.

FREQUENCY DISTRIBUTION RESPONSES FOR ITEMS WHICH ARE IMPORTANT

ITEM	RESPONSES	
	NUMBER	%
1	23	50
2	30	65
3	28	62
4	26	60
5	23	53
6	20	45
7	22	49
8	23	50
9	24	55
10	28	55

The following items were regarded as being important for education for sustainable living (EFSL)

- Item 2 - EFSL is about conservation and development
- Item 3 - EFSL is about satisfaction of basic human needs
- Item 4 - EFSL is about achievement of equity and social justice

**FREQUENCY DISTRIBUTION RESPONSES FOR ITEMS WHICH ARE NOT
IMPORTANT**

ITEM	RESPONSES	
	NUMBER	%
1	23	50
2	16	35
3	17	38
4	17	40
5	20	47
6	24	55
7	23	51
8	23	50
9	20	45
10	23	45

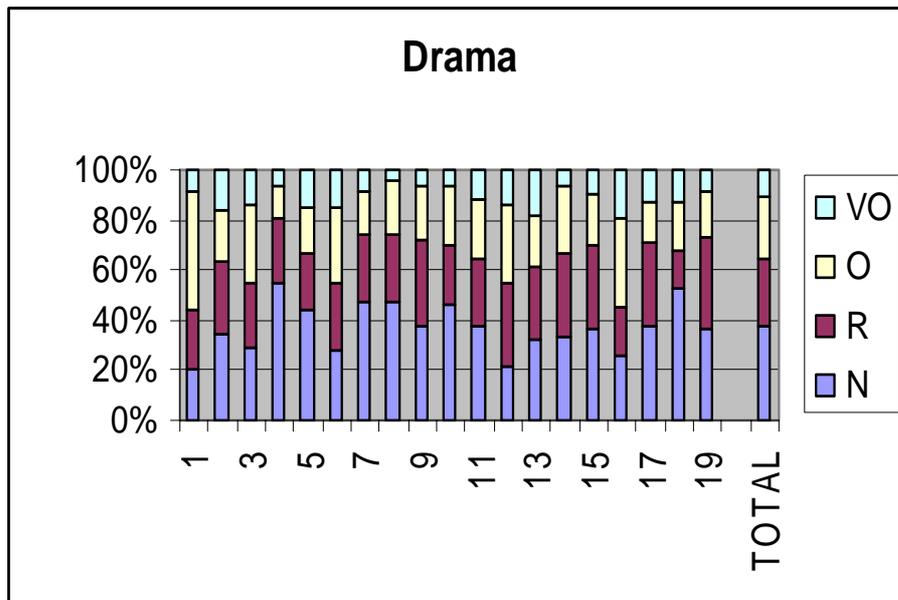
The following items were regarded as being **not important** for education for sustainable living (EFSL):

- Item 6 - EFSL is about maintenance of ecological integrity
- Item 7 - EFSL focuses on the quality of life rather than quantity of economic activity

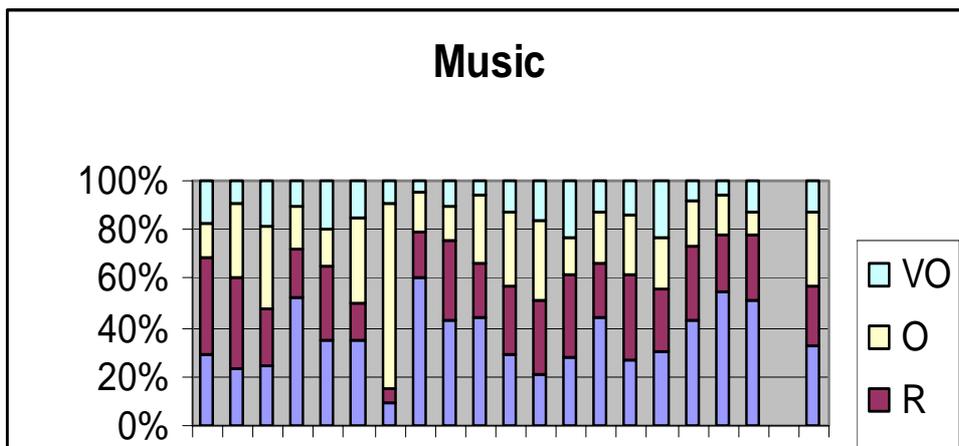
There was no consensus with regards to items 1 and 8.

- Item 1 - EFSL is relevant to all subjects
- Item 8 - EFSL is concerned with ethics and values education

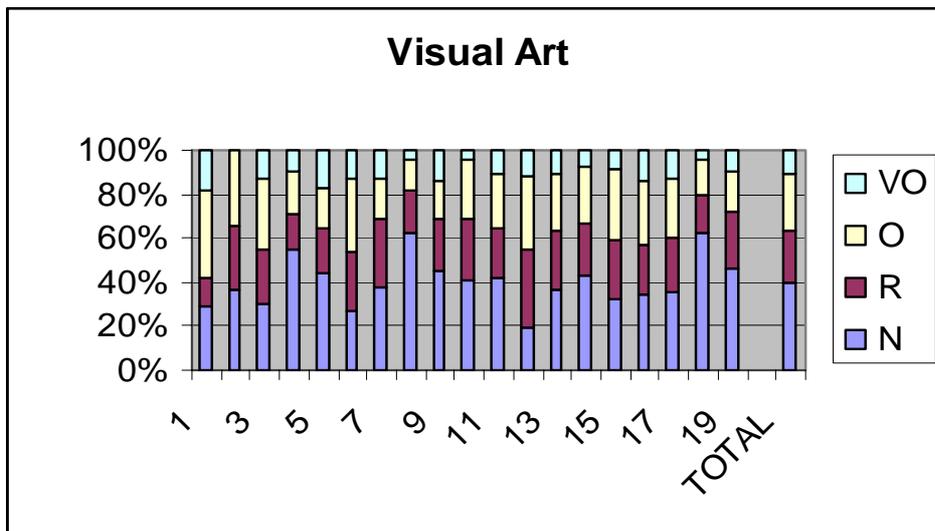
GRAPH C2



GRAPH C3



GRAPH C4



The following items were integrated more than others when teaching A &C:

1, 3, 5, 6, 12, 13, and 16

- Item 1 - Human rights
- Item 3 - Heritage
- Item 5 - Nation building
- Item 6 - Mass media
- Item 12 - Popular culture
- Item 13 - Fantasy and play
- Item 16 - Ideas, feelings and moods

The following items were given less priority:

Items 4, 8 and 19

- Item 4 - Technologies
- Item 8 - Power relations

Item19 - Wider social, historical and cultural environment

4.7.6 Frequency distribution of responses to section F

**TO WHAT EXTENT HAVE YOU INTEGRATED EDUCATION FOR
SUSTAINABLE LIVING WITH THE TEACHING OF THE ARTS AND
CULTURE LEARNING PROGRAMME IN 2004?**

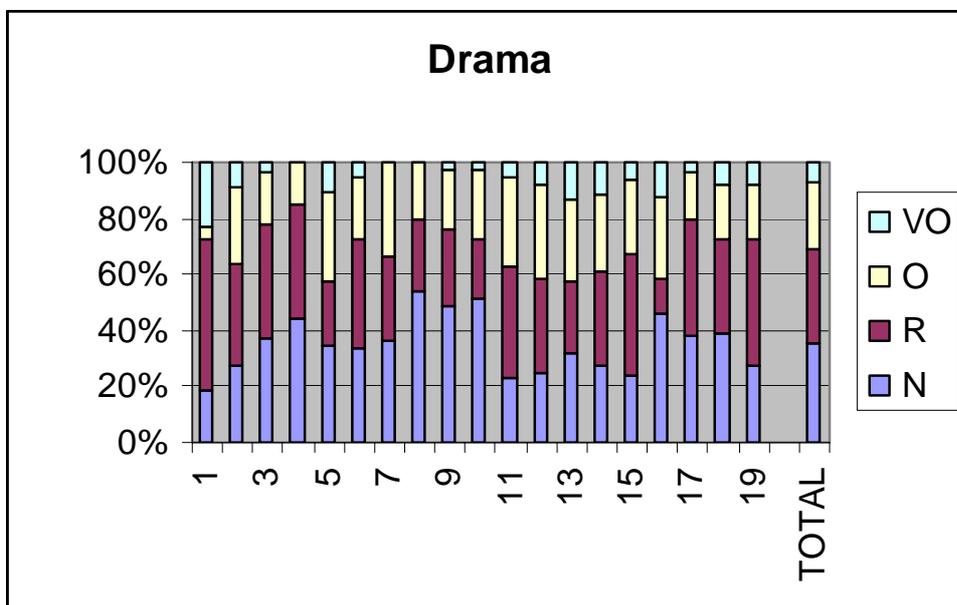
Never (N)

Rarely (R)

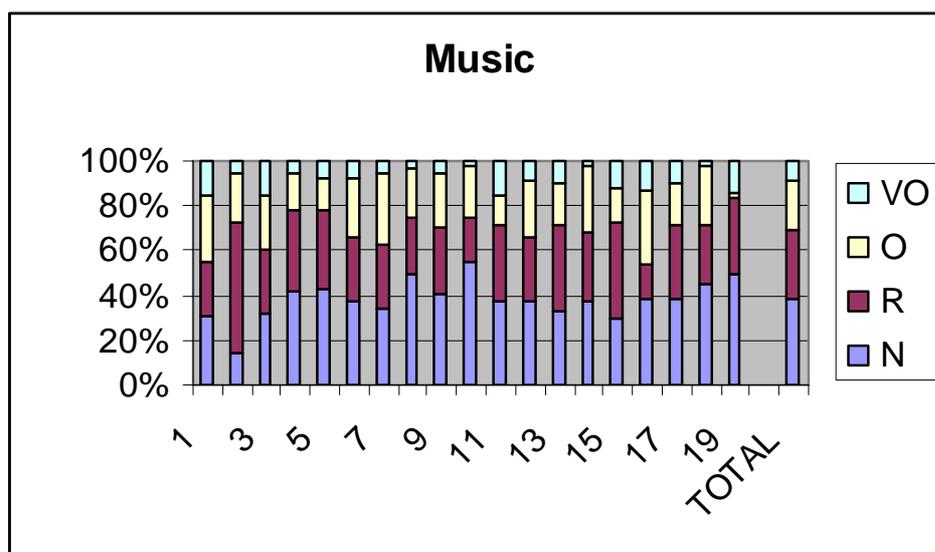
Often (O)

Very Often (VO)

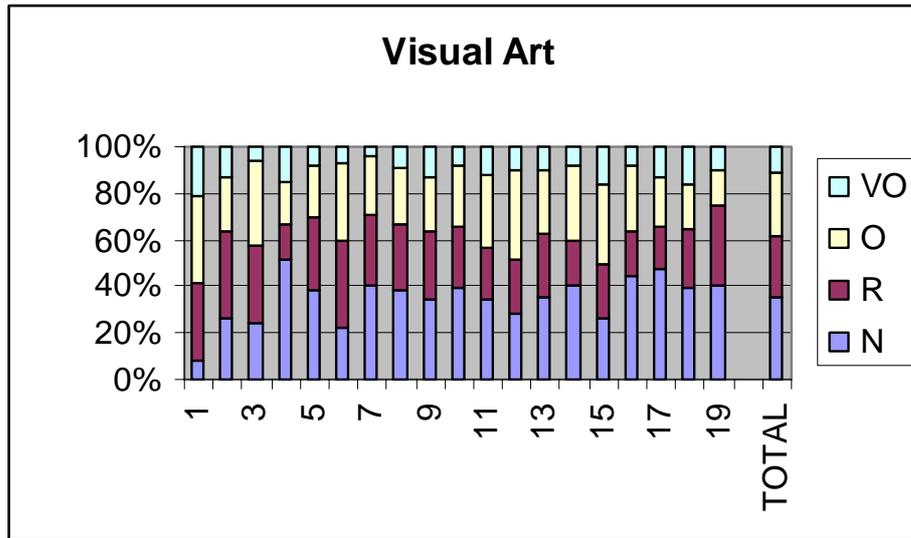
GRAPH D2



GRAPH D3



GRAPH D4



Item 1 (Human rights), Item 7 (Marginalised cultures) and Item 17 (Natural and physical resources) were given more priority in the integration of EFS in the A & C learning area and Item 8 (Power relations) and Item 10 (Marketing) were given the least priority. Human rights were integrated very often when teaching Drama, Music and Visual Arts. This was not so when teaching Dance. Item 16 (ideas, feelings and moods) was never done by more than 40% of educators when teaching Drama, Visual Arts and Dance. 30% of educators never included Item 16 in their teaching of Music.

4.7.7 Frequency distribution of responses to section G

TO WHAT EXTENT WERE THE FOLLOWING METHODS USED DURING THE TEACHING OF THE ARTS AND CULTURE LEARNING PROGRAMME?

Never (N) Rarely (R) Often (O) Very Often (VO)

DRAMA
VISUAL ART

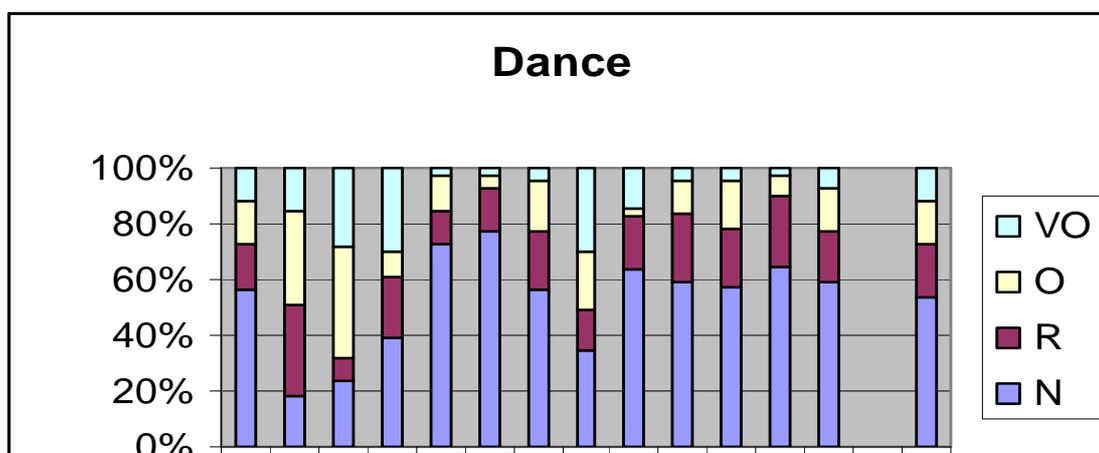
DANCE

MUSIC

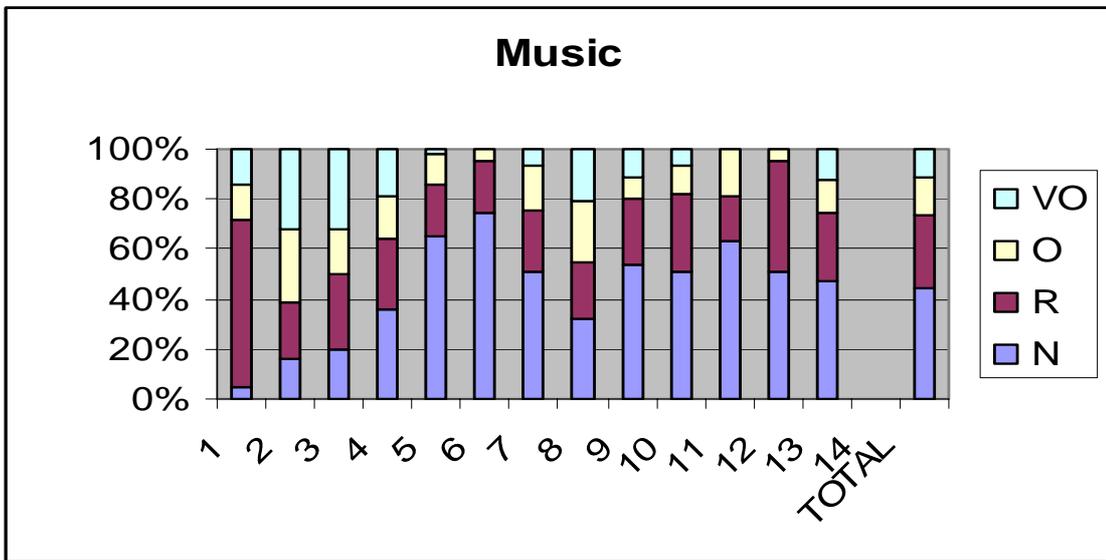
	N	R	O	VO	N	R	O	VO	N	R	O	VO	N	R	O	VO
1 WRITTEN WORK	25	7	7	5	2	29	6	6	21	4	11	8	5	15	12	10
2 PRESENTATION	7	13	13	6	5	7	9	10	2	19	13	10	4	10	15	14
3 ROLE-PLAY	6	2	10	7	10	15	9	16	10	14	12	5	3	11	14	13
4 DRAMA	13	7	3	10	15	12	7	8	15	11	7	8	4	8	16	14
5 JOURNALS	29	5	5	1	28	9	5	1	26	13	2	2	26	10	2	3
6 LOGS	31	6	2	1	33	9	2	0	31	11	3	0	33	6	3	0
7 GRAPHIC PRESENTATIONS	25	9	8	2	23	11	8	3	11	11	11	9	22	11	6	2
8 TESTS	15	6	9	13	14	10	11	9	10	13	10	10	11	16	9	13
9 ESSAYS	26	8	1	6	24	12	4	5	23	1	3	5	17	8	10	7
10 DEBATES	25	10	5	2	23	14	5	3	25	13	4	0	16	15	8	3
11 INTERVIEWS	24	9	7	2	27	8	8	0	22	12	5	0	27	7	7	2
12 FIELDWORK	25	10	3	1	23	20	2	0	24	14	3	3	22	17	3	0
13 ORAL REPORT	23	7	6	3	19	11	5	5	16	12	8	4	16	10	11	5
14 OTHER METHODS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	274	99	79	59	246	167	81	66	236	148	92	64	206	144	166	86

GRAPHS E1 TO E4: To What Extent Were The Following Methods Used During The Teaching Of The Arts And Culture Learning Programme?

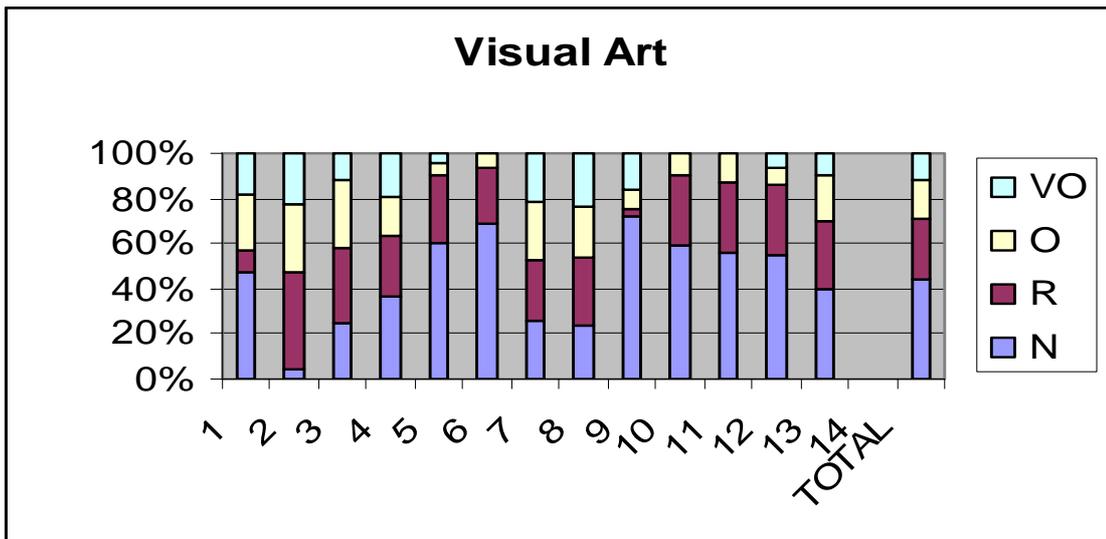
GRAPH E1



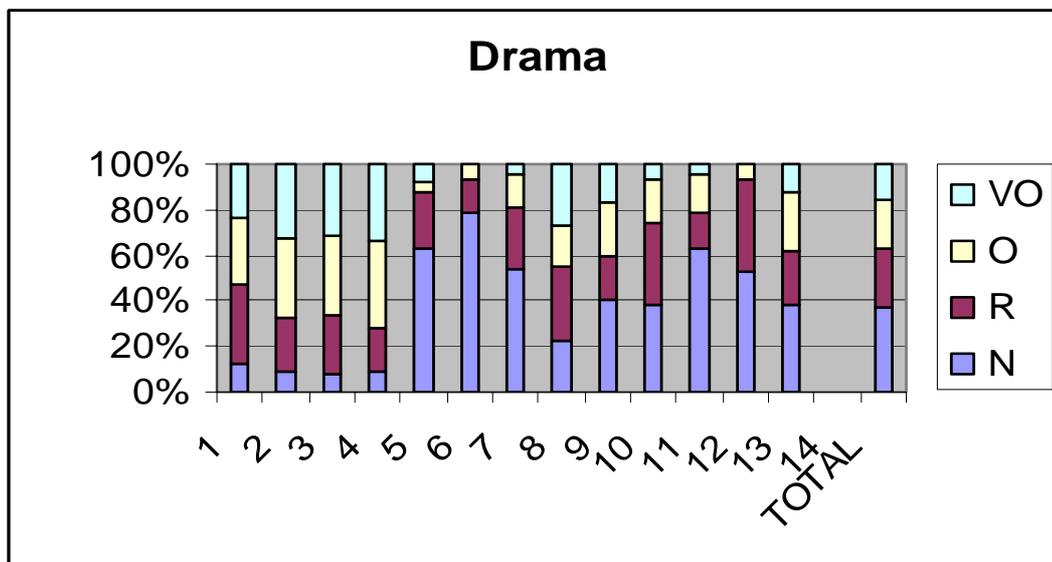
GRAPH E2



GRAPH E3



GRAPH E4



The following teaching methods were given priority in the teaching of the A & C learning area:

PRESENTATIONS, TESTS, ROLE-PLAY, DRAMA, GRAPHIC PRESENTATIONS and WRITTEN WORK

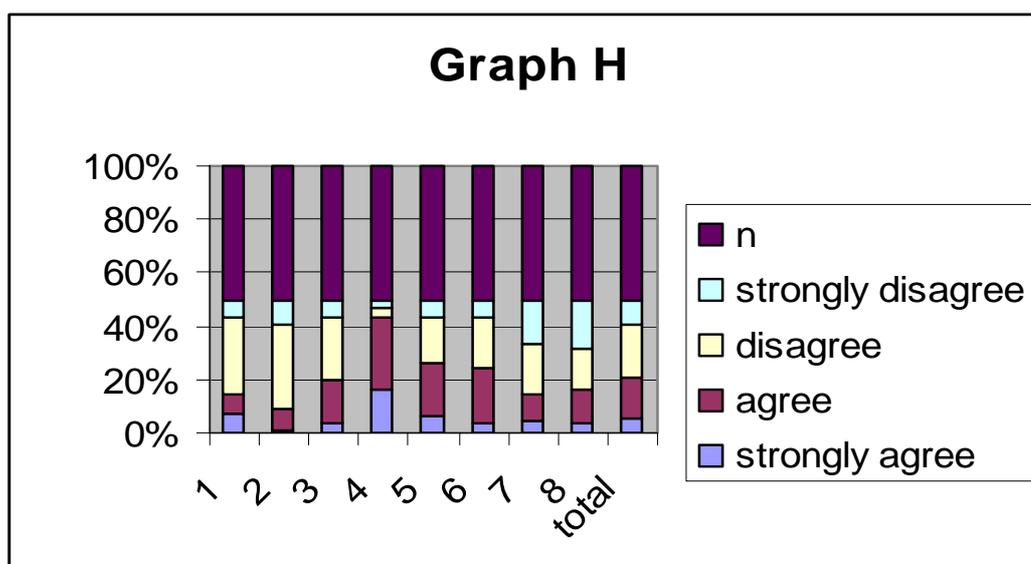
The methods that were given least priority were DRAMA and JOURNALS.

4.7.8 Frequency distribution of responses to section H

COMPLETE THE FOLLOWING TABLE WHICH REFERS TO EDUCATION FOR SUSTAINABLE LIVING IN THE TEACHING OF THE ARTS AND CULTURE LEARNING AREA IN YOUR SCHOOL.

	STRONGLY STRONGLY	AGREE	DISAGREE	
	54			

FACTORS	AGREE		
DISAGREE	<u>n</u>		
<hr/>			
1 EDUCATORS UNDERSTAND THE TERM SUSTAINABLE LIVING	6	7	25
6	4		
<hr/>			
2 EDUCATORS UNDERSTAND THE TERM ENVIRONMENTAL EDUCATION	1	7	29
9			
<hr/>			
SCHOOL MANAGEMENT IS AWARE OF EDUCATION FOR SUSTAINABLE LIVING	3	14	20
6	4		
<hr/>			
4 RESOURCES ARE ADEQUATE FOR EDUCATION FOR SUSTAINABLE LIVING	15	24	3
3			



The following inferences can be made with regard to the above statistics:

Educators in thirty-one schools do not understand the term “sustainable living”. Thirty-eight educators do not understand the term environmental education. Twenty-six management teams do not understand the term sustainable living. This lack of understanding of the concepts “sustainable living” and “environmental education” is due to the fact that these aspects were not included in their teaching courses. Majority of the educators (thirty-nine) agree that resources are available to teach EFSL. Twenty-four educators agree that teachers are not qualified to teach education for sustainable living and twenty-two educators disagree with this perception. Twenty-three educators agree that there is a lack of time to teach education for sustainable living and twenty-four disagree with this perception. Thirty-one educators disagree that there is confusion with regards to the national curriculum statements. This is so because all educators have been retrained with regards to the national curriculum statements. Majority of the educators indicated that values and emotions are emphasized more than cognitive aspects when teaching A & C and Culture. This seems to be in contradiction with the educators perception of what environmental education is like in their schools (see frequency response for section B)

4.7.9 Conclusion

The researcher has made the following conclusions with regard to the above analyses:

The researcher partly accepts and partly rejects hypothesis one (see Chapter One). According to section 4.7.8, thirty-one (70%) of educators do not understand the term “sustainable living” and thirty-eight (81%) do not understand the term “environmental education”. This means that both

environmental education and education for sustainable living is not fully incorporated in the school curriculum.

The researcher has also concluded that the integration of ideas, feelings and moods (Item 16 – section 4.7.3), which is related to emotional development, increases from grade 7 to grade 9.

According to section 4.7.8 the majority of educators (67%) disagree that cognitive knowledge is emphasized more than the values and emotions. Section 4.7.2 indicates that only 28% of educators emphasize affective outcomes in the curriculum. Section 4.7.4 indicates that 50% of educators emphasize ethics and values education. The researcher believes that the methods used in the teaching of A & C learning area that would place emphasis on the emotional development of the learner would be oral presentations, drama and the keeping of journals. Less than 20% of educators include orals in the curriculum and the methods least used, according to section 4.7.7 is drama and the use of journals. The researcher therefore accepts hypothesis two i.e. education for sustainable living is based more on the learners cognitive development than emotional development.

The questions (a) and (b) posed in chapter one (p.8) has been answered in this chapter. The other two questions regarding barriers and effective strategies for the integration of EFSL in the A & C learning area will be discussed in Chapter Five.

Chapter 5

Strategies and recommendations for the integration of EFSL in the A & C learning area.

5.1 Introduction

This chapter focuses on the barriers experienced in schools with regards to the integration of education for sustainable living in the A & C learning area. It

also includes the strategies and recommendations for the integration of EFSL in the A & C learning area. The limitations of the study and implications for further research will also be discussed.

The barriers and solutions are discussed after an analysis of the findings in Chapter Four. Strategies and recommendations are discussed with reference to the NCS (2002). It is important to note that strategy, policy and planning are related activities. Each requires the others to translate aspirations into actions (Bush & Burnham 1994:79). Strategic planning is a process operating in an extended time frame that translates vision and values into significant, measurable and practical outcomes.

5.2 Barriers experienced in schools with regards to the integration of education for sustainable living (EFSL) in the A & C learning area.

South Africa is a country of diverse cultural groups. The educator has to cope with different languages, values and social backgrounds. OBE is holistic and interdisciplinary in nature. It is hoped that EFSL would “change peoples attitudes, values and behaviour concerning the environment, and to make a contribution towards a better life for all its citizens” (Bornman 1997:218).

Learners and educators from different cultural backgrounds become embroiled in controversy because of individual attitudes and values. Although this is highly valued in a society, education in such a society must provide learners with various alternate views, to weigh them rationally, to determine their own position on issues, and to decide on their own course of action in attempting to resolve issues (Wisconsin Dept of Ed.1991:36).

According to Kohlberg (Simpson 1974:87) there is a universal set of moral principles held by people in various cultures. An example would be the wastage of food. Which culture encourages one to waste food? EFSL should bring various cultures together so that the finite resources of the earth do not get depleted. Since EFSL is the development of attitudes and is value-driven, educators must take care not to indoctrinate learners but to educate (Wisconsin Dept of ED. 1991:136).

The following are some of the main curriculum-related constraints:

- Educators do not see the importance of ecology when educating for sustainable living. EFSL is not regarded as linked to the environment.
- There is less emphasis on EFSL in the curriculum design especially with regards to the A & C learning area (NCS:2003)
- The organizing principles as stated in the NCS (2002:8) are not worked across phases. Learners are over-focused on a particular topic for a whole year.
- Educators are not familiar with the new didactic and instructional formats as discussed in the NCS document (2002).
- Majority of the educators feel that EFSL should not be taught by all educators.

Furthermore, educators are not adequately prepared to achieve the goals of EFSL in their classroom since there are no teacher-training programmes for such a cause. According to Wilke, Peyton and Hungerford (in Fien & Rawling 1996:12) the attitudes and skills of teachers are central in determining the mix of different knowledge, skills and affective objectives in educational programmes and the social and political interests they serve.

Educators, therefore, feel unqualified to teach EFSL because they had no previous training. Very few educators have the basic knowledge to teach A & C since it includes visual arts, dance, drama and music. They also lack logistical support in terms of resources, time and suitable class sizes. With these logistical problems teachers pay scant attention to a new paradigm that they have never heard of.

Another barrier is the contrast between the practical classroom theories of many educators, which stress academic knowledge, didactic teaching and classroom order, and the more progressive pedagogical theory underlying goals of value transformation and social change in education (Robottom in Fien & Rawling 1996:12).

According to Carl (1995:144) there are various psychological factors that can affect the educator regarding the implementation of a curriculum. Some

educators who have an authoritarian personality may reject initiatives from outside persons. Different educators have different values and these determine attitudes. Feelings of being threatened (anxiety, fear, uncertainty) may lead to a rejection of change and if expectations clash with change, it may bring resistance.

Instructional materials are usually designed for general application and scant attention is given to EFSL in the A & C learning area. A review of some texts for the new curriculum (NCS: 2002) is indicative of this (Gramanie, *et al*: 2005; Cowen, *et al*: 2005; Chemaly, *et al* 2005; Feenstra, *et al*: 2005).

5.3 Strategies and recommendations

To avoid the various barriers and constraints discussed above, strategies have to be implemented. This is very important, especially with the introduction of the NCS and OBE in South Africa. The main problem will be felt in the schools because most teachers will not be trained to teach in an integrative way (Loubser 1997:47). According to Le Roux & Maila (2004: 243) one cannot blame the educators for this shortcoming because learning about the environment is a new field in South Africa. Environmental education was only recently introduced in tertiary institutions. Furthermore, the concept “sustainable living” poses many problems to educators (refer to Section 4.7.4). Educators will have a problem if they do not understand the concepts “environmental education” and “education for sustainable living” when integrating these aspects in the A & C learning area.

5.3.1 Strategies for school policy and management

The school management must play an important role to ensure that EFSL is enshrined in their environmental school policy. Not all A & C educators are trained in all aspects of the arts. For example an educator who is trained in visual art will be biased and neglect dance, drama and music when integrating EFSL. The school management must ensure that educators attend in-service education and training programmes so that they are capable of applying this knowledge to integrate EFSL in the A & C learning area.

Multiculturalism is an important aspect that needs to be addressed when dealing with the A & C learning area. The following ten strategies and principles (Roberts & Gray 1999:8-11) can be adapted for use in a variety of programmes to help teachers address issues of multiculturalism:

- (a) Hire and train teachers and leaders who understand cultural issues and who are sensitive, knowledgeable, and ethnically competent.
- (b) Conduct an internal audit of racial/ethnic representativeness in staff-to-student ratios.
- (c) Operate a holistic recruitment and training programme, and promote attention to cultural representation and understanding. This aspect is important for an understanding of indigenous knowledge systems.
- (d) Actively recruit and train teachers and/or programme staff from the populations and cultures the programme serves.
- (e) Include in training modules activities to increase personal awareness of conscious and unconscious prejudices and assumptions leaders might hold.
- (f) Balance and accommodate different learning styles, and organize the curriculum to include goals of social awareness, knowledge of multiculturalism, and action-oriented behaviour.
- (g) Give multiculturalism the same level of importance as a good safety briefing prior to a class going out into the field. Step "outside the box" of traditional outdoor education concepts and integrate a multicultural curriculum into the program.
- (h) Attend to social relations in the outdoors. Instruction should help participants recognize behaviours that emerge in group-dynamics and improve interpersonal communications, without blaming or judging.

- (i) Use reflection and personal history/background as tools for experiential learning. Programme instruction can begin using the participant's worldview and experience for dialogue and/or problem solving.
- (j) Allow contradictions and tensions to emerge. Often overlooked is the fear of leaders to allow tensions and personal anxiety within themselves or participants to materialize. Teachers and leaders should allow themselves to experience the discomfort as well as encourage participants to step out of personal comfort zones.

The researcher also suggests that the school time-table be flexible so that educators, who are trained in visual art, dance, drama or music, could assist in the integration of EFSL in the A & C learning area. Although this could be difficult in most schools, motivated educators could assist in their non - teaching times. School management should also allow other stakeholders to intervene in the programme. Bornman (1997: 243-244) suggests that a school policy will be successful if the school principal has a strong and enthusiastic leadership. This aspect will be vital in schools since many schools do not have an environmental co-ordinator or an A & C education specialist. In this instance the management must select a departmental representative.

It is important to note that EFSL is absent in the assessment standards as indicated in the NCS (2002). Management must attempt to amend these assessment standards to include EFSL without altering the national imperatives such as nation building, indigenous knowledge, human rights, social justice and a healthy environment. For example one of the assessment standards is to discuss a musical instrument in terms of shape, materials used, type of sound etc (NCS: 2002). An adjustment would be to include the type of resources found in the natural environment with which one could make musical instruments. Care must be taken so that this act does not impact negatively on bio-diversity.

The importance of EFSL is well illustrated by Elizabeth Dowdeswell, ex Executive director of UNEP in the booklet entitled *Our Environment Through The Eyes of Our Children*:

“Achieving our goals of sustainable development, and a healthy environment for present and future generations depends on broadening, involving and motivating key sectors of society. Children and youth are particularly important as they are the most effective agents of change today and the teachers of tomorrow”.

5.3.2 *Strategies for educators*

The EEPI document (1995:12) outlines important steps and strategies for teacher education. These ideas could also be related to EFSL. EFSL should not be the responsibility of specialist subject teachers only. Teacher education should be oriented towards wider issues in the immediate environment and educators must be proactive in terms of local environmental issues, not just reactive.

The attitudes and skills of educators are central in determining the mix of different knowledge, skills, and affective objectives in EFSL programmes and the social and political interests they serve. Educators must realize that EFSL is non-negotiable since EFSL is embedded in the South African Constitution and in the principles that underpin the curriculum of the NCS (2003:5). Educators fulfil various roles. They are mediators of learning, interpreters and designers of learning programmes and materials, leaders, administrators and managers, scholars, researchers and lifelong learners, community members, citizens and pastors, assessors and Learning Area specialists (NCS 2002:3). Educators that are empowered about EFSL should seek strategies to integrate EFSL in the A & C learning area.

5.3.2.1 *Teaching strategies*

The researcher suggests that Reflective Teaching and Constructivism be used when integrating EFSL in the A & C learning area.

(a) *Reflective Teaching*

Learning outcome 2 states that the “learner will be able to reflect critically on artistic and cultural processes, products and styles in past and present contexts”. Learners will be able to explore and analyze the ways different social and cultural groups engage in and convey meaning through the arts (NCS 2003: 20-21). According to Fien and Rawling (1996:13) “reflective action is deliberate action that results from the active and thoughtful consideration of specific beliefs and knowledge in relation to past and future consequences”.

Reflective teaching encourages learners to become autonomous, independent and self-motivated learners. This is a paradigm shift from one of providing instruction to one of promoting effective learning. Learners develop a sense of ownership on their individual learning processes, and opportunities for self-assessment and reflection on their achievement. Learners develop a sense of their own personal and professional development (Stefani, Clarke & Littlejohn 2000:163).

Reflective teaching develops in the learners the ability to determine for themselves whether or not they have understood certain concepts, principles or skills that they can bring all of this to bear on new situations and problems, and the ability to decide in which ways their present competencies can suffice and in which ways they may need to acquire new skills and knowledge for new situations (Stefani, Clarke & Littlejohn 2000:163-164).

Reflective teaching also brings about continuous personal and professional development. When learners are given tasks it is vital for them to keep reflective records. Learners can be given a prepared project management logbook to keep a record of project progress. The logbook is used to promote reflection on current attainment to enhance learning and to create a link between learning and continuous professional development. It is also a tool for formative, self and tutor appraisal (Stefani, Clarke & Littlejohn 2000:166-167). This aspect is important when realizing Learning Outcome 3 i.e. participating and collaborating.

“The learner will be able to demonstrate personal and interpersonal skills through individual and group participation in Arts and Culture activities. This Learning outcome emphasizes the importance of personal and social development – the development of the ability to work individually and collaboratively in activities in the Arts towards fostering healing and nation - building” (NCS 2000:10).

(b) *Constructivism*

According to Klein & Merrit (1994:14) constructivism is a philosophy that challenges the philosophy of objectivism. The comparison can be seen in the table below.

CONSTRUCTIVISM	OBJECTIVISM
a) Reality is determined by the knower	Reality is external to the knower
b) Structure relies on experience	Structure can be modeled
c) Thought is embodied, it grows out of bodily experience	Thought is disembodied, it is independent of human experience
d) Thought grows out of physical and social experience	Thought reflects external reality
e) Meaning is determined by the understander	Meaning is external to the understander
f) Symbols are tools for constructing reality	Symbols represent reality

There are five tenets of constructivism as embraced by different proponents (Clements & Battista in Klein & Merrit 1994:15-16).

- Knowledge is actively created by the child, not passively received from the environment.
- Children create new knowledge by reflecting on their physical and mental actions.
- Ideas are constructed or made meaningful when children integrate them into their existing structures of knowledge. No one true reality exists, only interpretations of the world. These interpretations are shaped by experiences and social interactions.

- Learning is a social process in which children grow into the intellectual life of those around them.
- When a teacher demands a learner to use set mathematical standards, the sense-making activity is seriously curtailed.

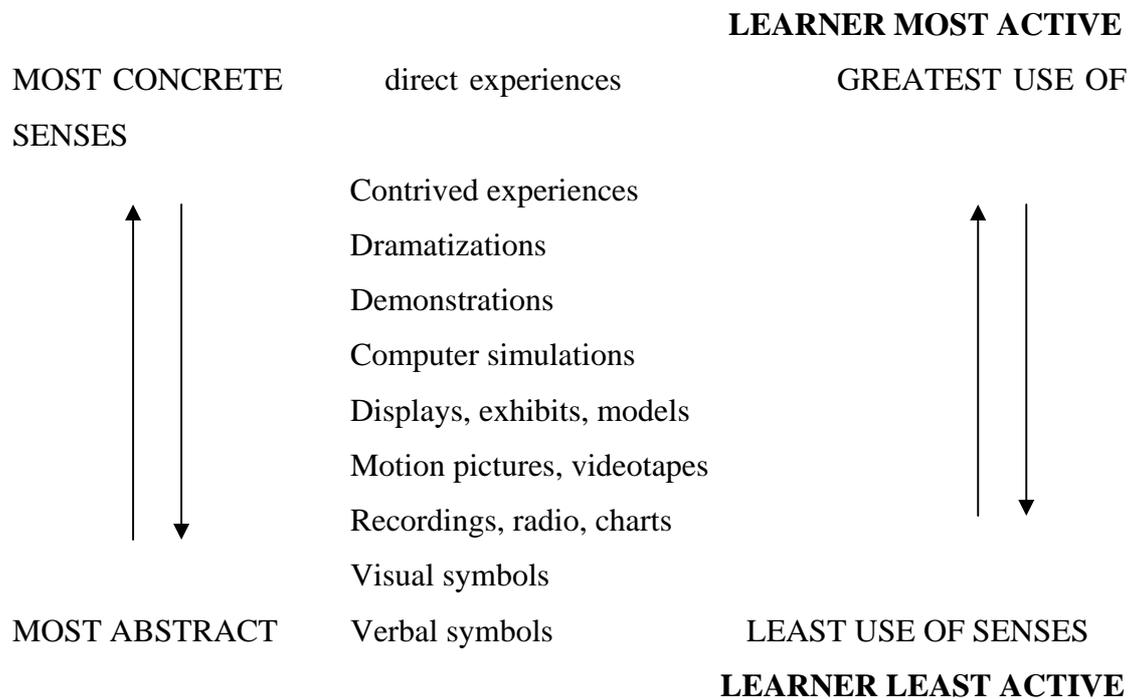
This teaching strategy is chosen because learners can be introduced to real – life problems. The educator acts as a facilitator and the instruction is learner – centered. There can be group interaction during the learning process and authentic assessment and demonstration of student progress can be made.

The above strategies were chosen because they provide the educator with a substantial amount of flexibility and control and the educator could easily infuse attitudes and values into the learning process. A common ground among constructivists lies in the commitment to the idea that the development of understanding requires active engagement on the part of the learner (Jenkins: 2000:601). This method is advantageous when teaching dance, music, drama and visual art. There are also ample opportunities for individual and group work. The strategies also link with reality and learners grapple with live problems and are useful preparation for the real world (Curzon 1990:218). EFSL is a practical approach and the strategies help learners to examine the value positions of other people. Learners are also able to identify their own value positions on sustainable living and compare their value systems to other cultures and eventually opt for one that is most beneficial for environmental welfare (Curzon 1990:131). Learners should not be passive learners but engage actively during A & C lessons.

5.4 Practical ideas and methods to integrate EFSL in the A & C learning area

According to Noel McInns (in Wisconsin Dept. of Ed. 1991:119), the first law of environmental education is “an experience is worth 1000 pictures”. This law could also apply to EFSL. A classification scheme for educational experience, in which they are arranged from most concrete to most abstract is

shown below. This classification is important, especially when integrating EFSL in the A & C learning area.



(Wisconsin Dept. of Ed. 1991:119)

Direct experiences are those in which the learners have an opportunity to use all their senses. Most naturalist educators believe that children’s feelings about nature are fundamental to any education programme. They echo the words of Rachel Carson, “It is not half so important to know as to feel”. (Dige 1993:59). Educators must attempt to organize their lessons in visual art, drama, music and dance at the location where the ecological crisis exists.

Contrived experiences are similar to direct but are edited so as to omit certain elements of direct experiences. This method can be used when direct experiences are difficult to come by e.g. a pond ecosystem can be studied in an aquarium. This, however, does not substitute for direct experiences. The importance of organic fertilizer can be demonstrated with the use of an old aquarium to make a home for worms. The learners could draw or paint a scene for visual arts, dance to the movement of the worms, write a song and sing for music, or use role play (conversation between two worms) for drama. Role-playing and dramatization is an invaluable activity because it helps learners

gain an understanding of other people's feelings, thus providing new insights into their own lives.

Demonstrations are visualized explanations of important facts, ideas, processes or techniques that are generally done by one person or a small group before a large group. A good demonstration often involves a dramatic presentation, models, specimens, objects, photographs, videotapes, computers and written symbols (Wisconsin Dept. of Ed. 1991:120). Sometimes it is difficult to use all of visual art, dance, drama and music when integrating EFSL in the A & C learning area. For example learners would be able to demonstrate in the visual art lesson, the method of permaculture or sing a song in the music lesson but this would be difficult in the dance lesson.

The researcher hopes to encourage A & C educators to plan the integration of EFSL in the A & C learning area in a meaningful manner by giving a few examples of how to integrate EFSL in A & C lessons. The examples chosen are from the UNEP *Tunza International Children's Conference on the Environment* that was held in Connecticut, USA in 2004 and the UNEP *Children's World Summit for the Environment* that was held in Toyohashi City, Japan in 2005. The researcher attended these two events.

5.4.1 *Dance*

"*Earth dance*" is a performance ensemble that integrates movement, music and the spoken word in an effort to encourage expression and individual growth as participants learn about environmental and cultural issues. It is a visually enchanting celebration of the earth, and includes music, songs and puppets. The goal is to provide a mechanism for children to express their concerns about the environment in an artistic way.

"*Water - The River of life and the Ocean Environment*" takes participants through a creative dance experience where they explore and express the many ways water moves. Through creative movement a new way of thinking and relating to the environment is opened up. Participants also come to know one another in a fun, interactive and cooperative way.

5.4.2 *Drama*

According to Mama (personal conversation) storytelling has been neglected in most schools throughout the world. Dr Raouf Mama, an internationally known storyteller, gave a laudable rendition of his stories, *Pearls of Wisdom* (Mama: 2001) at the International Children's Conference on the Environment in Connecticut. Learners must be encouraged to narrate stories relating to sustainable living in a dramatic fashion. Story -telling encourages individuals to appraise the situation, identify the conflict, and take responsibility for their own stance. Responses from the facilitator or peer group can then promote critical evaluation of the position taken and consideration of alternative solutions (Ballantyne & Packer 1996: 31). If there is a strong emphasis in the culture on the oral tradition, then knowledge may be transmitted through "verbal usage and memorization" as in the cases of Moroccan and Western Samoan cultures (Field & Aebersold, 1990:406-410).

“*Water in everyday life*” is a dramatization demonstrating the omnipresence of water in our everyday lives and motivates children to develop activities in their surroundings to tackle the most pressing water problems within their communities.

Martial arts are used to change learners' mind-sets to care for others and the earth. It is about taking the energy of nature prevalent in the air into our bodies to strengthen our skills as well as our mind. Learners move their bodies and feel one with nature and nurture the mind-set to respect the earth and each other.

5.4.3 *Music*

Michael Hoppe (personal conversation) is a music composer who had no formal training in music yet he uses music to educate about the environment. His rendition of “*Awakening*” should encourage educators who do not have formal music training. Learners should be encouraged to use their voice to mimic natural sounds and use instruments they make from the environment.

The Japanese used a traditional musical instrument, the “shamisen” to introduce its nature and its culture.

5.4.4 *Visual art*

“*Let’s become a beverage carton artist*”, allows learners to understand “sustainable forests” and recycling. By creating pieces of art and toys from recycled plastic, learners learn about the types and properties of plastic, and acquire higher knowledge and awareness of resource recycling. This method is suitable for parent-child participation, and is aimed at continued practice of what has been learned at home.

“*Aluminum cans shift to the World of Art*” is a theme in which learners create pieces of artwork from recycled aluminum cans and learn how valuable goods around us are, as well as share the fun and excitement of creatively transforming aluminum cans into completely different objects. This method enhances mutual harmony through communication and creation.

Learners can also dye fabric, using dyes collected from grass and trees around their homes. Working in small groups, learners can create a mural poster of how humans use and pollute water.

5.5 **Limitations of the study and implications for further research**

The fact that the research was based on the responses of 47 educators indicates that the research was limited. However, the researcher feels that the responses were adequate because all the questions posed received plausible answers. One of the main problems experienced was with regards to the questionnaire. Many educators did not understand the meaning of certain concepts. This came to the fore when different responses were given to similar conceptual ideas regarding environmental education and EFSL in schools.

The researcher recommends that certain concepts be defined in questionnaires, especially when dealing with EFSL, since this is a relatively different and new paradigm. Further research should stress on ways to adjust the assessment standards in A & C learning area to include EFSL. There should be

quantitative research in schools so that recommendations could be made to the Education Departments to emphasize the importance of EFSL in the A & C learning area.

5.5 Conclusion

Hypothesis One stated that although EE is integrated in the school curriculum, EFSL is not fully incorporated. The researcher partly accepted and partly rejected the hypothesis. The conclusion drawn from the research indicates that EE and EFSL are not fully incorporated in the curriculum.

Hypothesis Two stated that EFSL is based more on the learners' cognitive development than emotional development. The researcher accepted the hypothesis.

Strategies and recommendations were given to integrate EFSL in the A & C learning area and practical examples were given from literary sources and from the researcher's own experiences.

According to Orr (1992:137) EFSL should connect disciplines as well as parts of the personality i.e. intellect, hands and heart. The purpose of EFSL is twofold. Firstly it aims towards the establishment of a community of life that includes future generations. Secondly, connective education is aimed at personal wholeness. One has to restructure the learning environment to overcome the split between academic specialization and intellect and experience.

If EFSL is to become an important force for a sustainable and humane world, it must be woven through all of the operations of the institution, and not confined to a few courses.

“This will require a serious effort to rethink the substance and process of education, the purposes and use of research, the definition of knowledge, and the relationship of institutions of higher education to human survival. All of which require courageous and visionary leadership. In the mounting battle for

a habitable planet it is time for teachers, college and university presidents, faculty, and trustees to stand up and be counted” (Orr 1992: 152).

Bibliography

Bak, N. 1995. The Unsustainability of “Sustainable Development” In A South African Context. *Southern African Journal of Environmental Education No 15: 57-63.*

Balance, A and King, N. 1999. *State of the Environment of South Africa 1999 – An Overview.* DEAT (Pretoria): Consortium Publishers.

Ballantyne, RR and Packer JM. 1996. Teaching And Learning In Environmental Education: Developing Environmental Conceptions. *Journal of Environmental Education* 27(2): 25-32.

Bandhu, D; Bongartz; Ghaznawi & Gopal. 1994. Environmental Education for Sustainable Development: Proceedings on the Global Forum “93: Environmental Education for Sustainable Development, New Delhi, 23-28 September 1993.

Bartelmus, P. 1986. *Environment and Development*. London: Allen & Unwin.

Becker, C. 2002. *Surpassing the Spectacle - Global Transformations and the Changing Politics of Art*. England: Rowman & Littlefield Publishers.

Bluhm, B and Champean R. 1994. *Environmental Literacy Consortium*.
http://www.naaee.org/upece/learner_guidelines/EELC-iiG.html (3-06-2002).

Bornman, GM. 1997. *Towards A Model for the Integration of Environmental Education into Secondary Schools in South Africa*. Unpublished thesis. Pretoria: UNISA.

Bowen, J (ed.). 1994. *Environmental Education. Imperatives for the 21st century*. Albert Park, Australia: James Nicholas Publishers.

Bowers, CA. 1995. *Educating for an Ecological Sustainable Culture*. Albany: State University of New York Press.

Burgess, RG. 1985. *Field Methods in the Study of Education*. London: Falmer Press.

Bush, T and Burnham, JW (eds.). 1994. *The Principles of Educational Management*. Leicester: Longman.

Capra, F. 1983. *The Turning Point: Science, Society and The Rising Culture*. New York: Bantam Books.

Carl, AE. 1995. *Teacher Empowerment through Curriculum Development: Theory Into Practice*. Kenwyn: Juta

Cefic. 2003. *European Chemical Industry Council*.

<http://www.cefic.org/common/server/surnauRedirect.asp?NID=>(25 July 2003).

Chemaly, L; Kubheka, M; Rabikisson, M and White, H. 2005. *Shuters Arts and Culture- Grade 7- Learner's Book*. Pietermaritzburg: Shuter & Shooter.

Collins, KJ; DuPlooy, GM; Grobbelaar, MM; Puttergill, CH; Terre Blanche, MJ; Van Eeden, R; Van Rensburg, GH and Wigston, DJ. 2000. *Research in Social Studies*. RSC201-H. Pretoria: Unisa.

Committee for the Review of Curriculum. 2005. 2000. *A South African Curriculum for the Twenty-first Century*. Report presented to the Minister of Education. Pretoria: Department of Education.

Cowen, D; Fivaz, S; Kruger, C; Roux, L; Sibiyi, Z and Welvering, D. 2005. *Arts and Culture for all Grade 7- Teacher's Book*. South Africa: Macmillan South Africa Publishers (Pty) Ltd.

Cunliffe, B and Crickmay, C. 1976. *Design with nature?* Milton Keynes: The Open University.

Curzon, LB. 1990. *Teaching in Further Education*. London: Holt.

Department of Education (DoE). 1989. White Paper on Environmental Education. Pretoria: DoE.

Department of Education (DoE). 2002. *Revised National Curriculum Statement. Grades R-9 (Schools) Policy*. Pretoria: DoE.

Department of Education (DoE). 2003. *Revised National Curriculum Statement. Grades R-9 (Schools) Teacher's guide for the development of learning programmes*. Pretoria: DoE.

Department of Environmental Affairs and Tourism. 1996. *An Environmental Policy for South Africa*. Pretoria: DEAT.

Department of Environmental Affairs and Tourism. 1997. *White Paper on Environmental Management Policy*. Pretoria: Government Printer.

Department of Environmental Affairs and Tourism. 1999. *White Paper on Environmental Management Policy in South Africa*. Cape Town: DEAT

Dige, J. 1993. Children and the Earth. *Young Children* 48(3): 58-63.

Drucker, PF. 1993. *Post Capitalist Society*. New York: Harper Publishers.

EEPI. 1995. *Environmental Education Policy Options for Formal Education in South Africa*. EEPI: Johannesburg.

Engel, JR & Engel JG (eds.). 1990. *Ethics of Environment and Development*. London: Belhaven.

Feenstra, M; Morgan, J; Notcutt, B and Rogers, T. 2005. *Learning Station-Arts and Culture-Grade 7 Learner's Book*. South Africa: Paarl Print.

Field, ML and Aebersold, J. 1990. Cultural attitude toward reading: Implications for teachers of ESL/bilingual readers. *Journal of Reading* 33(6): 406-10.

Fien, J. 1993. *Environmental Education: A Pathway to sustainability*. Geelong: Deakin University Press.

Fien, J and Rawling, R. 1996. Reflective practice, a case study of professional development for environmental education. *Journal of environmental education* 27(3): 11-20.

Fox, M. 1994. *The reinvention of work: a new vision of livelihood for our time*. San Francisco: Harper.

Fullan, M. 1982. *The meaning of educational change*. New York: Teachers College Press.

Gay, LR. 1992. *Educational Research- Competencies for Analysis and Application*. New York: Macmillan Publishing Company.

Giddens, A. 1992. *The Consequences Of Modernity*. Cambridge: Polity Press.

Glasson, J; Therivel, R and Chadwick, A. 1996. *Introduction to Environmental Impact Assessment-Principles and procedures, processes, practice and prospects*. England: Page Bros (Norwich) Ltd.

Glavovic, BC. 2000. *Our coast for life: From Policy to Local Action*. Cape Town: Department of Environmental Affairs and Tourism.

Gramanie, P; Kisten, P; Lindsay, M; and Lolliot, F. 2005. *Arts and Culture for the New Nation Teacher's Guide – Grade 7*. Cape Town: Indigo Blue.

Hammersley, M. 1983. *The ethnography of schooling*. HumberSide: Nafferton Books.

Harman, W. 1988. *Global mind change. The promise of the last years of the twentieth century*. Indianapolis: Institute of Noetic Sciences.

Harris, G and Blackwell (eds.). 1996. *Environmental issues in education*. Cambridge: University press

Hattingh, J; Van Rensburg, EJ; Lotz-Sisitka, H and O'Donoghue, R (eds.). 2002. *Environmental Education, Ethics and Action in Southern Africa*. Pretoria: EESA.

Hicks, JM. 2004. It's An Attitude. *Art Education*. Reston, Vol.57, 3 (13-17).

Higgs, P. 1995. *Metatheories in Philosophy of Education*. Johannesburg: Heinemann.

Huntley, B; Siegfried, R and Sunter, S. 1990. *South African Environments into the 21st Century*. Cape Town: Human & Rosseau.

Hurry, L. 1992. Development Education: core concept. Discussion document. *Environmental Education Bulletin* 6: 30-33.

IUCN, UNEP, WWF. 1991. *Caring for the earth. A strategy for Sustainable Living*. Gland, Switzerland: IUCN/ UNEP/WWF.

Jenkins, EW. 2000. Constructivism in school science education. *Science and Education* 9: 599-610.

Jickling, B. 1999. Beyond sustainability: Should we expect more from education? *Southern African Journal of Environmental Education* 19: 60-67.

Klein, ES and Merrit, E. 1994. Environmental Education as a Model for Constructivist Teaching. *Journal of environmental education* 25(3): 14-21.

Le Roux, C and Maila, M. 2004. Issues and Challenges Regarding Environmental Education Policy Implementation. *Africa Education Review* 1(2): 234-244.

Le Roux, K. 2001. *Environmental Education Processes- Active learning in schools*. Pietermaritzburg: University of Natal Press.

Loubser, CP. 1997. *Study manual for Further Diploma in Environmental Education (FDEEV4-X). The Cross-Curricular Teaching of Environmental Issues*. Pretoria: Unisa Press.

Mama, R and Romney, M. 2001. *Pearls of Wisdom*. USA: Boyd Printing Company.

Marckwardt, AH; Cassidy, FG and McMillan, JB (eds.). 1992. *Webster Comprehensive Dictionary*. USA: J.G. Ferguson Publishing Company.

Mason, EJ and Bramble WJ. 1996. *Understanding and Conducting Research-Applications in Education and the Behavioral Sciences*. USA: McGraw-Hill, Inc.

Miles, MB & Huberman, AM. 1994. *Qualitative Data Analysis: An Expanded Sourcebook*. Thousand Oaks: Sage

National Environmental Education Project - General Education and Training. (NEEP-GET). 2001. *Environment in the National Curriculum Statement. A Discussion Document for Learning Area Working Groups*. Pretoria: NEEP- GET.

Okeem, E (ed.). 1990. *Education in Africa- Search for realistic alternatives*. London: Billing & Sons Ltd.

Orr, DW. 1992. *Ecological Literacy: Education and Transition to a Post-Modern World*. Albany: State university of New York Press.

Porrit, J. 1990. Introduction. In P.Martin, 1990. *First Steps to Sustainability: The School Curriculum and the Environment*. Godalming: WWF-UK

Rader, M and Jessup, B. 1976. *Art and Human Values*. Engelwood Cliffs, New Jersey: Prentice-Hall, Inc.

Ramsey, JM; Hungerford, H and Vlok TL. 1992. Environmental Education and the K12 curriculum: finding a niche. *The Journal of Environmental Education* 23(2): 35-45.

Rio Documents, <http://iisd1.iisd.ca/rio=5/agenda/chp01.htm> (24 October 2005)

Roberts, NS and Gray, S. 1999. *The Impact of Diversity Issues on Risk Management*. In J. Gookin (Ed.), *Wilderness Risk Managers Conference Proceedings* Sierra Vista, AZ: National Outdoor Leadership School: 8-11.

Robinson, J & Shallcross, S.1998. *The Socio-Ecological Crisis and Education for Sustainable Living: Is An Essentialist's Standpoint Possible?* Proceedings of the International Best of Both Worlds Conference, 23-26 March 1998, Pretoria/Dikhololo, South Africa> Pretoria: University of South Africa.

- Schumacher, S and McMillan, JH. 1993. *Research in Education: A Conceptual Introduction*. Glasgow: HarperCollins.
- Simpson, EL. 1974. Moral Development Research - A Case Study of Scientific Cultural Bias. *Human Development* 7: 18-106
- Stefani, L; Clarke, J and Littlejohn, A. 2000. Developing A Student Centered Approach to Reflective Learning. *Innovations in Education and Training International*. 37(2): 163-171.
- Strauss, A and Corbin, J. 1990. *Basics of Qualitative Research: Grounded Theory, Procedures and Techniques*. Newbury Park: Sage.
- Stuhr, PL. 2003. A Tale Of Why Social And Cultural Content Is Often Excluded From Art Education - And Why It Should Not Be. *Art Education*. Reston: Summer 44(4): 301.
- Tarr, P. 2003. Reflections on the Image of the Child: Reproducer or Creator of Culture. *Art Education*. Reston: Vol. 56, 4 (6).
- Tolba, MK. 1992. *Saving Our Planet - Challenges and Hopes*. London: Chapman & Hall.
- UNCED. 1992. *Agenda 21: Programme of Action for Sustainable Development*. New York: United Nations Dept of Public Information.
- UNEP. *Our Environment through the Eyes of Children*. Information and Public affairs: Kenya
- Urquhart, P and Atkinson, D. 2001. *A Pathway to Sustainability - Local Agenda 21 in South Africa*. Cape Town: Department of Environmental affairs and Tourism.

Van Rooyen, HG. 1998. Education For The Environment In The Post-Apartheid South_African School System: An overview. *International Journal of Environmental Education and Information* 17(2): 117-136.

Wisconsin Department of Public Instruction. 1991. *A Guide to Curriculum Planning in Environmental Education*. Wisconsin: Herbert J, Grover.

Personal Communication

Hoppe, M. 2004. *Personal interview on the integration of music, in education for sustainable living in the Arts and Culture learning area*. July 27, Connecticut, USA.

Mama, R. 2004. *Personal interview on the integration of drama and story-telling, in education for sustainable living in the Arts and Culture learning area*. July 27, Connecticut, USA.

APPENDIX

Questionnaire: Strategies for the Integration of Education for Sustainable Living in the Arts and Culture Learning Area