CHAPTER ONE

INTRODUCTORY ORIENTATION

1.1 INTRODUCTION

Inquisitiveness is a feature, which characterizes all human beings, especially young people. Parents and adults in general know how difficult it sometimes can be to cope with curiosity and inquisitiveness of young people. However, according to Gawe and Jacobs (1996:10) children become less and less curious and inquisitive after they start schooling. Sadly, as they grow up, too often their dynamic nature of learning gets eroded in passive classrooms that are not organized around their cultural background, experience and conditions or interest. Shor as quoted by Gawe and Jacobs (1996) supports the idea by arguing that people begin life as motivated learners experimenting and by using plays to internalize the meaning of words and experiences. Therefore, their inquisitive nature needs to be sustained and not repressed.

Several factors can probably be attributed to the fading away of this natural desire to discover things of which social and cultural factors may play a significant part. In certain cultural groups children are not encouraged to develop this natural curiosity and discipline within the family tends to curb this aspect. People of South Africa “operate with a variety of learning styles as well as with culturally-influenced perspectives” (RNCS, 2002: 13). However, when teachers search for the cause of this decline in the desire to know, the first place to check should be the methods of learning used in schools. The learning and teaching pedagogy used in schools needs to be examined in order to establish the extent to which it falls short. Improved pedagogy which addresses these issues should consequently aid in developing the learners’ thought processes.

The White Paper on Education and Training (Department of Education, 1995:18) therefore states that: “Environmental Education, involving an interdisciplinary, integrated and active approach to learning, must be a vital element of all levels and programmes of the education and training system, in
order to create environmentally literate and active citizens and ensure that all South Africans, present and future, enjoy a descent quality of life through the sustainable use of resources.

The new education system in South Africa with an Outcomes-based Education (OBE) approach encourages the use of active participatory methods which are learner-centred and activity-based (RNCS, 2002:9). It advocates for teaching and learning processes that give the learner a chance to think creatively and make meaning of the objects in the surrounding environment. Reflexive competence is one of the outcomes which the new education system hopes to develop among the learners (Norms and Standards for Educators, 1992:2). This outcome can only be achieved through well organized classroom activities, which makes it possible for learners to interact with the environment. Active learning within fieldwork in Environmental Education aims at helping learners understand their immediate environment. This cannot happen in rigidly planned classroom activities where the teacher and the textbook are the only source of information. O'Donoghue and Janse van Rensburg (1995), summarise this view by stating that Environmental Education processes / methods involves learners in diverse encounter, dialogue and reflection experiences so as to foster greater awareness and meaningful change in learners’ insight and attitudes.

For the purpose of this study the researcher decided to look closely at the implementation of fieldwork as one of the participative methods used in the Intermediate phase of schooling.

1.2.1 Statement of the Problem

The researcher chose to focus on fieldwork because of the exposure and past experience he has had in this field. The researcher’s experience is that active learning within fieldwork has been neglected in Outcomes-based Education in the Intermediate Phases of schooling. His past experience is that very little is done to implement active learning within fieldwork in Outcomes-based Education.
Indeed many schools do undertake field trips that are normally called “Trips of the year”. These trips normally take place towards the end of the academic year when normal classroom sessions have ceased and learners are only waiting to write examinations. Usually there are no goals stated for such trips, no purpose given and no follow-up activities made. Yet the researcher believes that such trips could be used for more educational benefits. Failure to use these trips productively, leads to shallowness in learners’ understanding and perception of the various critical aspects in Environmental Education.

Recent research has demonstrated that one of the most effective ways of reaching school students with an environmental message is to engage them in experiences in the environment, particularly experiences which enable them to observe the evidence of environmental problems and the impacts of these on wildlife, habitats and human beings (Ballantyne et al., 2001a). Teachers often use visits to natural areas such as natural parks, state forests and grassland areas to support and extend formal school education programmes. Nature-based or fieldwork learning experiences allow students to apply theoretical knowledge in the field, discover real life examples of principles, problems and issues, see things in a new perspective, undertake problem-solving and decision-making within a real world setting and engage with environmental issues (Ballantyne et al., 2001b; Ballantyne & Uzzel, 1994; Lai, 1999).

However, Gerber and Chaun (2000), in their work “Fieldwork in Geography: Reflections, Perspectives and Actions” cites a concern by the International Geographical Union’s Commission on Geographical and Environmental Education on the status of fieldwork being at risk. A range of internationally-orientated geographers and environmental teachers want to see fieldwork back on its pedestal in formal education so that geographical and environmental education can be a rewarding personal, first-hand experience as it was.

The researcher argues that field trips can enhance the learning process. The Natural Sciences Curriculum offers a particular way of understanding the world we live in (RNCS 2002: 13). Teaching Science involves developing a
range of skills which learners can gain and develop in the environment eg. field trips, where creativity, responsibility and group confidence is supported (RNCS, 2002:12). The Natural Sciences Learning Outcome 1 enables learners to “act confidently on curiosity about the natural phenomena” while Learning Outcome 3 gives the learners an understanding of the relationships between science, technology, society and the environment (RNCS: 2002: 14). Therefore, I argue that there is value in field trips as they create an everlasting environmental awareness in the learners and tend to be the most enjoyable part of a child’s school career (online). The US Boards of Education has stated that field trips are significant as they are an expansion of the curriculum, increasing the student’s awareness of the world in which he/she lives, and could be of cultural significance as it assists students in developing insights into cultures other than their own (online). Field trips thus could incorporate activities which allow the child to develop to his full potential through, creativity, participation, curiosity, and problem-solving interacting collectively as a group.

1.2.2 Research Question

In the light of the above, this study will be guided by the following overarching question:

**How effectively is fieldwork implemented in Outcomes-based Education in the Intermediate Phases of schooling?**

This study will be pursuing the following questions:

- What are the essential teaching-learning elements needed for effective active learning within Environmental Education fieldwork?
- What is the knowledge base of teachers regarding essential teaching and learning elements of participative active learning?
- To what extent do these essential elements of participative active learning figure in fieldwork?
1.3 **OBJECTIVES OF THE STUDY**

The purpose of this study is to look closely at the implementation of active learning within fieldwork as an active participatory method in Environmental Education widely used in Outcomes-based Education in the Intermediate Phases of schooling.

The main objectives of the study are as follows:

- To establish whether active learning within fieldwork is implemented in the Intermediate Phase of schooling (Grades 4-6).
- To investigate procedures followed by teachers when undertaking fieldwork.
- To determine the constraints of fieldwork implementation in the Intermediate Phase of schooling (Grades 4-6).
- To develop guidelines that teachers can use when undertaking fieldwork.

1.4 **SIGNIFICANCE OF THE STUDY**

Gerber and Chaun, (2000) in their work “Field work in Geography: Reflections, Perspectives and Actions” cites a concern by the International Geographical Union’s Commission on Geographical and Environmental Education on the status of fieldwork being at risk. On the other hand, the teacher commitment to the concept of field instruction is questionable even in situations where organizational, administrative, and/or budgetary constraints are less critical. All other things being equal, it is clear that field instruction places additional demands on the skills and energies of the teacher, when compared to other instructional devices. It is in fact “easier” to teach in the classroom than to plan and implement outside the four walls of the classroom. In a word, many teachers do not know how to plan and conduct effective fieldwork instruction, and have little motivation to learn to do so (online).

A range of internationally-orientated geographers and environmental teachers want to see fieldwork back to its pedestal in formal education so that
geographical and Environmental Education can be a rewarding personal, first-hand experience as it was. On the other hand, literature on fieldwork dating as far back as the work of Jones (1968:15-30) puts more emphasis on the purpose and forms of fieldwork in both Primary and Secondary schools. Kent and Lambert (1995:22-47) discussed how fieldwork features in Environmental Education. Gold and Jerkins (1991:21-35) concentrated on the origin and characteristics of fieldwork. He further argued that in geography, biology and related subjects fieldwork is as intrinsic to the discipline as clinical practice is to medicine. He further argued that educational visits are used in the teaching of many subjects, yet he knew of no controlled study or their effectiveness.

It has already been stated that the purpose of this study is to investigate the implementation of active learning within Environmental Education fieldwork, as one of the active participatory methods supposed to be used in Outcomes-based Education. The findings of the research are expected to assist in the development of guidelines teachers can use when undertaking fieldwork.

1.5 RESEARCH DESIGN AND METHODS

In this research both the qualitative and quantitative paradigms will be used, because I want to establish the essence of active learning within Environmental Education fieldwork in Outcomes-based education. Qualitative research according to Merriam (2002:5) involves understanding a phenomenon from a participant’s perspective and the meanings people derive from situations with the aim of understanding a process. By contrast, quantitative research consists largely of statistical data where the variables are controlled (Henning, van Rensburg, & Smit, 2004:3). My purpose is to investigate the effectiveness of the implementation of active learning within fieldwork in Outcomes-based education in the Primary schools. At the end of the study it might be possible to develop guidelines for active participatory learning within Environmental Education fieldwork for teachers to use when undertaking Environmental Education field trips with learners. The researcher chose this mixed methods-approach (Cresswell, 2002:4) which combines philosophical ideas with broad approaches to research and implemented with specific methods because of its relevance to educational research. It fits
naturally with the concentrated action found in the classroom and schools, an action characterized by learners and teachers.

Qualitative-quantitative linkages exist between distinct data types, where qualitative information gained from the open-ended interviews is compared to the numerical data elicited from the questionnaires. Creswell (1994) used the term “triangulation” to argue for the combination of methodologies where the researcher uses multiple methods of data collection and analysis. On the other hand, Cohen and Manion (1980:254) believed that triangulation is the phenomenon that minimises the researcher's picture of the particular slice of reality or to ensure that the generated data are not simply artefacts of one specific method of collection or as Henning, et al. (2004:103) explain triangulation “is supposed to indicate that by coming from various points of angles towards a ‘measured position’, you find the true position”. For this reason the mixed-methods approach will be used in this study to confirm the initial thoughts about the implementation of Environmental Education fieldwork in the intermediate phase.

To achieve this, the researcher will suspend all his beliefs concerning active learning within Environmental Education fieldwork, in order to study the essential structures of the phenomenon. The researcher chose this approach because of its relevance to educational research. It fits naturally to the kind of concentrated action found in the classroom and schools, an action characterized by learners and teachers. Therefore, it is the researcher's wish to provide the most valid and accurate answers as far as possible to the question posed in the problem statement.

1.5.1 Selection of the Respondents

For the purpose of this study, the researcher will undertake the research in one school district and the choice will be based on accessibility of schools to participate in the research project. The chosen district will be Nongoma district in the far Northern part of KwaZulu-Natal. Nongoma district houses four Circuit Offices with 165 Primary schools. Due to time constraints, the researcher cannot make use of all 165 schools in the area. The selection of
the sample schools will be based on their accessibility. Thirty Primary schools will be randomly selected to form the sample of the study. Two Environmental Teachers and three focus groups of learners from each sample school will participate as respondents.

A letter requesting for permission to collect data from the randomly selected schools will be drafted with the assistance of the supervisor and presented to the District Manager and the management staff of each school where the researcher will be applying for participation in the research (see Appendix A and B).

1.5.2 Research Method

This section is concerned with the procedures employed in collecting data. Mason and Bremble (1978:302) argue that in order to understand a phenomenon (Maykut & Morehouse, 1994:68), the researcher should select, from those available, instruments that will be supportive of the research objectives. For the purpose of this study, methods available to the researcher are questionnaires (see 3.3.1 and 3.4.1), focus group interviews (refer to 3.4.2 and 3.4.2.1), document analysis and literature survey and will thus be used. Initially, the researcher will collect data through a systematic and critical study of available documents pertaining to the problem. This will involve extensive study of the existing literature from published books, unpublished dissertations and any other documentation which has information concerning the topic.

Continuing with this argument, after a considerable in-depth study of various research tools, inter alia, observation techniques, interviews, questionnaires, focus groups, schedules and opinions, it was realized that questionnaires and focus group interviews will be suitable to both the nature and purpose of this study. Therefore, the questionnaire and focus group interviews will be the chosen major tools in the proposed research study. Both tools will contain questions that are aimed at collecting data on various topics of the research study.
Teachers involved in Environmental Education will respond to a questionnaire to establish whether they know how to implement active participatory learning within Environmental Education fieldwork as well as being involved in focus group interviews.

1.6 DEFINITION OF CONCEPTS

In order to ensure that there is clarity of concepts which are central to this study, a brief description will be given.

1.6.1 Fieldwork

Fieldwork or outdoor educational experiences is any educational activity that takes place outside the classroom. It may take place in the school grounds or in a local park, or in fact anywhere where practical outdoor classroom activities are possible (Hurry 1991:102). Moller (1989:134) state that fieldwork and field excursion are terms used synonymously to refer to learning through direct experience of reality. He further argues that field excursion cannot be taken as an entertainment. The common feature of fieldwork is that it must be outside the classroom and learning must take place through direct experience of reality.

1.6.2 Environmental Education

Environmental Education is the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his biophysical surroundings. Environmental Education also entails practice in decision-making and self0formulation of a code of behaviour about issues concerning environmental quality. This definition was accepted and recommended for wide use by all participants in the International Working Meeting on Environmental Education in the School Curriculum organized by the IUCN Commission of Education under the sponsorship of UNESCO, 1970. (IUCN Commission of Education; UNESCO, 1970).
According to Braus and Wood (1993: 6) Environmental Education is a “process aimed at developing a world population that is aware of, and concerned about, the total environment and its associated problems, and which has the knowledge, attitudes, skills, motivation, and commitment to work collectively towards solutions of current problems and the prevention of new ones”.

Therefore, Environmental Education is a balanced mix of learning processes taking place at any level and any degree of specificity, from general to public awareness to advanced technical training. It enables learners to find information about issues, explore these through experiences in the environment and take action for a better world. It contributes to meaningful environmental learning and to better environmental management and lifestyles choices. Above all, Environmental Education is learning to employ new technologies, increase productivity, avoid environmental disasters, alleviate existing damage, see and utilise new opportunities and make wise decisions.

1.6.3 Outcomes-Based Education

Outcomes-based Education (OBE) is a flexible, empowerment orientated approach to learning (Bhengu 1997:21). OBE is the new system of education that aims not only to increase the general knowledge of the learners, but also to develop their skills, critical thinking and understanding of phenomenona.

1.6.4 Environment

According to the New Collins Concise English Dictionary (McLeod & Hanks: 372), the environment is simply:

- “external conditions or surroundings”.
  The “environment” is a broad term defined in the National Management Act (Act No. 107 of 1998; NEMA) as:
- “the surroundings within which humans exist, that are made up of the land, water and atmosphere of the earth; micro-organisms, plants and
animal life; any interrelationship among and between them and the physical, chemical, aesthetic and cultural properties and conditions that influence human health and wellbeing”.

Van Rooyen (2002) has recently argued that in our endeavour to develop a better and reliable perspective on the environment and the nature of the environmental crisis, we should not lose sight of the fact that the biophysical should be our starting point in relation to the political, social, scientific, technological and economic dimension of the environmental crisis. He further argues that any attempt to ignore the biophysical could distort our understanding of environmental issues and result in a human-centred and biased perspective.

**Figure 1.1** The Environment (Van Rooyen, 2002)

1.6.5 Experiential Learning
Experiential learning is a student-centred approach in which students are engaged in critical thinking, problem-solving and decision making within the contexts that are personally relevant to them. Experiential learning involves more than just student-centred activities, however. It also involves following-up the learning activity with structured opportunities for debriefing and consolidation through teacher and peer feedback, personal and group reflection, and application of the newly developed ideas and skills. Experiential learning is a process that develops knowledge, skills and attitudes based on consciously thinking about an experience. Thus, it involves direct and active personal experience combined with reflection and feedback. Experiential learning is personal and affective in nature, influencing both feelings and emotions as well as enhancing knowledge and skills (Law, n.d.:online).

1.7 LIMITATIONS AND DELIMITATIONS OF THE STUDY

This study will be limited to Primary schools under KwaZulu Natal province which has eight regions. The focus of the study will be on Nongoma district which has four circuits. Due to inaccessibility of most primary schools in this area, the researcher decided to concentrate on the total target of 30 primary schools.

1.8 PROGRAM OF THE STUDY

This study has been divided into four chapters:

Chapter One, the introductory chapter provides a background to the study, with a detailed introduction.

Chapter Two provides the conceptual and theoretical framework of the study. Literature will be reviewed within the parameters of the topic.

Chapter Three focuses on the outline of the research methodology. A description and motivation for the methods and instruments used during the research is presented.
Chapter Four provides an analysis of the data.

Chapter Five consists of the findings and recommendations of the study.
CHAPTER TWO

REVIEW OF THE LITERATURE REGARDING THE CHARACTERISTICS AND PLACE OF ENVIRONMENTAL EDUCATION FIELDWORK

2. INTRODUCTION

Fieldwork is a teaching approach that is integrative in its own and adopts more of a participative approach. Its importance could well be understood from this Chinese proverb:

Tell me, I forget.
Show me, I remember
Involve me, I understand (Gold and Jerkins 1991: 36)

Hurry (1991:102) states that fieldwork is an excellent teaching approach based on sound educational principles that are well suited for hands-on investigation. Consequently fieldwork should be seen as a necessary integral part of active learning in Outcomes-based Education and not as optional extra work. South African teachers need to be reminded of the above issues to ensure that fieldwork retains its place in the new education system.

The purpose of this chapter is to review literature relevant to fieldwork. Literature is reviewed so that relevant information from other authors who have written on the subject could be used as a theoretical framework to put this study in context and to serve as a foundation for the empirical part of this study. For the purpose of this study, literature on the essential teaching and learning elements for effective fieldwork and the extent to which elements of participative active learning figure in fieldwork practice in Environmental Education will be reviewed.

2.1 EXPERIENTIAL LEARNING WITHIN FIELDWORK IN ENVIRONMENTAL EDUCATION

Pre-school children learn nearly all by means of self-discovery. The Primary school teacher can encourage pupils to learn more about their immediate
environment by allowing them to continue this natural exploratory behaviour in a similar, but more directed way, by means of study activities and experiences such as direct observation, touch, experimenting and questioning. This can be done by making use of the local resources and educational excursions in the immediate environment to discover it for themselves (Rheeder, 1992).

Experiential learning seeks to educate through experiences in nature. Piaget as cited by Bodner 1986 in his work “Constructivism: A Theory of Knowledge”, inspired much work in the field of experiential learning (Bodner, 1986) He argued that children learn by encountering and manipulating objects in their environment. He further emphasized the importance of actual hands-on experience in learning. O'Donoghue and Janse van Rensburg (1995) highlight the importance of actual experiences with what is being studied and the value of reflecting on what we come to encounter.

On the other hand, Van Martre (1972), developed “acclimatization”, a form of experiential learning aimed at “immersing” individuals in nature:

“Let’s help our learners acclimate themselves to their own environment. To understand it on their own terms, and its own merits …..Let’s subject the learner to the most sensory experiences imaginable: mud baths, bog crawls, marsh wading …. Let’s sensitize the individual to his environment ….. In short, the learner should come to ‘feel’ his environment. To draw it close to him. To love it. To understand it – not for its labels and fables and fears – but as an intrinsic part of himself. Let’s go at it with the idea that if we take care of our natural heritage now, then we will have an American heritage later” (Van Matre 1972: 10-11).

Opie (1992) highlights both sensory experience and spiritual involvement in his understanding of environmental education. He developed the idea of “earth love education”. This involved a range of experiential, spiritual and active learning. Experiential learning as a form of learner-centred education was also inspired by the work of the famous educationist John Dewey from America.
According to Chapman (1992) experiential learning helps to develop knowledge, skills and attitudes that are based upon relationships that develop from experience. It is personal and ‘affective’ in nature, and has students “actively engaged in exploring questions they find relevant and meaningful, and has them trusting and feeling as well as thinking”. The process involves the following:

- a concrete experience that engages individuals;
- reflective feedback based on their experience. This involves individuals describing what they have experienced, analysing the implications for themselves and then encouraging them to think about what changes might need to be made; and.
- The application of newly acquired knowledge and skills.

These theories suggest that experiential learning is a critical element for effective fieldwork. Methods employed in experiential learning within fieldwork, provides excellent opportunities for meaningful teaching and learning activities. Learners get the opportunity to engage in dialogues, encounters and reflect on what is being studied. Dialogue, Encounter and Reflection are critical features of active participatory learning which encourages learners to participate fully in, and take full responsibility for their own learning (Van Rooyen, 2002). Experiential learning within fieldwork has the potential for learners to gain the maximum benefit from the experience by:

- Providing opportunities for learners to interact with one another, with the teacher and the content of the activity.
- Ensuring that all learners are actively involved one way or the other and not excluded by becoming non-participatory observers.
- Encourages feedback on what happened during the experience.
- Encourages participants to think about the implications of the experience for themselves.
- Encourages learners to think about any changes they might like to make themselves and would like to foster to others.
2.2 ENVIRONMENTAL EDUCATION FIELDWORK AND THE DEVELOPMENT OF THINKING SKILLS

This section examines the role of fieldwork in active participatory learning with particular reference to its contribution to the development of thinking skills.

The development of thinking skills has been applied in geographical and Environmental Education by the “Thinking Through Geography” project (Leat 1998). This has developed approaches to enhancing thinking skills by a wide range of strategies, each focusing on a generic concept important within geography but having great utility to transfer to other arenas. The concepts used include ‘classification’, ‘cause and effects’, and ‘systems’. Teaching strategies involved are innovative and varied, and include approaches entitled ‘odd-one-out’, mind movies and ‘mysteries’ (Leat 1998: 7-8). By using such thinking activities, pupils start to develop analytical and reasoning skills which support ‘transfer’, metacognition and increasingly independent learning through questioning and thinking.

Boardman (1974) and Smith (1999) working with geographers, and Fido and Gayford (1982) working with Biology teachers, demonstrate the view from many teachers that fieldwork pushes the children towards higher order cognitive skills. More recently, Smith (1997) in the UK, suggested a strong link between high achievement in Geography in schools and a high profile for fieldwork in the curriculum. There is the inferential evidence from psychology that experiential learning enhances pupils learning outcomes. According to Driver et al (1994), the constructivist perspective supports the importance of hypothesizing, active enquiry, and the testing of ideas in the new environment.

Mackenzie and White (1982) identified the overall cognitive gain from fieldwork, and note the enhanced gain from ‘active’ as opposed to ‘passive’ fieldwork. They suggest that ‘memorable episodes’, like getting wet, enhance learning and improve long term knowledge retention. Kern and Carpenter (1986) in working with US college students, indicate that fieldwork is especially beneficial in enhancing higher order cognitive skills.
However, Harvey (1991) argues that the affective gains outweigh cognitive gains from fieldwork in the long term. Affective gain may be important though not just for its own development but for its link with cognitive gain. Mackenzie et al (1986), suggest that cognitive gains are reinforced by the affective development of students by looking at residential fieldwork in the USA, and Nundy (1998) supports this idea very strongly. Nundy’s work has examined the gains of fieldwork to primary school phase pupils in comparison to pupils studying the same topic within the classroom.

Nundy (1998) shows clear enhancement in terms of constructing learning frameworks, the development of self image and the development of meaningful itself for those pupils studying by fieldwork rather than classwork. He emphasizes that it is the interaction of affective and cognitive development that enhances the cognitive gain from the challenge of investigative and thinking tasks in the field.

In conclusion, clearly Environmental Education fieldwork is one of the educational activities that have the potential to influence and lead to enhanced levels of learning outcomes. Active participatory learning within fieldwork contributes largely by opening up opportunities for enquiry-based and problem-solving teaching and learning activities with real life examples that push learners towards the development of high order cognitive skills.

2.3 FIELDWORK AND EDUCATION ‘ABOUT’, ‘IN’ AND ‘FOR’ THE ENVIRONMENT.

Early responses to the environmental crisis were to protect endangered wildlife in nature reserves and the predominant methods for teaching and learning were show-and-tell methods or education about the environment. In these methods conservation experts taught other people all they knew about ecology.

This top down approach has become less popular over the years and was replaced by encounters where learners were encouraged to discover nature through exposure to natural experiences. This led to Environmental Education
processes which were focused on sensory experiences and spiritual-involvement methods in the environment. The outdoor encounter became seen as the best method for studying the environment and teachers endeavoured to create opportunities for learners to experience nature through fieldwork (O’Donoghue & Janse van Rensburg: 1995).

As awareness of the complex nature of the environmental crisis emerged over time and people became more aware of local problems, new methods were developed to help learners understand the local problems, and to do something about them. Early attempts to do this developed from project work and co-operative, active learning methods. Active learning with fieldwork and problem-solving activities in the environment started to characterize more participatory, more local and more action centred approaches to Environmental Education.

Gradually more people centred approaches to Environmental Education developed as environmental teachers became more aware of the dimensions of the environment, and as the perspective of the environment became more widely conceived. The Action Research method became more widely used and active learning around tangible local problems through which learners were able to act on a wide range of issues to address them. The shift brought new methods into Environmental Education including co-operative learning in real life situations in the local environment.

According to Fien (1993), the tendency for teachers and environmental practitioners is to favour education for the environment, but this does not necessarily exclude the other two orientations which are appropriate in certain contexts. Le Roux (2001) argues that the role of teacher has changed over time from an authority on environmental knowledge or an engineer of nature experiences, to a more neutral facilitator creating opportunities for learners to develop their own knowledge, to an active mediator between learners and situations. The teacher will also, quite appropriately, take on different roles at different times.
Fieldwork has a high potential of integrating Environmental Education orientations as essential elements of participative active learning in fieldwork practice. Carefully thought-out and well planned fieldwork activities can assist learners to develop a wide range of skills. It encourages learners to collect and critically analyse information, identify environmental issues and take action for the environment. If correctly implemented, it may contribute towards achieving the goal of Environmental Education of developing individuals who are able to work collectively with other people and make informed and sound decisions on issues affecting their environment.

Hungerford and Volk (1990) cited two teaching strategies that provide students with opportunities to plan, apply, and evaluate alternative actions in relation to particular environmental issues. These strategies rely on the effectiveness of first-hand experience, learning by doing and involvement in real life issues. In the issue investigation and action model, students choose an issue of personal interest, investigate that issue in depth, and develop issue-resolution action plans that are subsequently evaluated and if desired implemented.

2.4 ENVIRONMENTAL EDUCATION FIELDWORK AND THE CONSTRUCTIVIST PERSPECTIVE

According to Driver et al (1994), the constructivist perspective supports the importance of hypothesizing, active inquiry and the testing of ideas in new environments. It also underpins much of the theoretical framework argued in favour of Environmental Education fieldwork and the development of thinking skills. Adey et al (1994), argued that learners should be pushed to work with cognitive skills that are more challenging than knowing and understanding the areas of thinking that include analysis, evaluation and problem-solving. Such work enhances pupil’s achievements, thereby raising output standards. This implies that teaching methods employed in Environmental Education fieldwork play a pivotal role in shaping the desired environmentally literate individuals as cited by Harvey in his definition of Environmental Education (Harvey: 1977).
On the other hand, Le Roux (2001), states that the trend has been to make classroom learning relevant to learners through fieldwork where they would use what they know in the classroom and their own experiences to make sense of what they experience in the field. This reflects another influential learning theory developed through cognitive psychology, the theory of constructivism. According to Bordner (1989), in the theory of constructivism, knowledge is constructed in the mind of the learner. Piaget, in his work with children actively manipulating objects, emphasised that learners are active constructors of meaning as they encounter and manipulate their environment.

Berger and Luckmann (1967), state that other constructivist theories are open-ended and recognize that meaning is socially constructed. According to social constructivism, learners make meaning in the company of others. The ideas of social constructivism have been used in defining the environment as a social construct, the meaning which has been developed by the people in their social interaction is that environmental problems are linked to environmental, social, political and economic processes and concerns, as well as to biophysical processes (see also Van Rooyen, 2002). Savery (1995) raises an interesting argument on the contribution of the constructivist perspective with regard to the paradigm of multimedia curriculum. He views it as a “philosophical view on how we come to understand or know”. Learning occurs and develops through interacting with one’s environment, exploring this environment and the construction of knowledge from these experiences. In this paradigm, when learners learn, each individual construct knowledge in a slightly different way, no two experiences are alike.

Multimedia authoring easily adapts to this perspective where each learner (or a group of learners) is provided with an authoring vehicle to construct their own knowledge representations. He further argues that first, “understanding is in our environment…. We cannot talk about what is learned separately from how it is learned”.

These theories have serious implications for the implementation of active learning within fieldwork in schools. From the above theories, it is evident that
learning in fieldwork must have a purpose and that purpose must be clear to
the learners. There is also a strong emphasis on the question of teachers
giving support to learners in their tasks so that they could develop ownership
of the overall tasks. Learners must own the problem-solving process. Even
though learners have ownership of the problem, it does not mean that just any
activity or solution is appropriate.

They need to be trained to think and solve problems in an appropriate manner
for the task being executed. They must also have responsibility for all the
various tasks required to achieve the desired outcomes. Learners must be
assisted to learn how to address social issues arising from the learning
environment. Teachers must model expert practice in group interactions as
well as monitor for problems that need to be mediated. By using cooperative
production groups intrinsic learning is increased as each group member
depends on the other group member for the needed product.

2.5 ENVIRONMENTAL EDUCATION FIELDWORK AND THE
DEVELOPMENT OF AFFECTIVE BEHAVIOUR

Hurry (1991:103) stresses the point that school education should not just give
children information. He states that an education system that is relevant to the
needs of the children will also encourage attitudes and values that will benefit
both individuals and society at large. Through fieldwork, learners learn to
observe and appreciate the land and the environment they live in. Environmental Education fieldwork offers children a deeper understanding of
their natural and cultural heritage and opportunities to acquire experiences
during their leisure.

Fieldwork is one of those educational activities that has the potential to
influence attitudes and values. Used properly, it can help pupils develop
environmental attitudes that will contribute to the long-term well being of the
environment and therefore to the long-term health of the people. In particular,
effective fieldwork should help the learners to:
• Develop an aesthetic appreciation of both natural man-made and natural forms of the environment.
• Develop responsible attitudes to environmental issues and respect for the environment.
• Develop a value system and a personal code of conduct that reflects this attitude
• To make independent, wide ranging and objective judgements about environmental issues and the people involved with them.

There is some evidence that providing students with opportunities to apply environmental citizenship action skills in the community may also influence factors, such as locus of control and personal responsibility that have been shown to be influential in an individual's participation in environmentally responsible behaviour (Hines, Hungerford and Tomera 1987; Hungerford and Volk 1990). Therefore properly planned active participatory learning activities within fieldwork foster environmental values in which learners unite in a common cause of interacting harmoniously with the environment.

2.6 ENVIRONMENTAL EDUCATION FIELDWORK AND THE DEVELOPMENT OF PERCEPTUAL AWARENESS

According to Waldmann (1992) environmental awareness is seen as the wholeness of observations, attitudes, wishes, fears and appreciations concerning the natural environment, our cultural environment and any relationships between them. He or she understands ecological problems and is aware of the effects of human beings on the environment. This theory implies that the development of a learner’s senses and emotions is crucial in Environmental Education, since feelings and emotions are features of a life experience which forms the basis of environmental sensitivity. It further implies that environmental awareness should be based on conscious experiences, ideas, beliefs and knowledge. Knowledge in this case does not mean only facts and concepts but also an understanding of phenomena and their relations.
Marcinkowski (1989); Sia, Hungerford and Tomera (1986); Sivek and Hungerford (1990) support Waldmann (1992) in the same study as cited by Jeronen (2002) in his work, “Thoughts of Children and Adults about the Environment and Environmental Education”, by saying that environmental sensitivity is an empathetic view of the environment and issues. It is a view that respects ecological stability and protects the idea that humans must live in harmony with the natural environment.

However, environmental sensitivity can be problematic to environmental teachers because the variables associated with sensitivity may often not be those that are evident in formal education settings. Researchers who have focused on environmental sensitivity agree that environmentally sensitive individuals tend to participate in outdoor experiences such as hiking, hunting and fishing. On the other hand, schools may not afford field trips or residential camp experiences due to lack of funds. However, wherever possible, schools should cooperate with informal organizations to provide outdoor experiences to learners. Learners should be encouraged to take part in outdoor experiences, for example a nature walk or participating in the rehabilitation of a degraded natural area. Such experiences can be both educational and recreational. By so doing, many of the ecological concepts and principles to be taught can be enhanced through outdoor experiences.

Values are also essential when developing environmental awareness and responsibility. According to Fien (1993) the central environmental values are ethical, ecological, biological, aesthetic and theoretical. Ecological values comprise empathy towards other people, species and future generations. They also include respect for the natural and social limits of growth. Ecological values are manifested in changing behaviour whereas biological values are represented by health and quality of living. Aesthetic values are values of beauty and theoretical values are linked with cognition and truth (Fien 1993) as cited by Jeronen (2002).

Joji (1989) reports that values can be influenced to some extent through education, and research has shown that:
• Environmental education is effective in producing positive environmental values – but only if programmes and methods are designed specifically to address this objective;
• Positive environmental attitudes and values, once acquired, appear to be long lasting;
• Development of environmental attitudes and values should ideally be nurtured in the home but should begin at pre-primary stage and be further developed and regularly re-enforced through all stages of formal education.

Various teaching methods have proved to be effective in broadening pupils’ views of reality and enhance their environmental attitudes and values. These include open-ended inquiry, guided discovery, simulations, dramatization and role-play and outdoor education.

From the above citations it is evident that fieldwork should assist learners to develop the ability to perceive and acquire an aesthetic sensitivity to both natural and human living environments and develop a conceptual awareness of how individual and collective actions may influence the relationship between the quality of life and the quality of the environment. In particular, fieldwork should provide the learners with the ability to conceptualize:

• How human cultural activities (religious, economic, political and social) influence the environment from an ecological perspective.
• How individual behaviour impacts on the environment from an ecological perspective.
• The alternative solutions available for solving environmental issues and the ecological and cultural implications of these solutions.
• The roles played by different human values in issues and the need for personal value clarification as an integral part of environmental decision making.
• The need for active responsible citizenship in resolving environmental issues.
2.7 ENVIRONMENTAL EDUCATION FIELDWORK AND THE DEVELOPMENT OF BASIC SKILLS

Outcomes-based Education forms the basis of the curriculum in South Africa. It is an integrative and holistic process which is learner-centred, result orientated, based on beliefs that all individuals can learn and recognize the prior learning experiences. It is dynamic and lifelong, because learning does not start with formal schooling and ends when one finishes schooling. It continues throughout the individual's entire life. This entails that formal, non-formal and informal education, are part of a learning process (Conserva – Magazine for the environment: 1997).

A set of the critical outcomes outlined in the Revised National Curriculum Statement Schools Policy for Grades R-9 envisage learners who are able to:

- Collect, analyse, organize and critically evaluate information;
- Identify and solve problems and make decisions using critical and creative thinking;
- Use science and technology effectively and critically showing responsibility towards the environment and the health of others;
- Work effectively with others as the member of the team, group, organization and community (Department of Education 2002)

One of the important reasons for implementing Environmental Education fieldwork in school is that it provides the learners with basic skills with which to care for the environment. Fieldwork provides practices for some of these skills. It shows the pupils when and how to use these skills. Some of these skills the learners will have developed before doing fieldwork others will be developed while doing fieldwork (Hurry 1989:102). Some of the skills learners will acquire through fieldwork include:

- Recording skills – which teach learners to accurately record information in note form as well as in the form of diagrams, maps and sketches.
• Measuring skills – which teach the learners to take accurate measurements of phenomena such as distances and quantities etc.
• Communication skills – which teaches learners to express their views and ideas about what they see in the environment, arguing clearly about the environmental issues and present information in graphic and oral form.
• Study skills – collecting, analysing, interpreting and evaluating information about environmental issues from a variety of sources.
• Problem-solving – identify causes and consequences of environmental issues; consider and predict consequences (ecological, political, social and economic) of possible courses of action.
• Make decisions to take action for the environment.
• Personal and social skills – work collectively with others in a team during fieldwork.
• Research skills – collecting, classifying and analysing data, for example carrying out an ecological survey and interpreting the results.

Therefore, Environmental Education fieldwork in particular will help learners to make meaning of their immediate environment. The value of environmental teaching, through fieldwork, lies in the fact that it opens the eyes of the learners as well as teachers to immediate surroundings. On the other hand, this will enhance learners’ awareness of, and concern for, environmental issues, and assist them to develop the knowledge, skills, values, and commitment that we need to achieve sustainable development.

2.8 ENVIRONMENTAL EDUCATION FIELDWORK AND EDUCATION FOR ENVIRONMENTAL SUSTAINABILITY

Education for sustainability is a lifelong process that leads to a informed and involved citizenry having creative problem-solving skills, scientific and societal literacy, and commitment to engage in responsible individual and cooperative actions. The actions will help ensure an environmentally sound and economically prosperous future (http://www.gcrio.org/edu-pscd/.chap1.html.).
According to the IUCN, as cited by Neal and Palmer (1994:12) Environmental Education provides a way of transforming man from a destroyer of the environment into a defender of the environment. A process during which values are discovered and concepts are explained in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture and his biophysical surroundings. Environmental Education includes the practice of decision-making and the formulation of a personal code on matters affecting the quality of the environment.

In October 1997, UNESCO, at the Tbilisi Inter-Governmental Conference, adopted this definition of Environmental Education: “Environmental Education is a lifelong, multi-disciplinary approach to teaching, mass communication, community participation or some other activity aimed at the development of a world population that is aware of, and concerned about the environment and has the skills, attitudes and values, motivation and commitment to work collectively towards solutions of current problems and prevention of new ones”.

Definitions cited above, show that active participatory learning within fieldwork encompasses the concept of sustainability offering an exemplary vehicle for developing environmentally literate learners. Carefully thought through and well-planned fieldwork activities can assist learners to develop feelings and emotions and other features of life experiences which form the basis for environmental sensitivity. The inquiry-based and hands-on approaches employed in fieldwork activities, develop the wholeness of observation, attitudes, wishes fears and appreciation to learners, concerning the natural environment, cultural environment and any relationships between them.

Regarding the strategy of participative learning emphasised here, Jordahl (2003), suggests an interesting inquiry-based learning activity, through animal tracking in active participatory learning within fieldwork. Tracking is a process of immersing oneself in the greatest of all – the mystery of life. A single animal track is a gateway into a world of questions and understandings that can motivate a student to direct their own learning about their surroundings.
Through tracking learners initially see just a hint of the animals, and then they have to use all of their critical thinking and researching skills to fill in the rest of the story. Teachers don’t need access to a million acres of wilderness to find a track. Wildlife exists all around us, even in the most urban environments. Finding a heron track next to a puddle in the school playground may get a student to look at his or her neighbourhood in an entirely new way. The process of discovery a teacher undertakes with his/her learners will be even more inspiring if he/she doesn’t have all the answers. In inquiry-based learning the questions are more important than the answers. Once a track has been found, learners take out their journals and write down as many questions as they can think of:

- What bird made this track?
- When was it here?
- How big was it?
- What does it eat? (which may lead to “what plants are growing around here?” “What insects and / or small animals are found here associated with the specific plants?”).
- Why was it in this place?
- Where is it now?
- Where was it going? etc.
(adapted from: http://www.newhorizons.org).

In conclusion, tracking is an engaging tool that can be used in active participatory learning within fieldwork. It is also an art form that engages every part of the brain. By researching one animal in-depth, learners learn about the world around them and how they are interconnected to their surroundings. Active participatory learning activities whereby learners interact directly with their local environment equip them with understanding of ecological problems and awareness of the effects of human beings in the environment. Above all they acquire skills and knowledge to act for a better life which leads to responsible actions. Establishing environmental responsibility means that learners have acquired environmental knowledge, skills, values and attitudes that will guide them to manage and use the natural resources in a sustainable manner.
2.8.1 Environmental Education Fieldwork and The Holistic Model for the Concept “Environment”

Various authors have made holistic representations of the environment. Given below are two examples from South African origin. Figure 1.1 is a well-known representation of the environment by O’Donoghue (1993).

![O’Donoghue’s model for the environment (1993)](image)

**Fig 2.1** O’Donoghue’s model for the environment (1993)

Below, Fig 1.2 represents the Van Rooyen Model (2002). It is interesting to see where these models agree and where they differ and how they feature into fieldwork. Both models acknowledge the holistic view of the environment consisting of different interacting dimensions.

In O’Donoghue’s model the political, social and economic dimensions rest on the bio-physical base. This corresponds to a certain extent with the ‘Van Rooyen Model’ where the bio-physical dimension takes a central position in the conceptualizing of the ‘environment’. Thus, the importance of the bio-physical component of the environment is acknowledged in both models. With regard to the different dimensions that the ‘environment’ consists of, it is clear from the diagrams that the Van Rooyen Model, compared to the
O'Donoghue's model, includes a few more dimensions which are considered by Van Rooyen to be essential components of the environment.

Fig 2.2  The Van Rooyen Model for the environment (2002)
Van Rooyen (2002) has recently argued that in our endeavour to develop a better and more reliable perspective on the environment and the nature of the environmental crisis, we should not lose sight of the fact that the biophysical should remain the central point of focus of our conceptualization. He explained that the biophysical should be our starting point in relation to the political, social, scientific-technological and economic dimensions of the environmental crisis. Van Rooyen warns that any attempts to ignore the biophysical could distort our understanding of the environmental issues and result in a human-centred and biased perspective. The model further illustrates the fact that the meaning of the concept ‘environment’ is constructed from a personal point of view influenced by different contexts. There exists also a dynamic interactive relationship amongst the dimensions of the model. All the above aspects from the Van Rooyen’s model can be achieved if people can be addressed if people can be knowledgeable about the environment, change their negative attitudes and culminate positive values towards the environment.

I strongly believe that the Van Rooyen’s model (2002) has a strong relationship with the development of holistic thinking in learners. This has a direct bearing on active participatory learning within Environmental Education fieldwork. School education is divided, for convenience, into different learning areas. Therefore teachers should not forget that knowledge should be viewed holistically, that is, an all embracing whole. Where possible learners should be taught and encouraged to think of education or knowledge from a holistic approach. This is particularly important in regard to studies of the environment. We live in one environment, with its bio-physical, economic, social, cultural, scientific-technological and political components, and learners should be encouraged to think of their surroundings in this way. As far as fieldwork in the environment is concerned, teachers should look for opportunities that integrate selected information from different learning areas to help create holistic pictures of the environment. This integrated nature of teaching in fieldwork promotes the ideas outlined in OBE. Learners acquire knowledge that is holistic and integrate different learning areas. In this way, the learners understand the universe as a whole.
2.8.2 Environmental Education Fieldwork and Active Learning

This section deals with the top part of the Van Rooyen’s model in figure 1.2. The Van Rooyen Model (2002) suggests the need for a balanced range of teaching methods in different contexts of Environmental Education. The directive interactive method where the teacher shows, instruct and tells within the teaching-learning environment needs to be balanced with more heuristic experiential approaches. Here, greater learner initiative in meaning-making, problem-solving and action taking is supported with methods which enable individual and co-operative efforts to develop action competences.

The Van Rooyen Model (2002) further highlights a strong emphasis on the occurrence of an active participatory teaching-learning approach within fieldwork as a teaching strategy. O’Donoghue and Janse van Rensburg (1995) supports Van Rooyen (2002) in that active learning within fieldwork in the environment is characterized by broader, more participatory, more local and action-centred approaches. Brandes and Ginnis (1986:3) state that in a participatory approach, students are encouraged to participate fully in, and take responsibility for their own learning.

The above implies that active learning is a critical element of fieldwork as a teaching method. Active participatory learning within Environmental Education fieldwork engages the learners in diverse encounters (hands-on), dialogue (discussion) and reflection (thinking) experiences. Fieldwork in particular provides learners with opportunities to experience for real things in the environment. In this way a good deal of knowledge and understanding as well as skills required by the learners could be developed. Fieldwork also provides valuable opportunities to share knowledge in the form of debates or discussion about issues relating to the environment. Information sharing amongst the learners accelerates interaction to construct and apply their knowledge as well as sensitise them to critical intervention for change when appropriate and necessary.
Outcomes-based Education (OBE) is an approach used within the earlier Curriculum 2005 education system and the Revised National Curriculum Statement (NCS). One of its main emphasis is on how learners learn and not primarily on what they learn. In other words, the process of learning becomes just as important as what you learn. This approach is aimed at not only increasing the general knowledge of learners, but also developing their skills, critical thinking, attitudes and understanding (Bhengu: 1997).

OBE came up with integration of similar subjects to form one learning area. An example of this is the case of Geography and History, which have become the Natural Sciences learning area. The idea behind this integration is to help learners to see their education as a whole, not segmented into subjects and without any clear and rigid boarders.

Environmental Education Fieldwork as a teaching method promotes the principle of integrating subjects. When learners are taken for fieldwork, they acquire or gain knowledge from different fields of study. For example, if the geographical importance of particular landscapes is studied, historical and botanic knowledge is acquired in the process. This makes learning more meaningful to learners because of the integration of different fields in one learning experience. This might not have been possible in the classroom. This, therefore, makes fieldwork more relevant within OBE.

OBE is a learner-centred approach and promotes contextualized learning for learners. Learners are expected to take full responsibility for what they learn and are fully involved in the process of learning. For them to participate actively and meaningfully the learning experience must not be abstract, it must be within what they know and think about. These principles of outcomes-based education are in line with fieldwork because in fieldwork learners also are motivated to take part in the learning process. During fieldwork learners become actively involved by observing, recording and drawing conclusions about what they see. Quality fieldwork becomes a true learner-centred
approach. Ideally, the teacher is mainly there to guide and facilitate the process of learning. Much of the information is discovered by learners themselves. The learning experiences presented become contextualized in that learners learn about what is around them. They become well acquainted with the environment they live in and they consequently have respect for it.

The previous education system in South Africa did not cater for life-long learning in the same way. It was to a degree separate from the world of education in that one would learn to pass the examination. The present system is not examination driven and the information acquired in the process of learning is valuable even in life outside the schooling years. It is a life long learning education system. The new education system envisages offering the learners the knowledge that will make them responsible citizens of the country. In linking these principles to fieldwork, it is important to note that fieldwork contribute to life long learning because in most cases learners do not easily forget what has been learned through observation. Through properly organized fieldwork, the learners’ perceptions about the environment are changed. Learners learn to respect and acknowledge the interdependence between man and the environment. This understanding becomes important for the entire life of an individual being.

OBE is sometimes referred to as ‘skill-based education’ because one of its main aims is on the skills to be acquired by learners during the process of learning. The system emphasizes that education must equip learners with skills needed in the world ahead of them. The range of skills to be acquired varies in accordance with the grade in which the learners find themselves.

No matter what the learning area is, learners need to be helped towards their careers. Fieldwork is essential in this regard as it equips learners with observation, writing and recording skills. Research and communication skills are also developed on well-planned fieldwork.
In conclusion, the value of fieldwork in the overall development of a child cannot be overemphasized. The experiences and knowledge gained by fieldwork activities is of direct significance, not only as far as the general education of learners is concerned, but also with regard to their overall personal development. I strongly believe that if teachers could be aware of the theoretical background of fieldwork outlined in this chapter, it will motivate and assist them to effectively implement active learning within fieldwork in OBE.
CHAPTER THREE

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In Chapter one the main research problem was outlined. Extensive literature review was conducted in Chapter two on the essential elements for effective fieldwork and the extent to which these elements figure in active participatory learning within fieldwork as an essential part of Environmental Education was debated.

This chapter explains the methodology used for the collection of data in this study. Determining the level of effective implementation of active participatory learning within fieldwork in outcomes-based education is a crucial focus in this research. This research project further seeks to determine procedures followed by teachers when undertaking fieldwork and also to develop guidelines that teachers can use when undertaking Environmental Education fieldwork as part of Environmental Education.

3.2 QUALITATIVE AND QUANTITATIVE PARADIGMS

Literature on research methodology reveals two main research paradigms, namely qualitative and quantitative approaches to research.

In qualitative research, data is expressed in words as opposed to numbers. Data compiled in qualitative research is usually arranged in themes and categories and evaluated subjectively. This is in contrast to the evaluation through statistics and numerical analysis used in quantitative methods. The use of the qualitative method results in the emphasis being placed on description and discovery in the study compared to verification and hypothesis testing in quantitative methods (Rudestam & Newton, 1992:31). Qualitative research designs are therefore not solely used to test or prove a theory; the theory is more likely to emerge once the data is collected.
Le Compte and Preissle (1993: 8) argue that qualitative research is concerned with the meaning that is the way people make sense of their lives, how they experience it and how they structure their world. Its emphasis is to examine and interpret individuals’ subjectivity, language and meanings and it regards individuals as active participants in giving meaning to their world. Polkinghorne (in Rudestam and Newton 1992:31) further argue that qualitative methods are especially useful in the generation of the interpretation and meaning that people give to the events they experience. According to Merriam (1991), qualitative research is concerned more with theory building than with the testing of it. The researcher approaches the project with a neutral mind and allows the theory to emerge from the analysis of data.

Quantitative methods of research according to Rudestam and Newton (1992) have an epistemological foundation based on logical positivism, which maintains that all knowledge is derived from direct observation and logical inferences based on direct observation. Statistical methods are used for looking at relationships and patterns and expressing these patterns with numbers. In quantitative research the objective is to test and verify a theory, rather than to develop it (Creswell 1994). Rudestam and Newton (1992) further argue that the focus of quantitative research is the study of averages or group effects rather than the study of individual differences. The purpose is therefore to “isolate a variable of interest and manipulate it to observe the impact of the manipulation on a second, or dependent variable” (Rudestam & Newton, 1992).

On the other hand, workers in various areas of educational research, especially the field of educational evaluation, have claimed that there are merits in moving beyond the customary practice of choosing either qualitative or quantitative methods and instead combining qualitative and quantitative methods within the same study as described by Cooks and Reichardt, 1979; Firestone, 1987; Fraser, William and Lake, 1988; Howe, 1988 (as cited in Fraser & Tobin in Fraser & Walberg, 1991:271).
Qualitative-quantitative linkages exist between distinct data types, where qualitative information gained from the open-ended interviews is compared to the numerical data elicited from the questionnaire. Brannen (1992) describes this approach as a multiple research strategy wherein different methods are used in relation to the same object of study. He recognizes that there is a need to use different research strategies and favours the use of different methods in relation to the same object of study.

In this research both the qualitative and quantitative paradigms have been used. This research combines a quantitative analysis of the responses to the questionnaire with a qualitative analysis of themes generated by open-ended focus group interviews.

3.3 DATA COLLECTION METHODS

Although it may not be possible to predict some elements of the procedures in a qualitative study with the same degree of accuracy as in a quantitative study, qualitative research must be able to meet the same criteria for completeness that quantitative studies do. In this study the structured questionnaire as well as semi-structured and open-ended interviews, were used as research methods.

3.3.1 The Questionnaire

According to Fox (in Mahlangu, 1987:79), this is a technique whereby the researcher puts his questions on paper and submits them to the respondents, asking them in turn to write their answers on paper. The questionnaire is efficient and practical and is still widely used in educational research. According to McMillan and Schumacher (1993), the researcher selects a set of questions requesting respondents to answer them, usually in a form that asks the respondents to check and select their perceived responses. In the questionnaire the completion of the form is done without any direct outside influence. If correctly compiled and implemented the questionnaire method tends to be reliable and encourages honesty, as it is anonymous.
The questionnaire contains questions that are aimed at getting specific data on a variety of topics. Sax (1979:244) believes that the questionnaire attempts to elicit the feelings, beliefs, experiences and activities of different respondents. Mlondo as cited by Nzimande (1993:137) adds that a questionnaire seeks information on opinions, attitudes and interest of the respondent in the area being investigated. This is in line with this study as it sought to attitudes and opinions of Environmental Education teacher’s on the understanding of fieldwork.

According to Gillham (2000), some researchers have used a questionnaire as a quick-fix method for research. He further argues that questionnaires have their place as one method, but are of most value when used in tandem with other methods. This multi-method approach to real-life questions is important because one approach is rarely adequate and if the results of different methods converge, then one can have greater confidence in the findings (Gillham, 2000: 1-2).

On the other hand, Wilkinson (2004:42) argues that questionnaires are useful tools for collecting data from a large number of respondents. Researchers use questionnaires to study particular groups, or people in a particular problem area because he / she wants to generalise about them, make comparisons with other groups or use their responses and comparisons for development. Therefore, the researcher is strongly convinced that a questionnaire is an appropriate tool to employ to collect data in this research study.

In designing the questionnaire, considerable attention was given to the following:

- The content of the questionnaire, work order, form of responses (for example a cross ×), multiple responses, as well as the format and presentation of the questionnaire.
- Helmstadter (1970:58) rightly advises that the language in each questionnaire instrument should be adjusted both to the level of the group to which it would be administered and the precision of data needed. This was also taken into account by the researcher.
The choice of the questionnaire for this study was motivated by the following:

- The questionnaire surveys consume less time.
- This method seems to be more efficient, practical and will enable the researcher to reach a relatively large sample within the shortest space of time.
- The questionnaire method provides a considerable measure of objectivity in the responses received from the population sample. It also eliminates the possibility of embarrassment to the respondent. All respondents receive the same set of questions phrased in exactly the same way which allows greater uniformity of the responses and greater reliability.

The questionnaire consisted of two sections (see Appendix C). Section A consisted of items dealing with demographic information like gender, age, educational level, teaching experience and grades that are taught. Section B was composed of 20 questions based on the implementation of fieldwork. It was characterized by both closed questions, and open ended items using Likert scale and rank order items. Open ended type of questions aimed to get the reasons from the respondents and more clarity on some of the issues of fieldwork (see also 3.4.1)

Finally, the questionnaire ended up with items where respondents were requested to rank 12 items in order of importance on the activities done prior, during and after fieldwork. The purpose of these items was to establish the procedures followed by teachers when embarking on fieldwork.

3.3.2 Sampling and Population

Merriam (1998:61) explains that when the researcher wishes to gain insight into a phenomenon he/she should select a sample from which the most can be learned. Behr (1983:11) states that the sample is used when the people within the research area are too numerous, or simply unavailable for the study so a relatively small section has to be selected. For the purpose of this study,
a simple random sampling procedure was used for selecting the respondents. Borg and Gall (1989:219) define a simple random sample as a sample where each individual in the defined population has an equal and independent chance of being selected as a member of the sample.

According to Fowler (1993), the population from which a particular sample size is drawn, has virtually no impact on how well that sample is likely to describe the population. Qualitative researchers usually work with small samples of people situated in their context and studied in-depth (Miles and Huberman, 1994:27). These small samples are known as the accessible population as Wallen and Fraenkel (1991:30) explain that the actual population (target population) to which the researcher would like to generalize, is often not available.

However, within simple random sampling, Henning, et al (2004:71) refers to the accessible population as the “theoretical population” as representing a fraction of spokepersons for the topic of inquiry. In this study, the population refers to teachers and learners from the Senior Primary schools in the district of Nongoma in the Province of KwaZulu-Natal, selected because of its convenience to the researcher. The chosen district houses four Circuits with one hundred and sixty five schools. Thirty Senior Primary schools were randomly selected to form the sample of the study. Two Environmental Teachers and three focus groups of learners from each sample school participated as respondents.

3.4 DATA COLLECTION PROCEDURE

The questionnaires were distributed in the following manner:

- A letter was written to the District Manager for the Education department, where permission was asked to conduct research in Senior Primary schools in the district of Nongoma (see Appendix A).
- Similarly a letter was written to the Principals of schools requesting for assistance to collect research data from teachers and learners in their
schools (see Appendix B). A total of one hundred questionnaires were distributed to schools.

- The distribution of questionnaires to schools was co-ordinated by the researcher, which made it possible for the researcher to negotiate the time frames for the completion and collection of questionnaires with principals of schools. Time frames for the completion and collection of questionnaires differed from school to school due to varying circumstances. Some schools managed it in three days whereas some in five days.

3.4.1 Description of Questionnaire Questions

A motivation and description of the questions which appears in the questionnaire (see Appendix C) follows:

SECTION A

- Question 1 is intended to determine how qualified the respondents of this study were to perform teaching and educating tasks. Educational qualifications play an important role in the productivity level and performance of an individual. It is expected that the higher one is qualified to do a particular job the higher one’s productivity and teaching efficiency will be.

- Questions 2 and 3 are intended to determine the knowledge base of respondents with regard to Environmental Education. The researcher felt it was important to know the level at which respondents understood the subject. It was expected that respondents who had studied Environmental Education would have the desired knowledge and skill to effectively implement active participatory learning within Environmental Education fieldwork in outcomes-based education.

- Question 4 is intended to determine the general teaching experience of the respondents. For the purpose of this study, it became important for the researcher to have a general idea of the teaching experience the
respondents had in Environmental Education. Experience is an important variable to measure the knowledge base the respondents had to effectively implement Environmental Education fieldwork in outcomes-based education.

- Questions 5 and 6 are intended to determine whether active participatory learning within Environmental Education fieldwork in outcomes-based education is implemented at schools in the Nongoma district of education.

- Question 8 and 9 are intended to establish how frequently the learners are exposed to Environmental Education fieldwork during the course of the school year.

- Question 10 is intended to enable the researcher to follow the trend respondents followed when implementing Environmental Education fieldwork.

- Question 11 was formulated to establish whether respondents make their learners aware of the outcomes of Environmental Education fieldwork. Stating clear outcomes is an important exercise in any learning experience. Outcomes help the teacher to focus on what the learning experience intends to achieve. Outcomes are not only important to the teacher but to the learners as well because they are the people who are going to show whether the stated outcomes have been achieved or not. Because Environmental Education fieldwork is also a learning experience, it must have its own outcomes which are supposed to be well communicated to the learners.

- Question 12 intends to establish whether learners are made aware of what they should expect or observe when they were interacting with the phenomena they were to observe in Environmental Education fieldwork.
• Question 13 was formulated to establish from the respondents the role they played during fieldwork.

• Question 14 is intended to find out from the respondents the activities they expected learners to do during Environmental Education fieldwork.

• Question 15 is aimed at establishing the expectations of the respondents from the learners during Environmental Education fieldwork. It is crucial to establish if, and exactly when the learners were made aware of what was expected of them.

• Question 16 attempts to find out the methods used by respondents to assess and evaluate the extent to which the outcomes of Environmental Education fieldwork learning experience were realized.

• Question 17 is aimed at establishing the options employed by respondents in determining the undertaking of Environmental Education fieldwork.

• Questions 7 and 18 are intended to establish the constraints respondents had with the undertaking of Environmental Education fieldwork.

• Question 19 was designed and formulated to determine the respondent’s opinions and perceptions about the undertaking of Environmental Education fieldwork.

• Question 20 was formulated to determine procedures followed by respondents when undertaking Environmental Education fieldwork.

3.4.2 The Interview as a Research Method

Interviewing is also a component of collecting data for this study. According to Merriam (1991) an interview is a conversation with a purpose, where a researcher wants to discover other people’s opinion. Creswell (2002:186-187)
describes an interview as providing “indirect” information filtered through the views of interviewees and are intended to elicit views and opinions from the participants.

Advantages of interviews include the fact that they enable the researcher to seek the same information in several ways, at various stages of the interview, thus providing a check of the validity of the response. The interview technique could also stimulate the respondent to greater insight into his or her own experiences and to explore significant areas not anticipated in the original plan of investigation.

There are, however, various types of interviews for different research purposes. McKerman (1996:129) state that there are three types of interviews, which can be identified in terms of their content and organization, namely structured, semi-structured or unstructured interviews. Schumacher and McMillan (1993:251) also classify interviews into structured, unstructured and semi-structured interviews.

The interviews used in this study were structured, semi-structured or open-ended. The semi-structured interview was particularly chosen because it has the advantage of being reasonably objective while still permitting a more thorough understanding of the respondent’s opinions and the reasons behind them (Borg and Gall, 1989:452). According to Schumacher and McMillan (1993:253) semi-structured interviews do not have choices from which respondent select answers. Rather, the question is phrased to allow the interviewer to respond to situations at hand, to the emerging worldview of the respondent and to new ideas on the topic.

When compiling the interview guide for this study (Appendix D), the researcher took into consideration the questions on the questionnaire (Appendix C) in order not to deviate from addressing the main objectives of the research problem.
3.4.2.1 Interview Data Collection Procedure

In this research the focus group interview was used as a tool to collect data. Denzin and Lincoln (1994: 365) state that the term “focus group” was coined to apply to a situation in which the interviewer asks group members very specific questions about the topic. Kreuger defines a focus group as a “carefully planned discussion designed to obtain perceptions in a defined area of interest in a permissive, non-threatening environment” (1988: 18). This type of interview is an attempt to elicit information on a number of issues, as well as to brainstorm a variety of solutions, and ultimately facilitate group discussion as a tool of data collection, and possibly policy construction. Focus group interviews are used as a form of data collection that employs discussion in a non-standardised form and allows the research to observe the participants.

For the purpose of this study, three cases of focus group interviews were conducted from the selected sample. The interview targeted learners that have been taken to field trips on recent months or during the last quarter of 2004. Three schools were randomly selected from the sample. The researcher interviewed two focus groups of five learners from each school. A total of thirty learners were interviewed. Interviews were conducted in different venues since the interviewees were from different schools. Interview dates and times were confirmed with teachers.

In order to maintain focus and control on the interview discussions, and avoid deviation from the purpose and objectives of the study, the researcher developed some questions as a point of reference. When developing questions for the interview, the researcher considered questions that also formed part of the questionnaire.

3.5 DATA ANALYSIS

All data collected through the above-named method will be qualitatively analysed. To ensure the bracketing and phenomenological reduction of data, the researcher suspended as much as possible his meaning and interpretation of data collected. He strived to enter into the world of each
unique individual who was responding to the questionnaire. The researcher will set out to understand the points made by the respondents from the responses rendered, rather than what he was expecting. The researcher employed an in-depth analysis of questionnaires in order to provide content for specific units of meaning and themes.

Once units of general themes had been noted, they were then reduced to units of meaning relevant to the research question. The researcher's findings were verified by using other researchers to carry out the same procedure in order to delineate significant differences in findings. Thereafter, the researcher embarked on a process of clustering units of relevant meaning. The researcher then determined if any of the units of relevant meaning clustered together. Clusters expressing central theme were determined so as to code collected data according to the main ideas. Thereafter, the researcher wrote up a composite summary of all data collected which would accurately capture the essence of the problem being investigated.

3.6 CONCLUSION

This chapter focused on the research methodology, data collection methods and procedures used in this study. The next chapter deals with analysis of data and findings.
CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

4.1 INTRODUCTION

In this chapter presentation and analysis of data, from the completed questionnaires and interviews will be done. Significant features of respondent’s responses will be highlighted. For the purpose of this study, data is simplified by putting it into categories. This has been done by using frequency distribution and tabulation. Tables have been used to illustrate data and to emphasize the central points as well as areas of differences and similarities.

4.2 PRESENTATION AND ANALYSIS

Leedy (1989: 319) states that the data collected should be “presented completely and may, of course, be organised into charts, tables, graphs, lists of responses to questionnaires, inquiries and statistical summaries”. Data in this study is presented with frequencies and expressing it in percentages. Percentages are given in the table for purposes of easy comparison. The responses were analysed as follows:

4.2.1 Findings of the Questionnaires

Question 1 (See appendix C)
What is your highest qualification?

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>FREQUENCY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard ten</td>
<td>04</td>
<td>4</td>
</tr>
<tr>
<td>Teacher’s Diploma (M+3)</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Further Diploma in Education</td>
<td>01</td>
<td>01</td>
</tr>
<tr>
<td>Primary Teacher’s Certificate (M+2)</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
The data from table 4.2.1.1 reveals that a significant percentage of respondents (seventy percent) had a three-year qualification in teaching. Twelve percent were teachers with a Bachelor’s degree and one percent with a Further Diploma in Education which is also a tertiary qualification. Thirteen percent had a Primary Teacher’s Certificate and four percent had no teaching qualification at all. For a more comprehensive interpretation of the above data, see 5.2. in Chapter 5.

**Question 2: (See appendix C)**
Did you study Environmental Education?

**TABLE 4.2.1.2: Environmental Education as a field of study**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>66</td>
<td>66</td>
</tr>
<tr>
<td>No</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.2.1.2 above shows that sixty-six percent of the respondents studied Environmental Education at Colleges of Education and University level, but thirty-four percent never having done so. A significant number of respondents were suitably qualified to conduct Environmental Education fieldwork at schools in the Nongoma district of Education. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

**Question 3: (See appendix C)**
If you did, where did you last study it?

**TABLE 4.2.1.3 Level at which Environmental Education last studied.**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>At High school</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>At College of Education</td>
<td>56</td>
<td>56</td>
</tr>
<tr>
<td>At the University level</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Never Studied Environmental Education</td>
<td>34</td>
<td>34</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
Table 4.2.1.3 above shows that there were no respondents who studied Environmental Education at high school. Thirty-four percent of the respondents never studied Environmental Education. Ten percent of the respondents last studied Environmental Education at the University level. A large percentage of fifty-six respondents last did Environmental Education at the College of Education level. It could be deduced therefore that the respondents of this study were people who had sufficient knowledge of Environmental Education to teach it at Primary schools. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

Question 4: (See appendix C)
What is your teaching experience?

TABLE 4.2.1.4: Teaching experience

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below one year</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Between 1-5</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Between 5-10</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Between 10-15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Above 15</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

The majority of the respondents had taught for more than five years. Twenty-five percent had taught for less than five years. Fifteen percent had taught for less than five years. Sixty percent of the respondents had teaching experience of more than ten years. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.
Question 5: (See appendix C)
Is fieldwork part of your annual learning programme?

TABLE 4.2.1.5 Environmental Education fieldwork and learning programmes.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>No</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.2.1.5 above depicts the number of respondents who include Environmental Education fieldwork in their annual learning programmes and those who did not. Seventy percent of the respondents include Environmental Education fieldwork in their annual learning programmes. Only twenty-eight percent responded negatively. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

Question 6: (See appendix C)
Do you undertake fieldwork in your learning programmes?

TABLE 4.2.1.6: Undertaking of Environmental Education Fieldwork

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>No</td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

From table 4.2.1.6 given above, it was interesting to note that seventy percent of the respondents claimed that they did undertake Environmental Education fieldwork in their learning programmes and only thirty percent stated that they did not. Therefore, it was interesting to note that seventy percent of the respondents valued the undertaking of Environmental Education fieldwork in their learning programmes. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.
Question 7:
If you do not undertake fieldwork, what are the reasons for not doing it?

This question was only directed to those who responded “No” to question 6 above. From table 4.2.1.6, the frequency of the respondents who stated that they did not undertake Environmental Education fieldwork was thirty. This is the number of respondents to whom this question was directed to.

**TABLE 4.2.1.7: Reasons for not undertaking Environmental Education fieldwork N = 30**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of knowledge and methods on how to conduct Environmental Education fieldwork</td>
<td>20</td>
<td>67</td>
</tr>
<tr>
<td>Lack of financial support from parents</td>
<td>04</td>
<td>13</td>
</tr>
<tr>
<td>Fear of going out of the school with learners</td>
<td>04</td>
<td>13</td>
</tr>
<tr>
<td>There are no activities in learning programmes that require Environmental Education fieldwork</td>
<td>02</td>
<td>07</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>100</td>
</tr>
</tbody>
</table>

From table 4.2.1.7 it is evident that sixty-seven percent of the respondents did not undertake Environmental Education fieldwork because they claimed that they had no knowledge of the methods on how to conduct Environmental Education fieldwork. Some claimed that they haven’t attended any workshops to equip them with knowledge and skills on this aspect active participatory learning within Environmental Education fieldwork. Another reason for not undertaking Environmental Education fieldwork was lack of financial support from the parents and school. One of the respondents in this category stated that places of environmental interest are far away from their school and the parents have no money to pay for the learners to go to these places. Some respondents claimed that they had of going out of the school with learners. Another reason for not undertaking Environmental Education fieldwork mentioned by two respondents was lack of teaching and learning activities in learning programmes that require the undertaking of Environmental Education fieldwork. For a more comprehensive interpretation of the above data, see 5.3 in Chapter 5.
Question 8: (See appendix C)
How often do you undertake fieldwork?

**TABLE 4.2.1.8: Undertaking of Environmental Education fieldwork.**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once a year</td>
<td>42</td>
<td>60</td>
</tr>
<tr>
<td>Twice a year</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Three times a year</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

For table 4.2.1.8 it is clear that most of the respondents undertake Environmental Education fieldwork once a year. Fourteen percent of the respondents undertake Environmental Education fieldwork two or three times a year. Only fourteen percent of the respondents make an effort of undertaking Environmental Education fieldwork three times a year. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

Question 9: (See appendix C)
During which time of the year do you undertake fieldwork?

**TABLE 4.2.1.9: Time of the year when fieldwork is undertaken**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>At the beginning of the year</td>
<td>20</td>
<td>29</td>
</tr>
<tr>
<td>During the middle of the year</td>
<td>24</td>
<td>34</td>
</tr>
<tr>
<td>At the end of the year</td>
<td>22</td>
<td>31</td>
</tr>
<tr>
<td>Throughout the year</td>
<td>04</td>
<td>06</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Table 4.2.1.9 above shows that thirty-four percent of the respondents undertook Environmental Education fieldwork during the middle of the year while thirty-one percent of the respondents undertook Environmental Education fieldwork at the end of the year. Twenty percent of the respondents undertook Environmental Education fieldwork at the beginning of the year. It is interesting to note that four percent of the respondent did not have a fixed time to perform this activity. It is evident that four percent of the respondents
undertook it at any time of the year whenever a need arose. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

**Question 10:** (See appendix C)

When undertaking fieldwork, which method do you use?

**TABLE 4.2.1.10: Methods of Environmental Education fieldwork**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present lesson in class, fieldwork thereafter</td>
<td>45</td>
<td>64</td>
</tr>
<tr>
<td>Fieldwork first, then theoretical lesson in class</td>
<td>08</td>
<td>11</td>
</tr>
<tr>
<td>Present lesson theoretically whilst on field</td>
<td>06</td>
<td>09</td>
</tr>
<tr>
<td>Use a combination of all the above methods depending on the nature of the lesson</td>
<td>11</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>

It is interesting to note that sixty-four percent of the respondents commenced by presenting the lesson theoretically in class before undertaking fieldwork to observe what have been learnt in class. Eleven percent start by doing Environmental Education fieldwork and went back to class to discuss what had been observed. Sixteen percent are guided by the nature of the lesson and therefore, use a combination of all the methods outlined in table above. Nine percent presented the lesson whilst on the field. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

**Question 11:** (See appendix C)

Do you make learners aware of the objectives of fieldwork?

**TABLE 4.2.1.11: Are learners made aware of Environmental Education fieldwork?**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>60</td>
<td>86</td>
</tr>
<tr>
<td>No</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>
From the table above eighty-six percent of the respondents communicated outcomes of Environmental Education fieldwork learning experiences to learners. Only ten percent of the respondents stated that they did not communicate the outcomes to the learners. For a more comprehensive interpretation of the above data, see 5. in Chapter 5.

**Question 12: (See appendix C)**
When do you make learners aware of the objectives?

**TABLE 4.2.1.12: When are learners made aware of the outcomes?**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to Environmental Education fieldwork</td>
<td>43</td>
<td>62</td>
</tr>
<tr>
<td>During fieldwork</td>
<td>18</td>
<td>25</td>
</tr>
<tr>
<td>After fieldwork</td>
<td>09</td>
<td>13</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>

A large number of respondents (sixty-two percent) stated that they made their learners aware of the outcomes prior to undertaking Environmental Education fieldwork. Twenty-five percent of the respondents preferred to tell their learners during fieldwork while thirteen percent preferred to inform the learners about the outcomes after the fieldwork has been conducted. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

**Question 13: (See appendix C)**
What do you do as a teacher during fieldwork?

**TABLE 4.2.1.13: Teacher’s role and responsibilities during Environmental Education fieldwork**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organize learners in groups and give them data collection tasks</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Integrate theory with the natural phenomenon observed</td>
<td>08</td>
<td>11</td>
</tr>
<tr>
<td>Remind learners about the purpose of the trip</td>
<td>08</td>
<td>11</td>
</tr>
<tr>
<td>Facilitate the process and allow learners to explore</td>
<td>40</td>
<td>58</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>
From the table above, fifty-eight percent of the respondents did not dominate the Environmental Education fieldwork learning experiences. Twenty percent of the respondents divided the learners into groups and gave them data collection tasks to do. Eleven percent of the respondents integrated theory with the natural phenomenon observed, whilst another eleven percent reinforced the purpose of the Environmental Education fieldwork learning experience by reminding the learners during fieldwork. For a more interpretation of the above data, see 5.2 in Chapter 5.

**Question 14: (See appendix C)**
What activities do you expect learners to do during fieldwork?

**TABLE 4.2.1.14: Learners activities during Environmental Education fieldwork**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify, observe, analyze, evaluate and make conclusion about the important features of the natural phenomenon</td>
<td>13</td>
<td>19</td>
</tr>
<tr>
<td>Record data</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Individual observation and self-discovery</td>
<td>05</td>
<td>07</td>
</tr>
<tr>
<td>Investigate and find solutions to environmental problems</td>
<td>05</td>
<td>07</td>
</tr>
<tr>
<td>Discuss in groups and ask questions</td>
<td>20</td>
<td>29</td>
</tr>
<tr>
<td>Feel, smell, hear and taste</td>
<td>02</td>
<td>03</td>
</tr>
<tr>
<td>Sports, music and cultural activities</td>
<td>05</td>
<td>07</td>
</tr>
<tr>
<td>Doing projects</td>
<td>08</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>

From table 4.2.1.14 above, twenty-nine percent of the respondents expected learners to participate in group discussions and ask questions from the teacher about the natural phenomenon observed. Ninteen percent of the respondents adopted a more participatory approach whereby the learners were expected to identify, observe, analyze, evaluate and make conclusions about the important features of the phenomenon observed. Seventeen
percent of the respondents expected learners to write down what had been observed.

The table also shows that seven percent of the respondents expected learners to do individual observation and discover certain features of the natural phenomenon on their own. Another seven percent expected learners to do investigations and find solutions to environmental problems. It is interesting to note that respondents in this category opted to integrate Environmental Education fieldwork with activities for environmental action research. Teachers in this category adopted an approach which offers excellent opportunities for meaningful environmental learning. Three percent of the respondents expected learners to use their senses whilst observing the natural phenomenon.

Surprisingly, seven percent of the respondents expected learners to do sports, music and cultural activities during Environmental Education fieldwork learning experience whilst eleven percent expected learners to do projects during an Environmental Education fieldwork learning experience. The project mentioned relates to cleaning the garden, digging weeds and watering the flowers. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

**Question 15: (See appendix C)**
When do you tell your learners what you expect them to do?

**TABLE 4.2.1.15: Learners made aware of expectations for undertaking Environmental Education fieldwork**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prior to Environmental Education fieldwork</td>
<td>42</td>
<td>60</td>
</tr>
<tr>
<td>During Environmental Education fieldwork</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>After Environmental Education fieldwork</td>
<td>08</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>70</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

From the above table it is clear that sixty percent of the respondents made the learners aware of the expectations prior to undertaking the Environmental
Education fieldwork. Twenty-eight percent of the respondents made the learners aware of what was expected of them during fieldwork whilst twelve percent of the respondents told the learners what they were suppose to do after fieldwork has been undertaken. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

Question 16: (See appendix C)
What follow-up methods do you use after fieldwork?

TABLE 4.16: Follow-up activities

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners are given a test</td>
<td>21</td>
<td>30</td>
</tr>
<tr>
<td>Learners are given individual assignments</td>
<td>26</td>
<td>37</td>
</tr>
<tr>
<td>Class discussions based on observation</td>
<td>23</td>
<td>33</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>

From the table above it is clear that respondents used various forms of assessment activities to evaluate the extent to which the outcomes of the Environmental Education fieldwork learning experience were realized by the learners. Thirty-three percent of the respondents used class discussions based on observation of the natural phenomenon made in order to reinforce knowledge gained and skills acquired during the Environmental Education fieldwork experience. Thirty-seven percent gave the learners assignments to do and 30 percent conducted written class tests. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

Question 17: (See appendix C)
Who should take initiative to ensure that learners are engaged in fieldwork?

TABLE 4.2.1.17: Initiative to undertake Environmental education fieldwork

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Principal</td>
<td>06</td>
<td>08</td>
</tr>
<tr>
<td>Head of Department</td>
<td>06</td>
<td>09</td>
</tr>
<tr>
<td>Subject teacher</td>
<td>54</td>
<td>77</td>
</tr>
<tr>
<td>Learners</td>
<td>04</td>
<td>06</td>
</tr>
<tr>
<td>Total</td>
<td>70</td>
<td>100</td>
</tr>
</tbody>
</table>
The above table shows that seventy-seven percent of the respondents felt that it was the responsibility of the subject teacher to initiate and ensure that learners engage in Environmental Education fieldwork. Nine percent claimed that it was the responsibility of the Head of Department whilst eight percent claimed that it was the responsibility of the school principal. Six percent claimed that the initiative to engage learners in Environmental Education fieldwork is a joint venture between teachers and learners. This was noted with interest as respondents further claimed that the involvement of the learners in the initiative to undertake Environmental Education fieldwork encourages them to take full responsibility for their learning. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

**Question 18: (See appendix C)**
What are the problems you think that they are associated with the understanding of fieldwork?

This question was designed and formulated to determine the constraints respondents had with the undertaking of Environmental Education fieldwork. This question was directed to all respondents. The researcher assumed that even those who did not undertake Environmental Education fieldwork (thirty percent; refer to tables 4.2.1.5 and 4.2.1.6) may anticipate some problems to the undertaking of Environmental Education fieldwork. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

**TABLE 4.2.1.18: Constraints to the undertaking of Environmental Education fieldwork**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of knowledge on teachers to conduct Environmental Education fieldwork</td>
<td>39</td>
<td>39</td>
</tr>
<tr>
<td>Lack of funds (financial support from parents)</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>Limited time available to conduct Environmental Education fieldwork</td>
<td>09</td>
<td>09</td>
</tr>
<tr>
<td>Risks of going out of school with learners</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Lack of participation from both teachers and learners</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Places of environmental interest too far from schools to be visited</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
From the table above it is clear that there are problems associated with the undertaking of Environmental Education fieldwork. Thirty-nine percent of the respondents lack knowledge on the undertaking of Environmental Education fieldwork. Sixteen percent of the respondents raised the issue of schools and parent’s inability to pay for the learners to undertake Environmental Education field trips. Nine percent claimed that there isn’t enough time available to conduct Environmental Education fieldwork. Ten percent of the respondents felt that they were scared to go out of the school with learners knowing that they will be held accountable if the learners get involved in an accident. Eleven percent of the respondents felt that places of environmental interest to be visited were too far from their schools since their local environment had too little to offer in terms of conducting Environmental Education fieldwork learning experiences. For a more comprehensive interpretation of the above data, see 5.2 in Chapter 5.

**Question 19: (See appendix C)**

Read each statement and indicate whether you:

Strongly Agree (SA) / Agree (A) / Neutral (N) / Disagree (D) / Strongly Disagree (SD)

1. Environmental Education fieldwork waste time.
2. Environmental Education fieldwork is an extra-curricular activity.
3. Environmental Education fieldwork is in line with outcomes-based education.
4. Environmental Education fieldwork promotes environmental awareness.
5. Environmental Education fieldwork promotes environmental literacy.
6. Environmental Education fieldwork is the only way of putting Environmental Education into practice.
7. Environmental Education fieldwork shows learners how Environmental Education is integrated with other learning areas.
TABLE 4.2.1.19: Respondent’s opinions or perceptions about the undertaking of Environmental Education fieldwork

<table>
<thead>
<tr>
<th>Item number</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Freq</td>
<td>%</td>
<td>Freq</td>
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<tr>
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<td>00</td>
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<td>30</td>
<td>42</td>
<td>42</td>
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</tbody>
</table>

Frequency = 100  Percentage = 100

Statement 1: Environmental Education fieldwork waste time
The table above shows that ninety-four percent of the respondents disagreed with the statement whilst six percent of the respondents decided to remain neutral.

Statement 2: Environmental Education is an extra-curricular activity.
Seventy-two percent of the respondents agreed with the statement. Twenty percent of the respondents disagreed with the statement whilst eight percent of the respondents decided to remain neutral.

Statement 3: Environmental Education fieldwork is in line with outcomes-based education.
Ninety-two percent of the respondents agreed with the statement. Four percent of the respondents were neutral whilst the other four percent of the respondents disagreed with the statement.

Statement 4: Environmental Education fieldwork promotes Environmental awareness.
From the table above it is clear that sixty-four percent of the respondents agreed with the statement. Twenty-one percent remained neutral whilst fifteen percent of the respondents disagreed with the statement.
Statement 5: Environmental Education fieldwork promotes environmental literacy.
Sixty-six percent of the respondents agreed with the statement. Nineteen percent of the respondents disagreed and fifteen percent of the respondents decided to remain neutral.

Statement 6: Environmental Education is the only way of putting Environmental Education into practice.
Sixty-five percent of the respondents agreed with the statement. Six percent of the respondents were neutral to this statement whilst twenty-nine percent disagreed with it.

Statement 7: Environmental Education fieldwork shows learners how Environmental Education is integrated with other learning areas.
Seventy-two percent of the respondents agreed with the statement. Eighteen percent of the respondents disagreed with the statement whilst ten percent of the respondents decided to remain neutral.

Question 20: (See appendix C)
Below is a list of all things the teacher needs to do when undertaking Environmental Education fieldwork. Rank this list in order of importance by putting one on the box next to the item you think comes first, two on the item you think comes the second and so on:

- Deciding on the time that will be allocated for doing fieldwork.
- Thinking about practical problems that could be experienced on the fieldwork.
- Formulating the aims and objectives of Environmental Education fieldwork.
- Giving instructions to learners of what is expected of them with regard to Environmental Education fieldwork.
- Deciding on the exact nature of Environmental Education fieldwork.
- Asking learners to supplement their own observation by other references.
• Writing a letter to parents informing them about Environmental Education fieldwork to be undertaken.
• Allocating marks on the work of the learners.
• Asking learners to use observations to come up with conclusions.
• Asking learners to observe the phenomenon on the environment.

**TABLE 4.2.1.20: Frequency distribution of activities associated with Environmental Education fieldwork (N = 39)**

<table>
<thead>
<tr>
<th>Statement no</th>
<th>R1</th>
<th>R2</th>
<th>R3</th>
<th>R4</th>
<th>R5</th>
<th>R6</th>
<th>R7</th>
<th>R8</th>
<th>R9</th>
<th>R10</th>
<th>R11</th>
<th>R12</th>
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<td>62</td>
<td>12</td>
<td>05</td>
<td>05</td>
<td>05</td>
</tr>
</tbody>
</table>

R = Rank
Percentage = 100

**Statement number 1:** Deciding on the time that will be allocated for doing fieldwork: The majority of the respondents (sixty-one percent) ranked this statement as number four with a widely split of thirty-nine percent to six different rank numbers.

**Statement number 2:** Thinking about practical problems that could be experienced in the field: Twenty-six percent of the respondents ranked this statement as number five on the list of activities to be performed when undertaking Environmental Education fieldwork. The closer ranking to this was eighteen percent which that appeared in number three and four.
Statement number 3: Making necessary arrangements with anyone concerned with Environmental Education fieldwork: From the table above thirty-one percent of the respondents ranked this statement as number three and there was a widely split of sixty-nine percent to five rank numbers with number four receiving twenty-six percent of the respondents.

Statement number 4: Asking learners to produce a report on their findings: The majority of the respondents (sixty-one) ranked this statement as number 11. Other respondents ranked it as number one, eight, seven, nine and twelve.

Statement number 5: Formulating the aims and objectives of Environmental Education fieldwork: Twenty-one percent of the respondents ranked this statement as number two. Eighteen percent of the respondents ranked this statement as number six. The other respondents were split into six numbers.

Statement number 6: Giving instructions to learners with what is expected of them during Environmental Education fieldwork: The majority of the respondents (fifty-three percent) ranked this statement as number seven while other respondents ranked it as number six, five, two, nine, four and ten.

Statement number 7: Deciding on the exact nature of Environmental Education fieldwork: The majority of the respondents (sixty-one percent) ranked this statement as number one on the undertaking of Environmental Education fieldwork. Other respondents ranked it as number two, four, five and nine.

Statement number 8: Asking learners to supplement their observation by using other references: Thirty-six percent ranked this statement as number ten whilst thirty-three percent ranked it as number nine.

Statement number 9: Writing letters to parents informing them about Environmental Education fieldwork to be undertaken: Thirty-four percent of the respondents ranked this statement as number six whilst other respondents were widely split into eight rank numbers.
Statement number 10: Allocating marks on the work of the learners: Sixty-nine percent of the respondents ranked this statement as number twelve which is the last activity when undertaking Environmental Education fieldwork.

Statement number 11: Asking learners to use observations to come up with conclusions: Forty-two percent of the respondents ranked this statement as number nine whilst other respondents ranked it as number ten, eight, seven and eleven.

Statement number 12: Asking learners to observe the phenomenon in the environment: The majority of the respondents ranked this statement as number eight whilst other respondents ranked it as number seven, ten, eleven, twelve and six.

The results of this data for question nineteen are summarized below:

1. Deciding on the exact nature of Environmental Education fieldwork.
2. Formulating the aims of and objectives of Environmental Education fieldwork.
3. Making the necessary arrangements with everyone concerned with Environmental Education fieldwork.
4. Deciding on the time to be allocated for doing Environmental Education fieldwork.
5. Thinking about practical problems that could be experienced.
6. Writing letters to parents informing them about the Environmental Education fieldwork to be undertaken.
7. Giving instructions to learners on what is expected from them.
8. Asking learners to observe phenomenon in the natural environment.
9. Asking learners to use observation to come up with conclusions.
10. Asking learners to supplement observations by using references.
11. Asking learners to produce a report on their findings.
12. Allocating marks on the work of the learners.

For a more detailed interpretation of the above data, see 5.2 in Chapter 5.
In this section the research data collected from respondents was quantitatively analysed. The results were put forward. Each of the sets of response data will in Chapter five be analysed, interpreted and elaborated to indicate how effectively were teachers implementing active learning within Environmental Education in outcomes-based education in the Primary schools in the district of Nongoma.

4.3 THE INTERVIEW REPORT

The views and opinions presented in this section were the subjective experience of relevant respondents that were relevant to this study. Therefore, their experience, feelings, attitudes and views were of particular importance in evaluating whether active learning within Environmental Education fieldwork in outcomes-based education is effectively implemented in the Primary schools at the district of Nongoma.

This section then presents the respondent’s responses to the interview questions (see Annexure D) during the interview in the form of a report.

4.3.1 INTERVIEW WITH PRIMARY SCHOOL TEACHERS AT NONGOMA DISTRICT

4.3.1.1

“During the last quarter of 2004, your class undertook an Environmental Education fieldwork learning experience to uShaka Marine World. What was the purpose of undertaking this activity?”

In response to this question, the majority of the respondents stated that the main objective for undertaking Environmental Education fieldwork learning experience was to assist the learners to acquire more knowledge on the themes taught and learnt in different learning areas in the classroom. Some of the respondents stated that their local environment does not have much to offer with respect to different aspect of the learning areas taught in the classroom because of its rural nature. (refer to Table 4.4.1.a ). Therefore, they
regarded the undertaking of Environmental Education fieldwork as one aspect of teaching and learning that could afford the learners opportunities to explore the places of environmental interest.

4.3.1.2
“Did you tell the learners the objectives and or aims of undertaking the Environmental Education fieldwork and when were they made aware of the objectives of this activity?”

In response to the second question, all the respondents stated that they made the learners aware of the objectives of the Environmental Education fieldwork learning experience undertaken. The objectives of the undertaken Environmental Education fieldwork learning experience were communicated to the learners prior to the undertaking of the Environmental Education learning experience (see also Table 4.2.1.12).

4.3.1.3
“When did you make the learners of the objectives of the Environmental Education fieldwork undertaken?”

In response to this question, the respondents stated that the objectives were communicated to the learners before the Environmental Education fieldwork learning experience was undertaken. “We discussed it almost twice every week before undertaking it”. (Refer also to Tables 4.2.1.12 and 4.2.1.15)

4.3.1.4
“What procedures did you follow in preparing for the undertaking of Environmental Education fieldwork?”

In response to the third question, the responses of the respondents differed widely with respect to procedures followed in planning for the undertaken Environmental Education fieldwork learning experience. Some of the respondents conducted initial discussions with the learners in their respective classes in determining the places of environmental value worth visiting. Having agreed with the learners of the names of the places worth visiting, the
proposals were then taken up with the management of the school for permission for an educational visit.

On the other hand, in some schools initial discussions were entertained at the general staff meetings. The learners were informed after the decision had been made by the management of the school. Some of the respondents wrote letters to parents informing them about the undertaking of the Environmental Education fieldwork learning experience whereas the majority of the respondents informed the parents through the learners. All the information regarding the Environmental Education fieldwork undertaken was communicated verbally to the parents (refer to Table 4.4.1.b).

4.3.1.5
“What activities did you prepare for the Environmental Education fieldwork learning experience recently undertaken by your class?”

In response to the fourth question, the respondents mentioned a number of activities they engaged in, towards preparing for the Environmental Education fieldwork learning experience undertaken. The majority of the respondents wrote letters to the management of environmental places or centres asking for permission to bring the learners for educational purposes. Very few respondents requested detailed information such as maps and activities which could be of educational value from the places that were visited. Some of the respondents drew up the plan for the learners’ safety whereas the majority never drew-up such plans. The learners’ safety plans covered the following precautionary measures:

- Learners were strongly advised to stay away from strangers
- Learners were to be in groups at all the times
- Learners were always to stay in school uniform
- Learners were not allowed to visit their relatives

On the other hand the majority of the respondents did not compile the safety plans for the learners (refer to Table 4.4.1b).
4.3.1.6
"What did you do as a teacher the Environmental Education fieldwork?"

In response to the fifth question, the majority of the respondents stated that they acted as facilitators and mediators of the knowledge during the Environmental Education fieldwork learning experience undertaken. Others stated that they were supervising and monitoring the learners not to do things that will harm them whilst the tour guides led the activities. Some stated that they were observing what the learners were doing and gave guidance where necessary. Some played a passive role and allowed the learners to explore the natural phenomenon observed (refer to Tables 4.4.1.d and 4.4.3.d).

4.3.1.7
“What activities did you expect the learners to do during the Environmental Education fieldwork learning experience undertaken?”

In response to the sixth question, the majority of the respondents expected the learners to work in groups and to ask questions from the facilitators of the process. Others expected the learners to listen to what the tour guides were explaining to them. Question 6.1 was a follow-up question (refer to appendix D) was asked from the respondents to establish exactly what the learners did during the Environmental Education fieldwork learning experience undertaken. All the respondents responded by stating that they never compiled nor provided worksheets to the learners to work on during the Environmental Education fieldwork learning experience undertaken. One respondent said: “Looking at the nature of the place visited and taking into account the excitement that would be there, there wouldn’t be time for the learners to write. I thought that the learning process would actually unfold on its own”. The majority of the teachers were having note pads wherein they wrote some information to use in their classes after the Environmental Education fieldwork learning experience.
4.3.1.8
“Which skills did the learners apply whilst observing the natural phenomenon during the recent Environmental Education fieldwork learning experience undertaken?”

In response to the seventh question, the learners applied the following skills whilst observing the natural phenomenon: identification, observation, interpretation and analysis skills. When asked how these elements figured in the Environmental Education fieldwork learning experience undertaken, one respondent stated that the learners were observing and interpreting the nature of the animals. He heard statements like: “Surely if this animal lives here, that is why it has a light or dark skin. It is a camouflage”. On the other hand the majority of the respondents stated that the learners were asking questions.

4.3.1.9
“On return from the Environmental Education fieldwork learning experience, what follow-up activities did you do?”

In response to the eighth question, the respondents stated that they conducted class discussion as a follow-up activity after the Environmental Education fieldwork learning experience undertaken. Discussions were based on observation made during the activity undertaken. There was no assessment in the form of a written test or assignment since they were heading towards the year-ending examinations (refer to Table 4.4.1.e)

4.3.1.10
“In your opinion, did the recently undertaken Environmental Education fieldwork learning experience created any awareness of the environment in the learners?”

In response to the ninth question, the majority of the respondents stated that the Environmental Education fieldwork learning experience undertaken did create awareness of the environment to the learners. This was evidenced in learners’ courage to watch the National Geographic programme featured on SABC3 every Sunday afternoon at 18h00. In some other schools the
respondents stated that the impact was evidenced on the issues of litter but it was just for a short time (refer to Table 4.4.1.f)

4.3.2 INTERVIEWS WITH PRIMARY SCHOOL LEARNERS AT NONGOMA DISTRICT

4.3.2.1
All the learners that were interviewed undertook the Environmental Education fieldwork learning experience during the last quarter of 2004. Places visited varied from uShaka Marine World, the Durban International Airport, the Durban harbour, uKhozi FM Radio Station and the Durban beach site, all in the City of eThekwini.

4.3.2.2
When asked whether their parents were informed about the undertaking of Environmental Education fieldwork learning experience, their responses differed widely. In the majority of the schools parents were informed verbally. Some learners stated that teachers instructed them to convince their parents so that they could allow them to participate in the Environmental Education fieldwork undertaken. Very few learners stated that their teachers wrote letters to their parents informing them the undertaking of the Environmental Education fieldwork learning experience. With regard to the parent consent letters, none were issued to parents to sign according to the learners interviewed (refer to Tables 4.3.2.b. and 4.3.2.b).

4.3.2.3
According to learners who were interviewed, the objectives of the Environmental Education fieldwork learning experience recently undertaken were communicated to them prior to undertaking the activity. Learners who went to uShaka Marine World wanted to see the sea creatures such as fish, the dolphins and the Sharks. They also wanted to see the sea and have fun. Those who visited the harbour and the Durban International Airport intended learning about different forms of transport. They also wanted to go to the sea and have fun (refer to table 4.4.2.a).
4.3.2.4
When asked about their involvement during the planning phase, responses received differed widely. Very few learners were involved in the initial discussions. Those who participated during the initial discussions were engaged in the preparation and planning till the last day of the Environmental Education fieldwork learning experience undertaken. They also had the opportunity to look into the maps and information pamphlets about the places they had to visit. They engaged with their teachers in deciding the relevant site to visit at the chosen centres of environmental interest. The majority were simply told by their teachers that they were going to undertake this activity.

4.3.2.5
At these centres, the teaching and learning activities were led by the tour guides. When asked whether they were given worksheets to work on, they responded by stating that they were not given worksheet to work on. It was the tour guides who were telling them about the things they saw. Some of the learners stated that their Environmental Education fieldwork was exciting. When asked what was exciting, this is how they responded: “Seeing different sea creatures, their lifestyle and how they live, how they caught the Sharks and that we saw it for ourselves because we use to them on books and television”.

4.3.2.6
When asked what their teachers were doing whilst the tour guides were leading the activities, they stated that their teachers were always with them. “They only intervened in the discussions when ever there was an argument and uncertainties amongst ourselves”. Learners also stated that the teachers were asking questions on their behalf because they were afraid to ask questions. Other learners stated that teachers were having note pads writing the information conveyed by the tour guides.

4.3.2.7
When asked what follow-up activities did they engage in after the Environmental Education fieldwork learning experience undertaken, they all responded by stating that their teachers conducted class discussions based
on the observation made during the Environmental Education fieldwork undertaken and the fun they had.

4.3.2.8
When asked whether the Environmental Education fieldwork recently undertaken created environmental awareness in them, learners from all schools interviewed stated that the activity did create awareness of the environment in them. Here is what some of the learners had to say: “Yes, because we learnt a lot about the environment. The environment is very much interesting. We want to explore more about the environment. It is exciting to get away from home, from the things you see everyday”.

4.4. DATA ANALYSIS

All data collected during the interview process was analysed. The process of analyzing raw data is to process it into clearly legible form that can be understood by the reader. The process involves categorizing and patterning the coding of the transcribed data (Strauss and Corbin 1990). Pattern coding assisted in the identification and classification of similar data according to patterns. McMillan and Schumacher (1993:492) indicate that categories represent the meaning of a similar topic. The categories are formed according to interview units from each group of respondents, that is, each type of the interviewed group will be categorized separately.

4.4.1 Teachers’ Views and Opinions on the Environmental Education Fieldwork Undertaken.

Listed below are teachers’ views and opinions on the objectives of Environmental Education fieldwork undertaken.
### TABLE 4.4.1(a): CATEGORIZING INTERVIEW DATA.

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purpose of undertaking Environmental Education fieldwork.</td>
<td>1. Assist learners to acquire knowledge.</td>
</tr>
<tr>
<td></td>
<td>2. Local Environmental doesn’t have much to offer with respect to learning areas.</td>
</tr>
<tr>
<td></td>
<td>3. Clarity on learners’ questions.</td>
</tr>
<tr>
<td></td>
<td>4. Exposing learners to practical issues relating to theory learnt in class.</td>
</tr>
<tr>
<td></td>
<td>5. Integrate theory with the phenomenon to be Observed.</td>
</tr>
</tbody>
</table>

Listed below are teacher’s views and opinions on procedures followed during Environmental Education fieldwork undertaken.

### TABLE 4.4.1(b): CATEGORIZING OF INTERVIEW DATA

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation for the Environmental Education fieldwork undertaken.</td>
<td>1. Determining places of environmental interest with learners worth visiting.</td>
</tr>
<tr>
<td></td>
<td>2. Meeting with management of the school to decide on places to visit.</td>
</tr>
<tr>
<td></td>
<td>3. Request for permission from the school management to undertake Environmental Education fieldwork.</td>
</tr>
<tr>
<td></td>
<td>4. Letter to places worth visiting requesting for permission to bring learners and information about the site to be visited.</td>
</tr>
<tr>
<td></td>
<td>5. Learners made aware about the aims of the Environmental Education fieldwork to be undertaken.</td>
</tr>
<tr>
<td></td>
<td>6. Some schools drew-up learners Safety plans and some did not.</td>
</tr>
<tr>
<td></td>
<td>7. Some schools informed parents about the trip in writing and others informed parents verbally.</td>
</tr>
<tr>
<td></td>
<td>8. Fundraising.</td>
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</table>
Listed below are teacher’s views and opinions about the learners’ activities during the Environmental Education fieldwork undertaken.

**TABLE 4.4.1 (c): CATEGORIZING OF INTERVIEW DATA**

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>UNITS</th>
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<tbody>
<tr>
<td>Learners’ activities during</td>
<td>1. Identification of the phenomenon observed.</td>
</tr>
<tr>
<td>Environmental Education fieldwork</td>
<td>2. Observation and interpretation of the natural phenomenon.</td>
</tr>
<tr>
<td></td>
<td>3. Asking question.</td>
</tr>
<tr>
<td></td>
<td>4. Listening to talks conducted by tour guides as facilitators.</td>
</tr>
<tr>
<td></td>
<td>5. Discussed and debated issues.</td>
</tr>
</tbody>
</table>

Listed below are teacher’s opinions on their responsibilities during the undertaken Environmental Education fieldwork.

**TABLE 4.4.1 (d): CATEGORIZING OF INTERVIEW DATA**

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher’s roles during</td>
<td>1. Supervising and monitoring the learners.</td>
</tr>
<tr>
<td>the Environmental Education fieldwork undertaken</td>
<td>2. Observing what the learners were doing.</td>
</tr>
<tr>
<td></td>
<td>3. Gave guidance where necessary.</td>
</tr>
<tr>
<td></td>
<td>4. Played a passive role and allowed learners to explore.</td>
</tr>
<tr>
<td></td>
<td>5. Mediated knowledge.</td>
</tr>
</tbody>
</table>

Listed below are teacher’s opinions about follow-up activities undertaken after the Environmental Education fieldwork undertaken.
### TABLE 4.4.1 (e): CATEGORIZING OF INTERVIEW DATA

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>UNITS</th>
</tr>
</thead>
</table>
| Follow-up activities on the Environmental Education fieldwork undertaken. | 1. Class discussions on the phenomenon observed.  
2. Discussion on the pros and cons of the Environmental Education fieldwork undertaken.  
3. Revision for examination. |

Listed below are the teacher's views and opinions on the creation of environmental awareness abilities in learners.

### TABLE 4.4.1 (f): CATEGORIZING OF INTERVIEW DATA

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>UNITS</th>
</tr>
</thead>
</table>
| Environmental awareness creation. | 1. Awareness on issues of litter.  
2. Courage to explore more about the environment.  
3. Encouraged team work amongst the learners.  
4. Improved communication about environmental issues.  
5. Watch environmental awareness TV programmes and class discussions. |

### 4.4.2 Learners’ Views and Opinions on the Environmental Education Fieldwork Undertaken

Listed below are the views and opinions of the learners on the objectives of the Environmental Education fieldwork undertaken.
### TABLE 4.4.2 (a): CATEGORIZING OF INTERVIEW DATA

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>UNITS</th>
</tr>
</thead>
</table>
| Purpose of Environmental Education fieldwork undertaken. | 1. To learn about different forms of transport.  
2. To know places.  
3. To see the sea and have fun.  
4. To link what has been learnt in class with learning areas.  
5. To learn about sea animals. |

Learners’ views and opinions on the procedures followed in the Environmental Education fieldwork undertaken.

### TABLE 4.3.2 (b): CATEGORIZING OF INTERVIEW DATA

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>UNITS</th>
</tr>
</thead>
</table>
| Preparation for the Environmental Education fieldwork undertaken. | 1. Undertaking of Environmental Education fieldwork discussed every two days in a week in class.  
2. Letters to parents.  
3. Parents informed verbally.  
4. Parent’s consent letters not signed.  
5. Teachers asked learners to convince parents to allow them to undertake the Environmental Education fieldwork.  
6. Learners made aware of the objectives to undertaking Environmental Education fieldwork. |

Learners’ views and opinions on activities engaged in during the Environmental Education fieldwork undertaken.
### TABLE 4.4.2 (c): CATEGORIZING OF INTERVIEW DATA

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learners’ activities on site.</td>
<td>1. Listened to talks by tour guides.</td>
</tr>
<tr>
<td></td>
<td>2. Observed sea animals.</td>
</tr>
<tr>
<td></td>
<td>3. Talked to the shop managers about the behaviour and conduct of managers.</td>
</tr>
<tr>
<td></td>
<td>4. Watched the radio announcer conducting the radio programme.</td>
</tr>
<tr>
<td></td>
<td>5. Asking questions from tour guides.</td>
</tr>
<tr>
<td></td>
<td>6. Had fun and played water games.</td>
</tr>
</tbody>
</table>

Learner’ views and opinions about teacher’s roles during the undertaken Environmental Education fieldwork

### TABLE 4.4.3 (d): CATEGORIZING OF INTERVIEW DATA

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher’s roles during the Environmental Education fieldwork undertaken.</td>
<td>1. Added a few points on what was said by the tour guides.</td>
</tr>
<tr>
<td></td>
<td>2. Asked questions on our behalf.</td>
</tr>
<tr>
<td></td>
<td>3. Participated in the discussions.</td>
</tr>
</tbody>
</table>

Learners’ views and opinions on follow-up activities of the Environmental Education fieldwork undertaken

### TABLE 4.4.3 (e): CATEGORIZING OF INTERVIEW DATA

<table>
<thead>
<tr>
<th>CATEGORIES</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Follow-up activities.</td>
<td>1. Class discussions on the phenomenon observed.</td>
</tr>
<tr>
<td></td>
<td>2. Discussions on the fun we had during the Environmental Education fieldwork undertaken.</td>
</tr>
</tbody>
</table>
Learners' views and opinions on environmental awareness creation

**TABLE 4.4.3 (f): CATEGORIZING OF INTERVIEW DATA**

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental awareness creation.</td>
<td>1. Told other learners not to litter at school.</td>
</tr>
<tr>
<td></td>
<td>2. Feelings to explore more about the environment.</td>
</tr>
<tr>
<td></td>
<td>3. Learnt a lot about the environment.</td>
</tr>
<tr>
<td></td>
<td>4. Environment has a lot to offer in terms of learning that we didn't know.</td>
</tr>
</tbody>
</table>

**4.5 CONSOLIDATION OF INTERVIEW DATA**

4.5.1 The first category which emerged from the analysis process is the need to state clear objectives for the undertaking of Environmental Education fieldwork. This means that in the planning phase, teachers should first decide what changes they want to bring about as a result of the environmental learning experience. Stating clear objectives, determines learners' activities. Learners should be able to focus on the learning content in the objectives. Viewed in this context it is clear that stating clear objectives of Environmental Education fieldwork plays a crucial role in the success of the Environmental Education learning experience.

4.5.2 The second category reveals the need for teachers to involve everyone concerned with the undertaking of the Environmental Education fieldwork. Meaningful involvement of parents, management staff and learners could only be achieved by adhering to procedures for the undertaking of Environmental Education fieldwork.

4.5.3 The third category reveals the need to equip teachers with the necessary knowledge and skills to develop active participatory learning activities within Environmental Education fieldwork learning experiences. Environmental Education fieldwork as a learning process should yield
outcomes that are measurable. Therefore, the impact that the Environmental Education fieldwork learning experience have had to learners should be measurable.

4.5.4 Environmental Education fieldwork learning experience with properly planned learners’ activities should help them to acquire certain skills like analysis, observation, recording and measuring and interpreting skills. This depends entirely on the nature of the roles learners are given to play during the Environmental Education learning experience. Therefore, the findings of this interview reveal that there was no detailed preparation for the Environmental Education fieldwork undertaken. This was evidenced by the unavailability of worksheets for learners to work on during the activity on site.

4.5.5 The fourth category reveals the need to assist the teachers to play a meaningful role in implementing active participatory learning within fieldwork in Environmental Education.

4.5.6 The fifth category revealed that there was not much difference between the follow-up activities used by teachers. However, this may take many forms depending on the age category and ability of the learners involved the purpose of the learning experience and the complexity of the Environmental Education fieldwork itself.

4.5.7 The sixth category highlighted the need to implement Environmental Education learning experiences that would create environmental awareness in learners themselves. The activities of the Environmental Education fieldwork learning experience should assist the learners to develop responsible behaviour and the desired environmental values and attitudes towards the environment.

4.6 CONCLUSION

In this chapter the data was quantitatively and qualitatively analyzed. The data provided in this chapter was a preparation for the discussion of the findings, following in Chapter 5.
CHAPTER FIVE

FINDINGS AND RECOMMENDATIONS

5.1 INTRODUCTION

The data presented in the previous chapter provided a framework for the interpretations concerning the undertaking of fieldwork in Environmental Education. Therefore the discussion in this chapter is closely related to the research objectives and the pertinent questions this investigation set out to answer. The problem that this study aimed to investigate as stated in Chapter One was to investigate how effectively active learning within fieldwork in Environmental Education is implemented in primary schools (see 1.2.2 in Chapter One).

The subsidiary questions of this study were guidelines formulated to make it possible for the main research objectives to be achieved. They were meant to clarify the main problem under investigation and are therefore regarded in this study as research objectives (see 1.3 in Chapter One).

5.2 DISCUSSION OF THE FINDINGS.

5.2.1 The knowledge base of teachers regarding fieldwork in Environmental Education

The findings of the study revealed that seventy percent of the respondents had a three year teaching qualification which is the minimum requirement for a person to qualify as a teacher. Twelve percent had a four year teaching qualification. One percent had a Further Diploma obtained either from the University or College of education. Four percent of the teachers had no teaching qualifications (see question 1 and Table 4.2.1.1). Therefore the respondents were suitably qualified to teach. These results immediately rule out lack of knowledge and skills as an excuse for failure to undertake Environmental Education fieldwork.
Although some teachers might not have studied Environmental Education as such, their tertiary qualification would have made them familiar with fieldwork as a teaching and learning strategy. On the other hand a significant number of the respondents (sixty-six percent) have studied Environmental Education and Thirty-four percent has never studied Environmental Education. Fifty-six percent have studied Environmental Education at Colleges of Education whilst ten percent studied Environmental Education at the University level (see question 2 and 3 in Appendix C and Tables 4.2.1.2 and 4.2.1.3). It is at Colleges of Education and Universities where Student Teachers are exposed to different sources of information and current trends of active learning within fieldwork in Environmental Education.

It could therefore be deduced that the respondents in this study had sufficient knowledge and skills to teach Environmental Education fieldwork. Therefore the respondents in this study were supposed to be well informed and experts in the implementation of active participatory learning within fieldwork in Environmental Education.

The majority of the respondents in this study had taught for a period of between five and ten years (see question 4 and Table 4.2.1.4). This could suggest that the respondents of this study had gained enough confidence to apply challenging teaching methods. Therefore the respondents possessed sufficient experience to conduct fieldwork. Therefore, with the experience they had, they should have been familiar and well acquainted with the best methods of implementing active participatory learning within fieldwork in Environmental Education in the primary schools.

5.2.2 Essential teaching-learning elements for effective active learning within fieldwork in Environmental Education:

It was also interesting to note that the respondents of this study valued the undertaking of Environmental Education fieldwork by in co-operating and implementing it their learning programmes (refer to table 4.2.1.5). This then indicates that the value of active learning within fieldwork in Environmental
Education that teachers upheld could not be denied. It also shows the willingness of teachers to undertake Environmental Education fieldwork.

The study further revealed that the majority of the respondents undertook Environmental Education fieldwork once a year. Some undertook it twice a year whilst others made an effort to do it more than two times a year (see question 8 in Appendix C and Table 4.2.1.8). The study further revealed that Thirty-four percent of the respondents undertook fieldwork during the middle of the year. Thirty-one percent undertook fieldwork at the end of the year. Twenty-nine percent undertook it at the beginning of the year. (see question 9 and Table 4.2.1.9).

From the above finding it could be deduced that teachers did not do justice by undertaking Environmental Education fieldwork once or twice a year. If they are able to use other teaching and learning strategies interchangeably, what then stops them from doing Environmental Education fieldwork after completing each theme in their learning areas. The researcher is aware that time allocated to each learning area should be taken into consideration. Therefore it is for this reason that planning of fieldwork in Environmental Education with other members of the teaching staff becomes necessary.

It was further interesting to note that six percent of the respondents undertook fieldwork throughout the year (see Table 4.2.1.9). Therefore, it could be argued that starting with fieldwork at the beginning of the year and continue with it throughout the year may succeed in implementing active learning within fieldwork in Environmental Education. The frequency between teachers who undertook Environmental Education fieldwork during the middle of the year and those who undertook it at the end of the year differed by three percent which means that the majority undertook Environmental Education fieldwork during the middle of the year. This then defeats the researcher’s assumption that the teachers undertook Environmental Education fieldwork at the end of the year with no educational intentions.
5.2.3 Objectives of fieldwork undertaken.

It was interesting to note that eighty-six percent of the respondents made the learners aware of the objectives of undertaking fieldwork. It was surprising that fourteen percent of the respondents stated that they did not communicate fieldwork objectives to the learners. These could be respondents who did not undertake fieldwork at all in their learning programmes or had no knowledge on how to undertake it. Sixty-two percent of the respondents communicated objectives of fieldwork to learners prior to undertaking it. Twenty-five percent communicated objectives to learners during fieldwork. (see question 11 and 12 in Appendix C and Tables 4.2.1.11; 4.2.1.12 and 4.3.1.2)

Emerging from the analysis process of the interview data was the irrelevancy of objectives formulated by respondents of this study for fieldwork undertaken (see Tables 4.4.1.a; 4.4.2.a and 4.5.1). This therefore suggests the need for teachers to state clear objectives for the undertaking of Environmental Education fieldwork. This means that in the planning phase, teachers should first decide what changes they want to bring about as a result of the forthcoming environmental learning experience. Stating clear objectives helps to determine meaningful learning activities. Learners should be able to focus on the learning content in the objectives. Viewed in this context, it suggests that stating clear objectives play a critical role in the effective implementation of active learning within fieldwork in Environmental Education.

5.2.4 Constraints in the undertaking of fieldwork in Environmental Education:

There were teachers who for one reason or the other did not include and undertake Environmental Education fieldwork in their learning programmes (refer to tables: 4.2.1.5 and 4.2.1.6). From table 4.2.1.7 it was evident that a significant number (sixty-seven percent) of the respondents claimed that they did not undertake Environmental Education fieldwork because they had no knowledge of the methods on how to conduct Environmental Education fieldwork. Some claimed that, they haven’t attended workshops to equip them
with knowledge and skills on the undertaking of Environmental Education fieldwork.

One of the respondents in this category stated that places of environmental interest are far from schools to visit. The researcher disputes the reasons given above because learners don’t necessarily have to travel long distances for this purpose, but instead, they could use school grounds and the local environment in the vicinity of their schools for purposes of implementing active learning within fieldwork in Environmental Education. Using the local environment could benefit learners in many ways. It provides excellent opportunities for meaningful learning in the sense the phenomena dealt with will be familiar to learners because they encounter it daily in their lives. It also assists learners to understand the local environmental issues and take action to solve them.

One of the respondents raised the issue of the lack of funds to support the undertaking of Environmental Education fieldwork (see Table 4.2.1.18). It is true that funds could hinder the undertaking of Environmental Education fieldwork particularly if the area worth visiting for this purpose is far from school. The researcher argues that teachers who are dedicated to implementing Environmental Education fieldwork as a teaching learning strategy cannot complain about the lack of funds because there is a lot more learners can learnt in their local environment. It was surprising that two teachers mentioned the lack of activities that requires Environmental Education fieldwork in the learning areas. Therefore these must have been teachers who did not undertake Environmental Education fieldwork.

5.2.5 Learners’ activities on site

The findings of this study further reveal that there was no detailed preparation for the Environmental Education fieldwork undertaken (see Table 4.2.1.14; 4.4.1(b) and 4.3.1.6). This was evidenced by the unavailability of worksheets for learners to work on during the activities on site (see 4.3.1.6 and 4.3.2.5). There were also no differences in the follow-up activities used by teachers. The majority of the teachers opted for class discussions based on the natural
phenomenon observed (see 4.4.1(e):4.4.3(e) and 4.3.1.8). The researcher argues that this then defeats the finding in 5.2.1 that teachers were knowledgeable about the undertaking of fieldwork in Environmental Education because learners’ activities may take many forms depending on amongst other things, the age category and ability of the learners involved, the purpose of the environmental learning experience, and the complexity of fieldwork learning experience itself. It is worth mentioning that some of the teachers were beginning to adopt a more participatory approach by allowing the learners to discuss the observation findings in class.

5.2.6 Procedures followed by teachers when undertaking fieldwork in Environmental Education.

The respondents had a positive attitude about the undertaking of Environmental Education fieldwork. In responding to the questionnaires the respondents displayed a good understanding of the theoretical background about Environmental Education fieldwork (refer to table 4.2.1.19). With the ranking of the activities associated with the undertaking of Environmental Education fieldwork the findings of the study revealed that the respondents knew the procedures to be followed when undertaking Environmental Education fieldwork. (refer to Table 4.2.1.20).

However, contrary to the above were the findings from the interviews which revealed that procedures followed by teachers when implementing Environmental Education fieldwork differed widely (refer to 4.3.1.3). Some of the teachers had initial discussions with learners in deciding upon areas to be visited whereas others did not involve the learners. Even the way in which parents were informed about the undertaking of the Environmental Education fieldwork differed also. Some schools wrote letters to parents and some were told verbally by the learners. In some schools teachers asked learners to convince their parents to allow them to participate in the Environmental Education fieldwork undertaken, a clear sign of poor communication between the schools and parents. This was evidenced by the fact that there was no consistency in the procedures followed (refer to Tables 4.4.1.b. and 4.4.3.b). This, therefore, confirm that teachers had insufficient knowledge of the
procedures to be followed when implementing Environmental Education fieldwork.

Environmental Education fieldwork undertaken had a positive impact in creating environmental awareness in learners. It raised awareness around the issues of litter although teachers claimed that it just for a short time. Otherwise they have to keep on reminding the learners not to litter on the school grounds. The learners and teachers at Nongoma primary school claimed that the undertaken Environmental Education fieldwork learning experience undertaken raised the feelings to explore more about the environment in the learners. Learners had developed the interest of watching SABC TV environmental awareness programmes. Issues captured from these programmes are taken up in class for discussions. This shows that the Environmental Education fieldwork undertaken had a positive impact on the learners’ affective behaviour.

5.2 SUMMARY OF THE FINDINGS

The main findings of the study were as follows:

- The major finding of this study was that teachers were not knowledgeable about the implementation of active learning within Environmental Education fieldwork. Problems identified as a hindrance to the undertaking of Environmental Education fieldwork clearly shows that very few if any of the teachers undertook Environmental Education fieldwork.

- The need to state clear objective for the undertaking of Environmental Education fieldwork became evident in this study. Clear objectives determine meaningful learning tasks for the learners to perform during the undertaking of Environmental Education fieldwork. Teachers failed to develop meaningful learning activities that are pertinent to active learning within Environmental Education fieldwork.
• The study further revealed that teachers had very little knowledge of the procedures for the undertaking of Environmental Education fieldwork. Procedures followed by teachers when implementing Environmental Education fieldwork differed widely though schools fall in one district.

• The study further revealed the need to equip teachers with the necessary knowledge and skills to develop meaningful active participatory learning activities within Environmental Education learning experiences. Environmental Education fieldwork should yield outcomes that are measurable. Therefore, the impact that the Environmental Education fieldwork learning experience have had on the learners should be measurable.

5.3 GUIDELINES FOR EFFECTIVE IMPLEMENTATION OF ENVIRONMENTAL EDUCATION FIELDWORK

One of the objectives of this study was to develop guidelines that teachers can use when undertaking Environmental Education fieldwork. The process involved in the implementation of Environmental Education fieldwork outlined below has been adopted from the work of Prof HG van Rooyen (Environmental Education Monograph; RAU College for Education and Health: 1996). The guidelines suggested in this study are based on the practicality of its implementation in view of the results of this study. The researcher established the following key important aspects about Environmental Education fieldwork that are important for teachers to consider:

5.4.1 Key Aspect about Environmental Education Fieldwork

Environmental Education fieldwork is ideal for active learning in outcomes-based education because it is a means of observing and experiencing the environment. It emphasizes the processes of observing, measuring, analyzing, synthesizing, investigating, diagnosis and decision making.
Environmental Education fieldwork is a flexible teaching and learning tool that may be used to investigate the physical, socio-cultural and biological aspects of the environment. It can help to promote understanding of the interaction between the various components of the environment. This demands a high level of participation from the learners.

Environmental Education fieldwork calls for good organization including the cooperation and assistance of enough adults (members of staff / parents / members of the community) for adequate supervision.

Environmental Education fieldwork should be learning task orientated. The “tasks” of the learners can be one of the following types:

- It can involve answering one question in depth.
- It can involve some sort of inquiry demanding the application of problem-solving skills.
- It can involve a survey necessitating the use of data collection instruments.
- It can involve the description of the natural phenomenon not available within the confines of the classroom
- An inquiry-orientated Environmental Education worksheet as an example of data collection instrument.

Other important considerations for teachers to keep in mind before undertaking Environmental Education fieldwork are:

- A preliminary trip to the site to ensure that the teacher is familiar with the resources on site.
- Arrangement for a visit to and use of the resources on site.
- Arrangements for transportation.
- Parent consent forms for participating learners.
- Plans for learners’ health and safety plans.
- Pre trip discussion with learners about the nature of the Environmental Education fieldwork, the resources needed, and learners’ assigned tasks.
• Pre trip preparation by learners for the required tasks, such as preparation for data collection tasks.
• Discussion concerning learners’ behaviour during the undertaking of Environmental Education fieldwork.
• Post trip data analysis. Synthesis and reporting (by individual learners or in small groups, etc).

For Environmental Education fieldwork to be educational and useful, teachers need to carry out three phases of activities:

5.4.1.1 In Preparation for Environmental Education Fieldwork

• Discuss with learners the location to be visited and what to look for.
• Out of the discussion above, work out a series of questions to answered from observations made during the Environmental Education fieldwork so that there is focus.
• Outline the procedure to be followed during the Environmental Education fieldwork to maximize its usefulness in answering the questions.
• Introduce the learners in tools and instruments they might need to use during the undertaking of the Environmental Education fieldwork.
• Give instructions for specimen collection (specimen collection should be restricted at all times).

5.4.1.2 At the Site:

• Have the initial discussion on the overall picture and remind the learners of the aims of Environmental Education fieldwork.
• Designate individual groups for specific data collection tasks.

5.4.1.3 After the Environmental Education Fieldwork

• Sort and classify any material or specimen collected.
• Take steps to prepare a report on the Environmental Education fieldwork undertaken.
• Answers to the pre-determined questions should be first given orally and discussed by the whole class.
• Permanent written reports should then be prepared, enhanced by illustrative diagrams and preserved specimen where these apply.
• Arrange for the display of the material produced (for other members of the school and the local community).

A worksheet containing specific questions which the learners are to address can be used to focus learners attention and thought on environmental concerns an on their actions with the environment.

5.5 LIMITATIONS AND WEAKNESSES OF THE STUDY

The following factors are considered as limitations to the study:

The research project was limited by lack of homogeneity of the sample. The sample was limited to thirty primary schools whereas there are one hundred and sixty-four primary schools in the district of Nongoma. Lack of observational survey of Environmental Education fieldwork learning experience where a sample of one or two classes could have been directly observed in the field contributed also to the limitations and weaknesses of this study.

5.6 RECOMMENDATIONS

• School authorities, like Chief Education Specialists, Deputy Chief Education Specialists, First Education Specialists, Principals, heads of departments for different learning areas should encourage the implementation of Environmental Education fieldwork by ensuring that it is included in the teacher's learning programmes in all phases of schooling.
• Teachers should adopt a teamwork approach in the execution of their daily teaching tasks so that the implementation of active learning within Environmental Education fieldwork would cover different learning experiences from related learning areas.

• Environmental Education workshops should be conducted regularly to enrich teachers on the recent trends on the implementation of active learning within Environmental Education fieldwork in outcomes-based education.

• Although teachers know about Environmental Education very little has been done to implement active learning within Environmental Education fieldwork in outcomes-based education and the researcher recommends that Environmental Education fieldwork be used more frequently as a teaching learning strategy to enhance participation amongst the learners.

• Teachers particularly those teaching in the primary schools, should be supported to develop learning programmes and Environmental Education fieldwork activities with appropriate scope and depth for the primary phase of schooling.

5.7 CONCLUSION

Active learning within Environmental Education fieldwork in outcomes-based education is aimed at encouraging teachers in schools to create active learning environments in which learners are able to become involved in addressing and responding to environmental issues and risks. In schools where teachers implement Environmental Education fieldwork, learners are able to find out about issues examine those issues and take critical action for a better environment.

Preparing learners to address environmental issues requires knowledge and skills best developed through active learning, critical thinking, involvement in real issues and encounters in the learners’ immediate environments.
Therefore, active learning within Environmental Education fieldwork provide a range of opportunities in activities which teachers facilitate to enable meaningful environmental learning where learners come to know, understand and live together in their surroundings and in so doing engage and resolve environmental issues.

This study focused on how active learning within Environmental Education fieldwork is implemented in outcomes-based education. The research design included questionnaires and interviews. Through the findings it was discovered that active learning within Environmental Education fieldwork was not implemented effectively in primary schools. The results of this study revealed that teachers did not have in-depth knowledge on how to implement active-learning within Environmental Education fieldwork in outcomes-based education. The researcher saw this as a shortcoming which the Department of Education has to address since it is advocating for integrated learning in schools.
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*Practitioners Research*. Routeledge Falmer.
The District Manager  
Department of Education  
Private Bag x5092  
NONGOMA  
3950  
09 May 2005

Dear Sir

Re: Request to conduct research in senior primary schools in the district of Nongoma.

I hereby request to conduct research on the under mentioned topic on Senior Primary Schools. This request is made to enable the researcher in fulfilling requirements for Master of Environmental Education dissertation at the University of Johannesburg. The required respondents are teachers and learners of Senior Primary Schools on a chosen sample.

The topic for research stands as:  
**The implementation of active learning within fieldwork in Environmental Education in primary schools.**

The “basic aims” of the study are:

1. To establish whether active learning within Environmental Education fieldwork is implemented in senior primary schools.
2. To investigate procedures followed by teachers when undertaking Environmental Education fieldwork.
3. To determine the constraints in the implementation of Environmental Education fieldwork in the senior primary schools.
(4) To develop guidelines that teachers can use when undertaking Environmental Education fieldwork.

Your consideration and permission will be highly honoured.

Yours Faithfully

............................................

PJST (THE RESEARCHER)

............................................

PROFESSOR H.G. van ROOYEN
SUPERVISOR
UNIVERSITY OF JOHANNESBURG
The Principal  
................................Primary School  
Private Bag x..............................  
NONGOMA  
3950  
Dear Sir / Madam  

Request for assistance in collecting research data in your school:  

I am a Master’s Environmental Education student at the University of Johannesburg and I am currently doing research in the implementation of Active learning within Environmental Education fieldwork in Outcomes-based Education IN Senior Primary schools in the district of Nongoma.  

The views and experience of teachers and learners in your school are a crucial part of the research. Your school is one of a number that has been randomly selected to participate in the research project. It would be of great help if any two members of your staff and a selected group of ten Grade 7 learners could spend a few moments responding to the interview questions and filling in the brief questionnaire enclosed. All the information you give will remain unknonomous and confidential.  

I hope you can find time to assist me with my research project.  

Yours faithfully  

...........................................  
PJST XULU  
RESEARCHER  
...........................................  
PROFESSOR H.G. van ROOYEN  
SUPERVISOR : UNIVERSITY OF JOHANNESBURG
APPENDIX C

A QUESTIONNAIRE


Questionnaire Number [ ]

Your responses will remain strictly confidential therefore do not write your name or the name of your school on this questionnaire.

A. PERSONAL BACKGROUND

Kindly put a cross [×] in the box to the next answer applicable to you.

1. What is your highest qualification?
   - Standard 10 [ ] 01
   - Teacher’s Diploma [ ] 02
   - Bachelor’s degree [ ] 03
   - Other, specify

2. Did you study Environmental Education?
   - Yes [ ] 01
   - No [ ] 02

3. If you did, where did you last study it?
   - At High school [ ] 01
   - At College of Education [ ] 02
   - At the University level [ ] 03

4. What is your teaching experience?
   - Below one year [ ] 01
   - Between 1-5 [ ] 02
B. INFORMATION ON FIELDWORK

5. Is fieldwork part of your annual learning programme?
   Yes [ ] 01
   No  [ ] 02

6. Do you undertake fieldwork in your learning programmes?
   Yes  [ ] 01
   No   [ ] 02

(Question 7 below is not applicable to those responded ‘yes’ above)

7. If you do not undertake fieldwork, what are the reasons for not doing it?
   ……………………………………………………………………………………………
   ……………………………………………………………………………………………

(After this question stop, if you have answered “No” in questions 5 and 6)

8. How often do you undertake fieldwork?
   Once a year    [ ] 01
   Twice a year   [ ] 02
   Three times a year [ ] 03

9. During which time of the year do you undertake fieldwork?
   Beginning of the year    [ ] 01
   Middle of the year       [ ] 02
   End of the year          [ ] 03
   Other specify             [ ] 04
10. When undertaking fieldwork, which method do you use?

- Present lesson in class, fieldwork thereafter [ ] 01
- Fieldwork first, then theoretical lesson in class [ ] 02
- Present the lesson theoretically whilst on field [ ] 03
- Other, specify………………………………………………………… [ ] 04

11. Do you make learners aware of the objectives of fieldwork?

- Yes [ ] 01
- No [ ] 02

12. When do you make them aware of the objectives?

- Prior to fieldwork [ ] 01
- During fieldwork [ ] 02
- After fieldwork [ ] 03

13. What do you do as a teacher during fieldwork?

………………………………………………………………………………
………………………………………………………………………………

14. What activities do you expect learners to do during fieldwork?

………………………………………………………………………………
………………………………………………………………………………

15. When do you tell your learners what you expect them to do?

- Prior to fieldwork [ ] 01
- During fieldwork [ ] 02
- After fieldwork [ ] 03

16. What follow-up methods do you use after fieldwork?

………………………………………………………………………………
17. Who should take initiative to ensure that learners are engaged in fieldwork?

- School Principal [ ] 01
- Head of Department [ ] 02
- Subject Teacher [ ] 03
- Learners themselves [ ] 04

18. What are the problems you think that they are associated with the understanding of fieldwork?

…………………………………………………………………………………………
…………………………………………………………………………………………

19. Attitudes of respondents towards the undertaking of Environmental Education fieldwork

Please read each statement carefully and indicate whether you:

Strongly Agree (SA) / Agree (A) / Neutral (N) / Disagree (D) / Strongly Disagree (SD)

Mark the appropriate box with a cross.

<table>
<thead>
<tr>
<th>NO</th>
<th>STATEMENT</th>
<th>SA</th>
<th>A</th>
<th>N</th>
<th>D</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Environmental Education fieldwork waste time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>Environmental Education fieldwork is an extra-curricular activity</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>03</td>
<td>Environmental Education fieldwork is in line with outcomes-based education</td>
<td></td>
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</table>
Environmental Education fieldwork promotes environmental awareness

Environmental Education fieldwork promotes environmental literacy

Environmental Education fieldwork is the only way of putting Environmental Education into practice

Environmental Education fieldwork shows learners how Environmental Education is integrated with other learning areas

<p>| | |</p>
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<td>04</td>
<td>Environmental Education fieldwork promotes environmental awareness</td>
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<td>05</td>
<td>Environmental Education fieldwork promotes environmental literacy</td>
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<tr>
<td>06</td>
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</tr>
<tr>
<td>07</td>
<td>Environmental Education fieldwork shows learners how Environmental Education is integrated with other learning areas</td>
</tr>
</tbody>
</table>

20.
Below is a list of all things the educator needs to do when undertaking Environmental Education fieldwork. Rank this list in order of importance by putting one (1) on the box next to the item you think comes first, two (2) on the item you think comes the second and so on.

Deciding on the time that will be allocated for doing fieldwork

Thinking about practical problems that could be experienced on the field [ ]
Making the necessary arrangements with anyone concerned with Environmental Education fieldwork [ ]
Formulating the aims and objectives of Environmental Education fieldwork [ ]
Giving instructions to learners of what is expected of them with regard to Environmental Education fieldwork [ ]
Deciding on the exact nature of Environmental Education fieldwork [ ]
Asking learners to supplement their own observation by other references

Writing a letter to parents informing them about Environmental Education fieldwork to be undertaken

Allocating marks on the work of the learners

Asking learners to use observations to come up with conclusions

Asking learners to observe the phenomenon on the environment

Thank you for your co-operation
A TRANSCRIBED INTERVIEW WITH EDUCATORS AT NONGOMA DISTRICT

R: “During the last quarter of 2004, your class undertook an Environmental Education fieldwork learning experience to uShaka Marine World. What was the purpose of undertaking this activity?”

T: “During the first quarter of 2004, I conducted a learning experience on different kinds of fish in Natural Science as a learning area. I tried my level best to make the learning experience as much effective as possible because I also took the learners to the school library to read more about Marine animals. The learners were asking me so many questions about marine animals of which I couldn’t provide appropriate answers for. Therefore, I decided to undertake an Environmental Education fieldwork learning experience at uShaka Marine World so that they could acquire more knowledge or information about marine animals.”

R: “Did you tell the learners the objective and aims of undertaking the Environmental Education fieldwork learning experience?”

T: “Yes, I did inform the learners about the objectives and the aims of undertaking the Environmental Education fieldwork learning experience.”

R: “When did you make them aware of the objectives of this activity?”

T: “The objectives were communicated to the learners before the Environmental Education fieldwork learning experience was undertaken because we discussed it almost twice every week before undertaking it”.

R: What activities did you do to prepare for the Environmental Education fieldwork learning experience recently undertaken by your class?”

T: “I first wrote a letter to the management of uShaka Marine World asking for permission to for the learners to visit the place. I also asked for
information pamphlets and the map of the centre. The map had all the information the structures of the centre. For example information like which sea creatures are there in the place. I studied the map and the information pamphlets together with the learners to determine the sections of the centre that would be relevant to visit. Also determined whether that had any relevancy with what the learners had learnt in class. Plans for the Learners’ Safety were also drawn up and communicated to the learners prior to undertaking the Environmental Education fieldwork learning experience.”

R: What did you do as an educator during the Environmental Education learning experience undertaken?”

T: “I would say even though the activity was led by the tour guides, but I did play my role as a facilitator and mediator of the knowledge during the activity. I always intervened whenever there were arguments and uncertainties with respect to the theory learnt in class and what they were observing”

R: What activities did you expect the learners to do during the Environmental Education fieldwork learning experience undertaken?”

T: “I expected the learners to work mostly in groups or in pairs. I also expected them to prove or support the given theory. Some times to ask up with new questions.”

R: “Did you give the learners worksheets to work on?”

T: “Not really, because looking at the nature of place visited and taking into account the excitement that would be there, there wouldn’t be enough time for the learners to write. I only discussed the information with them in class. I believed that the learning process would actually unfold on its own without worksheets. There was hardly any time available to do practical work on site. They asked many questions in fact they surprised me because they could identify some of the sea animals through their characteristics whereas they have just seen them in pictures. The information was just coming back as they go along.”
R: Which skills did the learners apply whilst observing the natural phenomenon during the recent Environmental Education fieldwork learning experience undertaken?

T: “I would say they applied skills like; identification, observation, interpretation and analysis. They were able to identify some of the sea creatures on their own without being told by the tour guides. Interpretation and analysis skills also, because they were observe and analyse the nature of the animals. From time to time I would hear statements like; “Surely if this animal lives here, that is why it has a light or dark skin. It’s a camouflage.” They were teaching one another. They will argue one another and ask the tour guides for conclusions. That’s when I stepped in and mediated the knowledge to clarify confusion and brought them to the same level of understanding.”

R: On return from the Environmental Education fieldwork what follow-up methods did you use?

T: “Anyway there was nothing in the form of worksheets as it would happen in the case of normal learning experiences. I conducted relaxed class discussions, but yes indirectly focusing on what they saw and the fun they had in the water games. There was no formal assessment conducted because we were through with the Theme, It was just revision and preparation for the examinations.”

R: “In your opinion, did the recently undertaken Environmental Education fieldwork learning experience created any awareness of the environment in the learners?”

T: “Strongly yes, because this year I have realized that they ask many questions about animals during the Natural Science learning experiences. They are now watching the “National Geographic Programme” on SABC TV3 featured at 18h00 every Sunday evening. Every Monday they will ask one or two questions about the Sharks and Dolphins observed on the television. They would come up with statements like; “The dolphin or shark we saw on TV is different from the one we saw during the Environmental Education fieldwork fieldwork learning experience. The recently undertaken Environmental Education
fieldwork brought about many things in them: leadership skills, teamwork and communication skills mostly because the success of the recently Environmental Education fieldwork was because of their efforts working together as a group."

R:  Thank you very much for your co-operation
APPENDIX E

A TRANSCRIBED INTERVIEW WITH THE LEARNERS OF PRIMARY SCHOOLS IN THE DISTRICT OF NONGOMA

R: “Did you undertake an Environmental Education fieldwork during the last quarter of 2004 and in which month was that?”
L: “Yes, Sir, it was in October last year.”

R: “Which places of environmental interest did you visit?”
L: “We visited uShaka Marine World in Durban.”

R: “Did your teacher inform your parents about the undertaken Environmental Education fieldwork and how were they informed?”
L: “Yes, Sir, letters were written to our parents informing them about the undertaking of the Environmental Education fieldwork to Durban.”

L: “Yes, Sir, our teachers told us to tell our parents about the undertaking of the Environmental Education fieldwork to Durban but no letters were written to them.
L: “No, Sir, our teachers asked us to convince our parents so that they can allow us to go Durban with the school.”

R: “Were your parents given consent letters for participating learners to sign?”
L: “No, Sir, our parents were not given letters to sign.”

R: “What was the aim of undertaking the Environmental Education fieldwork?”
L: “The aim of the trip was to go to uShaka Marine World to see different kinds of fish, sharks and dolphins that are not found in our local environment. We had learnt about sea animals in class and we were writing about them before we went there. We wanted also to have fun at the beach and play water games at uShaka Marine.”
R: “Did you discuss the Environmental Education fieldwork with your teacher in class?”
L: “We started planning for the undertaking of the Environmental Education fieldwork in June. The Environmental Education fieldwork was discussed every two days of each week in class. The teacher gave us the map of the place and talked about sites to be visited.”

R: “What did you do at uShaka Marine?”
L: “At uShaka Marine we met the tour guides who took us through different parts of the centre. They showed us different sea creatures like sharks, dolphins and other kinds of fish. We listened to talks that were conducted by the tour guides. They explained to us a lot of information about the lifestyles of sharks and dolphins.”

R: “Did your teacher give you worksheets with activities to do at uShaka Marine World?”
L: “No, it was only the tour guides who were telling us about the lifestyles of sea animals, what they need to survive and we saw it for our selves. It was really exciting.”

R: “What was exciting?”
L: “Seeing different creatures, lifestyles of animals and how they live and that we saw it for ourselves because we use to see them on books and in the Television.”

R: “What were your teachers doing during the Environmental Education fieldwork learning experience?”
L: “Our teachers were always with us adding a few points on what was said. They asked questions from the tour guide on our behalf because we were scared to ask questions. We can say they participated in all activities undertaken.”

R: “On return from the trip what did you do in class?”
L: “After the trip our teachers asked us to talk about what we saw at uShaka Marine. We were telling everything we learnt about, the fish,
the dolphins and the sharks relating it to what we have learnt in the books.”

R: “Did the Environmental Education fieldwork undertaken help you to develop interest and love for the environment?”

L: “Yes, Sir, because we learnt a lot about the environment. The environment is very much interesting. We want to explore more about the environment. It is exciting to get away from home from the things you see everyday.”

R: **Thank you for your co-operation.**
Release and Indemnity form

This document serves to obtain the written consent of the participant or if the participant is a minor, the consent of the parent/legal guardian to participate in Environmental Education fieldwork in …………. (place) between …………… (dates)…………………………

I………………………………………………………hereby apply for my child to participate in the said event be held on the ………… (date) in …………… (place).

PARPINCIPANTS DETAILS

FULL NAME: ………………………………………………………………………………………………………

DATE OF BIRTH:………………………………AGE……………….SEX………….

ADDRESS…………………………………………………………………………………..

…………………………………………………………

CONTACT TELEPHONE NUMBER:   ( …)………………………………………

CELLPHONE NUMBER……………………………………………………………

SPECIAL DIETARY REQUIREMENTS …………………….. YES / NO.
VEGETARIAN (Please specify)

OTHER (Please specify)

SPECIFY ANY ALLERGIES AND TREATMENTS?

PLEASE SPECIFY ANY CURRENT HEALTH PROBLEMS AND/OR DISABILITY

PLEASE DETAIL ANY CURRENT TREATMENT / MEDICATION etc:

NAME OF DOCTOR:

DOCTOR’S EMERGENCY NUMBER:

MEDICAL AID NUMBER (IF APPLICABLE)

IN CASE OF A MINOR

CONTACT PERSON

TELEPHONE NUMBER

I, the undersign

(Full name) parent/ guardian of

Residential Address

I do hereby acknowledge that:

• I voluntarily agree to allow my child to participate on the Environmental Education fieldwork and its related activities to be held at ………….. (place / venue) over the period ………….. (date) …………………
• My child has no medical conditions that render him/her unfit to partake in the Environmental Education fieldwork, and that if he/she has a disability, it is not such that will prevent her/his participation

• I understand and appreciate fully that there may well be risks and dangers involved during the transportation and in the event because of large number of learners expected to participate.

I acknowledge that I have read this release and indemnity form and that I understand and agree with all the terms thereof.

Signed: …………………………………………………………………………

Name: …………………………………………………………………………

Date: ……………………………………………………………………………

To be completed in the case of a minor.

I, …………………………………………………………………………………… (full name) do hereby certify that I am a legal parent / guardian of ……………………………………………………………………………………………… (full name of participant) and I hereby verify and confirm the acknowledgement given above.

Signed: …………………………………………………………………………

Name: …………………………………………………………………………

Date: ……………………………………………………………………………
Dear Parent

GRADE 5 ENVIRONMENTAL EDUCATION FIELDWORK AT LAWAAIWATER – EMPANGENI.

The Grade 5’s will undertake a Environmental Education fieldwork at Lawaaaiwater – Empangeni from 24 to 26 July 2006.

The cost of the fieldwork will be R120 – 00 per child and must be paid in full by 15 July 2006.

Please complete the form attached herewith send it back to school by 5 June 2006.

Yours faithfully

MR T.D. MAKHANYA
PRINCIPAL