

**THE ROAD SAFETY EDUCATION PROGRAMME: A JOURNEY INTO THE
SCHOOL CURRICULUM**

A thesis submitted in fulfillment of the requirements of the degree of

DOCTOR OF PHILOSOPHY

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ABSTRACT

This study's aim was to solicit the beliefs, attitudes and perceptions of the teachers to the implementation of the road safety education programme in the context of curriculum change in five primary schools in the Pietermaritzburg Region. It is the beliefs and the attitudes of the teachers that imply assumptions about curriculum change and implementation that was the major focus of this study.

The implementation of the road safety education programme was studied in the context of curriculum change. This was done by using a qualitative research methodology. A case study research method was employed to gather data. Through semi-structured teacher interviews, classroom observations and learner administered questionnaires, the researcher was able to answer the three critical questions of the study.

For the analysis of the data, interpretative phenomenological analysis (IPA) was used. The analysis of the data revealed that despite the teaching and learning constraints that teachers experience in the classroom with implementing curriculum change, they do the best that they can. They implemented the road safety education programme in very innovative and interactive ways.

Feedback from teacher interviews regarding the implementation of the road safety education programme, indicated that it was a good programme which was well developed and aligned to the Revised National Curriculum Statement. It was informative and provided learners with a wide range of age appropriate knowledge and expertise to make them safe and responsible road users.

This study also revealed the gaps in the literature where road safety education and its implementation, is concerned. This study makes a number of recommendations for successful curriculum implementation in the context of change. Because of the qualitative nature of the data collected it was difficult to establish whether there was, in fact behavioural changes regarding safe and responsible road user behaviour. Therefore the study recommends that more research must be carried out on the implementation of the

road safety education programme because this study only represented five primary schools.

This study also emphasized the importance of implementing road safety education from grade R to Grade 12 to enhance safe and responsible road user behaviour. This may be useful in reinforcing safe and responsible road user behaviour. Twelve years of road safety education will definitely have a cumulative effect which will be beneficial to the learner. A permanent space must be found in the CAPS school curricula to deliver appropriate and effective road safety education from Grade R to Grade 12.

The basic epistemological approach of the research reflects the importance of moving beyond universal truths about implementation as a complex and highly contingent enterprise in which variations is the rule rather than the exception.

This study subsequently concluded that the successful implementation of the road safety education programme was dependent on the teacher's beliefs, attitudes and perceptions of the innovation.

DECLARATION OF ORIGINALITY

I hereby declare that this dissertation, except the acknowledged referenced citation is my own original work. It has not been submitted for any previous degree or examination at any other university.

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LIST OF ABBREVIATIONS

| | | | |
|-----|---------|---|---|
| 1. | ANC | - | African National Congress |
| 2. | CAPS | - | Curriculum Assessment Policy Statement |
| 3. | CBRTA | - | Cross Border Transport Agency |
| 4. | COSATU | - | Congress of South African Trade Unions |
| 5. | CRSC | - | Community Road Safety Council |
| 6. | DET | - | Department of Education and Training |
| 7. | DETR | - | Department of the Environment, Transport and Regions |
| 8. | DFT | - | Department for Transport |
| 9. | DOA | - | Decade of Action |
| 10. | DoE | - | Department of Education |
| 11. | DOT | - | Department of Transport |
| 12. | IPA | - | Interpretive Phenomenological Analysis |
| 13. | NAPTOSA | - | National Association of Professional Teachers of South Africa |
| 14. | NCS | - | National Curriculum Statement |
| 15. | NEPI | - | National Educational Policy Initiatives |
| 16. | NGO | - | Non-Governmental Organisation |
| 17. | OBE | - | Outcomes Based Education |
| 18. | OECD | - | Organisation for Economic Community Development |
| 19. | PET | - | Participatory Education Techniques |
| 20. | RAF | - | Road Accident Fund |
| 21. | RNCS | - | Revised National Curriculum Statement |
| 22. | RSE | - | Road Safety Education |
| 23. | RTI | - | Road Traffic Inspectorate |
| 24. | RTMC | - | Road Traffic Management Council |
| 25. | SADC | - | Southern African Development Community |
| 26. | SANRAL | - | South African National Road Agency Limited |
| 27. | SPIY | - | Skills for Preventing Injury in Youth |
| 28. | SRSC | - | Scottish Road Safety Council |
| 29. | SRTS | - | Safe Roads To School |
| 30. | UK | - | United Kingdom |
| 31. | UN | - | United Nations |
| 32. | US | - | United States |
| 33. | WHO | - | World Health Organisation |


Foreword

The universal truth where road safety is concerned, is about individual behavior. This is where road safety education is concerned to bring about the necessary and desired change. Road safety education raises awareness by imparting knowledge and developing an understanding of the risks with a view to changing attitudes and behavior at individual, community and organizational levels. The road safety education programme seeks to engender a sense of pride in the way that learners will behave on the road. It is hoped that ultimately this will lead to a nation of road users that are safe and responsible. This research is a major step towards enhancing road safety awareness in young learners. Mrs. Govender's research is backed by international research on road safety education and fills a major gap where research is concerned at a national level. International consensus has built around the four Es (engineering, education, enforcement and evaluation), as the pivotal elements in reducing road deaths. Previously where road safety was concerned the emphasis has been on enforcement and engineering. Enforcement entailed punitive measures being adopted, to ensure compliance and a concomitant change in behavior. Engineering emphasized the building and maintenance of safer roads. In South Africa the unacceptably high road fatalities necessitated the implementation of educational measures to ameliorate the scourge of road fatalities. Road traffic accidents are not attributable to a single course. They emanate from a number of contributory factors that culminate in a way that road users are unable to cope when faced with danger. Road safety education is a proactive attempt to identify the contributory factors that lead to road accidents and how to avoid them.

Educators play a significant role in educating learners about road safety. Educators, by virtue of their profession are able to reach a large number of learners, therefore an effective road safety educator needs to act as a catalyst, as well as a deliverer of road safety education inspiring others to become safe and responsible road users. This research has revealed that despite the numerous curriculum changes in South Africa, educators that participated in this research project were implementing the road safety

education programme in innovative and interactive ways. The educators were doing the best that they could, despite the constraints that they were faced with in schools.

This research has revealed that effective and sustainable development towards road safety will only be achieved by the inclusion of road safety education in the core curriculum from Grade R to Grade Twelve.

A handwritten signature in black ink, appearing to read 'BS Gumbi', written over a horizontal line.

Mr. BS Gumbi

Head of Department

Kwazulu-Natal Department of Transport

CHAPTER ONE

The Road Safety Education Programme. A Journey Into The School Curriculum.

1 Orientation to the Study

1.1 Focus and Purpose of Study

The purpose of the study is to investigate the implementation of the road safety education programme and its effectiveness in enhancing road safety among primary school learners. This study will be conducted in the general education and training phase in five primary schools in the Pietermaritzburg Region. For this purpose, the researcher will solicit the attitudes, beliefs, perceptions and understandings of the teachers and learners to the implementation of the road safety education programme and its effectiveness in enhancing road safety in the context of curriculum change.

According to (Glanz & Horenstein, 2002) teachers' adherence to particular views and belief systems is a personal reflection of theories about knowledge and knowing, that influences their curriculum decision making and teaching approaches. Campbell (2006) supports this argument by stating that the divergence between the planned curriculum and the enacted one is caused by the role and actions of teachers and is heavily influenced by their personal and professional beliefs and values. Muijs (2010) state that teacher beliefs about their subject and how best to teach it are powerful influences on student learning and achievement. These implicit beliefs about teaching the subject, heavily influences teacher's classroom practices and teaching behaviours (ibid). Change is not about forcing all teachers to subscribe enthusiastically to new ideas. A change process needs to allow teachers to carve out spaces for, themselves in order to work individually and collaboratively and to find ways to reflect on their practices (Zembylas, 2010).The development and growth of knowledge, in all disciplines, depends, on interactions and personal associations among scholars. Hirst (2005, p. 8) states that "we become who we are only by the exercise of our individual capacities in relating to others and by participating in, or reacting to, all manner of socially constructed practices of which we are the heirs. The work of teachers does not take place in a void; it depends to a large extent on personal and societal context.

Akkerman (2006) claim that in the work settings professionals come into contact with ideas and approaches that enable them to reflect on their own ideas and approaches and to consider alternative ideas and approaches. One of the accompanying effects of this general phenomenon is the transfer of ideas from generation to generation through teaching. They represent implicit assumptions about curriculum, schooling, learners, teaching and learning, and knowledge and act as cognitive and affective filters through which new knowledge and experience is interpreted and enacted (Handal & Herrington, 2003).

The researcher believes that the teachers and learners will be the groups most able to offer pragmatic and valuable insights of the road safety education programme curriculum and its effectiveness based on their experience in the actual implementation process.

The need to incorporate a road safety education- programme in the National Curriculum Statement arose as, a consequence of the high fatality rates on our roads. Every 48 minutes, a person is, killed on our roads. On the 3 March 2008, 31 people died in KwaZulu-Natal between 7h00 and 9h00 in the morning. On the 4 and 5 March 2012, 16 people died on the roads between 18h00 and 6h00. The cost of traffic collisions in South Africa is about R16 billion per year. Using the roads is difficult and risky, especially for children, the elderly and people with disabilities. Children are particularly at risk when walking, riding bicycles, playing and/ or travelling in vehicles. Many road accidents can be, prevented if children from a young age, are taught the correct knowledge, skills and attitudes about road safety.

Fokides & Tsolakidis (2012) refers to road safety as all the skills, attitudes, knowledge and good practices that a person needs in order to be safe in the road environment. It is further stated that (ibid), in the long run, prevention is always better than the treatment to a problem, so that the solution to the problem of road accidents depends on the development of a culture of road safety as early in one's life as possible. Therefore, road safety education in primary schools becomes highly significant.

Like all learning, road safety education needs to start at an early age and must be appropriate to the child's age and context. Children need to be familiar with the road safety rules of their immediate environment. They need to be aware of the dangers and learn safe ways to cope with them. Often children do not know what is safe. Young children have a limited concept of danger and are easily distracted. They need ongoing education from an early age to help them develop safe and correct behaviour in traffic and help them develop a more positive attitude towards their own decision-making. Therefore, the role of the school extends to educating parents/guardians/caregivers how to include road safety education in their child's daily routines and activities. Safe behaviour develops over time and must be practiced often, reinforced and reflected upon throughout a child's schooling.

Schools therefore need to ensure that comprehensive road safety education, such as that offered in the road safety education programme is included in the curriculum. According to research carried out by the Queensland Department of Transport (2008), road safety concepts should be taught to children from an early age and through continual exposure in the regular school curriculum. This approach will help children develop positive and safe road user behaviour that will continue throughout their lives. One-off road safety talks do not have a meaningful and long, term effect (Queensland Department of Transport, 2008).

The National Department of Transport and Education have emphasized the need for a long-term road safety strategy that will include road safety education. It was announced at the beginning of 2006 by the DoE that road safety will be included in the primary school curriculum. The Department of Transport confirmed that they had embarked on an extensive educational programme. Road safety education develops knowledge, skills, attitudes and values that, enables pedestrians, cyclists, motor-cyclists, drivers and passengers to use the road safely (Arrive Alive, 2006).

The implementation of the road safety education programme had started in 2006 in KwaZulu-Natal. This programme was, implemented in the primary schools in the Durban and Ladysmith regions. The programme covers Grades 1-9 and is presented in three packs- Foundation Phase, Intermediate Phase and Senior Phase. The

components, of the road safety education programme, are, aligned with the National Curriculum Statement Grades 1-9 in all the learning areas.

The National Curriculum Statement strengthens and consolidates Curriculum 2005, which was, introduced in 1998. Curriculum 2005 embodied a framework for change that reflected the democratic values and beliefs of the new political order (DoE, 2001). The curriculum must truly engage children and the teachers must not lose sight of their concrete experiences, their actual capabilities, their theories, feelings and hopes. A central feature of the new curriculum framework is a commitment to teaching and learning that is outcomes- based.

The principles which informs the National Curriculum Statement, and which are linked to the road safety education programme for this study, are the following:

- Outcomes based education as an activity-based and developmental process encompassing what learners learn and are able to do at the end of the learning process.
- The road safety education programme is an activity based programme. At the end of each developmental stage, learners will be able to acquire road safety skills to use the roads in a responsible and safe manner.
- Social and environmental justice, human rights and inclusivity. Learners will acquire appropriate social skills to use the road environment in a responsible manner so that they do not infringe on the rights of other road users. A high level of skills and knowledge for all will be required to be a safe and responsible road user.
- A balance of integration and progression in what is, expected at each level. Different skills and knowledge is, presented at different levels to the learners. The road safety education programme is presented in a clear manner and is accessible to all primary school learners across the country

A closer look at the principles makes it clear that all these can be related to road safety education. Learners will be able to develop high levels of skills and knowledge to solve problems and make decisions using critical thinking to deal with

road safety issues. Each level caters specifically for how learners will manage the road and its environment at that stage in their lives. Learners will be able to demonstrate an understanding of the road safety education programme as a set of related systems by recognizing that road safety education does not exist in isolation, but affects every single person that uses the road either as pedestrians or as motorists.

Children and young people have a high involvement in road crashes (Arrive Alive, 2006), therefore receiving road safety education as part of their normal school curriculum is recognized as being one of the most effective ways of ensuring that they receive comprehensive road safety knowledge to make them safe and responsible road users. The road safety education programme is a comprehensive programme, which is currently, being used to teach road safety education in the classrooms. The programme is part of the Road Traffic Management Corporation's national strategy that was, implemented in all primary schools across South Africa. The programme was developed in consultation with the National Department of Education. Representatives of the National Department of Education contributed to the improvement of the Learner Support Material programmes. Resource materials have been developed and tested and 218 000 copies were produced and distributed according to the demographics of the Provinces. Foundation and Intermediate phases were delivered in February 2006. The RTMC has also proposed that research be carried out to evaluate the effectiveness of the project both during the workshops and in the classroom. The researcher is unaware if, any such research is currently, being carried out.

According to Kelly (1999) curriculum evaluation is clearly the process by which we attempt to gauge the value and effectiveness of any particular piece of educational activity- whether it is a national project or a piece of work undertaken with our own pupils. One view of the process of curriculum evaluation as expressed by Tyler (1949, pp.195-196) is essentially the process of determining to what extent the educational objectives are actually being realized by the programme of curriculum and instruction. The 'Tylerian' model was, adopted as a means of measuring student outcomes and judging the quality of curricula and became known as the behavioural objectives model. Such methods, however, were found to have weaknesses when applied to education (McTaggart, 1983). The field of curriculum evaluation began to

expand by the 1960's when it was realised that the Tylerian model inhibited planning and evaluation and failed to provide understanding of the quality of education (McTaggart, 1983; Kemmis & Stake, 1988). The work of Lee Cronbach broadened notions of evaluation. His approach, which aimed at curriculum improvement, introduced notions such as the need for understanding the contextual features surrounding student learning (McTaggart, 1983). Another significant impetus to the growth of evaluation came with the work of Scriven (1967) who made a distinction between the goals and roles of evaluation. The roles of evaluation involved information collection as a methodological activity, which was seen as assisting evaluators make a judgment.

However, since educational objectives are actually changes in human beings, that is, the objectives are aimed at to produce certain desirable changes in the behaviour patterns of the learner, then evaluation is the process for determining the degree to which these changes in behaviour are actually taking place. Investigations of a number of successful programmes designed to enable individuals to change not only their intentions and attitudes but their concrete behaviour, strongly indicate that in areas such as road safety education it is not sufficient simply to inform understandings through the depth of intellectual engagement with knowledge (Vick & Navin, 1996). Catchpole & DiPietro (2003), state that it is important to help develop concrete practical knowledge linked to pragmatic strategies through which students are, enabled to put their imagined strategies into practice.

An investigation of this implementation will also determine whether the learners were acquiring the necessary skills and information to produce desirable changes in their behaviour patterns to make them safe and responsible road users.

1.2 Rationale

The researcher's purpose for undertaking this journey is to investigate the implementation of the road safety education programme in five primary schools in the Pietermaritzburg Region. This study will also capture and explore the meanings that teachers and learners assign to their experience of teaching and learning about

road safety. This description and analysis of my journey in the curriculum field starts with my job as a road safety practitioner.

The researcher is, currently employed by the KwaZulu Natal Department of Transport in the Road Safety Directorate. The Road Safety Directorate is responsible for road safety education and raising awareness, among all road users. The researcher's Master's dissertation focused on implementing a road safety education programme in the curriculum. A natural progression will be to investigate the implementation of the road safety education programme in the primary schools and to evaluate its effectiveness in enhancing road safety among primary school learners as well as to solicit the beliefs, values and understanding of the teachers perceptions to the implementation of the programme.

In considering the related issues of teaching and learning about road safety, the researcher will find herself pursuing the following objectives.

1.3 Objectives

Firstly, the researcher will need to apprise herself of the teacher's beliefs, attitudes, and perceptions of the implementation of the road safety education programme in the context of curriculum change.

Secondly, the researcher will attempt to identify the teaching and learning constraints experienced by the teachers, during the implementation of the road safety education programme.

Thirdly, the researcher will be able to determine whether the learners are acquiring the necessary skills and knowledge, to make them safe and responsible road users.

Road safety education is used to convey information to road users, to enhance their knowledge about road safety issues, influence their behaviour on the road and or to prepare them for new road safety measures. The ultimate aim of road safety education will be to reduce road fatalities. For the purpose of this study, it will not be possible

to determine whether this programme is leading towards a reduction in road fatalities, but the researcher will be able to determine whether learners are acquiring the necessary skills and knowledge to becoming safer road users. The researcher will also be able to capture and explore the meanings that teachers and learners assign to their experiences of teaching and learning about road safety.

1.4 Conceptual and Contextual Factors of the Study

According to McMillan and Schumacher (2006) a literature review illuminates the related literature to enable a researcher to gain further insights from the study to respond to the critical questions.

This literature study will provide a suitable point of departure for discussing international trends in evaluating road safety education.

Thereafter a survey of literature on curriculum, curriculum implementation, and curriculum evaluation will provide a framework for discussing the road safety education programme, investigating its implementation and evaluating its effectiveness in enhancing road safety among the primary school learners.

1.4.1 International Trends in Evaluating Road Safety Education

The National Red Cross societies in the European Union, and accession countries addresses the needs of vulnerable road users by:

- Facilitating road safety partnerships between government departments, private bodies and local communities;
- Assisting vulnerable road users through First Aid training, First Aid posts, ambulance services, psychological support and social assistance programmes;
- Staging national road safety campaigns targeted at drivers, decision-makers and the population at large

In addition to this, Red Cross staff and volunteers, schools, parents, local communities, safety organizations and private companies participated in this Pan -

European project. With the slogan '*you've only got one life... so take care!*'. The campaign focused on school children and those in charge of their welfare. The aim of this campaign was to contribute to reducing the number of school learners injured and killed in road traffic accidents across the European Union and candidate countries by providing information, raising awareness and exchanging good practice on road safety education in schools and in communities. Events were organized and materials distributed to provide road users from a very young age onwards continuously and systematically with, insight, knowledge, skills and materials in order to enable them to change their behaviour and adopt simple measures that make them safer road users (DfT, 2004).

There were three major concepts that framed this study. These were Curriculum, Curriculum Implementation and Road Safety Education. Road Safety Education was the major focus of this study. Within the domain of road safety education, this research project concentrated on how the road safety education programme was implemented in five primary schools in the context of curriculum change. The theoretical field of Curriculum Change as espoused by Michael Fullan underpinned this study. These conceptual and theoretical constructs will be discussed in the following sections.

1.4.2 Curriculum

The Shorter Oxford Dictionary defines curriculum as a 'course': especially a regular course of study as at a school or university. The curriculum is what happens to children in school as result of what teachers do. Young (1998) argues that curriculum needs to be seen, not just as something imposed on teachers and learners' classroom practice, but as a historically specific social reality, which teachers act on and thus transform. Yule (2004) supports this argument by stating that the curriculum should return to the life-world to promote learner development. Thus, the teacher's problem becomes, defined as how to devise effective ways of transmitting these skills and knowledge, to as many learners as possible (Young, 1998, p. 26).

It includes all of the experiences of children for which the school should accept responsibility (Stenhouse, 1978). Curriculum starts as a plan. By the official or

planned curriculum is meant what is, in syllabuses and prospectuses (Kelly, 1999, p. 5). The road safety education programme is also a curriculum as planned by the Road Traffic Management Corporation. It will only become a reality when teachers implement it with real learners in a real classroom.

Kelly (1999, p. 9), suggests that curriculum studies must embrace and tackle questions of what education is, or what different approaches to schooling one might adopt. For some people education means little more than instruction or the transmission of certain agreed bodies of knowledge, while for others it carries connotations of the values of what is, being transmitted and, most crucially, the impact on the individual. Yule (2004), states that different world outlooks bear different thinking modes and the change of the thinking mode, brings fundamental changes in the nature, forms and representations of the curriculum. Experience which is personal and tacit is rooted in the personal worlds of the learners. It is through experience that the experience of the curriculum comes into being.

Education should be, seen, as an integral part of an integrated approach to the problem of road safety and how learners experience the road environment. The safety of unprotected road users, including children, depends on how the traffic environment is organized and how motor vehicle traffic is controlled. Nonetheless, their traffic knowledge, skills and behaviour play an important role in reducing accident risks. Traffic and / or road safety education programmes will therefore be the traditional means to develop appropriate knowledge and skills needed for safe behaviour. The instruction of children in traffic safety is a desirable practice that should start from an early age. Ideally, the instruction of children in road safety education should be practical, intensive, and sustained and should be incorporated into all existing learning areas.

Grundy (1987) affirms that the curriculum of a school is an integral part of the culture of that society. To understand the meaning of any set of curriculum practices, they must be seen as both arising out of a set of historical circumstances and as being a reflection of a particular milieu. Yule (2004) concurs by stating that curriculum should be related to the learner's rich spiritual world and life experiences and by doing so the curriculum meaning can be created. We must recognize, however, that

to be engaged in educating anybody is to be committed ipso facto to the belief that some human activities are of more value than, others. Education is indeed, a matter of initiation into intrinsically worthwhile activities. It must therefore follow from this that whoever takes decisions about the curriculum or contributes to the taking of such decisions must be encouraged to appreciate the slender nature of the foundations which any system of values or set of criteria will be based. The curriculum should not only provide learners with rich knowledge but should also prepare the learners for their future by enhancing the significance of life. The road safety education programme should teach the learners to value life by teaching them to become safe and responsible road users.

Social and technical changes must be considered and balanced against each other. McNeil (2006, p.34) states that curriculum development in response to social needs, such as Aids and sex education, parenting programmes, anti-drug campaigns and road safety education is often adaptive. Such curriculum represents a mechanism for adjusting learners to what some groups believe to be an appropriate response to needs within a society. The approach to social adaptationist is to give learners information and prescriptions for dealing with situations as defined rather than to seek a fundamental change in the basic structure of the society underlying the problems. Adaptationist, look at society to find out what learners need to achieve, to protect themselves in the real world and to fit into society.

Applying road safety as a context in any curriculum area where work, has already been planned, like the road safety education programme, doubles the value by providing a way of practicing learnt skills in a meaningful context, and reinforcing positive road safety messages. In this context, learners will be able to protect themselves in the real world, especially the road environment, which is often risky and fraught with dangers. As with all effective curriculum delivery, there is a need for constant reinforcement if the concepts and skills are to be retained applied and extended. Curriculum is not the intention, or the prescription but what happens in real situations. It is not the aspiration but the achievement.

Schools take responsibility for planning and organizing children's learning. Teaching is not merely instructing, but according to Stenhouse (1978, p. 24), is the systematic

promotion of learning by whatever means. Teaching strategy is an important aspect of curriculum. Curriculum development translates ideas into classroom practicalities. This helps the teacher to strengthen his practice by systematically and thoughtfully testing ideas. New strategies must be, worked out within a development and research framework. Schubert (1986) sees curriculum as central to the maturing process of the human race. He further describes it as journey of learning and growth that is consciously developed. Programme outcomes should focus on improving knowledge and changing behaviour. Knowledge of road safety procedures can be, improved both by classroom instruction and by practical training. Road safety education can bring about changes in the behaviour displayed on the roads by children both as pedestrians and as road users. To change the behaviour of young learners, or to maintain any changes in behaviour over a reasonable period of time requires programmes of instruction that are far more intensive than has conventionally been the case in the past. Educational programmes for older learners that are, based only on the occasional intervention by outside agencies have limited value.

The main determinants of the curriculum may reveal different points of view. The curricula may be classified as socially-oriented, subject oriented or pupil oriented (CERI, 1975, p.159) The last two types keep the relationship between the curriculum and society implicit, and take as their starting point either school subjects or learners. The solutions found within their frameworks do exist in terms of social reality, however, and either they are in agreement with the demands of society or they are not.

The socially-oriented curriculum concentrates on content which is useful and necessary to the learners as future members of society. This type of curriculum must produce solutions to social problems. The approach of a social problem should normally be done in phases, which logically follow each other. For road safety which is, defined as a social problem, such a phased approach will be implemented. If good practice is learnt at an early age, learners can also influence their parent's behaviour and introduce safe principles into the home setting. In the long term, road safety education can create a generational change and provided it is ongoing and widespread, it will eventually improve behaviour and attitude, and performance to being safe road users. Receiving road safety education as part of their normal school

curriculum is, recognized as being one of the most effective ways of providing this life saving knowledge. These learners will be the next generation of road users, so the installation of sound and comprehensive awareness and implementation of good road behaviour at this stage can only be an investment in the future safety of our roads.

Careful planning and development are obviously important, but they count for nothing unless teachers are aware of the product and have the skills to implement the curriculum in their classrooms.

1.4.3 Curriculum Implementation

Many attempts at policy and program change have concentrated on product development, legislation, and other on-paper changes in a way that ignored the fact that what people did and did not do was the crucial variable. Implementation is critical for the simple reason that it is the means of accomplishing desired objectives. The desired objective for implementing the road safety education programme is that the learners acquire the necessary skills, and knowledge to make them safe and responsible road users. Fullan (2001) further states that implementation is a variable, and if the change is a potentially good one, success (such as improved road safety knowledge and increased skills on the part of the educator) will depend on the quality and degree of the implementation process.

In the context of this study, the researcher will be able to investigate the implementation of the road safety education programme and to determine whether it was successfully implemented by soliciting responses from the learners and teachers.

The change may be externally imposed; explicitly defined in detail in advance; designed to be used: uniformly or deliberately planned so that users can make modifications according to their perceptions of the needs of the situation. The road safety education programme, which is being imposed by the Road Traffic Management Corporation and the Department of Transport, is a new programme. It is explicitly defined in detail; it is also, designed for uniform use by all primary school teachers in the country, so that the educator will know what to do for each lesson.

Fullan & Pomfret (1977) state that it is a critical phase in the cycle of planning and teaching a curriculum. How to implement a new curriculum is a major concern for teachers because as 'craft specialists' they gain most of their intrinsic satisfaction from being successful in using a particular approach and materials with their learners. Intrinsic dilemmas in the change process, coupled with the intractability of some factors and the uniqueness of individual settings, make successful change a highly complex and subtle social process.

The success of implementation is highly dependent on the establishment of effective ways of obtaining information on how well or poorly a new curriculum is, being implemented (Fullan, 2001). By obtaining relevant information, the researcher will be able to evaluate the implementation of the road safety education programme.

1.4.4 Evaluation of the Road Safety Education Programme

The process by which some individual or group makes a judgment about the value of some object, person or process is termed evaluation (Posner, 2004, p. 237). Verma & Mallick (1999) refer to evaluation research as a systematic procedure, which is, adopted over a period, to collect and process data concerning the effectiveness of a particular programme. The researcher will attempt to focus this study on evaluating the implementation of the road safety education -programme. In so doing she will direct her study to those evaluation concepts that will enable her to probe deeper into the implementation of the road safety education -programme and how effectively it is being implemented. This will include such matters, as the implementation of the road safety education programme. The observation procedures that will be, used to determine whether the learners are, in fact, being taught what the programme designers intended; that the quality of teaching is, at least, adequate; and that the demands, made by the teachers on the learners in terms of their expectations of learner performance are appropriate.

Kemmis (1982) defined evaluation broadly as part of the research process of reaching judgements. Since the definition of curriculum evaluation varies (Posner, 2004), it implies that evaluation may mean different things to different people. If curriculum refers to a document such as a content outline, scope and sequence, or syllabus, then

curriculum evaluation might mean a judgment regarding the value or worth of such a document. For the purpose of this research, the course packs containing the road safety education programme will be evaluated.

On the other hand, if curriculum refers to the experiences of the student, then evaluation might mean a judgment about, whether the value of the educational experiences afforded to the road safety education -programme enabled them to acquire the necessary skills and concepts to become safe and responsible road users.

Curriculum evaluation decisions are of two types: decisions as to how to improve the curriculum require a formative evaluation. During the implementation, formative evaluation procedures will be used to discover the extent to which practice adheres to plans. According to Verma & Mallick (1999), formative data tend to be acquired from learner feedback in the form of post-lesson questionnaires, interviews and observation. For the purpose of this research, data will be acquired from the 30 learners through the form of questionnaires and observation in the classroom.

A decision as to whether to continue to use the curriculum requires a summative evaluation (Scriven, 1967). Evaluation plays a summative role when it enables administrators to decide whether a summation is good enough to warrant institutional support. Posner (2004) further states that evaluation plays a formative role when it occurs during the ongoing curriculum development process. The emphasis in this type of evaluation is on programmed processes. The researcher will seek to understand how the programme actually operates and gain an understanding of:

“why, things are happening, how do the parts of the programme fit together, and how do people perceive the programme” (Patton, 2002)”.

For the purpose of this study the focus will be on a formative evaluation, that is, an examination of the road safety education programme in the five primary schools - its activities, the population it serves, and how it functions. The researcher will be able to determine whether the participants believe that they have changed positively through their involvement with the road safety education programme, whether these

changes involved increased knowledge and skills as well as changes in attitudes where road safety is concerned.

The researcher will also use illuminative evaluation techniques. According to (Parlett & Hamilton, 1972) illuminative evaluation concentrates on an intensive study of the programme as a whole: its rationale and evaluation, its operations, achievements, and difficulties. Its primary concern is with description and interpretation rather than measurement and prediction. The primary concern with this study is not to measure or to predict behaviour concerning road safety education. The innovation is not examined in isolation, but in the school context or learning milieu; how it is influenced by the various school situations in which it is applied; what those directly concerned regard as its strengths and weaknesses; and how learner's intellectual tasks and academic experiences are most affected. Parlett & Hamilton (1972) further state that it aims to discover and document what it is like to be participating in the scheme, whether as a teacher, or a primary school learner. It is also to discuss the innovation's most significant features, recurring concomitants and critical processes. For the purpose of this study, illuminative evaluation will also be appropriate because the road safety education programme is an innovative programme, which, will be investigated in the school context or learning milieu. The methodological strategies adopted for this study also concur with illuminative evaluation. Classroom observation, interviews with teachers and learner administered questionnaires will help to illuminate significant issues concerning the implementation of the road safety education programme.

To evaluate any curriculum plan or practice credibly, we therefore need not only an understanding of the technicalities of curriculum planning and innovation but also the ability to discern the underlying values and assumptions of the curriculum.

1.4.5 Theoretical Framework

Road safety education provides a particular challenge in the primary school years because of the perceptual, cognitive, and physical immaturity of young children (Ross & Seefeldt, 1978). Road Safety education programme for young children have developed from diverse theoretical and pragmatic bases and there have been limited

attempts to integrate them with curriculum developments in primary education (Cullen, 1998).

Firstly, it is widely recognized that learners become more engaged in their work when it is of relevance to them, and when they are encouraged and enabled to explore and construct connections between issues and subject matter directly under investigation to broader life contexts and fields of activity (Bigelow, 2006). Secondly, current pedagogical theories stress the importance of intellectual depth. Depth is concerned with directing learners away from superficial factual learning by encouraging analysis and evaluative skills. They are enhanced by engaging in careful application of knowledge and an understanding, gained from formal study, within the confines of the classroom to a variety of real life contexts and are thus connected to the issue of relevance. Darling-Hammond (2000), states that the most powerful learning occurs when learners are encouraged and enabled to work together to explore materials. In the context of this study it will be the road safety education packs. The learners will subsequently build their own connections among facts and ideas, issues and situations, and will reflect on their own understanding of road safety education within the formal classroom setting.

This research argues that effective road safety education for primary school learners needs to incorporate both constructivists and socio-cultural theoretical perspectives on learning. Interviews with teachers and by administering questionnaires with the learners will highlight the variety of influences that affect learner's road safety knowledge and illustrate the interface of constructivist and socio-cultural interpretations of learning about road safety. This focus on the perspective of children acknowledges Piaget's early research. Contemporary constructivist views are derived from earlier Piagetian constructivist principles. They emphasize the importance of children's direct experience, but no longer support the general stage theory of development, which was the cornerstone of Piaget's theory. Socio-cultural theorists give greater emphasis to the context of learning, emphasizing that children's learning is embedded in specific contexts and giving a stronger role to adults and peers. A key characteristic of contemporary socio-cultural perspectives is that the environment is not viewed simply as a mediator of learning; instead, learning is seen to be embedded in social and physical contexts (Butterworth, 1993). Ginsburg and Opper (1979), state

that Piaget employs a social-learning theory to explain a child's development. As the child grows older and comes into contact with opposing points of view and varied social institutions, his thought goes through a process of de-centration and in reasoning, he tries to consider the complexities of the problem, that is, both the similarities and differences among the same set of events. The young child has an absolutistic concept of rules. Therefore, teaching learners about a traffic theme should start with the learner's conceptions of traffic and aim at developing an understanding of traffic as a mobile system with certain rules.

The problems encountered in the psychological analysis of teaching cannot be correctly resolved or even formulated without addressing the relation between teaching and learning. This concept will be further explored in answering critical question three.

Getting through the day requires that people process information: they notice the phenomena around them; they differentiate those phenomena by comparing and contrasting them with experiences, a set of values, or some pre-determined attributes; they select those to which they wish to attend; and they plan their activities accordingly.

When a curriculum based on a particular perspective is implemented in a classroom, certain factors become problematic as the teacher attempts to cover the curriculum, ensure that all learners learn it, manage the classroom, and develop in learners a positive, effect towards the subject matter and the class (Posner, 2004, p. 202).

Teachers, as well as learners are, often faced with a multitude of teaching and learning constraints during the implementation of a new programme. According to Carl (1995, p. 144) there are various psychological factors that can affect the educator regarding the implementation of a curriculum. McDonough & McDonough (1997), states that teachers have both explicit formulations of and implicit attitudes to issues and events in their own professional lives, which a research perspective is able to address within the reality of the classroom context.

For the purpose of this study, the focus will be on the investigation of the implementation of the road safety education programme in the context of educational change and to determine whether the learners are acquiring the necessary skills and knowledge to make them safe and responsible road users.

The basic orientation of the interpretivist paradigm is towards understanding. It is not the sort of understanding which enables rules to be, formulated so that the environment may be manipulated and managed (Grundy, 1987, p. 12).

In this instance, the researcher does not seek to manipulate the environment in order to carry out her investigation, but will rather seek to observe and solicit the teacher's beliefs, attitudes and perceptions to the implementation of the road safety education programme in the context of curriculum change in five different primary schools in the Pietermaritzburg region.

In a review of research on curriculum implementation, Snyder, Bolin, and Zumwalt (1992), as cited in (Pinar, Reynolds, Slattery & Taubman 2002, p.19), list three major approaches. The first is referred to as "fidelity perspective". The focus here is on: 1) measuring the degree to which a particular innovation is implemented as planned and 2) identifying the factors, which facilitate or hinder implementation as planned. The assumption here is that successful curriculum implementation is characterized by fidelity to the original plan (Pinar et al., 2002). From a fidelity perspective, the educator's decisions are how to deliver the curriculum most efficiently and effectively in the classrooms. For the purpose of this study, the researcher will be able to determine whether the road safety education programme is being implemented according to the plan as delineated in the road safety education manual. The researcher will also be able to identify the factors which facilitate or hinder implementation as planned.

The mutual adaptation approach is defined, as "that process whereby adjustments in a curriculum are made by curriculum developers and those who actually use it in the school or classroom context (Pinar et al., 2002). From the, mutual adaptation perspective, the educator's role amplifies and is, understood to reshape the curriculum as planned according to the dictates of the local classroom situation. From

this perspective the researcher will be able determine how the teachers are reshaping the road safety education curriculum to suit local classroom situations.

The third approach as cited by Snyder, Bolin and Zumwalt in Pinar et al (2002) is referred to as Curriculum enactment. From this perspective the: externally created curricular materials and programmed instructional strategies at the heart of the fidelity and mutual adaptation perspectives are seen as tools for students and teacher to use as they construct the enacted experience of the classroom. From the enactment perspective, the teacher's decisions are necessary for there to be a curriculum at all. The tools that the teachers and learners will use for the enactment of the classroom experience will be implementation of the road safety education programme. Successful implementation will ultimately depend on the teacher's decision.

Implementation becomes characterized as a change in the thinking of teachers; therefore this study's major emphasis is on an investigation of the educator's values, beliefs, attitudes and perceptions of the implementation of the road safety education programme. The conceptual framework for this study is consonant with Fullan's (2001, p. 110) views concerning successful curriculum implementation, and change as is summarized below:

- 1) change takes place over time;
- 2) the initial stages of any significant change always involve anxiety and uncertainty;
- 3) ongoing technical assistance and psychological support assistance are crucial if the anxiety is to be coped with;
- 4) change involves learning new skills through practice and feedback –it is incremental and developmental;
- 5) the most fundamental breakthrough occurs when people can cognitively understand the underlying conception of and rationale as to “why this new way works better”;
- 6) organizational conditions within the school (peer norms, administrative leadership) and in relation to the school (external administrative support and technical help) make it more or less likely that the process will succeed; and

- 7) successful change involves pressure, but it is pressure through interaction with peers and other technical and administrative leaders.

In line with the recommendations of (O Donoghue, 2007), this conceptual framework of curriculum change and implementation guided the data collection, analysis and interpretation of this study, as will be discussed in chapters five and six.

In classrooms, teachers and learners encounter the materials that have been developed, and it is in this encounter that curriculum becomes mediated and a symbolic social experience.

Knowledge, which is concerned with understanding, is not to be judged according to the success of the operations arising as a consequence of that knowledge. Knowledge is constructed not only by observable phenomena, but also by descriptions of people's intentions, beliefs, values and reasons, meaning making and self-understanding (Henning, 2002, p. 20). Instead of making the behaviour of people the facts of science, attention is given to interaction and negotiations in social situations.

In addition, the review of the literature seeks to identify the research questions that will inform the researcher's methodological choices and the research design of this study.

1.5 Research Aims

This research aims to:

- Investigate the teacher's beliefs, attitudes and perceptions to the implementation of the road safety education programme in the context of curriculum change.
- Investigate the teaching and learning constraints experienced by the teachers during the implementation of the road safety education programme.
- Determine whether the learners have acquired the necessary knowledge, and skills to make them safe and responsible road users.

Key research questions

1. What are the teacher's, beliefs, attitudes and perceptions to the implementation of the road safety education programme in the context of curriculum change?
2. What are the teaching and learning constraints experienced by the teachers during the implementation of this programme?
3. Did the learners acquire the necessary skills, and knowledge to make them safe and responsible road users?

1.6 Research Design and Methodology

The following table will provide an overview of the major methods that will be used for collecting data in pursuit of the three critical research questions of the study. This will be followed by a comprehensive discussion of the data collection methods that will be employed.

TABLE 1
Research Methodology

| Critical Questions | Mode of Inquiry | Sample | Instruments | Frequency |
|---|--|---|--|--|
| 1. What are the teacher's beliefs, attitudes and perceptions to the implementation of the road safety education programme in the context of curriculum change | Interpretivist-hermeneutic paradigm: Qualitative study Observation Interviews | 5 Teachers | Semi-structured interview schedule Observation schedule | Interviews will be conducted once with the teachers. |
| 2. What are the teaching and learning constraints experienced by the teachers during the implementation of the road safety education programme? | Qualitative Observation Interviews | 5 teachers | Semi-structured interview schedule Observation schedule | Each school will be visited once for classroom observation |
| 3. Did the learners acquire the necessary skills, and knowledge to make them safe and responsible road users? | Observation Questionnaires | 30 learners (10 per school in the intermediate phase) | Questionnaires | Questionnaires will be administered after the classroom observations |

As the central aim of this research is an investigation of the implementation of the road safety education programme in the context of curriculum change and its effectiveness in enhancing road safety among primary school learners, the researcher identified a phenomenological methodology as the best means for this study. The approach will be largely phenomenological as the data-gathering techniques employed seek to elicit responses reflecting the beliefs, attitudes and perceptions of key participants in the implementation process. Newby (2010, p. 36), states that the world that is explored by research is a perceived and experienced world. Phenomenologists are concerned with understanding social and psychological phenomena from the perspectives of people involved. Because of this, the researcher will engage with the participants, that is, the teachers and learners, in collecting data.

Qualitative research according to Cohen, Mannion & Morrison (2011) provides an in-depth, intricate and detailed understanding of meanings, actions, observable as well as non-observable phenomena, attitudes, intentions and behaviours. It gives voice to participants, and probes issues that, lies beneath the surface of presenting behaviours and actions (ibid, p. 219). Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. Such researchers emphasize the value-laden nature of inquiry. They seek answers to questions that stress how social experience is created and given meaning. Qualitative researchers attempt always to study human action from the insiders' perspectives.

For the purpose of this study, the insiders are the teachers and the learners from the five chosen primary schools. Cohen et al (2011), refer to the interview as a distinctive research technique which may serve three purposes. That is, it can be used as the principle means of gathering information because it relates directly to the research objectives, secondly it may be used to test hypotheses and thirdly it may be used in conjunction with other methods.

For this study, the researcher is concerned with the first and the third purpose, because this study does not seek to test any hypotheses. The researcher will use the interview as the principal means of gathering data because by providing access to what is inside a person's head, it will be possible to measure what a person knows

(knowledge or information), what a person likes or dislikes (values and preferences), and what a person thinks (attitudes and beliefs) (Cohen et al. 2011). By using the interview as a data gathering method, the researcher will have access to the teachers' beliefs, attitudes and perceptions of the implementation of the road safety education programme.

For this purpose, five teachers from the five different schools will be, selected, for the interviews. This represent, one educator from each school. Two teachers from the foundation phase and three teachers from the intermediate phase will be, interviewed.

A topic guide will be, used to steer the discussion and ensure that major interests will be covered in each interview. However, it will not be so restrictive that it will discourage the interviewee from raising issues that may not have occurred to the researcher.

The researcher chose the interview because it will be used in conjunction with classroom observations as well as questionnaires for validation purposes. The classroom observations as well as the questionnaire will be discussed in greater detail in Chapter Five.

In the next section the structure of the thesis will be presented.

1.7 Structure of the Thesis

Chapter 1: Introduction

This chapter provides an introduction to the study. It also states the rationale for conducting the study, the research aims and objectives, the theoretical underpinnings of the study and an overview of the research methodology. The chapter also presents an outline of the structure of the thesis.

Chapter 2: Decade of Action (DoA)

This chapter summarises the decade of action for road safety from an international perspective as well the South African perspective. It highlights the intervention methods that are required to ameliorate the scourge of road accidents. It also discusses the road safety projects that are implemented in the schools by the KwaZulu Natal Department of Transport. One such project is the road safety education project which is the focus of this study.

Chapter 3: Road Safety Education

Road safety education forms a key component of this study. International trends concerning research on road safety education is presented in this chapter.

Chapter 4: Theoretical Conceptions of the Curriculum

This chapter discusses curriculum and the various meanings that curriculum specialist ascribe to it. It also discusses the perspectives of curriculum and curriculum implementation in a changing context. A review of the literature pertaining to educational change is presented in this chapter to strengthen the underpinning theory of educational change within the context of implementing the road safety education programme.

Chapter 5: Researcher Design and Methodology

This chapter discusses the ontological and epistemological underpinnings that framed the research methodology. This study was interested in soliciting the beliefs, attitudes and perceptions of the five teachers to the implementation of the road safety education programme. For this purpose a qualitative research method, situated in an interpretive paradigm, was employed to answer the three critical research questions of this study.

Chapter 6: Analysis and Discussion of Data

The analysis of the data was conducted in this chapter. The analysis tools were described and discussed. The analysis and discussion of the data was informed by the literature study. It is hoped that the data and evidence will provide answers to the three critical questions of this study.

Chapter 7: Summary, Recommendations and Conclusions

This chapter provides a synopsis of the study. It re-examines the critical research questions. It makes recommendations for further research to be conducted on the implementation of the road safety education programme and finally presents the conclusion drawn from the study.

Road Safety Education forms a key component of this study. In the next chapter, a summarised version of the Decade of Action (2011-2020) (WHO, 2010), for road safety will be presented. One of the key recommendations of this document for reducing road fatalities by 50% in 2020, is for comprehensive road safety education to be implemented in schools across all learning areas from grade R to Grade 12.

CHAPTER TWO

2 ROAD SAFETY STRATEGY FOR SOUTH AFRICA FOR 2011-2020 DECADE OF ACTION

2.1 Introduction

In this chapter the researcher will present the decade of action for road safety as proposed by the United Nations and adopted by the South African National Department of Transport. The document that I have used as a reference is the *Decade of Action and Arrive Alive National Road Safety Strategy 2011-2020*. In this chapter I will also present the road safety education programmes that the Kwazulu-Natal Department of Transport, Road Safety Directorate currently implements in schools in Kwazulu-Natal.

2.2 Executive Summary

The Department of Transport is the lead agency in South Africa, with the responsibility of creating a safe road environment, and uses its agencies to assist with the implementation of projects to reduce fatalities. One such project is the road safety education programme that is being implemented in the primary schools. The strategy involves a concerted effort to improve education and enforcement. This is done in accordance with international best practice and recommendations from the World Health Organisation for developing countries (DoA, 2011)

South Africa supports the Decade of Action (DoA) for Road Safety which will support international measures to reduce road fatalities (especially in Sub-Saharan Africa). This will be done by making use of the five road safety pillars from the DoA, together with the revival of the Arrive Alive Campaign. South Africa will be accountable to the United Nations throughout the decade. These issues will include the resources dedicated to road safety, the success of partnerships and sponsorships, the activities undertaken and data to indicate the success or failure of projects. It is hoped that this research will be able to highlight the success or the failure of the

implementation of the road safety education programme in primary schools where the research was undertaken (DoA, 2011).

This integrated strategy will lead to multi-sectoral efforts within the private and public sectors to reduce road fatalities. This will be done by concentrating on the highest risk factors. These include:- alcohol (drivers and pedestrians); seat belt compliance; moving violations including speed; creation of a safe environment for pedestrians; education in schools. Mass media campaigns to gain the support of the public; improving vehicles and the road environment and improving after crash care to reduce deaths and disabling injuries (DoA, 2011).

Previous strategies have been unsuccessful because they were too wide-ranging and did not prioritise “quick fix” solutions. At all government levels insufficient resources were made available for implementation of road safety strategies. Road fatalities have generally continued to rise over the past decade. To achieve the goal of a 50% reduction by 2015 a decrease of 15% in fatalities per annum is required. If this goal is achieved 27 000 lives will be saved over the next few years (WHO, 2010).

2.3 Rationale for the Decade of Action

Road crashes have become recognized internationally as a social and economic burden, particularly in low and middle income countries. This has led to the World Health Organisation, World Bank and United Nations to profer recommendations to mitigate against the challenges faced on roads internationally, particularly in the developing world (WHO,2010)

The reason that this strategy is designed for implementation over a ten-year period is because South Africa is joining the international community in the Decade of Action for Safety from 2010 to 2020. This is an initiative of the Commission for Global Road Safety. This campaign supports the Millennium Development Goals from the world wide community and the Accra agreement of 2007 by the African Ministers of Transport to halve fatalities in Sub-Saharan Africa by 2015. This international and

regional movement supports the commitment of our own Minister of Transport who is a declared Road Safety Champion.

It is obvious from the efforts of the high income countries that road crashes and fatalities can be reduced through specific efforts in the widely recognized best practice model of the four “E’s”, (this is discussed in greater detail in section 2.3.1 to 2.3.4 in this Chapter), and with sufficient political and financial support from role-players such as the national insurance and transport related industries.

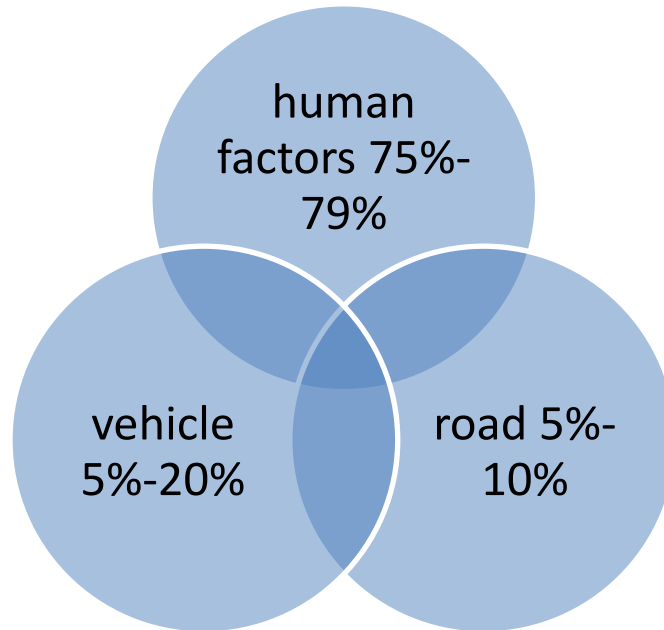
When basing a strategy it is essential to base ALL actions taken on specific, scientifically proven challenges and appropriate solutions, so that the maximum effectiveness is achieved and a relationship between the remediation processes is developed to enhance the results.

The challenges in South Africa are seen primarily as human behaviour that is:

A lack of knowledge of the rules of the road and willingness to abide by those rules; as well as inadequate enforcement and a lack of follow up of fines and the resulting culture of impunity in respect to punishment of offenders.

The following diagram as presented in the document indicates the contribution of the road environment to trauma on the roads (DoA, 2011, p.5)

FIGURE 1
Contributory Factors to Road Trauma



Factors are often inter-related and more than one contributing factor exists. The components that comprise the transport system include the user, the vehicles and infrastructure. These components operate by interacting with one another. An accident is the result of an incorrectly adjusted interaction between the system components.

According to Figure 2.1. human factors account for 75% to 79% of road trauma. The human factor of accidents refers to the inadequacy of the variables that characterises the human component, that is age, fatigue, speeding, drinking and driving (Van Elslande, Naing & Engel, 2008). Factors associated with the road environment account for between 5% to 10% of road trauma. According to (WHO, 2010) report, engineering measures have been developed to mitigate road trauma. Vehicle defects such as faulty tyres and brakes contribute between 5% to 20% of road trauma.

Another challenge is the line function for road safety with respect to the constitutional division of transport functions between government and the various agencies, tasked with road safety initiatives. The agencies in South Africa are Road Traffic Management Corporation (RTMC), South African National Roads Agency Limited (SANRAL) and Cross Border Transport Agency (CBRTA).

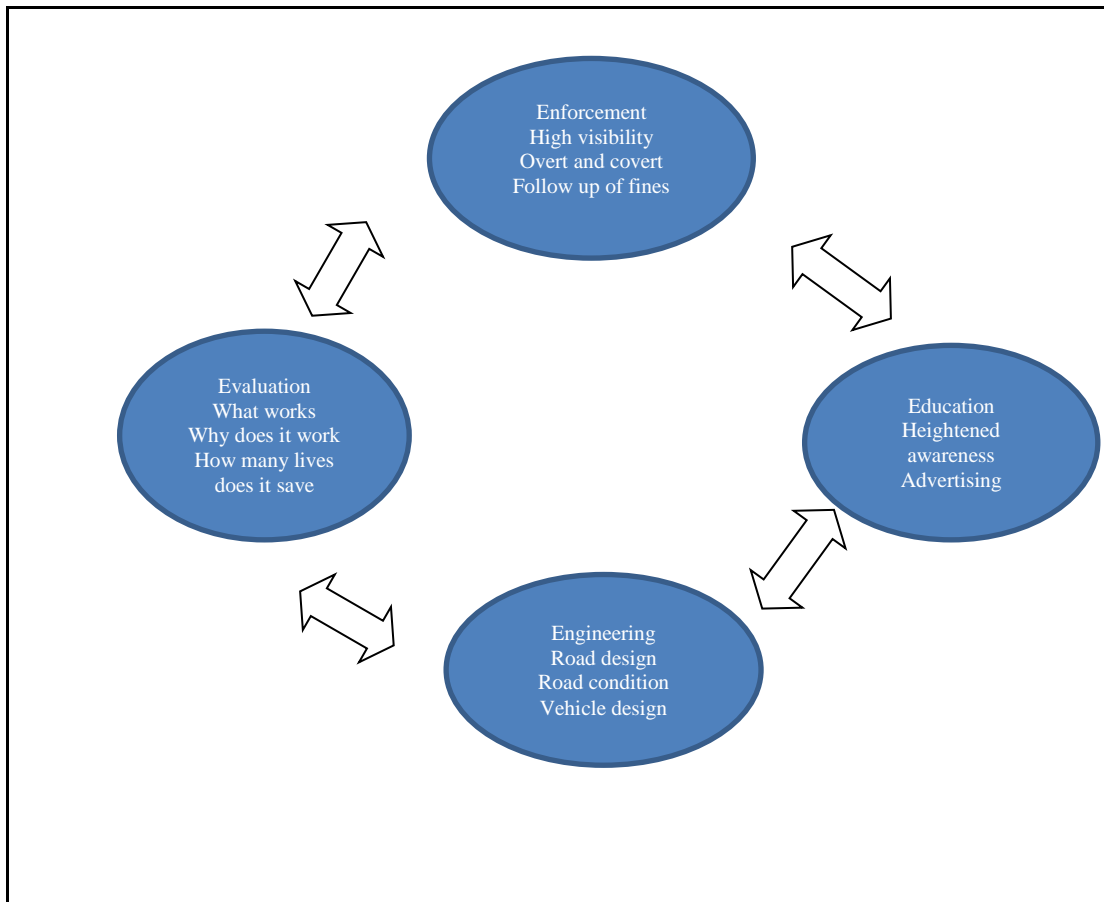
The Minister of Transport has requested that the road safety line function develop a goal, vision and mission to support the Departmental vision, which is:

To provide safe, reliable, effective, efficient and fully integrated transport systems and operations as well as infrastructure; which will best meet the needs of freight and passenger customers and commuters at improving levels of service and cost in a fashion which supports government strategies for economic and social development, whilst being environmentally and economically sustainable. (DoA, 2011, P.6.)

The consultation process has come with the following as basic terms of reference for the projects:

- **GOAL:** To reduce fatalities on the roads of South Africa by 50% by 2015, with further reductions by 2020.
- **VISION:** Safe and efficient road transport, contributing to economic growth and development, through improved co-operation and compliance from road users.
- **MISSION:** Using strong political will and commitment to reach all road users, using a systems-based approach of education, enforcement, engineering and evaluation to change attitude and behavior (P.6).

FIGURE 2
World's Best Road Safety Practice (DoA, 2011, p. 8)



2.3.1 Enforcement

To have the best possible enforcement project, one must create the perception of substantially increased enforcement activities. Visibility must be increased by as much as four times. In 2010, in South Africa, a campaign was launched to improve visibility. The target was to have a thousand road blocks every day and to check a million vehicles every month. The challenge to achieving this target is the substantial shortage of dedicated road traffic inspectors (RTI).

It is advocated that agencies concentrate on a single behaviour challenge at any given time. For example offences relating to seat belts must be carried out over a period of two months. Education and advertising campaigns must support this initiative simultaneously. This is done to maximize the efficiency of the enforcement by educating the public about correct behaviour regarding the use of seat belts.

Research as carried out by the National Department of Transport indicates that seeing a traffic officer affects behaviour for seventeen minutes. It is important that officers are seen actively enforcing the law with maximum impact. The public must be implicitly made aware that if they disobey the rules of the road, they will be caught, and they will be punished.

In 2010 South African enforcement agencies responded to a call by the Minister which demanded that a million vehicles and drivers are checked every month for legality in a project which will last for at least 12 months. This began on 1 October 2010 and has continued until September 2011. This campaign concentrated on drunk driving, seat-belts and vehicle condition and legality.

Administrative Adjudication of Road Traffic Offences and demerit points

Implementation of the Administrative Adjudication of Road Traffic Offences (AARTO) system is designed to:

- Reduce the impact of large numbers of fines on the court system
- Decriminalize the lesser offences
- Identify repeat offenders
- Improve the fine collection process and ensure that people are appropriately punished for their offences
- Introduce the demerit system to enable the process of taking dangerous drivers of the road by withdrawing their licences
- Ring-fencing funding collected in fines specifically for road safety projects

Demerit points:

In countries like Ireland, Canada, Australia and New-Zealand demerit points are issued when fines are paid. Payment of fines in these cases is an “admission of guilt” and when a certain number of demerit points are allocated to drivers their driving licenses are suspended for a period of time.

2.3.2 Education

Projects should be concentrated on those who are repeat offenders, and groups who are considered “at risk”. These are public transport and heavy duty drivers, pedestrians, young men, children and the elderly.

Advertising should emphasise the consequences of poor behaviour in ways in which it makes people think “that could happen to me”. It is no good giving the message “slow down” without saying what will happen if you don’t comply..

Special education programmes in schools and with workers in business or industry should be ongoing, to ensure that they understand the rules of the road and the consequences of behaving in a way which does not comply with laws or which is careless or negligent.

2.3.3 Engineering

The road environment

It is important to find out where crashes occur on a regular basis and ensure that there are no challenges to the road’s engineering. Authorities can always erect fences which control pedestrian activities, or traffic calming methods such as speed humps and rumble strips or traffic circles to slow traffic down where necessary.

Auditing processes at design, construction and maintenance stages are also important, when one considers challenges to safe design.

The freeway system in South Africa was based on the American system, where the only factor that was taken into account was the vehicle. No provisions were made for pedestrians, cyclists or other vulnerable road users. The European model caters for all road users. South Africa is now paying the price for that choice, with many places, including rural areas and affluent suburbs, not having adequate pedestrian or cycling facilities which can be used safely by those who are walking or cycling as a choice or as a necessity (DoA, 2011)

Human beings will and do make mistakes and the roads should provide a forgiving environment which allows for reasonable levels of misuse and carelessness.

The International Road Federation has indicated that South Africa has amongst the best national road networks in the world after Germany and is on par with France. The provincial and local authority road systems are however a challenge, due to a lack of adequate maintenance and the existence of potholes. Should maintenance be delayed for three years beyond the recommended time, the cost of rehabilitation escalates by a factor of 6, and should it be delayed for a further three years, the factor increases to x18 (DoA, 2011, P.12)

Vehicle design and maintenance

Vehicle design and condition is also important, with safety equipment such as seat belts and airbags, and general good condition of brakes, lights, steering and shock – absorbers are vital to ensure safety. Vehicle condition plays a large role in crashes in South Africa due to the age of the national fleet (more than 10 years) and the current situation where vehicles are only tested for road worthiness on change of ownership.

The introduction of periodic testing (this was proposed since the mid1970s) is a priority to ensure that, owners keep their vehicles in the best possible condition, to ensure safety and to prolong their lives and improve its second-hand value

2.3.4 Evaluation

The best practice in road safety is always based on intervening on a scientific basis:

- Where are the big problems and how does one ameliorate them?
- What works as an intervention and what does not work?
- Are the particular measures taken, culturally appropriate in terms of a particular nation and community?
- What can be done to improve public understanding in terms of crashes and their consequences?

- Is there any way in which you can improve your lobbying and advocacy skills and improve your relationships with your local council to ensure that the necessary steps are taken to make your community safer? (DoA, 2011, p.12.)

Monitoring and evaluation is considered to be one of the pillars of international best practice. Where statistics are unreliable, it is necessary to monitor not only in terms of straight data, but also in terms of activities carried out to achieve the goals, as well as the use of resources (personnel and financial) and the cost benefit activities of such successes.

Monitoring should include reports on the following basis:

- Measure the scale of programmes (inputs)
- Assess behaviour shifts (outputs)
- Monitor safety improvements across areas of roads, users and vehicles (outcomes-data)
- Report on all enforcement activities across all jurisdictions

2.4 Communication Strategy

Education comprises all those issues which influences behaviour, and of which this media strategy is the primary component. It uses media (television, radio, billboards, print) through advertising and public relations efforts, as well as the unconventional and new social networking vehicles (Facebook, Twitter) to promote knowledge, leading to attitude change which in turn leads to a change in behaviour.

It also uses any opportunity for education, particularly of vulnerable groups such as children, pedestrians and public transport drivers, to improve knowledge, behaviour and attitude.

2.4.1 Basis of a Media Strategy

International experience from best international practice indicates that the following must be priorities when developing an advertising campaign.

- Education projects must emphasise the danger of poor behaviour and show the emotive result of death and injuries on the roads
- It should be concentrated on those who are repeat offenders, and groups who are considered “at risk”. These have been identified as public transport and heavy duty drivers, pedestrians and young men.
- Advertising should not be generalized or generic in nature. They should deal with specific offences.

2.4.2 Strategic Imperatives:

- Develop strategic interventions to reach all stakeholders and segments of society, including the youth and children, rural and urban people, with appropriate, accessible language and style.
- Promote Arrive Alive as a beneficial over-arching policy to save lives, improve safety, reduce the “culture of impunity” of poor drivers, identify repeat offenders and be of benefit to the community as a whole. Make poor driving behaviour and non-payment of fines socially unacceptable.

In line with best practice, road safety messages must be marketed as a “consumer product”, with public relations activities to support enforcement activities and inform road users of the risks associated with road travel. Communication plays a vital role in supporting road safety projects with the promotion of road safety slogans as consumer products.

In the next section the South African context of Road Safety will be discussed

2.5 South African Context in Road Safety

Every single South African should know and understand that South Africa has one of the worst road safety records in the world. Forty people per day die on our roads, with a further 20 being left permanently disabled and several hundred suffering serious injuries (WHO, 2010).

Most of these crashes are unnecessary and occur as a result of road traffic contraventions. The government can only do so much to keep the roads safe, but

ultimately it is the responsibility of every single citizen to ensure their own, their families and their community's safety.

Despite the various road safety campaigns, the death toll in some provinces continues to rise. In Limpopo and the Free State it has risen by 9% and in KwaZulu-Natal by 7% percent

Dangerous roads have a significant impact on developmental objectives-especially because of immense economic and social cost of road crashes to low and middle income countries. In South Africa the amount of money that the crashes cost is in the region of R133 billion. This has a significant effect on other needs such as money being available for health, education, housing, job creation initiatives, water and electricity production and other state expenses (WHO, 2010)

Recommendations from the World Bank include the suggestion that 10% of infrastructure spend should be dedicated to road safety. In a recent grant to Sub-Saharan Africa only 2% was earmarked for road safety. Governments do not take seriously enough their responsibility to implement strategies to reduce pain and suffering caused by crashes, and also to reduce the effects on the health system and the economy of the country.

The current national budget for road safety is only R15 million annually, that has been transferred from RTMC to the Department of Transport, Road Safety Promotion Unit.

Many provinces and most local authorities do not have adequate road safety budgets, and in spite of the National Minister being committed, the commitment is not obviously moving down through the various strata of government.

2.5.1 Department of Transport

The commitment to road safety by the Minister of Transport and the Director General has led to the formation of a Road Safety Promotions Unit within the Department of Transport. This Unit has been, set up in the Office of the Minister, and reports to Communications in terms of line function to co-ordinate and promote road safety.

It is necessary for the department to ensure that the road safety functions which currently exist in various components within the department and its agencies are institutionalized in such a way that their efforts are sustainable and effective.

Many of the road safety functions fall within the Road Regulations component of the Departmental structure. DOT road regulation is responsible for policy, development and maintenance of legislation and regulation, and standards.

Infrastructure Safety Audits, Road Traffic information and AARTO fall under the responsibility of the RTMC.

2.5.2 The Road Traffic Management Corporation

The Road Traffic Management Corporation (RTMC) commenced its operations in April 2005 with the main purpose to pool resources to eliminate the fragmentation of responsibilities for all aspects of road traffic management across the various levels of government in South Africa, and to bring a professional approach and improved confidence into the entire system.

The RTMC was established in terms of section 3 of the Road Traffic Management Corporation Act, No.20 of 1999, for co-operative and co-ordinated strategic planning, regulation, facilitation and law enforcement in respect of road traffic matters by the national, provincial and local spheres of government.

In the next section the researcher will discuss the opportunities and challenges of implementing road safety initiatives in South Africa.

2.6 Challenges and Opportunities

2.6.1 Challenges

The following have been identified as the primary challenges in South Africa:

- The primary risk group is men in the 18-45 age group. Included in this group is the high level of public transport and heavy vehicle crashes. There is also non-compliance with driving permits with this category of drivers.
- Driving while under the influence. Alcohol is a contributing factor to 50% of crashes which occur at night.
- Lack of compliance to the wearing of seatbelts.
- Excessive speeding while driving.
- Most fatal crashes occur over the weekends.
- Rush hour in the mornings and evenings between 17h00 and 22h00.
- High pedestrian fatalities
- Vehicle condition in both the private and public sector
- Vehicle and driver legality. Fraud and corruption is rife in this industry
- Accuracy of data which hampers the evaluation processes

Other challenges identified and emphasized through a consultative process include the following:

- Lack of capacity in terms of resources- financial resources for road safety as well as personnel for enforcement and educational purposes.
- The lack of clarity as to where the various road safety functions lie- within Road Regulation at DOT, RTMC with the Road Safety Promotions Unit and the various agencies. This leads to confusion with no institution taking responsibility and confusion as to the line function for the various projects.
- The loss of impact of the Arrive Alive brand and refusal by certain institutions to utilize and support the brand.
- High risk behaviour on the road must compete with other challenges, that is, the high prevalence of violent social crime and HIV/AIDS.

In the next section the opportunities will be discussed.

2.6.2 Opportunities

2.6.2.1 Enforcement

- High levels of publicity with 1 million vehicle checks from October 2010
- South African Breweries support for alcohol centres, 1 in Gauteng, 2 in Western Cape with another 2 under construction and 1 in KwaZulu-Natal
- The high levels of non-compliance, means that there is vast room for improvement.

2.6.2.2 Education in the South African Context

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- Training of Road Safety officials with Community Road Safety Council (CRSC) is a possibility to improve skills.
- More partnerships with the private sector are being established with general commitment towards road safety being more clearly understood.
- Wasted projects such as DOTY and other competition based-projects with limited impact and reach are now recognized as a poor use of resources.
- Communities are getting more involved in road safety issues, leading to the development of community-based ambassadors and evangelism for road safety.

In this section the researcher will discuss the various education programmes that the KwaZulu-Natal Department of Transport has implemented to address the challenges that have been identified.

Participatory Education Techniques (PET)

This programme targets high school learners. It involves research in a road safety problem near their school and community. Learners are trained in research methodology and how to identify a possible solution. Learners submit their written research as well as a prototype of their research and solution.

Scholar patrol

This programme targets primary school learners. Ten learners are trained by RTI personnel to assist the learners from the school to cross the roads in the mornings and afternoons. Learners are also issued with a manual demonstrating the various types of crossing at different schools and what steps are in place to ensure that all learners cross the roads safely. Learners also learn about road traffic rules and regulations.

Driver of the Year (DOTY)

Heavy duty and long distance drivers are targeted for this programme. Education and awareness is conducted at the freight companies as well as on strategic points of the N3 corridor. A wellness clinic is also held. This is to ensure the wellbeing of the drivers. The Department of Health and an NGO called Trucking Wellness assist with this programme. Drivers are screened for any health related issues that may impact on their long distance driving. The necessary remedial measures are also advocated. Where possible, drivers are given immediate medical assistance at nearby clinics or hospitals.

Regional competitions are held in five different categories according to the size of the different types of vehicles. The tests are conducted, in the same way as the K53 driving test is conducted. The regional winners compete at a provincial level and then proceed to a national level. The national winners then compete at an international level. The international competitions are held every two years in Europe. It was held for the first time in South Africa in August 2012 at Sun City.

Awareness Campaigns

Awareness campaigns are conducted at taxi ranks and other areas that are identified as high risk areas. Community Road Safety Council members are allowed to conduct awareness campaigns on a monthly basis in their areas. This is done in conjunction with the Road Traffic Inspectorate personnel (RTI), members from the municipalities involved in community safety and liaison, members from church- based organisations and other stakeholders.

Debates

High school learners are targeted for this programme. One school per Community Road Safety Council (CRSC) area is chosen. In the Pietermaritzburg region, there are eight CRSC areas. There are four areas in the Umgungundlovu district and four areas from the Sisonke district. There are eight schools that compete with each other on a knockout basis. The final two schools represent the region at a provincial level.

Schools are trained in the world style of debating on road safety topics. This is done to increase road safety awareness not only at a local or national level but at an international level.

Adult Pedestrian

This programme targets adult pedestrians. There is an emphasis on alcohol abuse and jay walking, especially in the rural communities. Community Road Safety Councils (CRSC) implements this programme in their communities. Risk factors associated with pedestrians are highlighted.

Interfaith

This strategy emphasizes the concept that road safety and awareness is everybody's business. It is also a part of everybody's moral and civic duty to use the roads in a safe and responsible manner. The rationale behind this is that if road safety becomes a part of religious catechisms on an ongoing basis and in a consistent manner then

norms and values concerning road safety will become internalized. Religious forums are an ideal platform to address road safety issues, awareness and education campaigns. With this faith-based programmes adults as well as young road users are targeted.

To achieve these objectives the following strategies have been adopted.

- Leaders of the various denominations must plan activities pertaining to road safety in their region
- Road safety information must be disseminated in their parishes.
- Road safety awareness and education must be an integral part of their religious discourses on a regular basis
- One road safety topic per month must be discussed
- Most people in rural areas manage the roads as non-motorised users, therefore there must be intensive education targeting pedestrians.

2.6.2.3 Engineering

- Getting more people to use rail, Bus Rapid Transport (BRT), high occupancy vehicle lanes and Gautrain will improve safety.
- Taxi re-capitalisation should improve safety, improved behaviour and safer vehicles, but only if seatbelts are worn and drivers are adequately trained.
- The pothole remediation plan is in progress, with a budget being allocated specifically for this.

2.6.2.4 Evaluation

- Improved relationships with other role players such as RTMC, RAF and EMS will enable us to collect more accurate data for evaluation purposes.

2.7 The Goal of Arrive Alive and the Decade of Action

World leaders put together the Millennium Development Goals to improve the socio-economic situation in the world. During the Accra Conference in 2007 the African Ministers of Transport supported this initiative.

The goal of the Arrive Alive programme is to honour this obligation. This will require a five year programme of initiatives which will lead to a 15% reduction of fatalities on an annual basis.

It was predicted that a 50% reduction in fatalities from 2010 to 2015 will be as follows. This is represented in Table 2

TABLE 2
Predicted Fatality Reduction from 2010 to 2015

| Year | Reduction in fatalities |
|--------|-------------------------|
| Δ 2010 | 15 000 |
| Δ 2011 | 12 750 |
| Δ 2012 | 10 837 |
| Δ 2013 | 9 212 |
| Δ 2014 | 7 830 |
| Δ 2015 | 6 65 |

For this strategy to be effective, the Decade of Action plans, international best practice and WHO recommendations must be combined with a well, planned strategy which is appropriate to the South African socio-political and economic context. To achieve the desired goal of a 50% reduction in road fatalities by 2015, this initiative must be well resourced (WHO, 2010).

The reporting processes to the UN will involve detailed analysis of the successes achieved in terms of both activities carried out, good governance, the effective use of resources, and the reduction in offence rates and fatalities of each member country.

The Secretary-General will produce annual reports throughout the decade and in 2015 at the Ministerial Conference on Road Safety hosted by the Sultanate of Oman.

The family of Nelson Mandela has established a scholarship to support road safety initiatives in South Africa. This scholarship was established in memory of Zenani Mandela who died in a car crash before the start of the Soccer World Cup in 2010. This scholarship was launched as part of the UN Decade of Action for Road Safety. The aim of the scholarship is to help young policymakers tackle the increase in death and injury on the South African roads (ACRS, 2011)

2.8 Summary

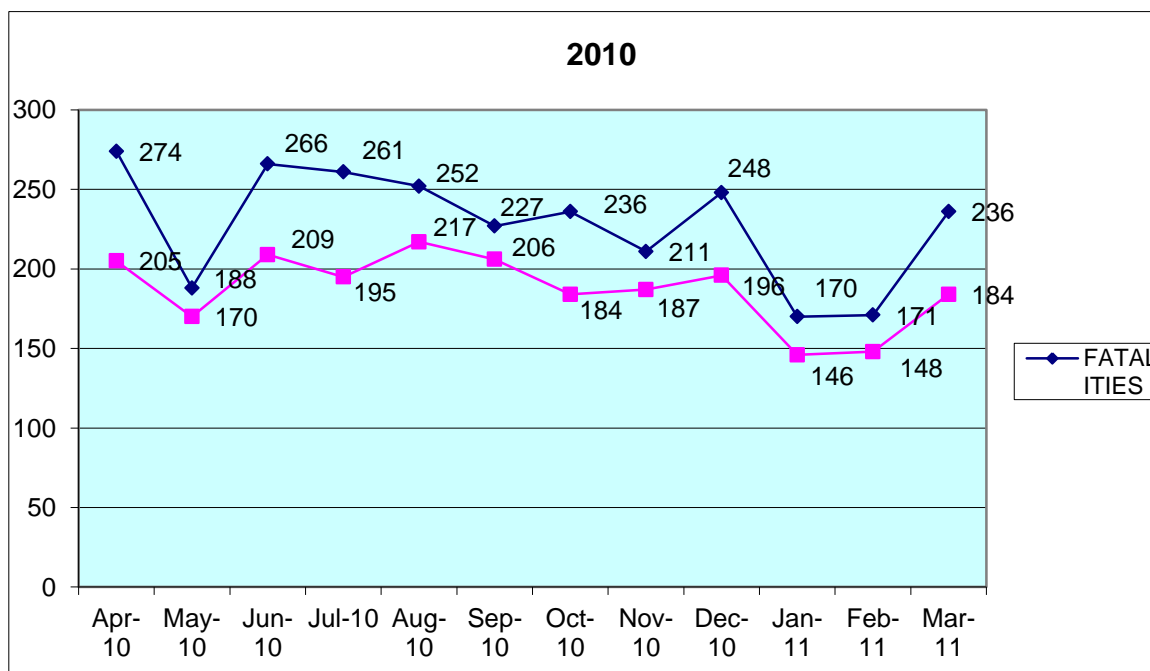
In spite of consulting and preparing at least three strategies in the past decade, South Africa has not made any significant gains in reducing the tragedy of the high fatality rate on our roads. South Africa now has a Minister of Transport who has the political will to make a change, and has set a clear target of reducing fatalities by 50% by 2015. This means that by 2015 no more than 7000 people should die on our roads. Compared to other nations these levels are high, and we must ensure that we are successful in reducing the carnage on our roads.

The Decade of Action strategy has a clear focus for each of the ten years based on international best practice and the five road safety pillars. It is hoped that this new and simpler approach will assist in the implementation of those elements that are vital for attitude and behaviour change which will reduce offences and thus reduce fatalities and disabling injuries. The following TABLE 3 and FIGURE 3 reveal the crash and fatality statistics for the year 2010- 2011.

TABLE 3
Fatalities and crashes as per RTMC April 2010 – January 2012

| MONTH | FATALITIES | CRASHES | MONTH | FATALITIES | CRASHES |
|--------|------------|---------|--------|------------|---------|
| Apr-11 | 214 | 210 | Apr-10 | 274 | 205 |
| May-11 | 195 | 193 | May-10 | 188 | 170 |
| Jun-11 | 215 | 155 | Jun-10 | 266 | 209 |
| Jul-11 | 217 | 162 | Jul-10 | 261 | 195 |
| Aug-11 | 183 | 143 | Aug-10 | 252 | 217 |
| Sep-11 | 190 | 146 | Sep-10 | 227 | 206 |
| Oct-11 | 129 | 121 | Oct-10 | 236 | 184 |
| Nov-11 | 161 | 150 | Nov-10 | 211 | 187 |
| Dec-11 | 213 | 204 | Dec-10 | 248 | 196 |
| Jan-12 | 69 | 56 | Jan-11 | 170 | 146 |
| | | | Feb-11 | 171 | 148 |
| | | | Mar-11 | 236 | 184 |

FIGURE 3
This Graph Reveals the Fatality Rate for 2010



In this chapter I have presented the Decade of Action plans for road safety as proposed for the international community by the United Nations (UN) as well the proposal for the South African context for road safety. This was a summarized version of the Decade of Action Plan (DoA, 2011).

This chapter also focussed on the road safety initiatives implemented by the Kwazulu-Natal Department of Transport. One of the initiatives is the road safety education programme which is currently being implemented in primary schools in Kwazulu-Natal. The focus of this study is the implementation of the road safety education programme and the key research question addresses how the teachers experience curriculum change in implementing this programme.

In Chapter Three, an international review of the road safety initiatives and research will be presented. The focus is on studies conducted to enhance safe and responsible road user behaviour. The success rate of these road safety initiatives will also be discussed.

CHAPTER THREE

3 LITERATURE REVIEW

3.1 Introduction

This chapter provides information on road safety and the way road safety education is practiced internationally. A key component of the study's conceptual framework is road safety education. According to Newby (2010) a literature review, is the key part to any research. To do justice to our research it needs to be embedded in the wider research environment. Other people's work need to be used as a foil to our own ideas and to highlight and support our own findings. Relevance to research questions, especially critical question three, and purpose was an important consideration in including them in the review for this study as will be revealed in the discussion and the analysis of the questionnaire data in chapter six.

In order to gain an understanding of the efficacy of current trends to school-based road safety education, a literature review of international programmes was undertaken. Programs included in the study were limited to those that were provided to school learners of all ages. These studies were conducted between 1999 and 2010 (Raftery & Wundersitz, 2011). The road safety issues that were addressed were about pedestrian, cyclist and passenger safety. This study will briefly discuss these initiatives and their outcomes. This review did not include media campaigns or any other road safety initiatives that were conducted outside of the schools, as this was not within the scope of this study.

There is a substantial body of literature which examines road safety education in schools. This literature is supported by program materials from the various departments of transport. An analysis of the materials indicate that they vary widely in scope from a wide range of road safety education to narrowly-focused, but more in-depth treatment of specific road safety issues. Across these differences, they tend to focus either on transmission of information or development of practical road user skills and knowledge or a combination of both. Although a small number of studies focus on developing strategies for shaping behaviour (Ferguson, Schonfield, Sheehan & Siskind, 2001). Many road safety education programmes foster the development of

attitudes, because attitudes are a precursor to acceptable and good behaviour. Studies by (Cooke & Sheeran, 2004), have found that attitudes are not always the best predictors of behaviour. The problem of altering people's behaviour to reduce the incidence of injury is not unique to road safety.

The implicit aim of providing such road safety information is to provide a basis for developing cognitive capacity for making rational, informed and competent decisions, and a combination of knowledge and attitude to lead learners towards making such decisions. School based road safety education programmes aim to improve the road safety behaviour of children and adolescents. The strategies employed to encourage learners to make use of their newly acquired skills or knowledge are almost exclusively, a combination of fear of consequences and moral exhortations which is based on a premium desire to maintain a positive sense of self and an appreciation of the consequences of not being involved in an accident.

Curriculum-based approaches involve the inclusion of road safety specific subjects or the integration of road safety themes within existing subjects such as mathematics, science, and English (this is also known as the cross-curricular approach). Rafterey & Wundersitz (2011) state that curriculum based approaches enable the delivery of developmentally appropriate road safety education to students of all ages and usually involve multiple sessions delivered over the course of a term, semester, or school year. However they (ibid) state that the main problem associated with the addition of road safety subjects to any school curriculum is that of space, because the school curriculum is already overloaded with core subjects. Curriculum based road safety education programmes are the least evaluated of all road safety education programmes.

Studies that evaluated, outcomes of road safety education indicated that neither skills-based nor classroom programmes based on knowledge and cognitive capacity had much tangible impact on daily road user behaviour (Azeredo & Stephens-Stidham, 2003; Christie, 2001; Dragutinovic & Twisk, 2006; Ferguson, Schonfield, Sheehan & Siskind, 2001). On the other hand, studies conducted by Leadbeatter (1997) revealed that during the implementation of the road safety education programmes, in which teachers used a variety of active learning strategies with problem solving components did result in improved road user behaviour.

Road traffic crashes are a routine occurrence on roads throughout the world. Thousands of people lose their lives on the roads every day. Many millions more are left with disabilities or emotional scars that they will carry for the rest of their lives. Children and young adults are among the most vulnerable. Every hour of every day, forty youngsters die as a result of road traffic crashes (WHO, 2007). This means that every day another one thousand families have to cope with the unexpected loss of a loved one. Knowing that a child was lost to a preventable incident may add to the pain and suffering, and can leave families and communities with emotional wounds that takes decades to heal.

Publication of the WHO and World Bank *World Report on Road Traffic Injury prevention in 2004* and the dedication of World Health Day to road safety have resulted in unprecedented attention to road safety around the world. These events, issued a clear call for action, and governments, international organizations, civil society, road safety practitioners, and the private sector have all responded with energy and enthusiasm. As a concrete expression of this energy and enthusiasm, a number of the United Nations General Assembly resolutions as well as a World Health Assembly resolution urge countries to take further action to curb this escalating epidemic (WHO, 2004).

3.2 Road Safety Interventions

This chapter seeks to highlight the many interventions, especially the road safety education programmes, which is being implemented all over the world to make learners safer road users. Researchers are striving to find solutions for the high fatality rates on our road (Christie, 2002; Cairney, 2003; Buckley, 2008, Delaney, Newstead & Corben. 2004). There is no blue-print for road safety. No simple solution or easy vaccine-like intervention to cure this scourge. There are a variety of approaches to road safety education. Current research strongly supports a more age-appropriate behavioural approach for younger children while recognizing the need for large resources to implement it (OECD, 2004). According to Brown (2003) the models of practice for road safety follow very similar lines. There is an increasing emphasis on helping teachers to teach road safety, broadening the base from which

road safety is taught and encouraging a greater involvement of parents. The daily traffic situation deals with the life of human beings and the loss of it.

When international trends regarding the level of road safety education in schools are taken into account, it appears that road safety education plays a definite, explicit role in accident rates. International research has shown that in countries where road safety education is compulsory, the accident rate is relatively low whereas in countries where there is no or partly compulsory road safety education the accident rate is relatively high (20th South African Transport Conference, 2001).

In England the Department of the Environment, Transport and Regions (DETR) commissioned extensive research into good practice in the effective delivery of road safety education at all school levels. The DETR (1998, p.8) Research concluded that:

- Road safety can be used in most areas of the curriculum. In South Africa the road safety education programme is aligned to all eight learning areas. The course packs consists of detailed lesson plans incorporating the different learning areas.
- Children need to receive small, frequent, and purposeful inputs of road safety education throughout their school careers. The road safety education programme in South Africa targets learners from the foundation phase to grade nine. The lessons are planned for implementation on a continued basis.
- Well trained and supported teachers are the best, placed professionals to deliver road safety education in schools. The Department of Transport provides training and support for teachers implementing this programme.

In the United Kingdom the revised National Curriculum took effect from September 2000. The revised curriculum addressed road safety education in primary and secondary schools. Safety education is not necessarily about isolating children and young people from all potential hazards but is about equipping them to deal with situations safely (Department for Transport, 2004).

Using the information and experience from the English programmes, Massey University in New Zealand was contracted to manage the research on the road safety education programmes. The research confirmed that there was:

- a measurable and significant increase in both the amount and quality of road safety education taking place in schools that were part of the programme
- evidence that schools were beginning to incorporate road safety into their curricula in underlying policies and programmes
- road safety was becoming institutionalized within the curriculum of each school and also in the schools administration (Road Sense, 2003)

In Norway, two local councils have carried out a project aimed at integrating traffic into the curriculum. This report evaluates the project and focuses on accomplished results and participants experience of the process. The analysis shows that the project has led to an increased focus on traffic safety issues. Most of the activities have taken place at school levels, where traffic education traditionally has been an important activity. The project has been a moderate success when it comes to integrating traffic into the school's curriculum.

Elvik, (2000) stated that the *Speak Out* program in Norway was implemented to stimulate stronger social controls over driving amongst adolescents aged (16-19). This program encourages the passengers of teenage drivers to speak out against the unsafe driving practices of their drivers. This programme involved an information and an enforcement component. The information was presented at schools. The enforcement targeted speed and drinking and driving. This programme was initially implemented in Sogn og Fjordane county, and has since been adopted nationally.

An evaluation was conducted by Elvik (2000) to determine the effectiveness of this programme. Because this programme targeted passengers, the primary indicator of success was a reduction in injury rates among passengers. The evaluation compared crash injury statistics five years prior to the implementation of the programme (1987-1992) to three time periods after the programme began (1993-1998, 1994-1998, and 1995-1998). This served as a means to compare the programme at various levels of activity. These statistics were compared to the neighbouring county of More og Romsdal. The analysis revealed that teenage crash injuries reduced significantly in Sogn og Fjordane. The studies further revealed that reductions were observed for passengers while there was no significant change for drivers. A multivariate analysis revealed that the reduction of teenage crash injury rates attributed to *Speak Out* was

significant for passengers only. Elvik (2000) argues that *Speak Out* fulfills its intended aim. However, Elvik (2000) also mentions the limitations of the study's methodology. The data does not allow for an assessment of the programme's influence on individual behaviour. Because the study also involved an enforcement component it failed to clarify whether the reduction in injury rates were attributed to the information or the enforcement component.

The Scottish Executive and the Scottish Road Safety Campaign (SRSC) commissioned research to assess the current state of road safety education (RSE) in Scottish schools, the key stakeholders views on RSE and the factors that affect its delivery (Graham,1997). The results of the research assisted in the development of a strategy for the SRSC to provide a more equitable and consistent promotion and delivery of road safety education within Scottish schools.

Dragutinovic & Twisk (2006) assessed the use of computer software to teach Scottish learners how to cross the street safely. The training programme was evaluated by the use of a pre- and post- intervention design. Two hundred and seventy nine learners aged 5-8 years old were randomly allocated to intervention and control groups. Observations were made regarding children's demonstrated behavioural and conceptual understanding of the road crossing task.

The results revealed that there was, no significant differences between learners at the pre-testing stage. On the other hand, the learners in the intervention group demonstrated significantly better behavioural and conceptual performance. Dragutinovic & Twisk (2006) stated that statistical analysis revealed that correlations between conceptual understanding and behaviour were much higher than pre-test levels for learners who had undergone training. These findings revealed that the computer based training programme was successful at improving knowledge, and that this improvement further influenced behaviour.

An evaluation of the Safe Roads to School (SRTS) programme has been conducted in South Australia. This evaluation addressed issues regarding the programme's implementation and the perceptions of the program amongst key stakeholders. The findings of this evaluation provided little in the way of quantifiable evidence regarding the effectiveness of the programme. Preliminary findings by (Couch et al.

2001) revealed that most schools involved in SRTS, reported improvements in the management of traffic around schools in a manner that lowered concerns about road safety.

Cairney's (2003) evaluation study on Victoria's experience of SRTS focus on knowledge, behaviour, and crash-related outcomes of the programme. This study compared students from SRTS schools to students from non-SRTS schools in order to examine the impact of SRTS on learner's road safety knowledge. This study also focused on the road safety behaviours, of students and parents outside of schools during drop-off and pick-up times. Cairney (2003) found that the extent of road safety education was comparable across school types (SRTS versus non-SRTS); the road safety quiz utilized in the evaluation failed to produce any difference between the learners from both types of school.

Delaney, Newstead & Corben (2004) sought to determine the effect of the Victoria SRTS programme by examining crash statistics. Before and after assessments of SRTS schools were used in the evaluation. Data from non-SRTS schools were used in the control sample. The findings indicated that SRTS had a positive impact on road safety. The largest improvement was observed with regard to reductions in crashes during school travel times that involved primary school pedestrians and cyclists. The findings revealed that crashes were reduced by 17.9 %. There was a further 4.8 % reduction in crashes during school travel time (Delaney et al., 2004).

In New South Wales Gray (2003) conducted an assessment of Road Zone, an interactive road safety exhibition for 9-14 year olds. The assessment was conducted to observe the learning behaviours of learners as they interacted with the displays. Gray (2003) found that the interactive nature of the exhibit facilitated learning through the creation of a stimulating, supporting, and rewarding environment in which to explore road safety. Further assessment, revealed that 80% of learners had admitted to a better understanding of road safety issues. Interactive exhibits in other fields have also demonstrated their effectiveness as educational tools for adults and children (Birney, 1988).

In contrast, children in developing countries spend much of their time as pedestrians and are extremely vulnerable road users. In Ghana, child casualties are mostly in the

6-10 year old age group (Sayer, 1997). Ghana's Ministry of Transport and Communications is aware of this accident pattern. They are consequently using education as a means of addressing the problem (TRL, 1997, p. 2). For road safety education to be effective there needs to be a national commitment at all levels. Ghana is fortunate to have the benefit of a national committee (National Road Safety Committee) as its official body. It is active in a variety of road safety fields and has an overview of policy and practice.

Ghana has begun to follow good practice by:

- Producing a policy report for Road Safety. The report suggests that the best approach to Road Safety Education in Ghana is to develop institutional provision in formal education, that is, through curriculum development and to utilize non-formal education methods such as publicity.
- Planning to establish Road Safety Committees in the larger cities and in each region, and by appointing 10 regional Road Safety officers to assist with the delivery of road safety education through teachers in primary schools (TRL, 1997, p. 2)

The Ministry of Transport and Communications in Ghana is responsible for the Road Safety Policy. The Ministry of education is responsible for curriculum. The ministry of education decides upon the education policy and curriculum content.

This is, communicated to the Ghanaian Education Service. Road Safety Education is in the Life Skills syllabus and is, mentioned in Social Studies but is not progressive. To be effective road safety education should be given systematically and continuously throughout a child's school life. Its effectiveness largely depends upon an accumulation of learning and experience, which begins before the child can walk and never really ends. According to Limbourg and Gerber (1981) children behave more safely immediately after some training and less safe some months later. This shows the importance of presenting road safety education on a continued basis across the learning areas. Ghana has begun to address these issues. It is being, considered to placing a stronger road safety element within the proposed Environment Curriculum (Sayer, 1997).

Despite evidence suggesting that implementing road safety education programme in schools enhances the learning experiences there is little evidence demonstrating that such programmes facilitates the transfer of knowledge into safe and responsible behaviour on the roads.

Although countries around the world are implementing good practice where road safety is concerned, there are also many critics of the road safety education programmes that are being implemented in schools. From a public health perspective, road safety education and training is seen to be largely ineffective because there is no tangible evidence to suggest that they contribute to reduced, injury or fatality among those targeted (Christie, 2002). Christie (2002) asserts that sometimes road safety education and training programmes may cause more harm than good. They also represent a diversion of funds, resources and attention away from better based and more effective counter-measures. Driver training is often touted as a panacea for young driver safety however studies by (Christie, 2001) reveal that driver training programmes failed to demonstrate gains in road safety. The failure of training programmes was generally attributed to the fact that training produces over confidence in young drivers, which led to early licencing. Raftery & Wundersitz (2011), assert that training did not guarantee safer driving practices.

In a case-control study of Bike Ed conducted by Carlin, Taylor & Nolan (1998), it was reported that it did not lead to reduced bicycle related injuries. They also concluded that completion of Bike ED may create over-confidence and increased exposure to risk for children who complete bicycle education programmes. Colwell & Culverwell (2002) conducted a study in England among 336 students aged between 13-16 years. This was done to determine the effectiveness of bicycle training. The analysis of the survey revealed that the training programme had no significant relationship with accident involvement, nor did it influence safe riding behaviour or attitudes. While these findings suggest that training has little benefits for safe road use, the study was limited by a number of factors. The data was based on self-report information. This is subject to bias, so that behaviours and attitudes may be over- or under- represented. Further, participants had undertaken the training programme an average of four years prior to this evaluation, making it difficult to attribute the training to present behaviour (Colwell & Culverwell, 2002).

In a study conducted in the US by (Nagel, Hankenhof, Kimmel, & Saxe, 2003) to determine the road safety benefits of bicycle training for students in Grades 1-3, it was found that the training had a lasting effect on knowledge. Analysis of the data revealed that students demonstrated significantly improved bicycle safety knowledge. Although the study demonstrated some improvement in knowledge, there was no assessment of actual behaviour change (ibid, 2003).

Studies conducted by Duperrex, Bunn & Roberts (2002) on pedestrian education and training in developed and developing countries, revealed that it can change observed road crossing behaviour, but its ability to reduce the risk of pedestrian injury in road traffic crashes is unknown. Duperrex et al (2002) concluded that there is a lack of good evidence that pedestrian safety education is effective. Trials of effectiveness were conducted in affluent developed countries. These trials were not conducted in low- or- middle income countries.

Schrieber & Vegega (2002) avers that no single road safety education program has demonstrated sufficient impact on the majority of students to merit endorsement and widespread dissemination. Road safety education programmes have modest and limited benefits. Schrieber & Vegega (2002) further state that even after training, young children remain at substantial risk for pedestrian injuries. There is growing evidence that early intervention pays economic, social and health benefits in the long term (Di Pietro, 2009).

Skills for Preventing Injury in Youth (SPIY), is a school based intervention programme that is based on psychological theories. In this programme the Theory of Planned Behaviour was used to utilize cognitive –behavioural strategies to reduce the prevalence of risk-taking and other associated injuries amongst the youth (Buckley, Sheehan, & Shochet, 2010). According to (Buckley et al., 2010) the primary goal of the programme was to increase protective behaviours towards risk-taking peers. It also aimed to decrease adolescent risk taking behaviours and to enhance first aid skills. The SPIY programme is incorporated in the Year 9 Health Studies Curriculum in schools in Southeast Queensland. Each lesson involves the use of a risk taking and injury scenario. This is followed by a first aid lesson to treat the injury. Cognitive-behavioural strategies are used to avoid taking risks. This allows the learners to practice the skills learnt (ibid, 2010). Four of these lessons cover the risk-taking

behaviours. The other four lessons are focused on road safety. These lessons involve scenarios of travelling in a car with an underage driver, a drunk driver, riding a bicycle dangerously and riding a motorcycle off-road. These represent some of the most salient road safety issues for Year 9 learners who are 14 years old. The scenarios used in the lessons were developed by using focus groups of 14 year old learners.

Buckley et al (2010) undertook a preliminary evaluation of the programme in order to determine the short-term effects of the programme. For the evaluation of the programme a control group and an intervention group was used. A number of focus groups were also conducted. This was done to obtain qualitative data regarding student's perceived behavioural change following completion of the programme. In an analysis of the survey data, it was noted that there was a decline in self-reported risk taking behaviour for learners who participated in the programme, while learners in the control group showed an increase in self-reported risk-taking. This research offered some indication that SPIY had a positive effect for the 14 year olds. Buckley et al (2010) assert that because this was a short-term project, further evaluation must be conducted over a longer period before a definitive response can be made.

Challenges and choices in middle childhood focus on practical safety issues for the young road user. This stage expands on early childhood factors addressing passenger and pedestrian safety (Raftery & Wundersitz, 2011). The final area focuses on understanding the road rules, road signs and signals. The challenges and choices programme for adolescents incorporates abstract concepts, and seeks to shape attitudes and behaviours that are favourable to road safety. In Southern Australia *Your Turn*, a road safety programme for middle years was developed. *Your Turn* was not placed specifically within the school curriculum instead it encouraged an integrated approach through all areas of the South Australian, Curriculum, Standards and Accountability (SACSA) Framework (Raftery & Wundersitz, 2011). *Your Turn* provides educational resources that, allows the teachers to implement road safety education to meet the unique needs of the learners. The rationale behind these programmes is that the schools are responsible for providing young people with the knowledge and skills to understand the issues of road safety and environmental sustainability.

The Keys for Life programme is a pre-driver programme for 15-16 year old learners in Western Australia. The main aim of the programme is to develop the knowledge, skills, and attitudes necessary for young people to become safer drivers, including encouraging extensive hours of driving practice.

Perhaps the purpose and contribution that road safety education can make is not well understood by its critics. The aim of road safety education is to deliver developmentally appropriate education that prepares children and young people to become safe and responsible road users. It raises their knowledge and provides some skills to use the road networks. It helps them to problem solve, so that in the event of an emergency, they can address it in an appropriate way.

There are major critical gaps in the literature that informs road safety education. The road safety education literature is marked by a lack of critical or theoretical attention to pedagogy. There is also a lack of explicit, specific attention to the question of how learning might be connected to behaviour. It is therefore lacking in crucial bodies of researched-based theory within the field of education that offer crucial insights into what constitutes good educational practice (Vick, 2006). Both the road safety research literature and the road safety education literature are characterized by an almost complete lack of any sociological or qualitative theory and research that might explore the road user behaviour at an experiential level or the connections between learning, subject formation, desire and behaviour.

Based on the above review it is apparent that evidence regarding the effectiveness of road safety education programmes is somewhat ambiguous. Current road safety education programmes possess a number of characteristics, both desirable and otherwise. Due to a lack of well-constructed evaluation strategies, there is a dearth of evidence to indicate either the success or failure of these programmes.

In a South African context the road safety education programme is a relatively new education programme. Consequently the researcher is unaware if any other studies have been conducted to investigate the implementation of the programme. This study will hopefully contribute to this repertoire of road safety education programmes and its implementation. What has clearly emerged from international studies and their evaluation of the implementation of road safety education is that for road safety

education to be effective it must be presented on a continued basis and across all learning areas in the curriculum. Evidence based evaluations must be conducted to determine what works and what does not work. This will ensure that ineffective programmes are discontinued and new effective programmes must be developed to replace them (Raftery & Wundersitz, 2011).

When road safety initiatives and programmes are planned, policy-makers and leaders need to recognise children's vulnerabilities as well as their inexperience, developmental needs and exuberance for life. Road traffic crashes are not "accidents". We need to challenge the notion that road traffic crashes are unavoidable and make room for a pro-active, preventive approach to reducing death on our roads. The death of young road users is perceived throughout society as posing grave human and moral problems apart from the economic and financial loads imposed on social services. These costs include:

- The direct impact on health care services and the cost of providing rehabilitation
- The indirect costs such as the value of lost household services and lost earnings of victims and survivors, caregivers and families.

The annual cost of road crashes in low-income and middle-income countries are estimated to be between US\$ 65 billion and US\$ 100 billion more than the total annual amount received in development aid. Road traffic crashes and their consequences cost governments about 2% of their Gross National Product (WHO, 2004).

In many low-income and middle-income countries, a large proportion of road traffic casualties are from the younger, wage earning groups. In Africa, for instance, with 50% of the population below the age of 16 years, road crashes among economically active young people can place an enormous economic burden on countries, while the cost of importing medicines and providing appropriate care for road traffic victims further strain resources.

Even in high-income countries, road traffic crashes among young people impose a huge economic burden on societies. In the United States of America, crashes involving 15-20 year old drivers cost the country about US\$ 41 billion (WHO, 2004).

For people of any age, there are many risk factors that increase their likelihood of sustaining road traffic injuries. A number of these risks are elevated among young road users, including among pedestrians, and drivers and passengers of both cars and motorcycles. The factors influencing the risk fall into a number of categories:

- those influencing exposure to risk: such as a mixture of high-speed motorized traffic with vulnerable road users, or the lack of integration of a road's function with decisions about speed limits;
- those influencing crash involvement: such as high speed, use of alcohol before road use, being a young male, and defects in road design;
- those influencing crash severity: such as the use of excessive speed, and whether or not seat-belts or helmets are used;
- those influencing the post-crash outcomes after a crash: such as the time taken by rescuers to reach a crash, and the availability of pre-hospital and hospital care (WHO, 2004, p.3)

Understanding the risks faced by young road users is important in order to plan appropriate programmes to reduce road traffic deaths and injuries among this age group. Most of the interventions that reduce the risk of road traffic injuries among the general population will also reduce the occurrence among youth. In addition, experience from high-income countries shows that sustained efforts to implement appropriate interventions targeted specifically at children and young adults can lead to great success in reducing the numbers of deaths and injuries among this population group (WHO, 2007).

World-wide there has been a trend towards approaches to road safety education that focus on the outcome of the learning process rather than the input (content). The education process is more learner-centred and uses inquiry based approaches to learning and teaching, with a greater focus on the development of problem-solving

and decision-making skills and strategies. Learners actively construct meaning from their own experiences. This supports constructivism (Thompson, Tolmie, & Foot, 1996). Education and training is more relevant to learners when co-operative learning strategies are employed. According to Thompson et al (1996) this approach is well suited to the acquisition of road safety skills and knowledge.

A review of child development theories as presented in (OECD, 2004) including those of Piaget, Gibson and Vygotsky, reveals a clear consensus that children can learn from specific, context-bound actions and move towards increasingly generalized conceptual understanding. There is a need for children to be taught road safety education in a developmental fashion. This will reinforce key road safety education messages and will acknowledge the different types of risk they experience at various stages in their life. In a study conducted by Duperrex, Bunn & Roberts (2002) it was found that it was important to reinforce key road safety messages at various developmental stages, as acquired road safety knowledge could decline if not reinforced. In addition to being appropriate for the age group, road safety lesson content should also be relevant to local conditions, include practical roadside training, and be reinforced on a regular basis. This means that young pedestrians learn best at the roadside or a close approximation. After this, with experience, they develop conceptual understanding. These findings (OECD, 2004) support the promotion of practical skills training for pedestrians, cyclists and drivers in connection with reflections on emerging ideas and understanding. This differs from the more traditional form of road safety education for young children, which involves presentation of abstract rules for children in the classroom such as knowledge-based rules. There is often a tendency to over-emphasise the teaching of road signs and signals, especially to young children. It is essential to move away from the concept that knowledge of the road signs and traffic lights equates to road safety. Teaching, survival skills in a progressive manner should be emphasized. For example, teaching children that they must cross the road at traffic lights may cause confusion if the lights are not working properly, or if there are no traffic lights in the vicinity. It will therefore be more appropriate to teach rules and principles for crossing the road that can be applied equally to traffic light controlled intersections, marked pedestrian crossings, rural roads, or in other situations. In addition to skills acquisition,

improvement of knowledge and attitudes is implicit in most of the recently developed behavioural programmes (OECD, 2010).

There is general consensus in the research and among practitioners that ad hoc activities such as visits from experts and road safety enthusiasts, may have mass appeal but are relatively unsuccessful because road safety education should be planned and progressive. (Bailey, 1995; OECD, 2010) promotes and supports road safety education that spans several curriculum areas. It is recommended that road safety professionals support teachers in delivering a progressive programme of road safety education rather than occasional talks on road safety.

The rest of this section summarises the risk factors for road traffic injuries in young people, according to the main environmental factors, developmental factors and gender. These factors must also be taken into account when developing and implementing a road safety education programme.

3.3 The Road Environment

In many countries, the planning of road transport systems and urban development has not accommodated the needs of all road users (Mohan, 2002). Frequently motorized transport and other uses of transport and land space- such as children's recreational spaces – have received considerably less attention. In some cases, roads have been developed with little consideration for the needs of the communities they pass through- such as where high-speed roads have been built passing close to schools or residential areas. One such example is where parents at Upperthong Junior School, Holmfirth, West Yorkshire, are distraught at the lack of safety measures on the fast 'mixed priority' road that runs in front of the school and separates the school from the houses where most of the children live. Crossing the road, which does not have a zebra or pelican crossing, is running the gauntlet of speeding traffic. The road is limited to 30mph, but is a rural through-road that suffers from speeding traffic, bends, a downhill gradient, and no significant warning signs that a school is positioned on the road. In most countries the needs of motorized traffic have been given priority over those of non-motorised road users. Sometimes, steps are taken to separate different types of transport. For example, there may one lane on a motorway for

slower or non-motorised road users, or a separate bicycle lane along roads. However, in some countries as a result of resource constraints and a lack of planning means that slow, and non-motorized road users are often forced to share the road space with motorized traffic, leading to an increased risk for vulnerable young road users (Mohan, 2002).

3.4 Developmental Factors

Young road users do not understand or react to complex traffic situations in the same way as adults. Their developmental immaturity means that in the traffic environment young children lack certain abilities that adults possess and this increases their risk to road traffic crashes. In addition, the need of young children to exert physical energy, explore and play, combined with a lack of safe areas to do so, may predispose them to a greater likelihood of being hit by a vehicle (OECD, 2004).

The child in traffic has certain limitations and this will be discussed below.

Limitations of size

- The child has difficulty seeing in traffic: he or she needs to be tall enough to view the surrounding traffic.
- The child may not be easily seen by other traffic users: A child is top heavy- that is, the size of the child's head relative to the rest of the body is greater than the ratio in adults. A child therefore has a higher centre of gravity than an adult, leading to a greater disposition of head injuries (OECD, 2004)

Limitations of vision

- Children have less developed perception of depth and thus have difficulty in judging the distance between themselves and other objects, particularly when both are in motion.

Limitations of hearing

- Small children have difficulty discerning the size and speeds of vehicles from the sound of the engine as they approach.
- Children have difficulty discerning what direction a sound is coming from and hence what direction a car is coming from.

Limitations of attention

- Young children are active, energetic and often impulsive.
- Their concentration span is shorter and they can struggle to attend to more than one problem at a time.
- Children can be easily distracted by other stimuli which may lead them to suddenly run onto the road.

Limitations of judgment

- Speed and distance are difficult for a child to judge but are essential for safely crossing a road.
- The concept of left and right as positions relative to the body develop slowly and are only established after age seven.

While young children may inadvertently take risks because they lack appropriate skills to do otherwise, older children and adolescents may indeed have the skills but may actively seek out risk. Risk taking behaviour may allow adolescents to feel a sense of control over their lives or sometimes to oppose authority. Research shows that there are high levels of 'sensation seeking' behaviour among young adults and a need to maintain a heightened level of physiological arousal (Zuckerman, 1994). Zuckerman (1994) further states that young people consequently seek new situations and experiences to maintain this level, irrespective of the risks inherent in the experience. Such sensation-seeking frequently focuses on risky behaviours including while driving a vehicle or crossing a road. Sensation-seeking has been shown to rise between the ages of 9-14 years, peaking in the late adolescence or the early 20s, and

then declining steadily with age. Across all ages and particularly among the young, sensation-seeking is more common among males than females (Zuckerman, 1994).

As young children become adolescents, peer influence becomes increasingly important, compared to earlier strong influence of parents. For many young people, their peers are the most important people in their lives and are often also their primary source of behavioural norms. Teenagers can be led by what is considered “cool”, not necessarily what is safe. Hedlund & Compton (2004) state that peer pressure can mean that young people are more likely to behave in a risky manner on the road, both as novice drivers or riders, and as pedestrians.

In considering the developmental factors that predispose youth towards increased risk for road traffic collisions, the environmental pressures that may exacerbate inherent risks should be taken into account. Factors such as risk-taking and peer pressure that direct young people towards high-risk behaviours are often used in marketing techniques targeted to appeal to youth. Large corporations and industries can influence both individual behaviour and social norms in a manner that may increase risk on the roads. For this reason, one needs to consider not only individual behaviours, but also the environmental factors, including media, messages, community norms, and public and institutional policies, which may support high risk behaviours.

Developmental risks are also affected by gender. From a young age, males are more likely to be involved in road traffic crashes than young females..Young boys are more likely than young girls to play on busy roads and to run or ride bicycles onto roads without first stopping to check for traffic. The fatality rate for traffic collisions which involves young children on bicycles is twice as high for boys as for girls (WHO, 2004). In a study conducted in Iran it was found that boys were involved in a greater number of bicycle accidents than girls. Of the 1079 cycling injuries reported in the study, 79% were reported for boys, and 21 % for girls. Cycling is not considered to be socially acceptable for girls of school going-age, therefore there were no injuries among this age group. The 21% reported was for pre-school girls (WHO, 2004). Among child pedestrians suffering road traffic injuries, boys are usually involved in more road crashes than girls. This is attributed to lesser supervision of boy than girls.

This is governed by greater social permissibility of male mobility as opposed to female mobility. Among drivers, young males under the age of 25 years are almost three times as likely to be killed as their female counterparts. In a study conducted in Georgia in the United States of America of risky behavior among 16-19 year olds, it was found that significantly more males reported driving over the legal speed limit and also overtaking in a no-overtaking zone (WHO, 2002) This may reflect the fact that males are more likely to be on the roads, often because of socio-cultural reasons, as well as a greater propensity to take risks, compared to females. Therefore men have a higher exposure to the risk of traffic injuries (WHO, 2004). Gender role socialization and the association of masculinity with risky behaviour, and a disregard of pain and injury are factors that lead to hazardous behavior on the road

The perception of risk seems crucial for safe traffic participation. If learners do not perceive that they are at risk, they are unlikely to be able to prevent getting involved in dangerous situations.

3.5 Summary of the Literature Review

To sum up, it is clear that although several studies have been conducted on road safety education and its implementation, it is marked by a lack of critical or theoretical attention to pedagogy. At this point, this study is anticipated to be a contribution to the literature in terms of implying for the successful implementation of the road safety education programme via soliciting teachers' attitude, beliefs and perceptions toward change.

The next chapter will focus on curriculum as a concept and how it relates to the contextual aspects of the research project, such as issues associated with implementation and change.

CHAPTER FOUR

THEORETICAL CONCEPTIONS OF CURRICULUM

4.1 Introduction

In this chapter the researcher approaches the review of literature in twofold. The first part focuses on the survey of the literature related to curriculum and curriculum change, factors that influence curriculum change in general and the rationale for curriculum change in South Africa in particular.

In the second account the researcher reviews literature on teachers in managing curriculum change and the challenges that they experience in the processes of the strategies thereof. It is hoped that a refined literature study will provide answers to the research questions of the study.

This chapter begins by presenting roots of theory and practice of curriculum. Educational innovators need to be able to use the successes and the failures of the past to improve on their own contributions. The purpose of this background grows from the assumption that curriculum development in the present is more defensible if it proceeds from an awareness of the precedent.

Curriculum is not created in a vacuum. Curriculum is forged by political, economic, and value contexts that surround and inter-penetrate it. Curriculum achieves its character from an ecological embeddedness. Schubert (1986) uses the term ecological to imply that the context of the larger society interact with teachers, learners, curriculum developers, and the culture of classroom-life all at once. Each interacts with and influences the other.

The theoretical framework is a general or overall theory which explains or helps one to understand the context of the problem. The phenomenon to be studied will be explained within the framework of curriculum theories. The 'world' of curriculum comprises the results of man-made transactions; of deliberations and decisions about

what to teach, to whom, in what way and under what circumstances, as well as with what ends in view. Curriculum theory must take account of subject matter, the learner, the educator, the milieu and the justifications for bringing these into a relationship. There are two types of curriculum theory-systematic, sometimes called 'rational' or 'scientific,' and naturalistic. According to Taylor & Richards (1987) the aim of the first is to provide 'prescriptive guidance for curricular practices'. The aim of the second is to provide description, explanation, understanding and if possible, prediction. The study of the curriculum and the transactions associated with it is made more effective if it is conducted in relation to a frame of reference or a rationale.

Recent years have seen a great interest in what is taught in schools and in debating what ought to be taught in them. This interest has arisen for a number of reasons. There have been changes in society, in its attitudes and values, and in its economic condition. There have been moves towards greater social equality and away from discrimination on grounds of gender, colour or creed.

Changes in society, in political perspectives and in people's views about what is permissible and what is not, are but three areas of change which affect views about what is taught in schools and whether what is taught should be changed. Conditions of the economy and technological changes also influence how people think about the content of education. This century's advancement in science and technology which have been largely responsible for the material prosperity of modern society have led to proposals that science and mathematics become as essential ingredients of the education of the young as reading and writing. Science and technology have not only brought prosperity, but also problems. With increasing motorization and road traffic, road fatalities have become a major problem. This is the case despite significant improvements in road safety in many countries over the last ten years (OECD, 2004). At the heart of such a problem lie moral issues about how man should use his knowledge and the resources of the world in which he lives. Road safety education can be used as a tool, in this instance, in a systematic approach to road accident prevention. Human error is a major contributory factor in road accidents, and road safety education directly aims to influence the road user by changing his cognitions, attitudes, behaviour or skills. Road safety education implicitly assumes that traffic

behaviour is dependent on the skills, knowledge and attitudes of traffic participants, and that it is possible to improve the behaviour of road users through systematic educational efforts. Therefore the young should be taught how to confront these problems.

Interest in the content of education, in the curriculum, is not simply a contemporary phenomenon. Over 2000 years ago Plato was interested in what the leaders of an ideal state should be taught, and many philosophers and statesmen since have pondered the educational problems of society (Taylor & Richards, 1987). The reason for their interest is simple: the content of education, the curriculum, is at the heart of the educational enterprise. It is the means through which education is transacted. Taylor & Richard (1987) state that without a curriculum, education has no vehicle nothing through which to transmit its messages, to convey its meanings and to exemplify its values.

Taba (1962) postulated that there was a “strong tendency to assume that the theoretical foundations of the current curriculum were sound and that the difficulties occurred chiefly in translating theory into practice”. Taba (1962) further argued that planning should include consideration of the demands of society and culture, the learning process, the development of the individual, and the specific characteristic and unique contributions of the disciplines.

Eggleston (1977) avers that the curriculum is concerned with the presentation of knowledge; and involves a pattern of learning experiences, both instrumental and aggressive, designed to enable it to be received by students within the school. Zais (1976) states that curriculum, as a blueprint for education, consists ultimately of the experiences that is planned for the learners to have, under the direction or auspices of the school. The school is established in order to educate the learners placed in its charge.

Zais further states that the term ‘curriculum’ is used by specialists in the field in two ways: firstly to indicate, roughly a plan for the education of learners and secondly to identify a field of study. Curriculum involves a number of components, including aims, content, technology, order and evaluation that spring, like curriculum itself,

from the normative and power systems of society. The curriculum makes specific and at times inflexible demands on the other systems of the school, notably the teaching system but also the control system, the administrative system and the examination system.

Characteristically the curriculum whether it is divided into specific subject areas, disciplines, faculties, applied studies, or conceived of as integrated subject areas specific to certain age, sex or ability groups, may be expressed in a number of curriculum statements, such as a syllabus. Johann Friedrich Herbart (1776-1841) was a German philosopher whose educational ideas had wide acceptance in the latter half of the nineteenth century. Herbart's theories about teaching and learning required that systematic attention be given to the selection and organization of subject matter. Or, more generally, it may be expressed as a range of end-products or goals to be achieved by those who follow it or as a statement of aims. It may also be expressed, on occasions, as a view of learning.

Eggleston (1977) echoes Durkheim's functionalist view of curriculum, wherein the curriculum is seen to be serving the needs of society to ensure that the young receive the culture (knowledge, skills, values) appropriate to membership of the adult society. Certainly for Durkheim, such an experience was the central task of education and for that part of it which takes place in the school, the role of the curriculum is central. Curriculum can be further defined as a body of learning experiences, responding to a societal view of knowledge that may not always be fully expressed or even fully accepted by teachers or learners. In as much as schools were invented by social groups to secure the survival of the cultural heritage, it is not surprising that society and its culture exert an enormous influence on the curriculum. Traditional (and often unconscious) assumptions, values, and ideas about what is important or unimportant, good or bad, are translated into curriculum objectives, content, and learning activities. The history, the social divisions and the many competing interests and value systems found in a modern society are expressed in the school curriculum as much as they are in its system of government or its occupational structure (Young, 1988). Education is always, as Raymond Williams (1961) so evocatively pointed out, a set of cultural choices, some conscious and some unconscious. It follows that the curriculum is always a selection and organization of the knowledge available at a particular time.

Greene (1971) describes the dominant view of the curriculum in terms of the structure of socially prescribed knowledge, external to the knower, there to be mastered and goes on to contrast this with her own phenomenological view of the curriculum as a 'possibility for the learner as an existing person mainly concerned with making a sense of his own life-world'. Young (1988) argues that curriculum needs to be seen not just as something imposed on teachers and pupils classroom practice, but as a historically specific social reality which teachers act on and thus transform. Giroux (1981) contends that schools reproduce the values and attitudes needed to maintain dominant social groups. They do this through their formal and informal curricula. There is little opportunity given to students to generate their own meanings about knowledge. Knowledge is imposed overtly upon students or covertly via the subtle interactions of the 'hidden curriculum'. Under these circumstances, learning is a mode of control and domination.

Giroux (1981) argues that knowledge in schools is treated as a realm of objective 'facts'. It is not questioned, analysed or negotiated. Rather it is something to be managed and mastered. In schools there is little opportunity for students to generate their own meanings. The purpose of knowledge in schools becomes a matter of accumulation and categorization. Schools should be seen as part of the dominant society. They produce the cultural values and social relationships of the larger social order. According to Eggleston (1977) the school has an unavoidable relationship with the wider society. He further states that the normative and power systems of the school are not only part of the micro system of the school but also of the macro system of the whole society.

At this stage we can see clearly that curriculum is an important part of the macro system as well as being an important part of the micro system of education. For the curriculum is one of the key areas in which the values and power system of the school and society is brought together. It is a key mechanism of social control over the young and over those who teach them. There is also the mechanism, whereby the school supplies its leavers to the occupational structure.

A survey of eminent curriculum specialists would probably yield a quite disparate list of educational concerns identified as being distinctly curricular in nature, although some issues would emerge more prominently than others. Curriculum studies is a relatively new field, therefore there is a lack of precision in the meaning of its basic terminology. The following section will assess and discuss the variant meanings attached to the term as it is used in the curriculum literature.

4.2 Conceptions of Curriculum

The way curriculum is defined is largely influenced by one's worldview or philosophical orientations. From a comparison of dictionary definitions to those that were formulated by scholars, it was determined that the dictionary definitions were too narrow and simple. The definition of curriculum has shifted throughout the field. Many curricularists regard the matter of definition as highly significant and crucial for conceptual and operational progress. Carr (1998) contends that the conflicting views or beliefs about curriculum are a reflection of different political ideologies among competing key stakeholders in curriculum discourse.

One of the recent positions to emerge on the curriculum horizon is to emphasize the verb form of curriculum, namely, *currere*. *Currere*, according to Schubert (1986) refers to the running of the race and emphasizes the individual's own capacity to re-conceptualise, his or her autobiography. This may seem far removed from the current evolution of the term, but curriculum in modern times is typically conducted within parameters of time and the meeting of established criteria, inclusive of conditions and standards for conduct and completion. Tanner & Tanner (2007) assert that students may justifiably feel that they are engaged in running a race during their studies and examinations. This view of curriculum is also supported by Zais (1976) who regards it as a race toward the finish line (a diploma). Curriculum was regarded as the relatively standardized ground covered by students. Illustrated by Pinar and Grumet (1976), the individual seeks meaning amid the swirl of present events, and moves historically into his or her own past to recover and re-constitute origins. The individual subsequently imagines and creates possible directions of his or own future it also becomes a social process whereby individuals come to greater understanding

of themselves, others, and the world through mutual re-conceptualization. The curriculum is the interpretation of the lived experiences.

Taylor (1970) has observed teacher planning of courses and has emphasized that while it may involve written notes, much teaching is based on a curriculum of hidden plans. Curriculum is also referred to as the total programme of studies of an educational institution (Kelly, 2009). This view of curriculum as a plan is also embraced by Saylor, Alexander and Lewis (1981). (Marsh and Willis, 2007; Marsh, 2009) states that the planned curriculum is all about what knowledge is of most worth that is the important goals and objectives. Campbell (2006), as cited by Marsh & Willis (2007), refers to this as 'curricular authority', that is the legitimacy of standardized curricular guidelines. The extensiveness of this concept is viewed from two extremes. The one view is that curriculum is a written document and the other view is that curriculum is plans that are in the minds of teachers but remain unwritten.

Before the advent of the curriculum movement it was also referred to as course content. These definitions of curriculum seem simple and naïve. This concept of curriculum, solely as the data or information recorded in guides or textbooks, overlooks many additional elements that are essential in a learning plan. This limits planning to the selection and organization of information that learners are to acquire. Kelly (2009) states that this kind of definition of curriculum is limiting and that it is likely to hamper rather than to assist the planning of curriculum change and development. An effective and productive definition of curriculum must be more than a statement about the knowledge-content or subjects that are to be transmitted. It must be able to explain and justify the purpose of such transmission. It must further explore the effects that exposure to such subjects and knowledge is likely to have or is intended to have, on its recipients (Kelly, 2009)

A curriculum conceived of as Intended Learning Outcomes is the concept that is widely used by specialists in the field (Johnson, 1977; Posner, 2004) This shifts emphasis from means to ends. Intended Learning Outcomes are a convenient way to specify purposes. A structured series or sequence of learning outcomes is set forth; all activities, teaching, environmental design, and the like serve the acquisition of

specified ends. Intended outcomes are not precisely equated with curriculum; rather curriculum is the realm of intentionality that fosters the intended learning outcomes.

A criticism against this approach is that focusing on intended learning outcomes as the prime factor in curriculum draws attention away from the unintended outcomes. While all the students in a class may demonstrate that they have acquired the intended learning outcome the consequences of its acquisition may be quite different from one learner to another.

Another conception of curriculum is that curriculum should be a reflection of that culture. The job of schooling is to reproduce salient knowledge and values for the succeeding generation. The community, state, or nation takes the lead in identifying the skills, knowledge, and appreciation to be taught. It is the job of professional teachers to see that they are transformed into a curriculum that can be delivered to all learners. Teachers have to judge the appropriate pedagogical knowledge to use (Marsh & Willis, 2007). Giroux (1983) argues that if curriculum maintains the status quo in society then cultural and social improvements are not needed.

The curriculum is also seen as a set of tasks to be mastered, and they are assumed to lead to a pre-specified end. Schubert (1976) states that the end has specific behavioural interpretations, such as learning a new task or performing an old one better. This approach derives from training programmes in business, industry, and the military. The criticism levelled at this approach is that task analysis may be highly appropriate for learning certain mechanical activities, is very limited. Simple additive set of procedures may produce the appearance of a skill well-learned, but it will not provide for variation, which is essential in this changing world. This requires a knowledge of principles, not isolated skills or even concepts

The school has been established to develop learners in their care. This development is achieved through the experiences the learner has. To attend to one's experience reflectively and to strive continuously to anticipate and monitor the consequences of one's thought and action relative to the good that they bring is a continuously evolving curriculum. Tanner & Tanner (2007, p. 121), support this view of curriculum by defining curriculum as that reconstruction of knowledge and

experience that enables the learner to grow in exercising intelligent control of subsequent knowledge and experience. Through the medium of curriculum the learner grows in knowledge and ability.

The educator is regarded as a facilitator of personal growth. While curriculum as personal growth and experience is a wonderful principle, it is impossible in practice. This definition has been criticized by (Taba 1962, Johnson 1967), as cited by Zais (1976) as being too broad and by others as being too narrow. Marsh and Willis (2007) pointed out the disagreement about what the curriculum of the schools should be as a result of the varying understanding of the term. Smith & Lovat (2003) asserts that lived-experiences defy complete description either before or after it happens because it is individual, ongoing and unpredictable. Each person seeing only a small and not necessarily the same part of the overall picture does not only create confusion but may also impede the comprehensive understanding of the term. Therefore Campbell (2006) as cited by Marsh (2009) argues that teacher's professional authority in enacting the curriculum may cause conflicts with the planned curriculum.

Specialists, who favour the broader definition of curriculum, refer to the "hidden curriculum" or the "invisible curriculum". The hidden curriculum is the ideological and subliminal message presented within the overt curriculum (Pinar et al., 2002). Kelly (2009) refers to this as aspects of the curriculum that are unplanned or unintended and is therefore overlooked because of the way in which the work of the school is planned and organized and through the materials and resources provided. According to Kelly (2009) these are not overtly included in the planning. Social roles are learnt in this way as well as attitudes to aspects of living. The values and attitude of those that create them will be communicated to learners. To Giroux (1988), "the hidden curriculum" in schools works in a subtly discriminating way to discredit the dreams, experiences, and knowledge associated with learners from specific class, racial, and gender groupings. This becomes significant when the curriculum is planned and imposed by government. The values implicit in the arrangements made by schools for their learners, are clearly in the consciousness of the planners. This is especially so if these planners are politicians. They decide what the learners should learn, even though the learners do not overtly recognize this for themselves. It is part of the bureaucratic and managerial "press" of the school. Subsequently learners are

induced to comply with the dominant ideologies and social practices related to authority, behaviour and morality (Pinar et al., 2002).

The concept of ideology became central in understanding curriculum as political text, with curriculum itself conceptualized as an ideological mystification. Generally, the ideas and culture associated with the dominant class were argued to be the ideas and content of schooling. Some of the values and attitudes learnt via the hidden curriculum are not directly intended by teachers. Teachers should be aware of and accept responsibility for what is being taught in the classroom. Kelly (2009) states that teachers need to be sensitized and helped to recognize and identify the hidden implications of some of the materials and the experiences they offer their learners.

Recognizing that much of the controversy on the hidden curriculum had become unproductive, Tanner & Tanner (2007) proposed the use of the term *collateral curriculum*, following Dewey's use of the term *collateral learning*. Teachers according to Tanner & Tanner (2007) tend to overlook the importance of collateral learning because they focus too narrowly on the expected course of study. Most of the factual information learned is forgotten as soon as the examinations are over, whereas collateral learning as connected with attitudes, appreciations, and values can be far more enduring. Dewey, as cited in Tanner & Tanner (2007) added that "the most important attitude that could be formed is the desire to go on learning".

Desirable collateral learning is much more likely to occur if it is treated as integral to the planned and guided learning experiences that comprise the curriculum. Extra-class activities should not be regarded as outside the curriculum. These activities must correlate directly with the formal course of study. This will enhance the desired learning outcomes of the curriculum (Tanner & Tanner, 2007).

The emergence of the curriculum field as a distinct subject of study has given rise to many conflicting conceptions of curriculum. The different definitions reflect the different schools of thought as well as the changing conceptions of organized knowledge, the learner, the educative process, and the larger social situation. There are more aspects to curriculum implicit in the philosophy of teachers and politicians. Therefore a definition of curriculum which confines its scope to what teachers or

politicians actually plan will omit many important dimensions of the curriculum. The problems of definition become serious and complex.

In trying to arrive at a solution to this dilemma, Macdonald, as cited in (Zais, 1976) advocated tentative definitions, not only for curriculum and instruction but also for teaching, and learning. Macdonald proposed that schooling be conceptualized as the interaction of four systems. Firstly he defines teaching as the “professionally oriented behaviour of individual personality systems called teachers”. Secondly, learning consists of actions that students perform. Thirdly instruction was defined as the formal context in which teaching and learning behaviour took place. The fourth system is the curriculum system. Macdonald concludes by defining curriculum as a plan for action.

Prevailing conceptions of curriculum can be classified into four major categories: humanistic, social re-constructionist, technological, and academic. Proponents of each have different questions about curriculum:

According to McNeil (1996) the humanist holds that the curriculum should provide personally satisfying experiences for each student. The new humanists are self-actualisers who view curriculum as a liberating process that can meet the need for growth and personal integrity. Peters (1975) states that a recipe for progress is to state clearly what is thought desirable and then to devise steps to attain it. They should not, however, be confused with teachers in the liberal arts tradition who regard the humanities as separate disciplines, such as art, music, and literature, and who attempt to deal with the human being solely through cultural creations.

Social re-constructionists stress societal needs over individual interests. They place primary responsibility on the curriculum to effect social reform and to generate a better future for society. Curriculum is conceived to be an active force having direct impact on the whole fabric of its human and social context (Pinar et al., 2002). Learners must be involved in studying how to overcome obstacles so that a more ideal society can be created. This becomes the content of the curriculum. Achievement also takes on a different meaning. It does not relate to a body of prescribed content or skills. It is rather concerned with how effectively the problem

was resolved (Ornstein & Behar-Horenstein, 1999). They emphasize the development of chronological social values and their use in the critical thought process. It is assumed that there ought not to be a wide cultural gap between what is learned in school and what is learned in the wider society and between school knowledge and academic knowledge. In the light of such changes, haphazard and uncoordinated activities on the part of individuals are not sufficient to ensure that the educational system responds to its changing social, cultural and physical environment. Individual, intuitive 'tinkering' with courses by teachers ought to be replaced by a measure of conscious planning, coordination and management at school, regional or national levels to ensure that pupils receive a coherent, up-dated selection of society's developing stock of meanings (Taylor & Richards, 1987, p. 45).

Classroom activities and evaluation procedures in social re-construction would be developed through the use of criteria as proposed by Raths (1971) as cited in (Ornstein & Behar-Horenstein, 1999). Rather than activities which primarily provide appropriate practice for the behaviour and content of the objectives, activities would be planned which allows learners to make informed choices and reflect on their consequences. Curriculum is viewed as an active force which has a direct impact on the whole fabric of its human and social fabric.

Technologists view curriculum making as a technological process for achieving whatever ends policy makers demand. Sowell (2000) states that curriculum as *technology* seeks to make learning systematic and efficient. The focus is on the technology by which knowledge is communicated and learning is facilitated, rather than on the individuality of the learner or the content itself. The harmonious growth of personality or learning in the sense of the acquisition of knowledge is no longer the only purpose of the education system (Rassekh, 2001). Practical problems of efficiently packaging and presenting material for students are solved by curriculum technologists through programmed learning, personalized systems instruction, and computer-assisted instructional programs. Even in democratic countries, there is an intervention of political authorities in curriculum planning. The extent of reform in the curriculum is often decided by the political leaders because of the differences in political perspectives amongst different political groupings. Greater emphasis is being laid on the development of specific attitudes such as devotion to national goals

or developing desirable characteristics in the learners. Governments are particularly interested in such approaches. Even in the context of developing qualified human resources to meet the growing needs of the economy, the issue of quality, attitude and behaviour of the individuals to be trained are never overlooked.

Persons with an academic orientation see curriculum as the vehicle by which learners are introduced to subject matter disciplines and to organized fields of study. They view the organized content of subjects as a curriculum to be pursued rather than as source of information for dealing with local and personal problems. Persons who fall into this category assume that an academic curriculum is the best way to develop the mind, that mastery of the kind of knowledge found in such a curriculum contributes to rational thinking.

Oliva (1997) states that curriculum definitions can be conceived in broad or narrow ways. Definitions are concomitant on the following:

- Purposes of goals of the curriculum (the curriculum is to develop reflective thinking)
- Contextual position (the curriculum is responsible for holistic growth of individual learners)
- Strategies used throughout the curriculum (the curriculum is to develop problem solving processes)

Changes were made that educational institutions lost sight of the basic purpose of schooling; that the curriculum was homogenized, diluted, and diffused; and that a curriculum smorgasbord allowed for extensive student choice, which resulted in declining achievement scores in mathematics, science, and “higher order” intellectual skills.

Next an overview of the modern view of curriculum will be discussed. The modern view of curriculum is comprised of traditionalist and contemporary conceptions. The traditionalist view of curriculum is grounded in the belief that curriculum content should be characterized by inclusion of classical subjects and essential skills (Glanz

& Horenstein, 2000). In perennialism, the teacher's role is to help learners learn permanent knowledge and think rationally. In essentialism, teachers guide learners in mastering content-based principles and facts and in becoming competent learners (Glanz & Horenstein, 2000). Learners are expected to accept teacher's knowledge as being superior to theirs. Learners are also not expected to question their authority. Learner's idiosyncratic interest are considered to be irrelevant to developing the curriculum.

Glanz & Horenstein (2000) states that, contemporary conceptions of curriculum (as characterized by progressivism and re-constructionism) emerged as a reaction against the extreme autocratic and directive teaching behaviours. Espousing the benefits of an inter-disciplinary curriculum, the progressivists sought to integrate learner's interests and to focus on present and future national and international issues.

From the above inferences it seems to be that any definition of curriculum will necessarily vary according to the purpose that has to be accomplished. Many writers advocated their own preferred definition of curriculum which emphasizes other meanings or connotations, depending on its contextual use.

The researcher was particularly enamoured of this definition of curriculum because it was different and resonated with the researchers hope that the road safety education programme will get under the skin of both the teachers and learners, thereby ensuring that we have a safer and responsible generation of road users.

Tomlinson & Germundson (2007, p. 27), as cited by Marsh & Willis (2007), elaborate on the rhythm of curriculum by comparing teaching to creating jazz. The enacted curriculum for these authors is characterized by a teacher blending musical sounds: 'blue notes for expressive purposes and syncopation and swing to surprise to create curriculum with the soul of jazz, the curriculum that gets under the skin of young learners'.

The curriculum field also includes a number of concepts and processes that are related to the curriculum as it was discussed above, but represents quite distinct areas. These areas are represented in the literature as curriculum development, curriculum

implementation, functions of the curriculum and curriculum innovation and change. One of the objectives of the study was to investigate classroom practice regarding the implementation of the road safety education programme. There is a close relationship between the concepts and processes of curriculum to the approaches used in the teaching and learning of road safety education, as will be discussed below.

4.3 Curriculum Development

Term ‘curriculum development’ has, according to Marsh (1997) wide, connotations and is used to describe the various curriculum processes of planning, designing and producing, associated with the completion of a particular set of materials. Curriculum development implies a degree of systematic thinking and planning in which individual decisions about content, teaching and learning are taken, not in isolation, but in relation to an overall design or framework or, at the very least in relation to consideration of other relevant factors. Curriculum development is defined by Carl (1995) as “an umbrella and continuous process in which structure and systematic planning methods figure strongly from design to evaluation”.

In theory at least, the curriculum is developed from particular views of what education is. The planning and creation of alternate curricula is what curriculum development is all about. Its end products are a range of intended curricula comprising proposals for what ought to be taught in schools. Curriculum development is considered as comprising those deliberately planned activities through which courses of study or patterns of educational activity are designed and presented as proposals for those in educational institutions. Such proposed or intended curricula necessarily include selections from society’s stock of meanings and embody a variety of views, implicit or explicit, about purposes, knowledge, children, society, teaching and learning.

Curriculum development refers to a process (Zais, 1976, p. 17). It is a process which determines how curriculum construction will proceed. The processes of curriculum development range from small-scale modifications of current practices to large-scale innovations in which new curricular possibilities emerge (Taylor & Richards, 1987). The Road Traffic Management Corporation in South Africa funded one such large

scale curriculum innovation in the form of the Road Safety Education Programme for implementing in the General Education and Training Phase. The development of this project began with what should be taught and proceeded to develop materials and means to give these ideas a practical realization. For the Road Safety Education Programme, 'evidence' was the material on which teachers and learners were taught to acquire an understanding of all issues pertaining to road safety. The means was the teacher acting as a neutral person, not proffering a point of view but attempting to ensure that issues of road safety were fully understood. By these means it was intended that learners should acquire a better understanding of the differing value positions adopted towards some of mankind's most important problems.

The development of new points of view about what should be taught is surrounded by contention. New curricular possibilities have to compete with already established assumptions about what should be taught as well as with what is already being taught in schools. Curriculum planning, including decisions about what to teach and for what purpose, occurs at different levels of remoteness from intended learners (McNeil, 1996, p. 112). These levels are societal, institutional, and personal. Participants, at the societal level, include the Department of Education and Curriculum Reform Committees. The instructional level refers to teachers deciding upon purposes that are appropriate for the learners at hand. Recently, the personal or experiential has been recognized as a fourth decision level in curriculum making. McNeil (1996, p.112) further states that this level is consistent with the view that learners generate their own purposes and meanings from their classroom experiences and are not merely passive recipients of curriculum ends and means.

The scope and basis for curriculum decisions vary according to the level. At levels remote from the learner are policy decisions, which either prescribe procedures to be followed by others in formulating the curriculum or establish the character of curriculum by specifying what must be taught or what will be tested. Societal-level decisions are based ideally on theoretical data and are influenced by norms and pressure groups in society. In the society-centred approach, society and not the child or the tradition, determines the foundation of the curriculum. Schooling is to serve the needs of society. This implies that curriculum has to have a direct relationship with societies' needs. This implies that curriculum has to have a direct relationship with

societal needs. The decision to incorporate the road safety education programme in the General Education and Training phase in South Africa was influenced by the high fatality rates that occurred as a result of road accidents in the country.

Different techniques and personnel are involved in curriculum making at the different levels. Curriculum-making at the national societal level includes development of standards, goals and objectives as well as textbooks and other instructional materials for wide use. Increasingly, national educational goals and standards are set by politicians and professional organizations. The Road Safety Education Programme is an initiative of the National Department of Transport in collaboration with the Road Traffic Management Corporation (RTMC). Curriculum designers at this level often do not focus on a wide range of educational goals such as critical thinking, self-expression, manual dexterity, or general social attributes. Instead, they focus on domains that are specific to a single subject, grade level, or course. In this arena, specialized personnel- subject and curriculum specialists-, make most of the decisions about what should be taught and how.

Curriculum development at the state societal level involves the production of curriculum standards, guides and frameworks. These materials are prepared by professional staff in state departments of education, assisted by representative teachers, college and university personnel, and curriculum specialists. The purposes and goals set forth in these materials are usually formulated by advisory committees composed of professional teachers, representatives from educational agencies, and selected non-professionals.

A curriculum formulated at one level is not necessarily adopted and implemented at another. John Goodlad (1984) and his associates, for example, have proposed five different curricula, each operating at a different level. The sixth one is proposed by Van den Akker (2009).

1. *Ideal curriculum*: From time to time foundations, governments, and special interest groups set up committees to look into aspects of the curriculum and to advise on changes that should be made. Curriculum recommendations proposed by these committees might treat mathematics, science, a curriculum

for the talented, multicultural curriculum, early childhood curriculum, computer literacy, or something else. These proposals might represent ideals or describe desired directions in curriculum as seen by those with a particular value system or special interest. The proponents of such ideal curricula are competing for power within the society. It should be clear, however, that the impact of an ideal curriculum depends on whether the recommendations are adopted and implemented.

2. *Formal curriculum*: Formal includes those proposals that are approved by state and local boards. Such a curriculum may be a collection of ideal curricula, a modification of the ideal, or other curriculum policies, guides, syllabi, texts sanctioned by the board as the legal authority for deciding what shall be taught and to what ends.
3. *Perceived curriculum*: The perceived curriculum is what the teachers perceive the curriculum to be. Teachers interpret the formal curriculum in many ways. Often there is little relationship between the formally adopted curriculum and the teachers' perception of what curriculum means or should mean in practice.
4. *Operational curriculum*: Operational curriculum is what actually goes on in the classroom. Observations by researchers and others who record classroom interaction often reveal discrepancies between what teachers say the curriculum is and what teachers actually do.
5. *Experiential curriculum*: The experiential curriculum consists of what students derive from and think about the operational curriculum. Each student's background of experience interacts with classroom activities contributing to unique meanings from common instruction. This curriculum is identified through student questionnaires, interviews, and inferences from observation of students.
6. *Learned curriculum*: Resulting outcome of the learners (Thijs & van den Akker, 2009, p.9)

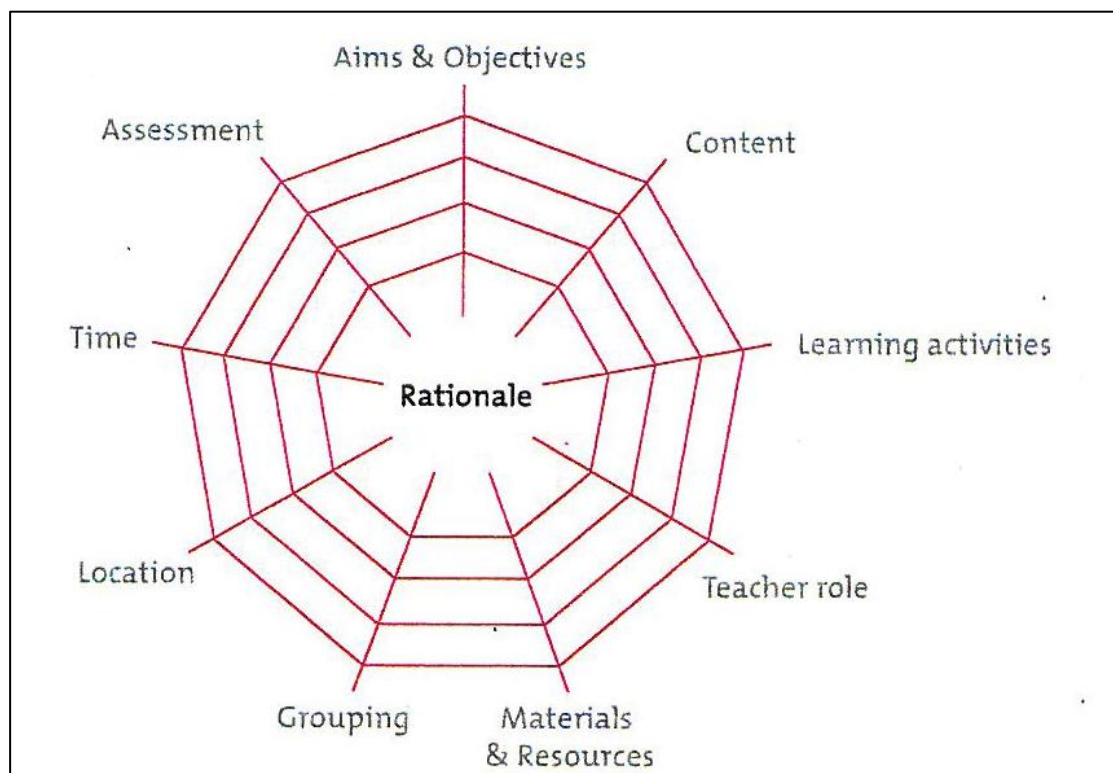
The division into six representations, enables an analysis of the processes and the outcomes of curriculum innovations. According to Thijs and van den Akker (2009, p.10) this distinction of forms emphasise the different layers of the curriculum concept and demonstrates the substantial discrepancies between the various forms.

Even though this may not be a problem, there is a desire to reduce the gap between dreams, actions and outcomes.

4.3.1 The Curricular Spider Web

The core of a curriculum generally concerns the aims and content of learning. Changes to this core usually presuppose changes to many other aspects of (the plan for) learning. The relationship between the various aspects is represented as a curricular spider web in FIGURE 4 by Thijs & van den Akker (2009, p.11).

FIGURE 4
The Curriculum Spider Web



The core and the nine threads of the spider web refer to the ten parts of a curriculum (Thijs & van den Akker, 2009, p.12), each concerning an aspect of learning and the learning programme for learners (see TABLE 4)

TABLE 4
Curriculum Components in Question Form

| Component | Core Question |
|-------------------------|---|
| Rationale | Why are they learning? |
| Aims and objectives | Towards which goals are they learning? |
| Content | What are they learning? |
| Learning activities | How are they learning? |
| Teacher role | How is the teacher facilitating their learning? |
| Materials and resources | With what are they learning? |
| Grouping | With whom are they learning? |
| Location | Where are they learning? |
| Time | When are they learning? |
| Assessment | How is their learning assessed? |

The rationale serves as a central link which connects all other curriculum components. They are also connected to each other thereby providing consistency and coherence. The curriculum is portrayed as being just as fragile and vulnerable as a spider's web. The spider's web can also rip if certain threads are pulled more than others. The spider web gives credibility to the saying "every chain is as strong as its weakest link". Based on this premise, Thijs & van den Akker (2009) asserts that sustainable curriculum innovation is often difficult to realize.

For any curriculum innovation to become an effective improvement on an existing practice, it must 'take' with the school and become fully institutionalized. Genuine innovation does not occur unless teachers become personally committed to ensuring its success. Unless this commitment occurs, new methods and materials may eventually be permanently relegated to store-cupboards, or used only in an unsystematic manner. The nature of the changes that occur when curriculum development reaches the schools and the classrooms is of crucial importance (Eggleston, 1977, P. 133). For the purpose of this study, the researcher will be able to determine whether the teachers are committed to ensuring the successful implementation of the road safety education programme.

The relevance of the ten components varies at the different levels. At the macro-level, objectives and content components receive more attention than those elements that concern pedagogy, educational materials, and the learning environment. At the macro-level, the consistency between objectives and content on the one hand and assessment and examinations on the other hand is important.

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Thijs & van den Akker (2009) state that, at the school and classroom level, all components play an important role. For the innovation to be successful and sustainable, overall consistency is important. This is in itself a great challenge, because it is an uphill struggle.

In addition to choosing content that is relevant, curriculum development is also concerned with the sequencing of content into a consistent and coherent curriculum. There must be coherence of content organisation both horizontally and vertically. The *horizontal coherence* involves the coherence between subjects and /or subject transcending themes within domains of the same educational level (Thijs & van den Akker, 2009). Horizontal coherence may be realized, by tuning in other components from the spider web, when teachers agree on mutual forms of assessment. The *vertical coherence* of content across one or more school years is often portrayed by curricular strands. Curricular strands or longitudinal trajectories are sequences of learning content. These sequences may be linear, stepped, or concentric. Curricular strands are also concerned with the alignment of educational objectives and content between educational stages (Thijs & van den Akker, 2009).

In the next section the four approaches to curriculum development as distinguished by (Visccher-Voerman & Gusafson, 2004) will be discussed. The four approaches are: instrumental approach, communicative approach artistic approach, pragmatic approach.

4.3.2 The Four Approaches to Curriculum Development

4.3.2.1 Instrumental Approach

The importance of a systematic design process is emphasized in this approach. The reference points for the design process is based on thorough analysis and clear and measurable objectives. Ralph Tyler was an important proponent of this approach. The Tyler rationale comprised of four important questions:

- Which *objectives* should education aim for?
- Which *learning experiences* are the most suitable in order to obtain these objectives?
- How could these learning experiences be *organized* effectively?
- How can we determine whether the objectives have been achieved?

The Tyler rationale emphasizes the importance of a rational and goal directed approach. By systematically answering the four main questions based on factual arguments, the validity and internal consistency of a curricular product can be enhanced. This approach also has its disadvantages. The attainment of predetermined objectives leaves very little room for flexibility to changing needs of users. Education is also concerned with personal views and opinions. Socio-political aspects play an important role in curricular issues

- In the context of the implementation of the road safety education programme, the objectives to be aimed for, is to make all learners safe and responsible road users.
- The learning experiences that have been most suitable to obtain these objectives have been outlined in the teachers' guide book for implementation in the classroom.
- These learning experiences have been organized in the guide book to facilitate implementation in the classroom.
- Lesson outcomes are clearly explicated in the guide book. These outcomes are aligned to the learning area outcomes as specified by the Revised National Curriculum Statement.

At the end of each lesson the teacher should be able to determine whether the learners have acquired the necessary skills and knowledge to make them safe and responsible road users.

4.3.2.2 Communicative Approach

In this approach relational strategies are important, that is building relationships with developers and other stakeholders. In this approach the subjective perceptions and views of all stakeholders is important. Designing is regarded as a social process in which the interested parties have their own vision and the possible solutions. The best designs are reached by consensus in which all stakeholders are involved. Deliberation and negotiation is the core of the design process. It is important that curriculum developers adopt this approach. It is extremely important for all stakeholders to be involved in curriculum design and development. The teacher's role in this approach cannot be underestimated because ultimately they are the individuals that are implementing the new curriculum in the classroom. Being involved in curriculum and design at its infant stages will make teachers more amenable to implementing it in the classroom because they are familiar with the product, rather than the teachers seeing the product for the first time when they receive the resource material at schools.

4.3.2.3 Artistic Approach

In this approach, the creativity of the designer is important. This is a subjective process influenced by the designers' views and influences. The designers will be guided by their own intuitions and perceptions. Eisner (1979) referred to this as *connoisseurship*. Eisner (1979) emphasized a holistic, approach to education in which teachers play a crucial role. Teachers will make decisions about the curriculum based on their own experiences. The key research question in this study is based in the educator's perceptions and experiences of implementing the road safety education programme. Teachers will anticipate the situation as it happens and will be able to make decisions about implementing the road safety education programme based on their own experiences. According to Eisner (1979) such a reflection on the curriculum should be aimed at all aspects of the curriculum. That is objectives, content, learning situations, organization of learning experiences, organization of

content, presentation and evaluation. Creative interaction is important in this approach. There is flexibility in this approach, to adapt content to suit the needs of the learner in a meaningful way. The drawback to this approach is the narrowness of the scope of the product. They are focused on a specific context of use and are based on the particular vision of the designer (Thijs & van den Akker, 2009).

4.3.2.4 The Pragmatic Approach

The practical usability of curricular products is emphasized in the pragmatic approach. There is close interaction between local practice and users. Because, formative evaluation is a core activity, design and evaluation activities take place interactively. Firstly, a rough outline of a possible final product is developed. Here the specifications of the design are visualized. After a series of design, evaluation and revision, the prototype is developed into a fully-fledged product. By constantly adapting the product to the requirements of the users, the prototype aims to increase the practicality of the product. This can be challenging if the demands of the users vary. In this instance the deciding factor is the designer's vision.

The four approaches contain valuable elements. The most appropriate approach will depend on the level of curriculum development. The communicative or instrumental approach is used at the macro level. The artistic approach is more suitable for use at the classroom level. The scope of the curricular product is also important. The artistic or pragmatic approach will offer great possibilities for the development of context-specific products. For the development of generic products, the instrumental or communicative approach will be more useful.

The concept of education as development advocates the adoption of a model of curriculum planning, that will seek to promote 'the right of each individual to a form of education which will advance his/her development as an individual (Kelly, 2009). Curriculum planners must not only recognize the need to make informed choices between the alternate approaches, they must also have clear reasons for the choices made.

This is a point which takes us naturally into an exploration of the functions of the curriculum and change as will be discussed in the next section.

4.4 Functions of the Curriculum

Before preparing any curriculum plan – whether for a textbook, lesson, course of study, document, product, or program-one should be clear about the functions the proposed curriculum will serve. The four functions are as follows:

1. *Common or general function:* The function of common education is met through a curriculum that addresses the learner as a responsible human being and citizen, not as a specialist or one with unique gifts or interests. It means, for instance, including as content the ground rules for participating in the civic affairs of the community and developing those minimal competencies essential for the health, welfare, and protection of all. Successful general education enables everyone to support and share in the culture; hence, a curriculum worker must decide what the individual needs in order to communicate with others. The planner must consider what outcomes and experiences all should have in common.
2. *Supplementation:* Individuality is the key to understanding supplementation. Objectives consistent with it deal with both personal deficits and unique potentials. To serve this function, a curriculum might be designed for those whose talents and interests enable them to go much further than the majority or those whose defects and deficiencies are severe enough to require special attention. Such a curriculum is personal and individual, not common or general.
3. *Exploration:* Opportunities for learners to discover and to develop personal interests capture the meaning of exploration. When well executed, it enables learners to find out what they do or do not have either the talent or zeal for certain kinds of activities. Exploring experiences should not be organized and taught as if their purposes were to train specialists. Nor should they be conceived as shoddy and superficial. Exploration demands a wide range of

contacts within a field, realisation of the possibilities for further pursuit, and revelation of one's own aptitudes and interests.

4. *Specialisation*: A specializing function is rendered by a curriculum in which the current standards of a trade, profession, or academic discipline prevail. Students are expected to emulate those who are successfully performing as skilled workers or scholars. Entry into such a curriculum requires that students already have considerable.

4.5 Curriculum Implementation

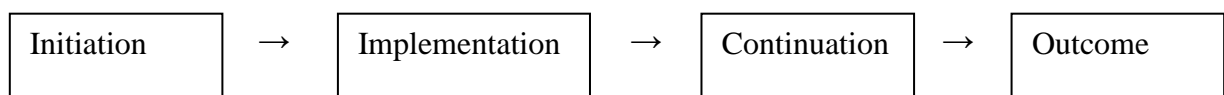
Implementation according to Fullan (2001) consists of the process of putting into practice an idea, program, or set of activities and structures new to the people attempting or expected to change. The change may be externally imposed or voluntarily sought explicitly defined in detail in advance or developed and adapted incrementally through use; designed to be used uniformly or deliberately planned so that users can make modifications according to their perceptions of the needs of the situation (Fullan, 1991). If the change is externally imposed, it is usually referred to as a top-down approach. This change may also potentially involve materials, teaching and beliefs in order to achieve certain desired student outcomes. According to Macdonald (2007) this was done to 'teacher-proof the curriculum'. With this approach, the teacher had a very passive role to play and had no input to the development and construction of the innovation. The goal of this approach was to assure high levels of congruency between the planning and the implementation of the curriculum (Fullan, 1993). For this approach to be successful the curriculum had to be adopted with very little deviation. This approach fails to deal with teacher concerns. Fullan (1993) also asserts that policymakers lacked understanding about implementation as a phase within in the change process and how to influence teaching practice. With the top-down approach, teachers had a tendency to adapt the curriculum rather than to adopt it (Brady & Kennedy, 2007). A contrasting approach to curriculum change was the 'bottom-up' or 'school based'. In this approach curriculum was developed within individual schools. According to Lovat & Smith (2003), this approach was widely used in Australian schools in the late 1970s and 1980s. This approach was used because teachers experienced difficulties in managing the teacher-proof curriculum packages. This approach was limited in its effectiveness

because there was low fidelity to the innovation. The approach failed to take into account that teachers tend to act out of their own self-interest and the subjective meanings that they attribute to situations (Lovat & Smith, 2003). Teachers benefit from developing their own assumptions about the curriculum before adopting it.

The processes beyond adoption are more intricate, because they involve more people, and real change (as distinct from verbal or “on-paper” decisions) is at stake. Many attempts at policy and programme change have concentrated on product development, legislation, and other on-paper changes in a way that ignored the fact that what people did and did not do was the crucial variable. Fullan (1991) states that, this neglect is understandable, for people are much more unpredictable and difficult to deal with than things. They are also essential for success.

The positive side is that, the persistence of people-related problems in educational change has forged greater knowledge about what makes for success. Educational change is a learning experience for the adults involved (teachers, administrators and parents) as well as for children. If an innovation is fully implemented, several definable aspects of the classroom or school life will be altered. Implementation, according to Fullan (1991), is a variable. Educational policy affects multiple dimensions of social welfare, because of its promise to serve as a significant lever of change in an institution intended to serve all learners (Honig, 2004, p. 2). However changes get initiated, they proceed or not to some form of implementation and continuation, resulting in intended and /or unintended outcomes. Honig (2004) states that although “implementability” and “success” are still essential policy outcomes, they are not inherent properties of particular policies. Rather implementability and success are the product of interactions between policies, people and places. For innovating classroom practice, attention must not only be given to the production phase of a curriculum, but also to events after the production. The logic of implementation is depicted in FIGURE 5 (Fullan, 1991, P.48).

FIGURE 5
The Logic of Implementation



There are three main observations to be made about Figure 5. Firstly, Fullan (1991) states that implementation is the hypothesized means of accomplishing improved student achievement. The processes that eventually lead up to and end with the decision to take up a specific innovation proposal has been referred to as the initiation phase. In the implementation phase participants attempt to use the innovation proposal in order to change their practice. Thus while the initiation phase is concerned with the nominal use of the curriculum, the implementation phase focuses on the actual use. Fullan (1994) states that the study of the implementation process is concerned with the nature and extent of actual change. This also includes the factors and processes that influence how and what changes are achieved. In the continuation phase the innovation is built into the routine organization, and extra support is withdrawn. Implementation is concerned with initial use of the innovation under project conditions while continuation deals with mature use under standard conditions.

According to (Marsh, 1997, p. 157) there are two extreme views about curriculum implementation. One view is that teachers have absolute powers of what will or will not be implemented in their classrooms ('power behind the classroom door'). In reality, it is not possible for any individual teacher to have such wide powers. If implementation does not occur or only partially occurs, that is, when materials change but teaching approach does not, it is unlikely that the desired outcome will be achieved (Gray, 1982).

The other extreme view is that an external authority exercises complete prescription over what teachers do in their respective classrooms, and that it directs teachers in selecting and using particular topics or units in specified ways. A realistic view of curriculum implementation lies therefore between these two extremes. Some subjects in schools are considered to be important core areas and are given detailed treatment in syllabus documents. For these subjects, teachers may be expected to cover particular content and to follow a certain instructional sequence. Alternatively, there may be other subjects where teachers can exercise their creative flair and implement very special, individual versions of the curriculum. This is referred to as 'adaptation' or 'process orientation'.

The alternative perspective to implementation is termed variously as ‘adaptation’, ‘process’ and ‘mutual adaptation’. Adherents of this approach maintain that differing organizational contexts and teacher needs will require on-site modifications (Berman & Mclaughlin, 1977). They suggest that all innovations become modified during the process of implementation and that this is vital, if it is to achieve the outcomes desired by the users. The term ‘mutual adaptation’ is described as a process whereby adjustments are made to the innovation itself and to the institutional setting. This term has been reified in the literature as the desirable consensual modification between developers and users and possibly the most effective way of ensuring successful implementation. For example, Macdonald and Walker (1976) maintain that implementation really involves ‘negotiation’ and that there are trade-offs in meaning between curriculum developers and teachers. The curriculum package which appears as a well-defined blueprint is perceived by classroom practitioners as a malleable entity to be adapted.

Adherents of the fidelity perspective emphasize the importance of the innovation itself and assume that products which can be demonstrated to be exemplary and effective will be readily accepted by teachers in schools. Marsh (1997) states that in a fidelity perspective, a structured approach to implementation is recommended whereby teachers are given explicit instructions about how to teach a unit or course. The instructions to teachers are specified *a priori*, and this means, little provision is made for the various school contexts in which the unit might be used. The basic assumptions are:

- central planning and definition is necessary to eliminate the inefficiency that occurs when local users are left with leeway to define an innovation;
- the less ambiguity and authority left to implementers, the greater the fidelity;
- evaluation is conducted to assess how closely implementation resembles the plan for programme execution.(Marsh, 1997, p. 159)

This orientation to implementation implies that the classroom teacher must be thoroughly trained to use the new programme or unit. It also appears that the

teacher's role is largely that of passive receiver, who will be willing to be trained to use the new curriculum package and once having received this training, will teach it at a high level of technical proficiency. Undoubtedly some curriculum packages are suited to this, especially where the content is complex and difficult to master and thereby requires careful sequencing; in subjects where teachers may lack the necessary knowledge or skills; and in subjects or units where appropriate diagnostic and achievement tests can be incorporated

A contrasting conceptualization of the implementation problem is provided by the adaptive-evolutionary approach. This approach accepts that the innovation as it has been devised will be modified during the course of its implementation. Berman & Mclaughlin (1977) states that "the primary feature of effective implementation could be called "mutual adaptation". In this context the project is adapted to its institutional context. The organizational patterns are adapted to meet the demands of the project. With this approach an attempt is made to identify the interaction of the innovation and setting in order to determine how they influence or alter each other (Gray, 1982).

4.6 Innovation and Planned Change

'Change' according to Marsh (1997) is a generic term which subsumes a whole family of concepts such as 'innovation'. It can be either planned or unplanned (unintentional, spontaneous, accidental movements or shifts). For Fullan (1991) this change is multi-dimensional involving possible changes in goals, skills, philosophy or beliefs, and behaviour, but above all, is change in practice. Much more emphasis is now placed upon innovation as a process. A working definition of innovation is the planned application of ends or means, new or different from those which exist currently in the classroom, school or system, and intended to improve effectiveness for the stakeholders.

An innovation is usually characterized through some materialized plan which describes the intended practices, and the aspired ways of changing them, and argues the theories which justify the rational. It uses some material, other resources (time, money) and specific social structures like workshops and appraisals to make people

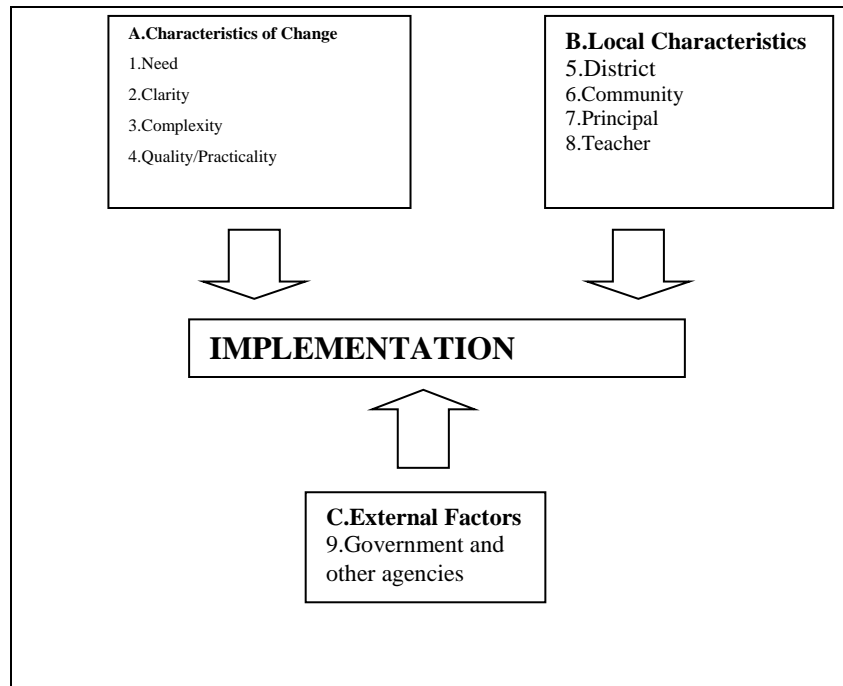
behave in a certain way. The real test of the innovation lies in it being put into practice. According to Fullan (1991) innovation is a practice to change practices.

Consequently a new curriculum may be described as an attempt to change teaching and learning practices which will also include the transformation of some of the beliefs and understandings hitherto existent in the setting to be changed. It is usually strong on the material side by providing a written curriculum, text books, recommendations for teaching strategies, working material for students, and probably also new artifacts for learning. It is usually less explicit on the organizational side but may also advocate the use of changed time tabling and new social structures. Curriculum change is not an event.

Parsons (1987, p. 22) states that in order for an innovation to become established and for attitudes to change, continuity of stimulus, support and legitimation is required. A phased plan of action is required with a carefully monitored pace, appropriate support, resource inputs and learning opportunities. If curriculum development is peripheral to the classroom teacher, then roles need to be designated, time must be made available, in-service opportunities provided to generate motivation, for knowledge and skills and for the impetus that is needed. The impetus may range from packs of materials, a teacher's guide, to a defined problem (Parsons, 1987).

The following FIGURE 6 lists 9 critical factors organized into 3 main categories relating to: the characteristics of the innovation or change project, local roles, and external factors (Fullan, 1991, p.72).

FIGURE 6
Factors and Characteristics of Implementation



Many innovations are attempted without a careful examination of whether or not they address what are perceived to be priority needs. Teachers, for example, frequently do not see the need for an advocated change. Teacher voice and ownership of curriculum change provide a key to understanding the problem of transforming innovative ideas from conception to implementation. The teachers' participation in the change process has a major effect on attitude and implementation of curricular change (Nicholson & Tracy, 2001). According to Marsh (1997) in education systems where teachers and principals have the opportunity to choose among competing curriculum packages, then attitudinal dispositions are clearly important. He further states that if a teacher perceives that the current curriculum that he or she is using is deficient in certain areas, then an alternative will be sought which overcomes these problems. But for many subjects, a revised or new curriculum is produced to be used by teachers in all schools and no choice is available. There is no opportunity for teachers to consider alternatives.

Where the Road Safety Education programme is concerned, teachers will be expected to implement the curriculum as prescribed in the manuals. The teacher's task will be to use this curriculum as effectively as possible. Teachers have varying degrees of

control over “selection, organization, and pacing of the knowledge transmitted and received in the pedagogical relationship” with their students (Bernstein, 1974). While the importance of perceived or felt need is obvious, its role is not all that straightforward. There are at least three complications. First schools are faced with overloaded improvement agendas. Schools in South Africa are implementing the revised national curriculum. Therefore, it is a question of not only whether a given need is important, but also how important it is relative to other needs. People often become clearer about their needs only when they start doing things, that is, during the implementation itself.

Clarity (about goals and means) is a perennial problem in the change process. Even when there is agreement that some kind of change is needed, as when teachers want to improve some areas of the curriculum or improve the school as a whole, the adopted change may not be at all clear about what the teachers should do differently. Legislation and many other new policies and programmes are sometimes deliberately stated at a general level in order to avoid conflict and promote acceptance and adoption. Such policies often do not indicate how implementation is to be addressed.

Complexity, refers to the difficulty and extent of change required of the individuals responsible for implementation (Fullan, 1991). Simple changes may be easier to carry out, but they may not make much of a difference. Complex changes promise to accomplish more, but they also demand more effort, and failure takes a greater toll. The answer seems to be to break complex changes into components and implement them in a divisible or incremental manner. Such incremental change as noted by Spillane, Reiser & Remer (2002, p. 415) occurs “when little or no alteration of the purpose and expectations of the people undertaking the change” is required. Such change may be useful for new curricula that do not differ significantly from those of the past.

The last factor associated directly with the nature of change concerns the quality and practicality of the change project – whether it is a new curriculum, a new policy, or a restructured school. The history of the quality of attempted changes relative to the other three variables (need, clarity, complexity) is revealing. To say that the importance of the quality of the change is self-evident is to underestimate how

initiation decisions are to be made. Inadequate quality and even the simple unavailability of materials and other resources can result when adoption decisions are made on grounds of political necessity, or even on grounds of perceived need without time for development. Put differently, when adoption is more important than implementation, decisions are frequently made without the follow-up or preparation time necessary to generate adequate materials. Ambitious projects are nearly always politically driven. As a result the time-line between the initiation decision and startup is typically too short to attend to matters of quality.

Changes in schools must also pass the test of the “practicality ethic” of teachers. Practical changes are those that address salient needs which fit well with the teachers’ situation, that are focused, and that include concrete how-to-do-it possibilities. People do not learn or accomplish complex changes by being told or shown what to do. Deeper meaning and solid change must be born over time. With particular changes, especially complex ones, one must struggle through ambivalence before one is sure that the new vision is workable and right. According to Quinn (1996) change requires the deconstruction of views and beliefs and an abandonment of the past and a start from the very beginning. In so doing, it requires discipline, courage and motivation, which is at the core of changing ourselves. Quinn further avers that because this is a radical change people would rather experience the pain of ‘slow death’ than the threat of changing.

This section analyses the social conditions of change; the organization or setting in which people work; and the planned and unplanned events and activities that influence whether or not given attempts at change will be productive. The same school programme is often successful in one school system and a disaster in another. Some districts have a track record of continual innovative achievement; others seem to fail at whatever they attempt.

Individual teachers and single schools can bring about change without the support of central administrators, but district-wide change will not happen. Deep change incorporates the notion of collaboration, which necessitates the development of professional communities and in turn the ‘re-culturing’ of classrooms and schools. Fullan (2005) states that re-culturing involves going from a situation of limited

attention to assessment and pedagogy to a situation in which teachers and others routinely focus on these matters and make associated improvements. Ryan (2004) states that the tensions between policy and pedagogy have direct implications for practice. Structures can block or facilitate this process, but the development of a professional community must become the key forger of improvement. When this happens, deeper changes in both culture and structure can be accomplished. Fullan (2005) states:

'Correlation is what happens when individuals increase their interaction and exert greater influence over one another creating new convergent patterns; auto catalysis is the behaviour of one system which stimulates certain behaviours in another system that, in turn, stimulates another and so on, eventually returning to motivate the original system thereby reinforcing a cycle of development and learning. Similarly if a school interacts in some on-going basis with other schools within a district, or within states, these systems will affect each other.'

Fullan (2005) further argues that if social interaction converts information into knowledge on a continuous basis, then some individuals are responsible for sharing what they know or contribute to the knowledge of others. Forging partnerships within a school and between schools is important in educational change, for it allows for reflection and discussion of common and unique difficulties and strengths. Fullan (2001) calls for the creation of authentic learning communities which continually convert tacit knowledge into explicitly shared ideas. Fullan (2001) advises reformers to focus on the collective good, to rediscover the close ties that education has with democracy and to understand that reform will happen through the sharing of successes and failures. Schools should share such ideas pertaining to reform for the benefit of the learners. Schools should also share their efforts with other schools and work to improve the larger communities in which they reside. Because change is inevitable, the best strategy for sustainable change is the formation of professional communities that are able to deal with issues, both major and minor as they appear.

It has always been said that the superintendent and the principal are critical to educational change. Long term change is difficult unless the leader communicates the

vision of what the change is to accomplish to the widest possible audience (Sowell, 2000, p. 143).

“The vision must become part of the belief system of individuals and play itself out in their behaviour” (Peel & McCary, 1997, p. 698). Implementation in practice can only be successful if it is regularly monitored, if the new proposals are actively supported and if decisions are followed through. In essence, principals of schools must adopt a style that facilitates and enhances the process of curriculum development within the present social context and culture of the school. Sowell (2000) advocates open communication in curriculum to foster the necessary psychological transitions. This is an opportunity for participants to look at concerns through the eyes of fellow participants. Professional development can assist participants with the psychological transitions involved in curricular change through opportunities to discard outdated ideas.

However Cohen and Hill in their 2001 study argue that collaboration per se does not mean that new ideas would necessarily flourish. They state :

‘professional contexts are likely to bear on teachers’ ideas and practices only when they create or actively support teachers’ learning of matters closely related to instruction, and most professional collegiality and community in American schools is at present disconnected from such learning..... The key point is that the content of teacher learning matters.’

Fullan (2005) argues that although Cohen and Hill rely heavily on the ‘informed prescription’ there may be an error of relying solely on professional communities, or for that matter external expertise. He suggests that both are required:

‘reforms need to be pursued under conditions which maximize intensive teacher learning, involving external ideas as well as internal ideas, interactions and judgements.’

Fullan continues by arguing that if social interaction converts information into knowledge then sustained interaction produces wisdom. Another powerful insight is that for a culture of knowledge-sharing to exist it must be a two-way street.

Rosenblum and Louis (1979) investigated the relative effects on implementation of superintendent authority on the one hand and classroom autonomy of the teacher on the other hand. They found that superintendent authority (number of decision areas influenced by the superintendent) was positively associated with implementation of a new district-wide programme, and classroom autonomy (number of classroom decisions made by the teacher on his or her own) was negatively related to implementation.

All major research on innovation and school effectiveness shows that the principal strongly influences the likelihood of change, but it also indicates that most principals do not play instructional or change leadership roles (Fullan, 1991, p. 76).

Berman & McLaughlin (1977) states that, “projects having the active support of the principal were the most likely to fare well”. Principals’ actions serve to legitimate whether a change is to be taken seriously and to support teachers both psychologically and with resources. Wiles (2009) corroborates this view by stating that, the true leader in any school building, will be that person who can mediate between organizational tasks and organizational needs. One of the best indicators of active involvement is whether the principal attends workshop training sessions. It is only when the principal gains some understanding of the issues that he or she will be able to understand teachers concerns. Such understanding requires interaction. The principal is the person most likely to be in a position to shape the organizational conditions necessary for success, such as development of shared goals, collaborative work structures and climates, and procedures for monitoring results. The school principal must demonstrate high levels of competence, which would include working effectively with others, showing excellent planning skills and the ability to deliver the results that have been projected through curriculum development activities (Wiles, 2009, p.11). The school principal should not tell the others what the curriculum is about, but should rather help them to discover or uncover what the innovation is about and to find the common beliefs held by the school community. If the school

community supports the basic premises undergirding the curriculum, there will be less resistance to change and implementation. Wiles (2009) further asserts that once these common beliefs or unifying statements are revealed, they can serve as filters or criteria to help the principal. He will be able to direct change, clarify objectives and outcomes, define the roles of his staff, and also guide the selection of strategies and tactics at classroom level.

It is these people at the classroom level who ultimately implement policy, significantly mediate implementation in a wide variety of ways that have begun to take centre stage in contemporary implementation studies. Research in this vein sometimes highlights the process whereby various individual and group orientations shape implementation. Spillane, Gomez & Reiser (2006, p. 17) reveal that implementer's identities and experiences extend well beyond their formal professional positions. They further elaborate the individual sense-making processes through which implementers draw on various identities and experiences to shape their choices during implementation. Flores (2004) refers to the way in which they understood their roles and the tasks and the nature of teaching itself. It is the professionalism of the teachers that led to their (re)construction of their professional identities in the changing context of teaching. In other words their understandings of what it meant to be a teacher were challenged and altered as they negotiated their roles in schools (Flores, 2004).

Both individual teacher characteristics and collective or collegial factors play roles in determining implementation. Some teachers, depending on their personality and influenced by their previous experiences and stage of career, are more self-actualised and have a greater sense of efficacy, which leads them to take action and persist in the effort required to bring about successful implementation. Wheatly (2005) defines teacher efficacy as teacher's beliefs in their ability to actualize the desired outcomes. This has been linked to teacher effectiveness and appears to influence learners in their achievement, attitude and affective growth. According to Spillane et al (2006) teachers prior beliefs and practices can pose challenges not only because teachers are unwilling to adapt to new policies, but because their existing subjective knowledge may interfere with their ability to interpret and implement a reform in ways consistent with policy maker's intent. An individual's prior knowledge and experience,

including tacitly held expectations and beliefs about how the world works, serve as a lens influencing what the individual notices. It also determines how the stimuli that are noticed are processed and subsequently interpreted (Spillane et al., 2002). What is new is always seen in terms of the past or as Spillane et al (2002, p. 35) states,

“ what we see is influenced by what we expect to see”. Similarly, one could argue that practices advocated in policy may be at odds with teacher’s tacit knowledge about teaching or simply what they know about teaching derived from their socialization into it. The approach a teacher deems ‘suitable’, will depend largely on his or her own understandings and beliefs of what good teaching is.

Teachers are considered to have a critical role for the actualization of the ideas in the new curriculum. For teachers, these new circumstances come into play from a variety of directions, only one of which is the official curriculum (Carson, 2005). Hence, no matter what the curriculum suggests, it is the teacher who makes the ultimate decisions about what is going on in the classroom. The teacher’s potential to learn and adapt to innovations can lead to learners’ learning and acquaintance with the innovations in the classroom. Cohen & Hill (2001) states that in this sense teachers are seen as both the means and the ends of the curriculum movement. Therefore any change should pay attention to what teachers know and believe. Change involves learning to do something new, and interaction is the primary basis for social learning. New meanings, new behaviours, new skills, and new beliefs depend significantly on whether teachers are working as isolated individuals or are exchanging ideas, support, and positive feelings about their work. The success of a sustained curriculum change depends largely on the quality of teaching and learning, when teachers individually and collectively assume responsibility for the planning of improved learning in the face of the complexity of change. The quality of working relationships among teachers is strongly related to implementation. Collegiality, open communication, trust, support and help, learning on the job, getting results, and job satisfaction and morale are closely interrelated.

Often teacher attitudes impact the success or failure of innovations. The attitudes and beliefs that teachers have will possibly affect its successful implementation. Attitude is defined in educational research (Mueller, 1986) as the sum of a person’s inclinations and feelings, prejudices and bias, pre-conceived notions, ideas, fears and

convictions regarding any specific issue. For the purpose of this study, the teachers attitude to implementing the road safety education programme will be the focal point, as it responds to critical question one. Joram & Gabriel (1998) has described attitudes as “screens” or “filters” which influences all new information concerning teaching and learning.

These definitions are related to Rosenberg & Hovland’s (1960) three component model of attitudes. These definitions cover the three aspects, namely behavioural, cognitive and affective. Although, not a more recent model, researchers like, Wood (2000) have found it appropriate to conceptualize attitude formation in terms of teaching and learning.

Wood (2000) further elaborated on the three components. The cognitive component focuses on the idea or thinking upon which the attitudes is based, the affective concerns feelings about the issue and the behavioural concerns the actions that comes about because of the attitude.

The last set of factors that influence implementation places the school or school district in the context of the broader society. This means primarily the department of education of each province, faculties of education, and other regional institutions. The relationship of the school to these various outside agencies is quite complicated, but necessary to analyse in order to understand the forces that impinge on school personnel. This section provides an overview of the influence of this outside set of forces.

Provincial / state and national priorities for education are stated according to political forces and lobbying of interest groups, government bureaucracies, and elected representatives. Legislation, new policies, and new programme initiatives arise from public concerns that the educational system is not doing an adequate job of teaching basics, developing career relevant skills for the economic system, producing effective citizens, meeting the needs of at-risk children. These “sources” of reform put pressure to provide various incentives for changing in the desired direction. Whether or not implementation occurs will depend on the congruence between the reforms and local needs, and how the changes are introduced and followed through (Fullan,1991).

Government agencies have been preoccupied with policy and programme initiation, and until recently they vastly underestimated the problems and processes of implementation. We have a classic case of two entirely different worlds- the policy-maker on the one hand, and the local practitioner on the other hand. The quality of the relationships across this gulf is crucial to supporting change efforts when there is agreement and to reconciling problems when there is conflict among these groups.

The difficulties in the relationship between external and internal groups are central to the problem and process of meaning. Not only is meaning hard to come by when two different worlds have limited interaction, but misinterpretation, attribution of motives, feelings of being misunderstood, and disillusionment on both sides are almost guaranteed.

The power of the individual teacher is limited. Without his strengths, the betterment of schools can never be achieved; but the strengths of individuals are not effective unless they are co-ordinated and supported. The primary unit of co-ordination and support is the school (Stenhouse,1978, p.166). Therefore building a professional, learning culture within a school and between schools and the wider educational organisations will enhance improvement.

The school is the basic organized community in education, and it is at school level that the problems and possibilities of curriculum innovation have to be negotiated. It is at this level that the process of implementing the road safety education programme will take place. Stenhouse (1978) further states that schools are the only institutions taking in a conscript population covering the whole of society. Moreover, curricular changes of real significance almost always involve changes in methods and ways of working. Innovation of quality needs to be experimental, provisional and tentative. The need for certainty causes many schools to assert in moral terms the rightness of the innovation they are about to embark on.

A further barrier to innovation in schools is the threat innovation poses to the identity of the teacher and the burdens it imposes on him. Stenhouse (1978) states that the teacher is a man of learning skilled in teaching. He identifies strongly with his subject knowledge and his professional skills and often it is upon these that his professional

self-respect is based. Dale (1973) has described how teachers often enter upon innovation, especially within the framework of a curriculum development project, with quite unrealistic expectations. 'We expected to take back an educational package that we would introduce into our respective classrooms, which with the pack of materials available, would mean successful lessons and involved committed learners'. The disparity between these expectations and the reality, particularly when the expectations are held by heads, constitutes a major barrier to innovation. Other obstacles relate to organizational arrangements such as role overload, rigid scheduling of time, reporting systems, and failure of administration to recognize and understand its role in change (Bennie & Newstead, 1999). The introduction of a new curriculum poses a range of challenges to teachers with regard to the underlying assumptions and goals, the subject demarcation, the content, the teaching approach and the methods of assessment. Teachers in South Africa had to contend with three curriculum changes from 1998 to date. Teachers had to contend with new learning areas, new content, and the implications of the calls for, "integration", "contextualization", "relevance" and "learner-centredness" (Bennie & Newstead, 1999).

In most schools which are going concerns there are complex organizational arrangements which hold the educational pattern in place. It seems doubtful if it is advisable to attempt to revolutionize a large school which is in operation. Gradual adaptation is required. In this process the timetable is crucial, and it is the modification of the timetable on an annual basis which dictates the rhythm of change. It also represents the bargain struck in negotiation over resources of staff, of time and of rooms. It is a major focus of the battle for implementing something new and especially if it is not an initiative of the Department of Education. In viewing this battle it is important that most innovations have strong implications for the internal politics of the school. Integration threatens the powerbase of subject departments. The introduction of new subjects increases the competition for resources and may create new opportunities for promoted posts.

The school has a hierarchy of status and power. Curriculum and organizational change disturbs that allocation of status. Factors that can restrict curriculum implementation have been identified in the literature review. These relate to the

teacher and the context in which the change is taking place. This also includes the mismatch between the teacher's "residual ideologies" and the principles underlying the change.

In the next section the change process will be discussed.

A description of the history of the political change in South Africa would give a context of political influences on educational policies and curricular decisions and will provide a background to curriculum change in South Africa and how it has progressed over the last eighteen years. Firstly, missionary education in South Africa and the objectives of the British will be discussed. Secondly, the role of Christian National Education based on Calvinist Principles will be examined.

4.7 Curriculum Change in South Africa

4.7.1 Missionary Education

The British set up a system of government that was similar to other parts of Africa. This type of control ensured the spread of the British Empire across the world. Education was used as a means of social control (Msila, 2007). English was the official language, this ensured the anglicisation of the church, government offices and schools. Lovedale and the University College of Fort Hare were established in the eastern parts of the Cape Colony under British influence. Mission schools like Clarkebury and St. Matthews were established to foster the British traditions and culture. Teachers were also brought in from Britain. According to Msila (2007) in the hidden curriculum of the British, the Africans had to be educated so that they could take part in church activities. Christie (1988) states that mission education was to spread a western ethos among backward Africans and to teach them good work values. The mission education served both the private and the public needs of the British. The British Government used the mission schools to advance their political aspirations. Sir George Grey as quoted by Christie (1988) stated:

“Unremitting efforts must be made to raise the Natives in Christianity and civilization, by establishing among them missions connected with industrial

schools. The native races beyond our boundary, influenced by our missionaries, instructed in our schools, benefitting by our trade, would not make wars on our frontiers”.

These words encapsulated the basic political goals of African missionary education. Missionary education was geared to make the Africans docile and submissive. While the Africans were being anglicised, the Afrikaners were busy formulating their own education system in the trekker states of the Orange Free State and the Transvaal. It was in these Afrikaner states that gave rise to Apartheid and Christian National Education. The Afrikaners were opposed to the British system of education, because they felt that this system was alienating them from their own cultural practices and beliefs. Subsequently the Afrikaners established their own schools based on Christian National Principles.

4.7.2 Pre-1994 and Christian National Education

Observation and experience indicate that education systems affect life chances of citizens and profoundly affect access to their opportunities in society. South Africa is in a transition, characterized by transformation in every sphere of life, including the sphere of education and training. Embraced in this transformation is the significant paradigm shift in the way people think about learning and the way it is organized in education and training.

The previous education system was characterised by traditional curricula subjected to a time constraint and driven by the calendar. It was a paradigm of structured and inflexible curriculum. This technical view of curriculum persisted in South Africa well into the 1990s, although globally the emphasis was more on an inclusive type of curriculum to cater for the changing needs of society. This system did not develop a vision for citizenship, nor did it educate for the nation. Changing to a new dispensation would mean setting a new vision and approach for education. This approach would drift the state’s regulatory emphasis away from the amount of time spent in school, to the specification of rigorous outcomes for student achievement. It required a shift from focusing on teacher input (syllabus expressed in terms of content) to focusing on learner outcomes (Van Der Horst & McDonald, 1997). In our

education system this shift was inevitable because there was a need for more learning on global awareness, on helping the learners to recognise their responsibilities, and on opening up access while ensuring that people have access to quality.

In the White Paper on Education and Training (1995) the Minister of Education reiterates the central problem facing education and training in South Africa, namely, that “South Africa has never had a truly national system of education and training”. This was due to the previous dispensation which promoted a racially and culturally segregated and differentiated education system based on a philosophy of Christian National Education (CNE) as stipulated in the National Education Policy Act (No.39 of 1967). Ashley (1989) describes Christian National Education as the “educational expression of apartheid”. The Christian National Education started in the early 1870s, based on the Calvinistic Christian doctrine. Education was based on strong Christian principles, and children were instilled with a respect for authority and an ardent sense of nationalism. Ashley (1989) further describes Christian National Education as being technicist, rigid and authoritarian. This was also used as a vehicle to promote Afrikaner nationalism and segregation.

Up to and including 1983, the various education departments in South Africa functioned, to a large extent, independently of one another, and there was no significant indication of a common curriculum followed by all. A measure of commonality, especially in the higher standards was, however, achieved through the role that the then Joint Matriculation Board (JMB) played in curriculum development, examination and certification.

It is therefore clearly stated in the White Paper on Education and Training (1995) that this state of fragmentation necessitates strong, co-ordinating structures and mechanisms. The new education system must therefore be a single national system which is largely organized and managed on the basis of nine provincial sub-systems. To realize this aim the Constitution has vested substantial powers in the Provincial Legislature to administer educational affairs subject to a national policy framework. Education is also one of the ‘Schedule 6’ functions on which the constitution gives both the national Parliament and the provincial legislatures the competence to make laws. The Department of Education’s future function will be, inter alia, to establish

norms and standards with respect to curriculum frameworks, standards, examinations and certification in terms of the National Education Policy Act, 1996 (No.27 of 1996).

The curriculum is regarded as central to the education process. Curriculum policies are developed and changed in specific circumstances involving political and economic considerations. Hammersley & Hargreaves (1983) states that the nature of education is rarely, if ever, the practical realisation of an ideal form of instruction as envisaged by a particular group. Instead, most of the time the forms that education takes are the political products of power struggles. They bear the marks of concession to allies and compromises with opponents. Thus, to understand the nature of education at any one time, we need to know who won the struggle for control. The motive power of any pressure group lies in a shared belief in their perception of what is wrong or lacking in the current situation, and of what can be done about it, and in the ability of the leadership to canalize the dissatisfaction of the group, and of others, into line with these beliefs, by crystallizing, defining and focusing it in such a way as to create a widely shared frame of reference.

According to the National Education Policy Investigation Report (NEPI, 1992) a curriculum policy for South Africa needs to be grounded in an analysis of existing circumstances, and to be meshed with goals for future social development. It was also stated by the Minister of Education that education and training must change. The curriculum of the former dispensation has been regarded as irrelevant for some learners. The irrelevancy of the previous curriculum is further illustrated by the need of successful modern economies for citizens with a strong foundation of general education and who could move flexibly between occupations. The South African economy serves here as a good example where changes in the relative contribution of the various economic sectors have serious implications for a future curriculum.

To realize this aim, the knowledge and skills base of the working and unemployed population has to be massively upgraded, and young people still at school, should be given better opportunities to continue their education and training. The overarching goal of the national education policy should therefore be to enable all individuals to value, have access to and succeed in lifelong education and training of good quality.

All learners, namely children, youth and adults, should be exposed to good quality education and training, and they should also be able to move easily from one learning context to another. The emphasis is therefore on lifelong education and training of good quality.

Owing to the growing concern about the effectiveness of traditional methods of teaching and training, which are currently still content-based, standards will in future be defined in terms of learning outcomes. The emphasis will be on what the learners know and can do at the end of a course of learning and teaching, instead of the means which are used to achieve those results.

The Ministry of Education has committed itself to a fully participatory process of curriculum development, in which the teaching profession, teacher teachers, subject advisors and other learning practitioners play a leading role, along with academic subject specialists and researchers. The process must be open and transparent, with proposals and critique being requested from any persons or bodies with interests in the learning process and learning outcomes.

The previous curriculum decision-making structures and processes were characterized by a complex network of different bodies, with its committee structure co-ordinated by the Network Committee for Curriculum Development. Curriculum development in these former structures occurred outside the public domain, as an in-house and largely non-participative activity without formal representation of major interest groups such as corporate capital, organized labour, and other groups in civil society. Syllabuses were prescriptive and detailed, allowing almost no room for teacher initiative

The ANC Policy Framework for Education and Training of January 1994 exemplifies the lack of democratic control within the previous education and training system. This resulted in an exclusion of major stakeholders, such as teachers from the decision-making process. In view of this, the ANC strived for the active participation of various interests groups, in particular teachers, parents and students, workers and employers. The ANC stresses the principle that policies are matters not for

governments only. Such policies must be the product of open social and political processes involving all major stakeholders and interest groups.

The question of participation was reiterated in the NEPI Report (1992) indicating that one of the first challenges of the new system would be to open up curriculum-decision making to broader participation and to appropriate public accountability.

4.7.3 People's Education Movement and the Curriculum

In the mid 1980's the People's Education Movement was viewed as a political movement. They viewed the school classroom as a central site of the struggle against apartheid (Kraak,1999). People's education also came to be viewed as an alternate to the repressive Bantu Education system that was imposed in the mid-1950s. The seeds for integrated curriculum development in South Africa was sown by the People's Education Movement. Kraak (1999) reported that the ideals that were important to curriculum integration such as the democratization of education through the participation of a cross-section of the community in the decision-making on the content, quality and governance of education. These ideals were also underpinned by the negation of apartheid in education by making education relevant to the democratic struggles of the people. There was also a need to bridge the gap between theory and practice and between mental and manual labour.

If one compares the central principles of People's Education with those of Bantu Education, it can be seen that people's education became, according to Kraak (1999) an educational pedagogy encompassing the development of critical thinking, interdisciplinary curriculum content, learner-centredness, participatory teaching methods, community involvement and a concern to link the focus of formal education with the working world.

Kraak (1999) described the curriculum approach of the People's Education Movement as a radical conceptualization of curriculum that was driven by the ideals of self-empowerment, democratizing education and political liberation. Kraak (1999) further states that the movement made very little impact during the 1990s. This was attributed to suppression of curriculum reformist initiatives by the then apartheid

government. This was exacerbated by the lack of clarity regarding the Movement's agenda for curriculum reform. This was open to multiple interpretations and manipulation. Further development was, curtailed with the advent of the negotiation era. Subsequently the egalitarian language of people's education was abandoned in favour of expert-led, multi-stakeholder policy making process which prioritised the economic and systemic discourses.

4.7.4 Curriculum in the Systemic Discourse

The demise of the People's Education Movement was substituted by a less radical and more reformist systemic discourse. This systemic discourse evolved from five major policy initiatives aimed at transforming the political and economic landscape of South Africa. The new systemic reform logic of the ANC and the Congress of South African Trade Unions (COSATU) was concerned with the implications of a rapidly globalizing economy on the functioning of the education and training system (Kraak, 1999).

Systemic discourse according to Kraak (1999) has four central tendencies.

- As a policy discourse it focuses on the structural characteristics of the system under study. That is its institutional forms, the extent of internal differentiation, the form and social consequences of particular certification processes adopted, and the articulation between its sub-systems it is concerned primarily with the distribution of power between state, market and educational and training institutions.
- It is also concerned with the social relations, which underpins the forms of differentiation, articulation and certification which emerge within the education and training system and between the economy and labour markets.
- A systemic discourse has a political predilection towards the creation of a unified education and training system responding to the pressures of globalization and massification
- Each education and training system is held together by a distinctive regulatory framework. This has entailed the advocacy of a single national qualifications

framework to replace the highly differentiated and divisive qualification framework.

Systemic policy proposals in the 1990s have since sought to eradicate institutional divisions, through the creation of a single National Department of Education and Training, through a single national qualifications framework and a National Qualifications Authority. An outcomes –based approach to curriculum was also advocated. In the following section the rationale for the introduction of outcomes-based education will be discussed. A definition of outcomes-based education will also be provided. The origins and policy directives in a South African context will be discussed. The characteristics as well as its advantages and disadvantages will also be discussed.

4.8 Outcomes –Based Education

In the early 1990s, a curriculum idea with wide currency, Outcomes-based Education (OBE) was applied in many states in America to include affective goals among the desired outcomes including- “self-esteem,” “appreciating and understanding others without discrimination,” “maintaining physical, emotional, and social well- being.”

Outcomes-Based Education, as a philosophy, has been differently interpreted by different writers in the context of the unfolding debate over outcomes based education. Outcomes based education as stated by William Spady (1994), “means clearly focusing and organizing everything in an educational system around what is essential for all learners to do successfully at the end of their learning experiences. This implies starting with a clear picture of what is important for learners to be able to do, subsequently organizing curriculum, instruction and assessment to make sure that learning ultimately happens” (Spady, 1994, p.1).

Killen (1996) states that OBE is an, “approach that requires teachers and learners to focus their attention and efforts on the desired end results of education”. Killen (1996) further argues that it encourages teachers to use this focus as a guide to all their instructional decision-making and planning.

OBE is described by Malan (2000) as an eclectic educational philosophy taking the best from previous approaches and framing it in a new visionary system that is appropriate to the needs and demands of a democratic South Africa. OBE makes allowances for input from its stakeholders, because of its socio-constructivist base. Malan (2009), further states that OBE may become a living educational model adapting to new demands and needs.

Outcomes Based Education (OBE) is rooted in the systematic approach known as “competency based education,” which is aimed at defining and evaluating student performance. Proponents share the idea that curriculum must centre on some essentially far reaching outcomes that all students must attain (McNeil,1996, p.58) Students must demonstrate their mastery of these major outcomes, not put in “seat work” .

Spady (1994) argues that illiteracy and failure are neither inevitable nor acceptable and that all learners inclusive of learners from poor socio-economic backgrounds can also succeed because OBE is founded on three basic premises, that is, all learners can learn, and succeed, success breathes success and schools are responsible for the success of learners.

Baxen & Soudien (1999) concur with Spady (1994), by stating that OBE has the potential to meet the needs of all learners regardless of their environment, ethnicity, economic status or disabling conditions. Baxen & Soudien (1999, p. 133) also claim that “adherents of OBE state that this system enables teachers and educationists to adopt a more explicit, unequivocal curricular focus, to be able to develop better instructional procedures, and assess learner’s achievements with exactitude, clarity and validity”. To confirm the dominant role to be played by outcomes in Outcomes-Based Education Spady (1994) states that the outcomes based paradigm is defined, focused, and organized around exit outcomes. Spady (1994) further states that exit outcomes should culminate in demonstrations of learning simultaneously serving as the focal point, mission, fundamental purpose, top priority, bottom line and starting point for everything else that will happen in the classroom.

Outcomes-Based Education makes a conceptual shift away from content-driven, rote learning, to one where learners discover and construct knowledge. Learners learn about the relevance of content and are taught to use critical thinking skills and problem-solving matters across broad learning areas. Learners who are afforded an opportunity of “ learning how to learn”, become responsible for their own learning. They subsequently display greater enthusiasm and involvement (Rasool, 1997a). Knowledge, as viewed by outcomes based education is open to change and is adaptable. This knowledge must be meaningful to learners. It must be useful, relevant and meaningful o their everyday lives. This will encourage learners to appreciate knowledge and to acquire more. In order to cope with the technological and social changes, knowledge will have to change to remain in step with technology. Hence outcomes-based education’s view of knowledge as ever changing is correct, realistic, and prepares learners for the real world, real issues and the work world.

William Brady, Director of the International Centre on Outcome-Based Restructuring offers four principles for defining OBE:

1. All curriculum design, instructional delivery, and assessment focuses on what students must demonstrate at the end of their school experience.
2. A wide range of opportunities are available for students to learn what is expected of them.
3. All students are expected to attain performance at high level.
4. The curriculum is to be designed in accordance with the existing outcomes required

This view is shared by Haack (1994) who states that outcomes have three important functions as listed below:

1. Provide clear direction to guide the action of teachers
2. Convey to the community what is expected of the learners and the role to be played by education
3. Contribute to making schools autonomous.

It could therefore be argued that Outcomes-Based Education involves much more than simply introducing a new educational approach. It requires a novel consideration of a variety of related issues regarding policy and implementation. This illustrates the need to carefully consider the total environment within which a policy initiative is evaluated. Outcomes-based is only one of the facets of a society's efforts to improve its living conditions.

Outcomes-Based Education is usually attractive to politicians, policy-makers and administrators, during times of educational reform which follows socio-political reform (as is the case in South Africa after the change in government). OBE provides policy makers and administrators with some level of control over the outcomes of education. The new curriculum was developed in South Africa to ensure that it met the needs of a changing society. Tyack & Cuban (1995), as cited in Msila (2007), state that when people speak of educational reforms, they mean planned efforts to change schools in order to correct social and educational problems. Apart from being regarded as a possible solution to social and political ills, OBE was also seen as an answer to economic growth.

Despite their desire to make education a means of redress and transformation, a close reading of the government's White Papers since 1994 shows that education policy sees both the ends and the means of education in largely economic terms (Skinner, 1999).

Proposals for the transformation of education and training in South Africa first emerged during the civil society policy activities that led up to the 1994 elections (Christie, 1997). The curriculum significance of the political moment defined by 1990 was that within South Africa, competing social movements and political actors vehemently began to stake their curriculum positions in anticipation of what now seemed inevitable, the emergence of South Africa's first democratic state (Jansen, 1999). During this period of intense debate within and between the ANC, COSATU, private sector groups, and community groups, an education and training agenda was drawn up, borrowing explicitly from a range of international experience to meet the joint goals of equity and social and economic development.

The significance of this period according to Jansen (1999), is that the debate on the integrated system and competencies was largely confined to and conducted within the labour movement and its expanding relationship with business. There was at the time very little integration or interrogation of educational ideas into this labour-driven debate, at least from those working within schools. The underdevelopment of integration and competency within the schools sector, did not augur well for the development of curriculum policy in schools. The first national curriculum initiative was limited to a political intervention in the form of a highly superficial sanitation of apartheid syllabuses as a response to a serious legitimacy crisis after the elections (Jansen,1999).

The emerging vision for education and training was a systemic umbrella agenda. Education and training would be integrated in a system of lifelong learning that would articulate adult basic education and training, formal schooling and learning programmes for out-of-school children and youth. Structures representing stakeholder interest would ensure accountability and participation at all levels of an integrated system. An outcomes-based curriculum would allow different pathways for learners in different contexts so that adults, out-of-school children and youth, and in-school children would be able to follow different curricular content and even assessment methods which would be articulated through outcome statements. The allure of OBE for South Africa as stated by (Baxen & Soudien, 1999) is the learner-centred, results-oriented design based on the belief that all individuals can learn.

Christie (1997) states that in this complex reform agenda, demands of both equity and human resources development would be brought together in policies that would shift the values and practices of apartheid education into a democratic, rights-based approach to social and economic development. The new outcomes-based curriculum in South Africa was aimed at developing a thinking, problem-solving citizen who will be empowered to participate in the development of the country in an active and productive way. This is typical of a social-reconstructionist view of schooling, where schooling is regarded as a way to change and improve society. This is in keeping with the new emerging paradigm where the world is viewed as an integrated whole rather than as a disassociated collection of parts, where problems are perceived as systemic, interconnected and interdependent

The approach to reconstruction adopted by the Ministry of Education drew a sharp distinction between policy formulation and implementation. The new constitutional dispensation vested the national Department of Education (DoE) with responsibility for developing norms and standards, frameworks and national policies for the system as a whole, while provincial departments are responsible for implementation and service delivery within these frameworks. These policy frameworks have given almost no attention to the context of implementation and how the new vision could be put in place in the profoundly unequal school contexts that apartheid left behind. This approach has implicitly assumed that the formulation of policy can be logically separated from its implementation.

In many ways, the resultant suite of policy proposals represent state-of-the-art thinking on Western schooling, drawing as they consciously do from what is judged to be the best of international experience. OBE has been adopted and adapted needs in countries such as the UK, the USA, Canada, New Zealand and Australia, to suit their own unique needs. South Africa had opted for 'transformational' OBE. This form of OBE aims to radically change the way schooling is structured and operates. According to Malan (2000), it offers a dialogue between the learner and the curriculum where the learner interacts with sources of knowledge, reconstructs knowledge and takes responsibility for his or her own learning outcomes. From this viewpoint the transformational character of OBE is influenced by the mastery learning and competency-based education movements.

However, in setting out these proposals, the national Department of Education has assumed little or no responsibility or accountability for how these policies might be delivered as there was no teacher preparation or guidelines as to how this could be achieved (Christie,1997). This view is shared by Jansen (1999) that OBE is being driven by political imperatives that have little to do with the realities of classroom life. OBE will undermine the already fragile learning environment in schools of the new South Africa.

Cohen & Ball (2000) also state that innovations fail because of a lack of fit between policy and classroom practice. Innovations, they assert, did not heed practitioners'

needs and priorities, which included classroom discipline and the demands of daily teaching.

Jansen (1999) advances ten principal criticisms as to why OBE will have a negative impact on South African schools. The strength of Jansen's dissection of OBE lies in the fact that it exposes the stark reality that this curriculum innovation, like any other, is not without inherent limitations and therefore cannot be simplistically viewed as a panacea to solve all of South Africa's educational and socio-economic ills. Jansen highlights possible obstacles that must be overcome to ensure its successful implementation.

Firstly, Jansen asserts that the language is too complex, confusing and sometimes contradictory for most teachers to give these policies meaning through their classroom practices. Consequently, he believes that a teacher attempting to make sense of OBE will have to contend with more than fifty different concepts and labels. The teacher will also have to keep track of the changes in meaning and priorities afforded to these concepts over time. Secondly, OBE as curriculum policy is lodged in problematic claims and assumptions about the relationship between curriculum and society.

Jansen (1999, p.148) avers that there is not a shred of evidence in almost eighty years curriculum change literature to suggest that altering the curriculum of schools leads to, or is associated with, changes in national economics. To make such assertions between curriculum and society has an understandable political agenda, but given the accumulated research on curriculum change and its impact, there is no substantive evidence.

Thirdly, OBE is based on flawed assumptions about what happens inside schools, how classrooms are organized and what kinds of teachers exist within the system. The policy requires not merely the application of a skill but its theoretical underpinnings must be understood. There must also be an ability to transfer such applications and understanding across different contexts. Jansen (1999) is skeptical about whether this will be adequately addressed at classroom level.

Fourthly, there are strong philosophical rationales for questioning the desirability of OBE in democratic school systems. It is argued that that this policy offers an instrumentalist view of knowledge that violates the epistemology of the structure of certain subjects and disciplines as cited by (Mckernan, 1994) in Jansen (1999). There is a fundamental contradiction in insisting that knowledge be used creatively by students only to subsequently inform them that the desired learning outcomes are already specified.

In the fifth place there are important political and epistemological objections to OBE as curriculum policy. Teachers, as a constituency, have been limited in their participation around this important policy. OBE and its concomitant structures have been developed by a small band of elite and mainly white teachers. The majority of teachers in the country do not have access to OBE or understand OBE in instances where such information may be available. The same teachers, without proper training in OBE, were expected to implement it under unequal circumstances. Jansen (1999) argues that, there is not a process, systematic and ongoing, in which teachers are allowed to conceptualise and make sense of OBE as curriculum policy. This is mainly due to the lack of the appropriate cultural capital in the form of adequate content knowledge, adequate skills and resources among the majority of African teachers, unlike in the former advantaged schools (Harley & Wedekind, 2004). In South Africa, the advantaged schools continue to be advantaged with respect to a measure of cultural capital and pedagogic continuity, as well as material resources. This contributes further to social inequity, the very problem this curriculum approach was supposed to ameliorate. Taylor (2000) concurs by stating that the poor teaching and learning conditions which prevail in the majority of South African schools, OBE is widening existing inequalities.

The seventh criticism leveled against OBE is that the administrative burden on teachers will be exacerbated. To manage this innovation, teachers will be required to reorganize curriculum, increase the amount of time allocated for monitoring individual student progress against outcomes, administer and maintain comprehensive records. Therefore, the conditions under which teachers work seem not to be conducive to the attainability of these competent and complex outcomes

OBE trivializes curriculum content. According to Jansen (1999) content is important as it gives meaning to a particular set of outcomes. If knowledge is organized around discrete competencies, OBE overlooks the important cross-curricular and inter-disciplinary demands encountered in learning a complex task. On the other hand, Fakier & Waghid (2004) state that education should be guided by intrinsic reasons not by learning outcomes, because this justifies education in an intrinsic way.

For OBE to succeed in moderate terms, the entire education system needs to be overhauled to support this innovation. Jansen(1999) argues that South Africa lacks the fiscal base as well as the political will to intervene in the education system so intensely. Finally, OBE needs to revisit the system of assessment.

Other criticisms levelled against OBE is that it rejects the distinction between everyday knowledge and discipline-based knowledge (Muller, 2000). McNeir (1993) shares this view by stating that in OBE, affective knowledge is over-emphasised at the expense of academic knowledge. He further cites the lack of standardized assessment strategies, the time, costs and effort involved as well as a lack of comprehensive research to determine its effectiveness. It is hoped that research undertaken in this study will provide some insight into curriculum implementation especially how the road safety education programme is being implemented in the five primary schools.

This explanation of how OBE emerged historically in the South African context clarifies the trajectory of curriculum policy in South Africa since 1994. The historical account makes it apparent that politics is a dynamic force in shaping the timing, focus and content of curriculum policy in democratic states. In South Africa, the sudden introduction of OBE was primarily a response to a period of non-intervention (1994-1997) in the former apartheid curriculum.

It was clearly ambitious that a complex system such as Curriculum 2005 (C2005) was introduced into schools with a minimum of formal preparation and training. There was also no significant change in the resource base to enable this curriculum. This reflected a critical need to deliver a different curriculum from the past. The distinction between OBE and C2005 is described as follows: OBE is the approach

through which a curriculum is realized; C2005 is the curriculum that has been developed within the outcomes-based framework.

In the next section Curriculum 2005 will be discussed.

4.9 Curriculum 2005 (C2005)

Curriculum 2005 states that:

Teaching will become a far more creative and innovative career. No longer will teachers and trainers just implement curricula designed by an education department. They will be able to implement many of their own programmes as long as they produce the necessary outcomes (DoE, 1997, p. 29).

The new curriculum (Curriculum 2005) endorses the concept of lifelong learning. This means that all people who need to learn can now be given a chance to learn, not only scholars, but also adults and youths who have already left school. The vision of the changed education system is thus that all people be granted the opportunity to develop their potential to the full, whether by means of formal or non-formal schooling. The new education and training system is people-centred. It is also success-oriented (Van Der Horst & McDonald, 1997). According to (DoE, 1997) the goals of C2005 were to prepare the learner for the 21st Century based on the values of the country's Constitution. This would necessitate a change in the way the teachers thought about teaching and learning. C2005 was incrementally introduced into the General Education and Training (GET) band in 1998 across the country. It was envisaged that by 2005 all grades would be following this curriculum framework, therefore the use of the brand name C2005.

Though the new government recognized the need to replace the content-based and often ideological distorted curriculum of apartheid, curriculum change took second place to policies for finance, governance and organization of schools. After a short-term exercise in 'cleansing' the curriculum of its most obvious errors for the start of the 1995 year, frameworks for the Outcomes-Based Curriculum 2005 were put out in 1997. Building on the 'essential outcomes' of the National Qualifications

Framework (NQF), Curriculum 2005 set out eight Learning Areas (Communication, Literacy and Languages; Human and Social Science; Numeracy and Mathematical Sciences; Natural and Physical Sciences; Economic and Management Sciences; Technology; Culture, Arts and Artistic Crafts and Life Orientation). Specific outcomes have been developed for each of these, totaling sixty-six in all for the nine years of the GET Phase. Together with its outcomes approach, Curriculum 2005 favours continuous assessment with less stress on examinations for each term. Using a complex matrix of range statements, assessment criteria and performance indicators, teachers are able to construct learning programmes and prepare lessons based on outcomes.

Curriculum 2005 is an important step away from the content-laden, examinations-oriented curricula. It emphasis ‘learning by doing’, problem-solving, skills development and continuous development and allows greater space for teacher involvement in curriculum construction. C2005 required a changing role of teachers. The teacher becomes a facilitator rather than the sole suppository of knowledge (DoE, 1997). The teacher’s role is non-directive, supportive, non-judgemental and must be able to create a climate that is conducive to learning and change. Through interaction, the teacher must be able to provide the opportunity for growth and development. This will enable the learner to be able to deal with problems that may arise. The lofty ideals of C2005 was developed to produce citizens with a high level of skills, a high level of knowledge, and the attitudes and values needed to rebuild our country.

C2005 would prove to be a success story in theory, but in practice the misalignment between policy development and policy implementation was brought to light. Cohen & Ball (2000) concur with this view by stating that there is often a lack of fit between innovation’s design and classroom practice. Innovations are only aimed at practice, they do not take into account its realities which includes classroom discipline, the demands of daily teaching and the school organization.

In the case of South African schools, the particular forms of Curriculum 2005 and its implementation have been highly problematic. While the curriculum frameworks were drawn up by committees on which teachers were represented, most teachers

have not been actively engaged with the new curriculum. For most of them, the new curriculum is being put in place in top-down ways that strongly resemble the imposition of the previous curricula. Christie (1997) states that, this was partly due to the poorly planned and over-hasty introduction of the new curriculum into schools, with teachers being insufficiently prepared for outcomes-based pedagogy and continuous assessment. In these circumstances, the government provided emergency training and materials to ensure that all provinces could start from the same footing: however, in-service work with teachers and schools has been minimal and resources totally inadequate. The government was forced to pull back from its ambitious plans to launch the curriculum simultaneously in Grades 1, 4 and 7 in 1998. Because of a lack of capacity in provinces and schools to implement major changes at such short notice, the government scaled down its plans to Grades 1 and 4 and then to Grade 1 only. A major logistical problem with the launch of the new curriculum has been the resource-strapped circumstances of the provinces. During this period there was also increased political pressure for tangible changes in education, decreasing funding for education, and structural changes to the organization of the education system in the country

Jansen (1999) pointed out that changes have the greatest likelihood of success in well-resourced schools with well-qualified teachers and better prepared learners. The new curriculum is not targeted at conditions in the majority of South African classrooms. Harley & Wedekind (2004) aver that there is strong evidence that C2005 as a pedagogical project is working counter to its transformatory social aims. Despite admirable policy intentions and the goodwill of teachers, C2005 is reproducing class inequalities and reconstituting social class. This unintended effect as argued by (Harley & Wedekind, 2004) comes about because C2005 has been embraced as a political project that has been successful in the ideological domain, but it has failed to be successful as a pedagogical project. Meliorism, according to Harley & Wedekind (2004), explains how it was possible for policy-makers to overlook the profound inequalities in South African schools and to convince teachers that they could meet the challenges of under-resourced schools with minimum or no support.

The Minister of Education had tasked the review committee on C2005 to investigate the structure and design of the curriculum, the level of understanding of the

curriculum, how implementation could be strengthened. The report showed that while there was overwhelming support for the principles of OBE and C2005, which had generated a new focus on teaching and learning, implementation had been confounded by a number of issues. These included a skewed curriculum structure and design, lack of alignment between curriculum and assessment policy, inadequate orientation, training and development of teachers, learning support materials that were variable in quality often unavailable and not sufficiently used in classrooms, policy overload and limited transfer of learning in classrooms, shortages of personnel and resources to implement and support C2005, and inadequate recognition of curriculum as the core business of education departments (Chisholm, 2000).

Full implementation of C2005, began with the cascade training model. After implementation, problems and difficulties began to surface. These problems cited inadequate training, poor selection of learning materials, language and the lack of clarity around assessment.

Teacher training in the new curriculum was inadequate. Time was spent on an explication of vocabulary rather than on the substance (Van Rooyen & Prinsloo, 2003). Teachers were unable to apply the principles of C2005 in their own methodology. Textbooks varied wildly in quality and were not readily available. Because of design flaws in C2005, the quality was variable. The time frames for implementation was not realistic therefore it was unmanageable.

In a study conducted by NAPTOSA (1999), it was found that training was not adequately conducted for the successful implementation of C2005. Jansen (1999) iterated this view by stating that since teachers were the most important educational resource in the implementation of a new curriculum, they will determine whether the curriculum will succeed or not. The researcher is also of the view that the successful implementation of the road safety education programme is wholly dependent on the educator because curriculum decisions are closely bound with the educator's attitudes, values, assumptions and beliefs. Therefore the success of implementing any new curriculum will depend on the training and, support that teachers receive, and

their ability to mobilise and manage the resources around them to implement the curriculum.

The cascade model was identified as a weakness by Jansen (1999) because teachers who received training were not given sufficient time to train other teachers at their schools. These teachers also did not receive support from management back at their schools to assist with the cascading of information. The quality of training was also identified as being weak. These weaknesses were also identified in studies conducted by the Gauteng Education and Training Council (GETC, 1999). Educator training was also a key issue in a study conducted by Nsibandé (2002). In this study teachers iterated that more workshops should be conducted and that these workshops should be conducted by specialists in the field. The problems that were identified in Nsibandé's (2002) study were language, assessments and lack of resources and class sizes.

Curriculum 2005 has been accused of being jargon ridden and inaccessible in its discourse (Christie,1997). Its procedures for designing learning programmes are complex and sophisticated, if not obscure. The implementation of C2005 brought about some challenges and shortcomings that necessitated its revision. In 2000, the then Minister of Education, Dr. Kader Asmal appointed a committee to review C2005 and to recommend an effective strategy for its implementation in schools. Some of the changes that were proposed by the Review Committee were the structure and design features of C2005, also the simplification of its terminology and implementation of time frames to be relaxed. The Review Committee also recommended that there be a closer alignment between curriculum, C2005 and assessment, availability of appropriate educational resources and effective training and support for teachers. This review paved the way for the next curriculum initiative that was the National Curriculum Statement for the GET band and the Revised National Curriculum Statement (RNCS) for the Further Education and Training band (FET) band.

4.10 The Revised National Curriculum Statement

In order to address these issues the Review Committee proposed the introduction of a revised curriculum structure supported by changes in teacher orientation and training. The outcomes and assessment standards emphasize participatory, learner-centered and activity-based education. They leave considerable room for creativity and innovation on the part of the teachers in interpreting what and how to teach (DoE,). In order to address problems related to the complexity of the curriculum design and terminology, the review committee proposed that a revised streamlined national curriculum statement be produced for Early Childhood Development, GET, FET and Adult Basic Education and Training (DoE, 2002)

These major curriculum revision exercises occurred against the backdrop of a dramatically changing regional and national economic, political and social landscape. All these developments had an impact on the general context of schooling which shapes the experience of what goes on inside schools. Building on the principles contained in the critical and developmental outcomes, the Draft Revised National Curriculum Statement stressed a rights based approach to citizenship and nation building alongside clarity and accessibility (DoE, 2002). The goals and values of education, as manifested C2005 and the Revised National Curriculum Statement, have changed within a space of ten years.

The Revised National Curriculum Statement aims at the development of a high level of knowledge and skills for all. It sets and holds up high expectations of what South African learners can achieve (DoE, 2003)

Social justice requires that those sections of the population previously disempowered by the lack of knowledge and skills should now be empowered. The stronger base which the Revised National Curriculum aims to provide will enable the development of a high level of skills and knowledge for all. This is done by specifying the combination of minimum knowledge and skills to be achieved by learners in each grade and setting high, achievable standards in all the Learning Areas. The Revised National Curriculum Statement will be available in all official languages as well as in Braille. This will ensure that no learner will be disadvantaged because of language or

a disability. The Revised National Curriculum Statement adopts an inclusive method. The special educational, social, emotional and physical needs of learners will be addressed in the design and development of appropriate learning programmes. The curriculum attempts, particularly, to be sensitive to issues of poverty, inequality, race, gender, age, disability and such challenges as HIV/Aids (DoE, 2002). The latter is examined in almost all grade levels so that learners can be equipped with the knowledge necessary for leading a healthy, and a productive lifestyle.

The principle of integrated learning is an important component of the revised curriculum. Integration will ensure that learners experience the learning areas as linked and related.

This will support and expand their opportunities to attain skills, acquire knowledge and develop attitudes and values encompassed across the curriculum (DoE, 2003). The promotion of values is important not only for the sake of personal development but also to ensure that a national South African identity is built (DoE, 2002: 3). The kind of learner that is envisaged is one that will be inspired by these values, and who will act in the interest of the society based on respect for democracy, equality, human dignity, life and social justice. The curriculum seeks to create a lifelong learner who is confident and independent, literate, numerate, multi-skilled, compassionate, with respect for the environment and the ability to participate in society as a critical and active citizen (DoE, 2002)

It is important that curriculum sets out progressively more complex, deeper and broader expectations of learners. Conceptual progression is provided by the assessment standards in each learning area from grade to grade. It is advocated that learners should not deal with assessment standards in isolation. It must be linked across learning outcomes and learning areas. Central to this curriculum is the achievement of optimal relationship between integration across learning areas and conceptual progression from grade to grade. These are referred to as design elements of the Revised National Curriculum Statement.

The interaction between these design elements, have made the implementation of the RNCS a daunting and a challenging task for the teachers. Empirical studies on the

implementation of the RNCS have been provided for the purpose of understanding educator's experiences in the implementation of the new curriculum. This has been provided because the focus of this research is also on the educator's experiences of implementing the road safety education curriculum.

Most of these issues were already raised by the Curriculum Review Committee. The recommendations that follow draw primarily on what the teachers recommended, as well as other stakeholders (parents, subject advisors and unions) identified as barriers to the implementation of the curriculum and solution to these barriers (DoE, 2009). The findings of the review revealed that there is no clear, widely communicated plan for the implementation and support of the National Curriculum Statement. Parents and teachers complained that there was no vision in terms of what the curriculum hoped to achieve for the learners in South Africa. There were specific complaints about the inability of children to read, write and count at the appropriate grade levels. Their lack of general knowledge was also cited as a problem. There was a shift away from explicit teaching and learning to facilitation and group work. Teachers did not know what to teach. Academics and the media called for a review of the curriculum. The Review Committee recommended a "coherent, clear, simple *Five Year Plan to Improve Teaching and Learning* across the schooling spectrum" (DoE, 2009). The central tenet of this plan must be offering support to teachers and the improvement of learner performance.

Because of the widespread confusion regarding the policy documents, it was also recommended that one Curriculum and Assessment Policy Statement document be developed (DoE, 2009)

4.11 Curriculum and Assessment Policy Statement (CAPS)

CAPS have been introduced to strengthen the national curriculum statement (NCS) in order to improve the quality of teaching and learning in schools. It is a revision of the current national statement. With the introduction of caps every subject in each grade will have a single, comprehensive and concise policy document that will provide details on what teachers need to teach and assess on a grade by grade and subject by

subject basis. This curriculum review has the aim of lessening the administrative load on teachers, and ensuring that there is clear guidance and consistency for teachers when teaching.

With CAPS each teacher will know what to teach, when to teach and how to do assessments.

The following changes are included:

- The terminology learning outcomes and assessment standards has gone and will be replaced with content and skills
- CAPS Foundation Phase (Grades R, 1, 2, 3) Numeracy will be called Mathematics and Literacy will be called Language
- CAPS Senior Phase school based assessment counts for 40% and end of year examinations will be 60%
- CAPS for Grade 10, 11 and 12 content has been re-organized for several of the subjects and exam structure has changed in some of the subjects.

The interactions between these components of curriculum, makes implementing the various curriculum changes in South Africa a daunting and a challenging task, for the teachers who implement the curriculum in the classroom. A discussion on the curriculum changes in South Africa has been undertaken for the purpose of understanding the teacher's experiences in implementing curriculum change.

From the above discussion concerning curriculum change in South Africa, it has become clear that the educator is the key factor in implementing curriculum change. Because teachers are ultimately responsible for the actual implementation of any curriculum innovation in the classroom, the literature review will focus on educator related factors such as teacher's beliefs, attitudes and their perceptions of curriculum implementation. This will be discussed in the next section.

4.12 Teacher Related Factors

The implementation of any curriculum is however dependent on the teachers who will implement it, how teachers make sense of the curriculum, what they oppose, what they regard as assisting them, makes a difference. As Fullan (2001) points out attempting to introduce curriculum reform without thinking through the implications for teachers and their classroom practice is likely to collide with very different understandings and result in insecurity and instability in the system. The success of a curriculum initiative is largely dependent on what teachers think about the intended changes. Teachers are considered to have a critical role for the actualization of the ideas in the new curriculum. Therefore, no matter what the curriculum suggests, it is the teacher who makes the ultimate decisions about what is going on in the classrooms. Teacher's potential to learn and adapt to innovations can lead to learners' learning and acquaintance with the innovations in the classrooms. In that sense, teachers are seen as both the ends and the means of curriculum reform movements (Cohen & Hill, 2001). Hence, any curriculum change should pay attention to what teachers know and believe. Educational change is a complex process, in which teachers hold strong beliefs about the quality and process of innovation. Curriculum implementation may only occur through sufferance as many teachers are suspicious of reforms (Handal & Herrington, 2003). It is not surprising then that many teachers enact the curriculum in the class, relying on their own beliefs than on current trends in pedagogy. These beliefs, conservative as they may be, have their own rationality in the practical and daily nature of the teaching profession, and in the compelling influence of educational systems from which these teachers are paradoxically the social product. The literature under review of teachers' pedagogical beliefs reveal the extreme complexity of bringing about educational change (Handal & Herrington, 2003).

According to Sahlberg (2006) the two aspects are using change knowledge in curriculum implementation and selecting appropriate implementation methods to help teachers to succeed. Change knowledge in education means gaining an insight of the process of curriculum change and the key drivers that make for successful curriculum implementation into practice. The key drivers of curriculum implementation are the teachers. The personal meaning of change for teachers is intrinsic to successful

implementation as they are the conduits of reform. Spillane (2000) contends that change is a negotiated and an interpretative process. It is also not a simple process of translating the published curriculum into classroom practice. In this study, the subjective views held by the teachers as decision-makers are elicited and analyzed. As receivers, interpreters and actors with regard to the implementation of the road safety education programme, the educator's beliefs, attitudes and perceptions, are important data.

Nieuwenhuis (2008) critiques the idea that organizational change is a mechanistic process. He further argues that it has a deeper personal dimension that is often overlooked and ignored. Too often it is assumed that organisations particularly bureaucratic state institutions, achieve technical compliance when it comes to the introduction of new policies and regulations, without really engaging with the underlying assumptions, attitudes and beliefs of staff that must implement these new policies.

Fundamental to this phenomenon are ideas claiming that managers can be successful at implementing organizational change by coercing, rewarding or talking people into change. One may achieve technical compliance (that is meeting the requirements of the policy) but not substantive change (that is, change in people's perceptions, assumptions and beliefs). Change cannot be managed from outside, as classic management theories lead us to believe. Change lies within people, through professional development based upon democratic ideals and basic human rights.

In South Africa teachers are seen as the technicians of education. Teachers are expected to implement educational reforms in a setting of contradictory incentives and rewards. They are accountable to provincial education departments for reform most do not understand well and many do not support. Teachers are also accountable to parents and communities for results on examinations that they do not develop and that thus far do not reflect the intended curriculum changes. Many, however, have become alienated and despirited, unenthusiastically presenting a minimal curriculum and teaching to national examinations with little effective accountability (Samoff, 2008). At a time when national mandates dictate so much of how teachers must work within their classrooms including what and how they teach, they feel that they are

being controlled, therefore they refuse to accept best practice approaches and subsequently do not keep within the integrity of the approach in promoting its success (Rusch & Perry, 1993). Anxiety due to fear of discomfort can lead to resistance. People often insist on maintaining familiar patterns of behaviour and the possible need for change make them uncomfortable. Rusch & Perry (1993) state that teachers may become resistance because they fear that their own imperfections may be revealed which cause them to become embarrassed or even feel defensive. Fear of success might also lead to resistance in attitude change. When an educator assumes a position on an educational issue, it is depicted in terms of their attitude (Kennedy & Kennedy, 1996).

Attitudes have been defined by (Mueller, 1986) as the sum of a person's feelings and inclinations and feelings, prejudices and bias, preconceived notions, ideas, fears, and convictions regarding any specific issue. The issue that is concerned with in this research will be the attitude of the teachers to implementing the road safety education programme.

(Joram & Gabriel, 1998) describe, attitudes as screens and filters, which influence all new information concerning teaching and learning. These definitions are related to Rosenberg & Harland's (1960) three component model of attitudes because these definitions cover three aspects, namely, behavioural, cognitive and affective.

Although this model was not a more recent model, researchers like, Wood (2000) have continued to use it to conceptualize attitude formation in terms of teaching and learning. Wood (2000) state that the, cognitive component focuses on the idea or thinking upon which the attitude is based. The affective component concerns feelings about the issue and the behavioural component concerns, the action that comes about because of the attitude.

The teacher's belief systems regarding the implementation of the road safety education programme is also of concern for this research. According to Thompson (1984, P.112) teacher's beliefs seemed to be manifestations of unconsciously held views of expressions of verbal commitments to abstract ideas that may be thought of as part of a general ideology of teaching. They represent implicit assumptions about

curriculum, schooling, students teaching and learning and act as cognitive and affective filters through which new knowledge and experience is interpreted and enacted (Lovat & Smith, 2003).

Although many studies on teacher's beliefs suggest there is a relationship, causality is difficult to explain. Some studies strongly suggest teacher's beliefs influence instructional behaviour while in other cases it appears that instructional practice influence teacher's belief (Buzeika, 1996). Prawat (1996) has affirmed that teachers can be either conveyances of, or obstacles to change. No matter how much is expected of them to support reform, it is always possible that their views do not coincide with those underpinning the reform and therefore become a major impediment to that reform effort. When teachers consider new task to be trivial and superficial, they tend to mistrust other innovations. If teachers' belief systems are compatible with the innovation, then the acceptance of the innovation will occur. New experiences are always initially reacted to in the context of some (Fullan & Stiegelbauer, 1991, p. 31) "familiar, reliable construction of reality" in which people must be able to attach personal meaning to the experiences regardless of how meaningful they are to others.

For the context of this study the researcher believes that if the road safety education programme is compatible with the teachers' belief system, then the teachers will accept the programme more readily. This is corroborated by Martin (1993) who states that curriculum implementation approaches that do not consider teacher's beliefs have a temporary life. However if the teachers do not see the value or the merits of the innovation, then there will be a dilution or corruption of the reform (Handal & Herrington, 2003, p. 61). Fullan (1991, 2001) suggest that innovations are not neutral in their benefits and there are many reasons other than educational merit that influence the decision to change. Innovations are adopted for symbolic, political or personal reasons. In this case the road safety education programme hopes to ameliorate the scourge of road carnages by inculcating safe and responsible road user behaviour.

Teacher's beliefs and attitudes could change incrementally over time if they are persuaded about the merits and the value of the change or as they respond to the

plethora of information that becomes available to them. Fullan (2001) asserts that it is very unlikely that teachers can modify their teaching practices without modifying their beliefs and attitudes. Change can also be cosmetic, that is a teacher can be using new resources, or modify teaching practices, without accepting internally the beliefs and principles underlying the reform (Fullan, 1993). Subsequently, meaningful reform escapes the typical teacher in favour of superficial episodic reform. Curriculum change in the last several decades relied on the simplistic assumptions that teachers will in a mechanical way alter their behaviour patterns because of prescriptions that were supposedly good for them and their students (Handal & Herrington, 2003). It is asserted (ibid) that curriculum approaches to curriculum implementation need to rely on more realistic assumptions about teachers' beliefs, recognizing that it is difficult to change teaching styles because changing practices demands a process of unlearning and learning again. It also needs to be recognized that change for teachers may cause feelings of discomfort that may be intimidating and unpleasant for them (Martin, 1993).

Teachers may not have a choice between change and non-change (Richardson & Placier, 2002), but do have a choice where their responses are concerned. Implementation in the classroom is also left to their discretion. Furthermore, we have moved away from the 'one solution' concept of change. Deep and lasting change requires consideration of a multitude of aspects and interests and should be viewed as an ongoing and local process (ibid, 938).

It is reasonable to speculate then that a teachers' belief will influence practice in the classroom. Richardson & Placier (2002) argue that belief-change and practice-change are interactive and the process of teacher-change may start with either. Fullan (2001) raised a similar argument that the process of change in behaviour and beliefs is reciprocal and ongoing. Belief-change influence how a teacher will perform in the classroom and changes in practice will provide the teacher with the necessary experiences to develop new thinking and understanding.

Even though teachers are willing to change their own pedagogical beliefs, they will still have to contend with the conflicting beliefs of other stakeholders in the school situation. Contextual factors in school and the classroom have a significant impact on

changing teachers' knowledge and beliefs. Complex classroom life involves a range of activities with different purposes. These activities may either occur simultaneously or haphazardly, but they will demand the teacher's immediate attention. In order for the teacher to manage this complexity, different coping strategies will have to be employed. These strategies may not necessarily concur with their beliefs.

The high rate of failure of educational innovations (Fullan, 1993) has drawn attention to teacher's beliefs, attitudes and assumptions as a significant mediator in curriculum implementation. It is the teacher who perceives and defines a teaching situation that makes judgments and decisions and subsequently acts on a particular situation. From a curriculum perspective, Van den Akker (2003) refers to the perceived curriculum and states that the teacher's perception of educational innovations and curriculum reform initiatives are significant factors for researchers when studying implementation processes.

Understanding teachers', perceptions, attitudes and beliefs is important for successful implementation. In other words, the personal willingness of teachers to adopt and integrate innovations into their classroom practice is essential for the success of the innovation (Vanderlinde & Braak, 2011).

In the context of this study, the implementation of the road safety education programme will depend fundamentally on the individual teacher's system of beliefs and on the teacher's perception of the road safety education programme and its value. Teaching reforms cannot take place unless teacher's deeply held beliefs about road safety education changes. Furthermore, these changes in beliefs are associated with increased reflection and autonomy. The practice of teaching road safety education will depend on the teacher's mental contents, particularly the system of beliefs concerning road safety and its teaching and learning. The social context of the teaching situation, particularly the constraints and opportunities it provides, and also the teacher's level of thought processes and reflection. According to Ernest (1989), teacher's beliefs have a powerful impact on teaching. During practice, two factors affect these beliefs: the constraints and opportunities of the social context of teaching, and the level of the teacher's thoughts. Higher level thought enables the teacher to reflect on the gap between beliefs and practice, and to narrow the gap

This judgement does not adequately capture the complexity of the teacher's role in ensuring the outcomes. Implementing a new curriculum in school is never easy, because there is a gap between intended and implemented curriculum. Closing this gap requires that two essential aspects of curriculum change are given appropriate importance and appreciation. Ivor Goodson (1991) says, as cited in DoE (2009), "it is a supreme example of the invention of tradition". It is only the intended curriculum that has the chance to be interpreted and survive. He explains further by saying that "clear parameters to practice are socially constructed at the pre-active level". It is these parameters and how they are constituted in the National Curriculum Statement that was of interest to the review team.

4.13 Closing the Implementation Gap

Implementing a new curriculum into practice is never easy because of the gap between the intended and the implemented curriculum (Sahlberg, 2006). For this curriculum gap to be closed, two essential aspects of curriculum change must be emphasized. These two aspects are: *using change knowledge in curriculum implementation and selecting appropriate implementation methods to help teachers and schools to change* as expected.

Curriculum reforms fail, because of the inability to implement good ideas. The missing ingredient according to Sahlberg (2006) is insufficient appreciation and application of what is called change knowledge. Change knowledge in education means understanding insight about the process of curriculum change and the key drivers that make for successful curriculum implementation into practice. The presence of change knowledge does not guarantee implementation success, but its absence ensures failure (Sahlberg, 2006).

According to (Fullan, 2005; Hargreaves and Fink, 2005), the following seven principles are often used in the implementing of the new curriculum.

- *Making sense of why a new curriculum is necessary.* This typically refers to curriculum change and how it is related to the overall political, social and economic development. The moral purpose of change is committed to enhancing quality and student achievement.
- *Understanding the changing process.* For the sustainability of curriculum reforms, the complexity and dynamics of change process must be thoroughly understood.
- *Capacity building.* Capacity is one of the key conditions for successful implementation of curriculum reforms. Capacity building involves policies, strategies, resources and other actions that empower people.
- *Developing cultures of evaluation.* Cultures of evaluation must be embedded in the cultures of learning. This involves assessment of student learning, disaggregating data, preparing action plans based on data and communicating students' performance to learners.
- *Developing leadership for change.* Good leadership is essential for curriculum change. This not about managing one's own success but helping others to be successful.
- *Utilizing the ideas that already exist in schools.* Schools do have good ideas about improving teaching and learning. This reality is often ignored by many curriculum reforms.

The following TABLE 5 is a decision-making matrix as presented by Sahlberg (2006, P.7).

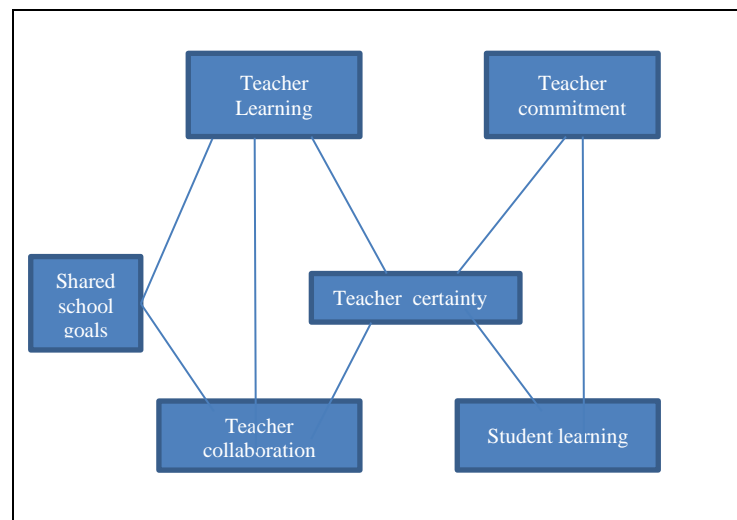
TABLE 5
Decision Making Matrix for Curriculum Implementation

| Intended change | Implementation methods |
|--|--|
| Awareness and basic knowledge of the curriculum | In-service training of teachers, printed or audio-visual materials for teachers and new modules in teacher pre-service training programme |
| Knowledge and understanding of theories and practices required in new curriculum | In-service training of teachers, printed or audio-visual materials for teachers and new modules in teacher pre-service training programme. Demonstration of expected new classroom practices and behaviours in school. Workshops where teachers can practice new skills. |
| Skills development for discrete behaviours, patterns and strategies | In-service training of teachers, printed or audio-visual materials for teachers and new modules in teacher pre-service training programme. Demonstration of expected new classroom practices and behaviours in school. Workshops where teachers can practice new skills. |
| Changing beliefs about learning, children and academic content | In-service training of teachers, printed or audio-visual materials for teachers and new modules in teacher pre-service training programme. Demonstration of expected new classroom practices and behaviours in school. Workshops where teachers can practice new skills. Extended school based or locally managed teacher development programmes. |
| Consistent use of new practices | In-service training of teachers, printed or audio-visual materials for teachers and new modules in teacher pre-service training programme. Demonstration of expected new classroom practices and behaviours in school. Workshops where teachers can practice new skills. Extended school based or locally managed teacher development programmes. Supporting professional learning communities in school |

Closing the gap between the intended and the implemented curriculum requires that curriculum designers are knowledgeable about selecting appropriate implementation methods to assist teachers and schools to change. If curriculum is viewed as a product as described in the table, the implementation of a new curriculum becomes a bureaucratic and a technical exercise. In this case teachers are externally trained where new information is transmitted to them. More comprehensive change strategies are required if curriculum reform is expected to change teaching and learning strategies at schools. As teachers are actively involved in making professional judgments, the gap between the current situation and the preferred future for their students has the power to motivate them towards improvement for change (Fullan, 2006). The capacity to be able to design effective programmes that enable focused

teaching and learning is an important skill. Further, (Fullan, 1993), stated that teachers need to try new things before they really begin to change their understandings and beliefs. Providing training to teachers is necessary, but it will not guarantee a change in the beliefs, attitudes, knowledge and skills. Teachers must participate in skills training workshops. They must also have one-on-one sessions and group opportunities to receive and give help. They must also be able to engage in dialogues about the meaning of change. Consequently teachers learn how to use an innovation as well as to judge its desirability based on informed grounds. They will be in a better position to know whether they should accept, modify or reject the change. This pertains to both externally developed ideas and innovations decided upon or developed by other teachers. Purposeful interaction is essential for continuous improvement. This leads to a “learning-enriched work environment”. The following FIGURE 7, as cited by Fullan (2001, p.125), contains an adapted summary of the main school based elements associated with learning enriched schools.

FIGURE 7
Learning Enriched Schools



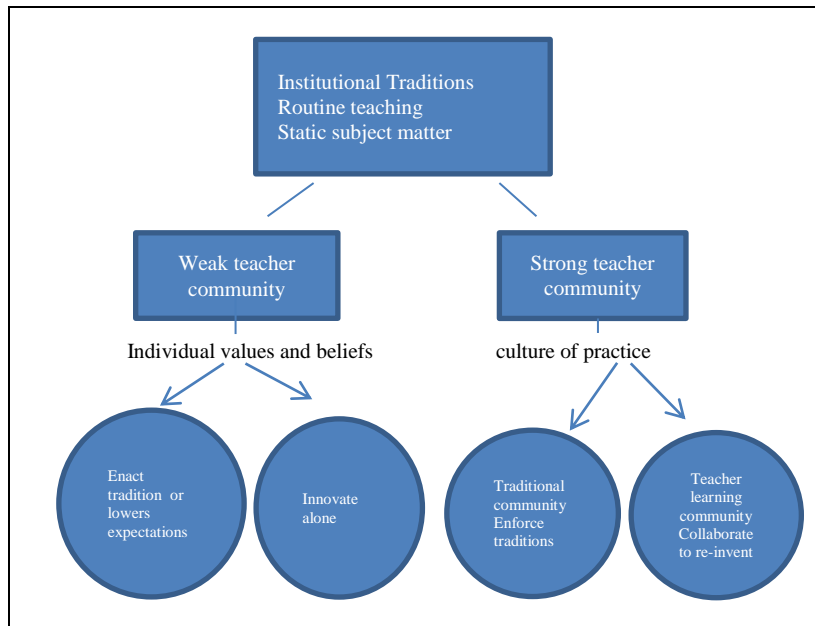
Fullan (2001, p. 123) asserts that teachers need to increase their capacity for dealing with change because if they do not, they will be continually victimized by the relentless intrusion of external change forces. Fullan (2001) cites Rosenholtz’s study (1989), where it was found that shared goals served to focus efforts and mobilize resources in agreed-upon directions. Principals and teacher leaders actively fostered collegial involvement. In effective schools, collaboration is linked with norms and

activities for continuous improvements and career-long learning. Teachers that improve are able to deal with problems with greater confidence and certainty. Teacher certainty and teacher commitment motivate teacher to perform better. These factors are committed to optimize student achievement. Teachers determine student performance by how effective their teaching methods are and make improvements where necessary. Hargreaves & Fullan (1998) refer to this as assessment literacy. This involves:

- the capacity to examine student's performance data and results, and to make critical sense of it.
- The capacity to act on this understanding by developing classroom and school improvement plans in order to make the kinds of changes needed to make the kinds of changes needed to increase performance.
- The capacity of teachers to be effective players in the accountability arena by being proactive and open about school performance data, and by being able to hold their own in the contentious debate about uses and misuses of achievement data in an era of high stakes testing.

In their (2001) study, McLaughlin and Talbert, found that “a collaborative community of practice in which teachers share instructional resources and reflections in practice appears essential to their persistence and success in innovating classroom practice”. Their study is summarized in the following FIGURE 8

FIGURE 8
Collaborative Community of Practice



Therefore, Fullan (2001, p.134) asserts that weak teacher communities are bad and strong teacher communities are effective in enhancing purposeful, critical improvements for all students. The development of professional learning communities, integrate development and accountability seamlessly in new cultures of improvement. In recognition of the fragility of any innovation (van der Akker, 2003), based on isolated schools the value of organized, led, local collaborative groups should be recognized. Kruger (2002), corroborates this view by maintaining that a favourable teaching and learning environment in a school is prominently characterised by goal focus, synergized communication, power-decentralisation, effective utilization of resources, cohesiveness, adaptation and sound morale. Parsons (1987) asserts that groups can provide moral and material support and can raise awareness of the need to change and legitimize the course of action planned. People are naturally resistant to change when they do not know what is going to happen or why change is occurring (Wagner et al., 2006). The need to involve others is especially true in schools when working with curriculum change (Wiles, 2009). Teachers, individually and collectively need to work on this agenda, because it is not only in their interest but also in the interest of the students. In schools, it is the groups

that initiate activities, co-ordinate work, and summarises progress towards improvement. A supportive school climate can engender a culture of teaching and learning in schools. In this way, it elicits an increasing interest and excitement in teachers regarding the implementation of a new programme. The source of motivation for any teacher to participate in curriculum development activity is his or her belief that the change is desirable. In fact, student achievement and needs represent the highest value in the school curriculum improvement effort.

Subsequently, the school can experience an improvement in the performance of its students. When teachers think of students, they think of them as the potential beneficiaries of change. They think of achievements, results, skills, attitudes and jobs. Students are rarely thought of as participants in the change process and organizational life. Because educational change is a people-related phenomenon for each and every individual, students are also important. Because teachers are held responsible for the implementation of a new curriculum, the review of the literature focused on the teachers' attitudes, beliefs and understandings.

In addition the researcher also recognizes the importance of the students as they are the recipients of the new curriculum. In this instance the students are the recipients of the road safety education programme. Student-related factors are thus also important in the change and innovation literature. Senge, Dutton, Quantz & Dutton (2000) state that students are vastly underutilized resources. Children's characteristics and needs are diverse. Fullan (2001) asserts that not only must they be part of the solution, they may even have better ideas for the solution. The researcher concurs with Fullan's (2001) assertion that the students' opinion about curriculum change and implementation is important and matters, therefore the researcher included the opinions of the learner in the scope of this study.

Irrespective of what curriculum is chosen by authorities to implement, the common issue in all curriculum reforms is that what learners learn is important. Traditionally, the logic of curriculum thinking was based on choosing the right contents and appropriate methods of instruction subsequently students will learn what they are expected to learn. Currently, what students should know and be able to do as a result of going to school, has become a key interest. Not only has learning as an outcome of

education become more emphasized but also the nature of learning as constructive intellectual and social process been incorporated into various curriculum models in a new way (Sahlberg, 2006).

The leading idea of renewed curriculum is the learning of students, therefore it requires that appropriate teaching and learning arrangements are described. Expected learning outcomes and related standards are written in a way that enable teachers to adopt learning-centred methods. The contemporary understanding of learning is that topics and contents are not overloaded and isolated from each other.

It is fundamentally pedagogically essential that students are involved in constructing their own meaning and learning. Young people must be helped to deal with change because this is and will continue to be part of their lives. The degree to which learners shape knowledge for themselves must somehow be acknowledged in the design of the curriculum therefore what students encounter in terms of curriculum content will have much influence on the formation of their values (Sowell, 20011, p. 65). For instance, when students encounter circumstances that challenge their experiences, they need to modify their expectations. Students must know that it is not safe to cross a busy road, because they may be knocked down by a car. They must only cross the road if there are no approaching vehicles. In this way students must modify their expectations of crossing the road. Students need to develop the necessary skills and methods that will enable them to negotiate traffic situations in a safe and responsible manner. While learners grapple with important concepts and practice key skills, to make them safe and responsible road users, they do so in the context of a real problem, rather than according to or bounded by disciplinary frames or the eight different learning areas of the curriculum (Rogers, 1997).

The core principles of education reforms is to make students learn more and in better ways, to request teachers to teach in new and meaningful ways and requires that schools perform optimally. According to (Sahlberg, 2006) this educational agenda promises significant improvements in the quality of education, especially in standards of learning and equal opportunities for all students. However, as Hargreaves (2001) claims, some important components of teaching and learning is underestimated. Teachers are not as dedicated as they used to be, they are beginning to lose interest in

teaching. Standards and assessment schemes are now dictating to teachers not only what should be taught but also how to teach. Teachers are being de-professionalised, (Sahlberg, 2006) because of the over-standardisation of education. This is as a result of external testing and assessment that are often linked to accreditation and made public through the media. In South Africa the Grade 12 final examinations are external examinations. The results are made public through the media. Currently learners in primary schools are writing the Annual National Assessment (ANA) in Literacy and Numeracy, the individual results of students are not published in the media but the overall percentages per regions and districts are published in the media.

The emphasis on student learning now is on knowledge and skills that are examined and tested and subjects, like physical education, does not feature in the curriculum any more.

4.14 Evaluation

A design research perspective offers rich possibilities to reinforce the quality of curriculum development and implementation. From this perspective, curriculum evaluation is focused on the four quality criteria of relevance, consistency, practicality, and effectiveness (Thijs & van den Akker, 2009). Summative evaluation, at the conclusion of the process, is aimed at the assessing of the effectiveness of the final product and contributing to knowledge development.

By obtaining insight in the existing situation, the needs of those involved, and the conditions for innovation, the relevance and practicality of the road safety education programme can be improved. Important activities include an analysis of the user practice. In this instance it will be the analysis of the teaching and learning of the road safety education programme.

The analysis of the implementation process is needed to gain insight, in the phenomenon under study, that is, the gap between the current and the desired situation. An analysis of the teachers' attitudes, beliefs and perceptions to the implementation of the road safety education programme will be conducted. A context analysis is aimed at exploring the implementation of the road safety education

programme in the classroom. Questions to be asked during these analysis include the following.

- What are the attitudes, beliefs, perceptions and understanding of the teachers to the implementation of the road safety education programme?
- What are the barriers and constraints to implementing this programme?
- Are the learners acquiring the necessary knowledge and skills to make them safer road users?

In considering the above questions the researcher will also look at the following:

- What is the innovation scope, considering the needs and the abilities of the teachers, for example: Their willingness to change, and the prevailing conditions in the school to assist in the implementation process (resources, infrastructure, time, collaboration from principal and colleagues)

Investigative methods that are frequently used to gain answers to the above questions are through case studies using the following data gathering techniques: interviews, observations and questionnaires as will be used by the researcher for the purposes of this study and will be discussed in Chapter Six.

The main aim of formative evaluation is to improve the quality of the curricular products. As the implementation process progresses, attention is shifted away from the relevance and consistency of the product, to its practicality and finally its effectiveness (Thijs & van den Akker, 2009, P. 44).

Formative evaluation focuses on locating shortcomings to generate revision decisions, summative evaluations on the other hand focuses on determining the effectiveness and the impact of the curriculum. The focus is on the extent to which implementation of the new curriculum leads to the desired outcomes. The desired results are related to the intended objectives of the intervention. In this instance the desired outcome of the road safety education programme is to make the learners safe and responsible road users. As is, mentioned in Chapter One

section 1.1., it will not be possible to determine the immediate impact as the change in road user behaviour can only be established over a long period of time as is discussed in Chapter Three section 3.2.

In schools summative evaluation primarily focus on pupils learning results. Therefore, for the purpose of this study, the researcher will concentrate on the teaching and the learning of the road safety education programme. Such an evaluation does not only concern the question whether the desired learning outcome is achieved, but also whether the effects established can be ascribed to the teacher and the prescribed learner support materials.

During the implementation of a curriculum in educational practice, the various parties involved, such as teachers and pupils, usually carry out the curriculum according to their own needs and wishes. According to (Thijs & van den Akker, 2009), this may cause discrepancy between the intended and the implemented curriculum. This subsequently may affect the learning results. This means that insight into the implemented curriculum, obtained by means of teacher interviews, classroom observations and pupil questionnaire, as is the focus of this study, is important for the interpretation and explanation of the results as will be comprehensively discussed in Chapter Six.

Summative evaluation is important, because a rich description of the implementation in a changing context will also benefit future users as the researcher hopes that this study will be of benefit to future users.

4.15 Summary

In this chapter I have sought to set the curriculum in its context in the social arrangements that we call schooling. I have also provided a definition of curriculum and the way it is identified. During the last decade or two the question has been asked more urgently and a more systematic response has been made to it. Curriculum development and change is more than an educational or pedagogic response: it has political, ideological, social and economic implications, as it helps shape the learner's view of themselves and their world. Because of its concern with what ought to be

taught and with what education ‘means’ it cannot be value-free. It is inevitably a focus for value conflicts and its management is both ‘a practical and political art’.

The success of each pedagogical change, especially if it is a national curricular reform, is significantly related to teacher perceptions of instruction and other educational dimensions, and also how well informed and qualified the teachers are to introduce change and how they are supported in this process. Educator’s perceptions and attitudes to the main objectives of a change in curriculum is important, because it greatly influences their motivation to change their own professional practice to achieve the goals of the reform.

CHAPTER FIVE

RESEARCH DESIGN AND METHODOLOGY

5.1 Introduction

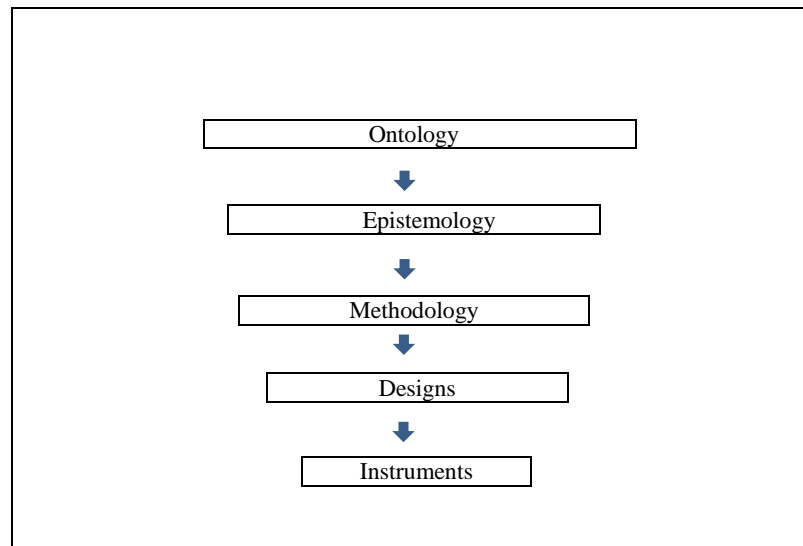
Educational research is the seeking or searching for knowledge within the field of education. The word research derives from the French word “researcher” meaning to ‘travel through’. Picciano (2004) defines educational research as ‘a careful systematic investigation of, or traveling through any aspect of education’. The search for knowledge can be formal or informal and includes observation, gathering and analysis of performance data and individual case studies.

Qualitative research has the aim of understanding experience as nearly as possible as its participants feel it or live it (Sherman & Webb,1988). Qualitative research is interested in the motives and aims, not just the behaviour, of those who are studied. The aim of qualitative research is not verification of a predetermined idea, but discovery that leads to new insights. Qualitative research focuses on natural settings. For the purpose of this study, the natural setting will be the five identified primary schools that have been selected to be part of this study. Qualitative researchers want those who are studied to speak for themselves. In this instance the 30 learners and 5 teachers that have been identified for this study will speak for themselves.

In the first instance the researcher shall briefly discuss the system of principles that guide social research. Diversity in research reflects the diversity in the parameters that guide it (Sarantakos, 2005, p. 29). Subsequently there is diversity in the ontological and epistemological underpinnings of methodology.

As shown in FIGURE 9 ontology and epistemology influence methodology, and guides the choice of research designs and instruments.

FIGURE 9
The Foundations of Research



Lincoln & Guba (1985) described ontology as the form and nature of reality and what can be known about it, epistemology as the nature of the relationship between the knower and what can be known and methodology as how the inquirer finds out what can be known. This they assert is essential in critiquing and conducting research. Ontology, according to Hartas (2010, p.15), seeks to classify and explain entities, according to ‘what it is’, and ‘what there is to be known’. Ontologies inform methodologies as to the nature of reality, in other words *what* social research is supposed to study. Epistemologies inform methodologies about the nature of knowledge or about what count as fact and where knowledge is sought (Sarantakos, 2005; Babbie, 2010). Mack (2010) defines ontology simply as one’s view of reality and being and epistemology is viewed as how one acquires knowledge. Methodologies prepare ‘packages’ of appropriate research designs which will be used by researchers, guiding them in their research focus and how to recognize and extract knowledge (see TABLE 6). Babbie (ibid), refers to methodology as the science of finding out or the procedure for investigation. Hartas (2010) refers to methodology as the process of ‘how we come to know’.

TABLE 6
Theoretical Foundations of Social Research

| | Deals with |
|--------------|--|
| Ontology | The nature of reality Asks: What is the nature of reality? Is it objective or subjective What does research focus on? |
| Epistemology | The nature of knowledge Asks: How do we know what we know? What is the way in which reality is known to us? What kind of knowledge is research looking for? |
| Methodology | The nature of research design and methods Asks: How do we gain knowledge about the world? How is research constructed and conducted? |
| Research | The execution of research designs. |

At the level of epistemology (assumptions about how things can be known) and methodology (the practical procedures that give effect to this), constructionism and the interpretive approach primarily appears to be identical. Both these assume that the social world can only be understood by accounting for meaning, and both draw on qualitative methods (Terre Blanche, Durrheim, & Painter, 2006). Methodology is centrally situated in the research process because it translates ontological and epistemological principles into guidelines to aid the research process.

Therefore how the constructs of social reality and knowledge is viewed, will affect how knowledge of social relationships among phenomena and social behaviour is uncovered (Mack, 2010, P.5).

As the central aim of this research is an investigation of the implementation of the road safety education-programme and its effectiveness in enhancing road safety among primary school learners, the researcher identified a phenomenological methodology as the best means for this study. The approach will be largely phenomenological as the data-gathering techniques employed sought to elicit responses reflecting the beliefs, opinions, assumptions, values, interests and perceptions of key participants in the implementation process. Welman & Kruger (1999, p. 189) further, states that phenomenologists are concerned with understanding social and psychological phenomena from the perspectives of people involved. For

this purpose, the research design must enable the researcher to guide the participants of the research to reflect upon and describe their attitudes, beliefs and understandings of the road safety education programme and its' implementation. TABLE 7 presents an overview of the four elements of the research design for clarity of understanding and the subsequent text addresses each one in turn.

TABLE 7
Research Framework

| | |
|-------------------------------------|--|
| 5.2. Ontology | Constructionism |
| 5.3. Epistemology | Intepretivism |
| 5.4. Methodology | Qualitative |
| 5.5. Data collection methods | Observation Semi-structured interviews Questionnaire |

According to (Grix, 2004, p. 68 as cited in Mack, 2010, P.6)) research is best done by:

Setting out clearly the relationship between what a researcher thinks can be researched (her ontological position) linking it to what we can know about it (her epistemological position) and how to go about acquiring it (her methodological approach). It is further stated (ibid), that your ontological assumptions inform your epistemological assumptions which inform your methodology and these give rise to the data collection methods.

The ontological and epistemological considerations, the methodology and method for collecting and analyzing data determined the basis for this research design. A concerted awareness of the theoretical and methodological underpinnings supported the researcher to make informed decisions about the research process that was consonant with those decisions as will be discussed below.

As might be expected, whether a research decision is about individuals or curricula significantly affects the methods used. The word qualitative implies an emphasis on the qualities of entities and on processes and meanings that are not experimentally examined, or measured in terms of quantity, amount, intensity, or frequency (Denzin & Lincoln, 2000, p. 13). Qualitative researchers stress the socially constructed nature

of reality, the intimate relationship between the researcher, and what is studied, and the situational constraints that shape inquiry. Such researchers emphasize the value-laden nature of inquiry. They seek answers to questions that stress how social experience is created and given meaning. Qualitative researchers attempt always to study human action from the insiders' perspectives.

According to Sarantakos (2005), qualitative methodology is diverse and pluralistic, because it contains elements from many different schools of thought. The central principles of the research methodology employed in this research are taken from a constructivist ontology and an interpretivist epistemology, as will be explained in the following sections.

5.2 Ontology: Constructionism

The researcher in this study is interested in the reality or meanings which teachers have assigned to their experiences with change and in implementing the road safety education programme, therefore a constructivist ontology was adopted. Lorschach & Tobin (2008) indicate that educator's beliefs about how people learn, whether verbalized or not, often help them make sense of, and guide their practice.

Constructionism focuses on the firm belief that in practice there is neither objective reality nor objective truth. The key thesis of constructivism, (Tanner & Tanner, 2007) is that knowledge is made rather than 'found' or 'discovered'. They (ibid) state that knowledge is actively constructed either by the researcher or the learner. Sarantakos (2005) also states that constructionism is about realities and relationships and that meanings emerge out of peoples interaction with the world. This view is shared by Lorschach & Tobin (2008) who state that the only tools available to a knower are the senses. It is only through the five senses that an individual interacts with the world. With these messages from the senses, the individual builds a picture of the world. Therefore, constructivism asserts that knowledge resides in an individual. Accordingly knowledge is a construction of how the world works, one that is viable in the sense that it allows the individual to pursue particular goals (Lorschach & Tobin, 2008).

It follows then that the construction of reality is an active process of creating a world. Constructed reality, is the reality that people experience every day in their lives and this reality is based on interpretations. Interpretation and (re)construction, according to (Sarantakos, 2005, p. 38), allow the identification of meanings assigned to objects and this leads to a structuration of the field.

‘Communication’, which is more than a means of exchanging information, is central to reality construction. Communication is a selective process of producing meaning in social contexts. Constructionist researchers focus on language. However, constructionist research, according to Terre Blanche et al (2006), is not about language *per se*, but about interpreting the social world as a kind of language, that is as system of meanings and practices that construct reality. As such, they (ibid), construct particular versions of the world by providing a framework or system through which we can understand objects and practices, as well as understand objects and practices. The extent to which people create meanings in interaction with objects varies. The assignment of meanings is assisted by cultural mechanisms such as socialization where people learn to recognize meanings in subjects. Subjects do not assign new names and new meanings to objects but are reconstructed through interactions. Robson (2002) asserts that with positivism the researcher and the researched person are independent of each other with constructivism on the other hand the research participants are viewed as helping to construct the reality with the researchers. Constructivists believe in a subjectivity of knowledge in which the knower and the researcher are interdependent and are both involved in its construction (Denzin & Lincoln, 2000). Constructivists focus on individual experiences, values, attitudes, beliefs and understandings of observable phenomena during their research (Robson, 2002).

Robson (2002) asserts that human action is comprehended in terms of their place within different strata or layers of social reality. To explicate actions in social systems, mechanisms at various levels will have to be called upon. For example, the effectiveness of a new curriculum at schools, like the road safety education programme. It would be too simplistic to limit assessment of its efficacy to changes made by individual students following the new curriculum. On the one level the curriculum consists of content, ideas and skills introduced into children’s minds.

However, the curriculum is delivered via interaction in the classroom where there are rules about the expected behaviour of both students and teachers. The teacher's aims and objectives may be shared by some students and may vary for other students (Robson, 2002). Students and teachers bring their own diversity to the classrooms. An innovation like the road safety education programme will be implemented differently in a school which is under-resourced, rural, urban, or in transition and in one with acclaimed success and a good leader. Similarly the future as represented by opportunities and constraints in life prospects is likely to influence the value of road safety education. Therefore, the researcher will look into the effects that such an innovation has in the five different schools. In other words the focus will be on gaining an understanding of the teachers' attitudes, beliefs and assumptions about implementing the road safety education programme. Understanding the mechanisms at work and the context in which they operate provides a theoretical understanding of what is going on. This can then be used to optimize the effects of the innovation by appropriate contextual changes, or by exploring alternate ways to counteract teaching and learning constraints to achieve a positive change. Therefore the social construction of reality can be understood through interpretive research methods.

5.3 Epistemology: Interpretivism

Terre Blanche et al (2006), states that the interpretive paradigm acknowledges people's subjective experiences as the essence of what is real for them (ontology), as well as making sense of people's experiences by interacting with them and listening to what they tell us (epistemology). This is done by making use of qualitative research techniques to collect and analyse information (methodology). The theoretical perspective informs the research process and provides a basis on which data analysis can proceed. According to Denzin & Lincoln (2000) the nature of the relationship between the researcher and what is known and the methodological considerations is underpinned by a set of beliefs. People, unlike the objects of the natural world, are conscious, purposive actors who have ideas about their world and attach meaning to what is going on around them. Thus the interpretive approach does not focus on isolating and controlling variables, but on harnessing and extending the power of ordinary language and expression to help us understand the social world we live in (Terre Blanche et al., 2006, p. 274). Within this domain, *interpretive* means to

emphasise the productions of meanings and to learn the special views of actors, in other words, the local meanings (Sarantakos, 2005). The behaviour of people and what they actually do has to be interpreted in the light of the underlying ideas, meanings and motivations. Interpretivism, as the framework within which qualitative research is conducted, looks for culturally derived and historically situated interpretations of the real world (Crotty, 1998 as cited in Sarantakos, 2005).

Verstehen relates to the views, opinions and perceptions of people as it is expressed daily. (Terre Blanche et al., 2006; Gummesson, 2007) refer to *verstehen* as ‘empathic reliving’ or simply ‘empathy’, which in general means to imagine and try to understand texts in their context. The principle of understanding in context has had a strong influence in the social sciences, especially in the development of qualitative methodologies. Here the qualitative researcher is interested in the subjective meaning, namely the way in which people make sense of their world and meaning is assigned to it. The qualitative researcher often goes beyond identifying the subjective meaning and explores the processes of constructing social situations and everyday structures that guide and explain personal views and opinions. Smith & Osborn (2008) refers to this as a two stage interpretation process where participants make sense of their world and the researcher assimilates their sense-making process. Subsequently, to dispel so called biases and prejudices, the research orientations chosen to guide this research must be cognizant of the influence of context and personal meanings of both the researcher and the participant as they seek to construct their understanding of the teaching and learning of the road safety education programme.

From an interpretive theoretical perspective of qualitative research, differing approaches arises. This is evident not only in the ways in which research is conducted but also in the variety of paradigms that are associated with this research strategy. Given that paradigms contain ontological and epistemological principles, which have already been discussed, the researcher will now focus on the two paradigms namely, hermeneutic phenomenology and symbolic interactionism that guided this study.

5.3.1 Hermeneutic Phenomenology

Phenomenology derives from the existential-phenomenological approach in philosophy which is concerned with human existence and experience (Terre Blanche

et al., 2006). Phenomenological research focuses on the subjective experiences of the individuals studied, as they are revealed in consciousness and lived experiences (McCaslin & Scott, 2003). Pinar et al (2002) assert that for phenomenologists that experience and its conceptualization are distinguishable modalities. First, there is experience, thereafter language and thought follow (ibid). All people exist in a dialectical relationship in a lived world of experience, and there is no clear separation of self and world (Terre Blanche et al., 2006). Careful description based on suspension of all preconceptions is the key element of phenomenological research. Alfred Schutz (1967, 1970), argued, as cited in Babbie (2007) that reality was socially constructed rather than being 'out there', for us to observe. From this perspective reality becomes an inter-subjective construct to be formulated and negotiated inter-subjectively. From this perspective, the reality of classroom life is viewed as the construction of those who dwell within those situations (Aoki, 1988). People describe their world, 'not as it is', but as they make sense of it. While phenomenological enquiry is accurately classified as a form of interpretive enquiry, it is that form of interpretive enquiry that focuses particularly on human perception and experience (Pinar et al., 2002). This is characterized as the aesthetics of human experience (ibid). Newby (2010) refers to phenomenology very simply as how the world is experienced rather than ideas and concepts about how the world really is. This implies that we are concerned with the meanings that are attached to our experiences.

For the purpose of this research, the researcher will focus on the perceptions and experience of the teachers in implementing the road safety education programme as will be addressed by research question one. Pinar et al (2002, p. 405) asserts that "in its most basic form phenomenological enquiry investigates the distinctly human perceptions of individual people and results in descriptions of such perceptions which appear directly to the perceptions of the other persons".

Polakow (1984) as cited in Pinar et al (2002) described phenomenological research as the exploration of densely textured moments which points beyond the context in which they occur. Van Manen (1990) identified four activities that guided this exploration:

- Firstly, the researcher chooses a phenomenon which interests him or her. The researcher in this study chose to investigate how the road safety education programme is being implemented in primary schools because the researcher was an educator who currently works as a road safety practitioner.
- Secondly, the researcher identifies the phenomenon as it is lived, not merely as it is theorized. The researcher in this study observed the actual implementation of the road safety education programme in the classroom of the five identified schools.
- Thirdly, the researcher reflects on the essential themes or structures which characterize the phenomenon, as will be evidenced in the next chapter, where the researcher will be conducting thematic analysis by uncovering thematic aspects in life-world descriptions of the teachers in their implementation of the road safety education programme. The researcher will also be able to establish whether the students have acquired some skills in making them safe and responsible road users.
- Finally the researcher will describe the phenomenon via the art of writing, as is being carried out in this research.

While Van Manen (1990) acknowledged the debate between phenomenology which focuses on description and hermeneutics which interprets this description, he concludes by asserting that the researcher interprets the phenomenological text by seeking the essence of the lived experience. Van Manen (1990) further stated that the terms phenomenology and hermeneutics is used inter-changeably. Thus phenomenology and hermeneutics cannot be separated in its contemporary forms.

Hermeneutics is like phenomenology, in that it is concerned with understanding. Hermeneutics is the 'art and science of interpretation' (Sarantakos, 2005). It is the process whereby people make sense of their world. Babbie & Mouton (2006) concurs with this view by stating that the human sciences aim at understanding the internal relations between actions. Kinsella (2006) supports his view by stating that the goal of hermeneutics is to seek understanding, rather than to offer explanations. Understanding occurs when the interpreter recognizes the significance of the various items that he or she notices (ibid). This is done, by relating them to the ideas, values and purposes which give rise to them. Originally hermeneutics was concerned with

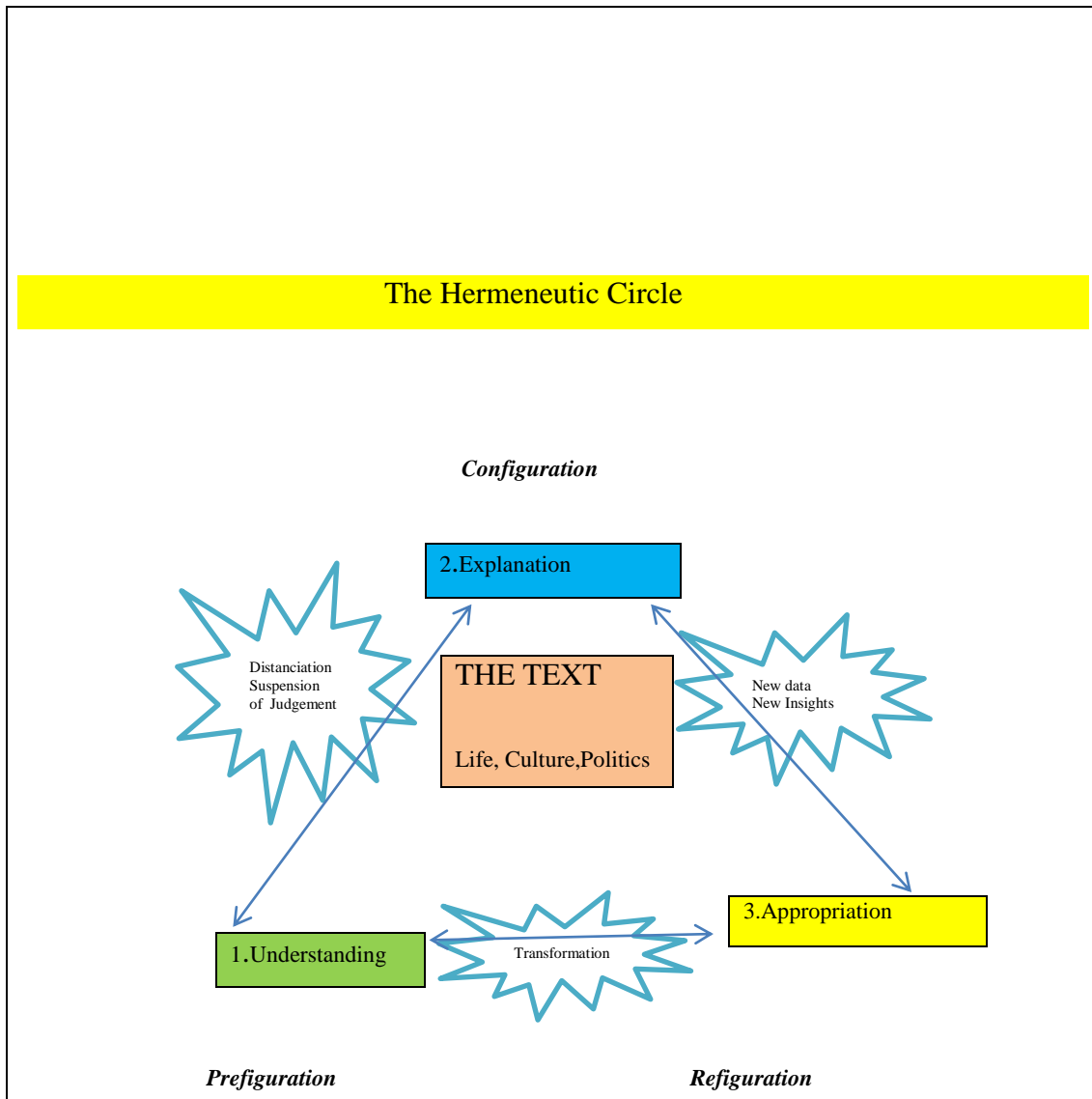
the interpretation of 'texts', but now it is applied to conversations, interactions between people in different settings. A central feature is the dialogic nature of hermeneutic enquiry. Terre Blanche et al (2006), further state that, the challenge for researchers using this method is to describe the world as it is lived and its temporal, spatial, and interpersonal characteristics. In phenomenological curriculum studies, as stated by (Pinar et al., 2002) hermeneutics has functioned to enlarge the phenomenological endeavor to include the social negotiation of meaning, as well as the individual attunement to truth. Central to hermeneutic understanding and negotiation of meaning is the notion of the hermeneutic circle.

The hermeneutic circle is referred to as the dialogue between understanding and interpretation. The hermeneutic approach assumes that because of a shared and common language and culture, the researcher is able to see or understand the phenomenon being studied (Kinsella, 2006). The hermeneutic circle prescribes that, in the interpretation of a text, the meaning of the parts should be considered in relation to the meaning of the whole. This can only be understood in respect of its constituent parts (Schwandt, 2001; Terre Blanche et al., 2006). The relation between the meaning of particular experiences and the meaning of themes that reflect a coherent clustering or ordering of themes of experience represents the operations of the hermeneutic circle (ibid).

Schwandt (2001) states that every interpretation relies on other interpretations, for interpretation is seen as an inescapable feature of all human efforts to understand. The suspension of judgement and shifting of a standpoint is the key to opening up the hermeneutic circle (Grassie, 2008). The hermeneutic circle is concerned with understanding, explanation, and appropriation leading to deeper understandings. FIGURE 10 is a schematic presentation of this dynamic.

FIGURE 10

The Hermeneutic Circle



The basic tenet of hermeneutics acknowledges that the research context is important, because of the way in which it influences the interpretation of data. The question posed by this research seeks to solicit the attitudes, beliefs and understanding of the teachers to the implementation of the road safety education programme. This study acknowledges that the socio-political changes in South Africa, has had a major impact on education and the way teaching and learning occurs in the classroom.

The aim of interpretive phenomenology is to understand the life-world from the participant's perspective, to identify what enables or restrains practice as well as identifying sources of innovation and change and how this impacts on classroom activities especially in the context of this study. Therefore the researcher identified the philosophical stance of hermeneutic phenomenology as appropriate for this study which sought to understand the implementation of the road safety education programme in a changing educational environment. It is this understanding of the participant's perspectives of their teaching and learning environment through reflection on the phenomenological text which resonates with the concept of curriculum change and its implementation as examined in Chapter Four, Section 4.6.

Because hermeneutics can contribute to the practice of education and education research by understanding the meanings that participants assign to their experiences of implementing curriculum change, hermeneutics was considered to be appropriate to guide this study. Subsequently the meanings that teachers assign to the implementation of the road safety education programme can be interpreted and analysed. Similarly symbolic interactionism seeks to explore the understandings inherent in our culture in order to understand the viewpoint of others. The social world is interpreted through the meanings that different people assign to it and definitions may change accordingly. Symbolic interactionism is another research orientation that will frame the research design, because the conceptions of reality are highly subjective.

5.3.2 Symbolic Interactionism

Symbolic interactionism, has a long intellectual history which started with the German Sociologist and Economist, Max Weber (1864-1920) and the American philosopher George H. Mead (1863-1931), both of whom emphasised the subjective meaning of human behaviour. Herbert Blumer coined the term symbolic interactionism, as well as for the formulation of the most prominent version of the theory (McClelland, 2000). Interactionist, focus on the subjective aspects of social life, rather than on objective, macro-social aspects of social systems. Its founding theorists argued for the interpretive, subjective study of human experience (Denzin, 2003).

Interactionists study social interactions through participant observation. It is argued that close contact and immersion in the everyday lives of the participants is necessary for understanding the meaning of actions. Meanings emanate from interaction and the re-construction of the participants perspectives in this methodology. Denzin (2003) states that interactionists assumes that human beings are capable of making their own thoughts and activities the objects of analysis. The meaning of an object resides not in the object itself but in the definitions that it brings and hence must be located in the interaction process. For consensual lines of certain objects within a group's perspective are subject to continual negotiation. The self is the base object for all interaction (Denzin, 2003). The self carries a multitude of differing interpretations. It is these shifts in definition which gives group life its changing character.

A fundamental concern of the interactionists has been with the conditions that give rise to new perspectives, new points of view and new lines of action. It was in the face of divergent perspectives that Mead located change and creative activity. Symbolic interactionism is primarily about understanding other people's meanings. Symbolic interactionism is therefore akin to phenomenology because of their focus attributed to meanings in everyday life.

Interactionists have persisted in believing in the presence of a concrete real subject. This subject's presence in the world is given through subjective and objective reports about personal experience and the interaction process. Language and the verbal reports it permits has been viewed as the window into the inner world of the person. Early and contemporary interactionists were and are still preoccupied with the stream of consciousness of the subject (James, 1890 as cited in Denzin, 2003) and the experience of temporality in the organization of social acts (Mead, 1910; Reece & Katovich, 1989 as cited in Denzin, 2003).

The theory that underpins symbolic interactionism is that in conceptualizing the self, there is the "I" and the "me". The self of the person is a reflected appraisal of the reactions of others. It is based on self, feeling and the imagined judgement of others. It arises out of the individual's experience. The stream of experience is continuous, albeit fragmented, immediate and unique to each person, selective in content with moving horizons and fringes of shifting awareness (Denzin, 2003). At the centre of the person's state of consciousness is the self, in its main form of knower, or subjects

(the “I”). In experience the “I” interacts with the “me” or the self as object. In this study the “me”, that was of interest was the teachers who were implementing the road safety education programme in the context of the selected primary schools. The researcher was interested in their experiences as they were involved in the dynamic process of curriculum change and implementation. From a symbolic interactionist’s perspective people are considered to be active agents of change.

States of consciousness are known through the process of introspection or reflection on our thoughts and perceptions. Reality comes in multiple forms. Emotions and feelings are central to the belief in any one of these forms of reality. Interactionists believe, that society is an abstract term which refers to something that sociologists have invented in order to have a subject matter. Interactionists, study how people produce their situated versions of society. They see these situated versions of the social everywhere. Interactionists believe, in writing local narratives about how people do things together. Interactionists do, not believe in using complex sociological terms which refer to things that cannot be immediately observed in the interactions of individuals. Concepts are reworked to describe the recurring meanings and practice which persons produce when they do things together. Interactionists use everyday language and interpretive theories and are concerned with actual lived experiences. More than simply being implicated in the social process society and the person derive from that process: they take on their meanings as those meanings emerge in and through social interaction (Strykes, 2011). This conception of society as further iterated by Strykes (2011), incorporates the view of the human being as “minded” and that “mindedness” as potentially reflexive.

This preoccupation between acts and experience led to a continual, search for a method of analysis that would incorporate the subjective and interactional features of human conduct into valid scientific documents about human society (Couch, 1987). This has created an interpretive heritage that relies on the soft qualitative methodologies. This is based on the assumption that the subject is the final authority in the subjective experience interactionists seek, a methodology that will produce unimpeachable data. For the purpose of this research, the researcher chose the case study because it is situated within the interpretivist theoretical perspective.

This study is justified on the grounds that students learning experience are shaped largely by their teachers mediating the “written” curriculum and the notion that the nature of the mediation is influenced largely by the teacher’s perspectives on that curriculum. In this instance it will be the teacher’s perspectives of the road safety education programme and the way that the teacher implements it.

To pose such an aim is to adopt a ‘theory laden’ research agenda where symbolic interactionism is the theoretical position. According to Woods (1996), the current tenet of this paradigm is that in order to understand social reality one has to study how individuals interpret the world around them; the particular view that an individual has of the social reality is constructed and negotiated by individuals acting according to the perspectives they confer on the phenomena in their environment. To retain the integrity of the phenomena being investigated, efforts are made to get inside the person and to understand from within (Cohen et al., 2011, p. 18).

5.4 Research Methodology

5.4.1 Case Study

Case studies investigate social life within the parameters of openness, communicativity, naturalism and interpretivity, which is informed by the interpretive paradigm (Sarantakos, 2005). Case studies are used to study a process or a programme or people in an in-depth, holistic way. According to (Wyness, 2010, p. 160), the depth of analysis that is demanded and the illustrative purpose of case studies make them more amenable to the generation of qualitative data. Yin (1994) suggested that the most appropriate methodology for explaining programme implementation is case study. The researcher agrees with this suggestion and chose the case study methodology. For the purpose of this study, the researcher is interested in the process of the implementation of the road safety education programme in the school context. Merriam (1998) states, that this permits a deep understanding of the phenomenon under study. The focus is on the actual process rather than the outcome, the context rather than variables and in discovery (ibid, p.19). This view is shared by (Patton, 2002) who states that case studies, create deep understanding of people and their activities. Woodside (2010), concurs by asserting that deep understanding of the actors, interactions, sentiments and behaviours occurring for a specific process

through time is the principal object of case study research. According to, (Babbie, 2010) the chief purpose of the case study is to be descriptive. Cohen et al (2011), states that a case study provides a unique example of real people in real situations, this enables the reader to gain a clearer understanding than if they were presented with abstract theories and principles. The researcher for this study supports Neale, Thapa & Boyce s' (2006), assertion that the case study gives the story and provides an opportunity to highlight the programmes success and to bring attention to challenges and difficulties experienced. The researcher supports this premise because it addresses the key research questions of the study.

The defining feature of the case study according to (Woodside, 2010) is the supreme importance placed by the researcher on acquiring data resulting in describing, understanding and predicting. Woodside (2010) further states that the participant interviewed in a case study provides an emic representation of the reality. The case study researcher provides an etic representation of the interpretation of the same process. Creswell (2012), recommends case study if the purpose is to understand an activity or a process, or one or more individuals in a bounded system. Similarly (Gay et al., 2009) describe the case study research as a qualitative approach which focuses on a unit of study known as a bounded system. 'Bounded' means that the case is singled out for research in terms of physical boundaries. According to Dowling & Brown (2010) the 'natural' world is presented as thinkable in terms of a collection of mutually independent bounded systems, which are transparently knowable to us. According to Vedic philosophy all knowledge is a symbiosis between the knower (in this context the researcher, the process of knowing (the implementation of this research project) and the known (what is already known and the results of this project) (Gummesson, 2007).The bounded system in this case is the five primary schools, which is known to the researcher and the boundaries are the five teachers and the thirty learners that have been selected for this study. Case studies according to Cohen et al (2011) recognize and accept that there are several variables operating in a single case, and to grasp the implications of these variables usually requires more than one tool for data collection and many sources of evidence.

Therefore the researcher felt that the case study will be appropriate for this study, because of the in depth data collection techniques which involved multiple sources of

information which included observation, interviewing and questionnaires (Robson, 2002). This multiple sources of information was consonant with the varied perspectives of reality that underpinned the constructivist orientation of this research project. This methodology also facilitated the creation of rich, thick and in-depth descriptions of the implementation of the road safety education programme.

The size of the bounded case determines the type of case study, such as whether the case involves one individual, several individuals, a group, an entire program, or an activity. They may also differ in terms of the intent of the case analysis. In terms of the intent three variations exist, that is the: single instrumental case study, the collective or multiple case study, and the intrinsic case study. In the single instrumental case study, the researcher selects one bounded case to illustrate an issue or a concern. In a collective case study multiple case studies are selected to illustrate the one issue or concern. Multiple cases are selected to reveal different perspectives on the same issue. In this instance the logic of replication is used because of the researcher's reluctance to generalize from one case to another. The intrinsic case study focus on the case itself because of its unusual or unique situation this may involve a programme evaluation or a student experiencing difficulties.

In choosing which to study an array of possibilities for purposeful sampling is available. Five different teachers from five different schools were chosen because they will reveal different perspectives on the implementation of the road safety education programme. The choice of case study for this research was deemed to be appropriate because of its characteristics which are noted in this study. It is about the educator's beliefs, attitudes, and perceptions about implementing the road safety education programme. This was also a real phenomenon that was studied in its natural context without any influences from the researcher. The researcher was aware of the possible pitfalls and limitations that is, inherent in case study research, as well as its advantages as compared to other research methodologies. In the next section the advantages and limitations of the case study will be discussed.

5.4.2 Advantages and Limitations of Case Study.

According to Neale et al (2006, p. 4) the case study provides more detailed information than what is available through other methods, such as surveys. Case

studies produce first-hand information because it occurs in a natural setting (Sarantakos, 2005). A complete picture is provided because data is collected from multiple methods (that is, interviews, observation, document reviews, questionnaires). For this study the researcher chose the case study because she was interested in obtaining a complete story of the implementation of the road safety education programme. This involved the educator's experiences of implementing the programme, the factors that enabled or restrained the implementation process. The researcher was also interested to know whether the students were acquiring the necessary knowledge to make them safe and responsible road users. Not only does the case study have advantages, it also has limitations and pitfalls, which is described below. This served as a guide for the conduct of the research project.

It *can be lengthy* because it provides detailed information about the case. The five teachers provided a lengthy account of their implementation experiences. The researcher had to ensure that these rich in-depth accounts were presented in a manner that will hold and capture the reader's attention.

There is a concern that case studies *lack rigor*. Neale et al (2006) states that case studies are viewed, as being less rigorous than other research methods. The reason advanced for this is that qualitative research is still considered to be unscientific and that case study researchers have not been systematic in their data collection (Flyvbjerg, 2006). Results relate to the unit of analysis only and there is no room for inductive generalizations (Sarantakos, 2005). Case study researchers have also been accused of allowing bias in their findings, because it entails personal impressions. The case study is too subjective, allowing too much scope for the researcher's own interpretations (Flyvbjerg, 2006). Hence there is no assurance of objectivity, validity and reliability (Sarantakos, 2005; Flyvbjerg, 2006). Access to the field is limited and also to the personal and subjective information that is the basis of case studies. Another limitation is that the interviewer effect may cause distortions, even the presence of the researcher can be destructive, states Sarantakos (2005). Flyvbjerg (2006) states that the bias toward verification is general, but that the alleged deficiency of the case study and other qualitative methods is that more room is allowed for the researcher's subjective and arbitrary judgments than any other method.

Another complaint about the case study is that it is *not generalizable*. A common complaint about the case study is that it is not possible to generalise from one case to another. It is also stated that case studies have been prone to overgeneralization because a few examples are chosen to represent the population and they may not be a typical representation of the population (Neale et al., 2006). Generalization, is a standard aim in quantitative research, according to Silverman (2010), because it is achieved by statistical sampling procedures, which allows the researcher to make inferences about the whole population. Silverman (ibid), further state that such sampling procedures are, however, usually unavailable in qualitative research. This concern about the validity of information, is shared by Terre Blanche et al (2006), who states that casual links are difficult to test and that generalisations cannot be made from single case studies. Silverman (2010) emphasises that representativeness is of perennial concern to case study researchers. In this regard Babbie & Mouton (2006) recommend that the number of case study sites should be increased to overcome this problem. Multi-site case studies is also advocated by (Gay, Mills & Airasion, 2009, p. 430), because it improves the generalizability of the research. For the purpose of this study, five primary schools were chosen because they demonstrated the phenomenon that the researcher was interested in and because it was easily accessible and the researcher knew that she would obtain the relevant data that the researcher was interested in soliciting. Flyvbjerg (2006) states that the advantage of the case study is that it can “close in” on real life situations and test views directly in relation to phenomena as they unfold in practice.

Two of the schools were schools that were formerly under the Department of Education and Training (DET). The one school is a rural school that caters for the local farming community. This school consists of one block with a pre-fab room that serves as the principal’s office. This school participates in the DOT scholar patrol programme. Regional scholar patrol competitions are held annually. This school is one of the top three performing schools where this programme is concerned. The principal and the teacher participant in this study avidly supports the DOT road safety programmes. This school is neat and well maintained. It also has a well maintained vegetable garden that is used for the schools feeding scheme. For the purpose of this study this school will referred to as school A. The classroom that I had observed a lesson in had both Grade Four and Grade Five learners.

School B is situated in a township. This school is also well maintained and neat. It has a well maintained garden and the courtyard area was paved. This is a large primary school. It is one of the very few primary schools in the area that has a fully functional computer room where learners are taught computer literacy. This school is situated in a fairly densely populated area.

School C is a former House of Delegates School. Prior to 1994 it catered for only Indian learners. The parents of these learners were employed mainly by the hatcheries that dominate in that area. The school student demographics has subsequently changed, but the principal and the teachers are still predominantly Indian. The classroom that I had observed the lesson in had 42 learners.

School D and E are situated in a predominately Indian area. School D is regarded as being the best school in the area. Admission to this school is sought after. The school has developed a good reputation for having an excellent teaching and learning ethos. The infrastructure is excellently maintained. The classrooms have air conditioning units that were sponsored by private companies and individuals.

Two other schools were also considered for this project. One was a school situated in a township (School F) and the other school was a former model C (School G), a school that is situated in an affluent suburb.

I had telephonically arranged meetings with the principals of all seven schools. I also explained to them that I would like the Heads of Department to be present at this meeting. The Head of Department will be able to assist with liaising with the identified educator for an appropriate time and date for the lesson observation and interview. The Principals had agreed to meet. The Principals had given me time and dates for the meetings. During the meeting I had explained to the Principals and the Heads of Department the purpose of the visit. The Principals and Heads of Department gave me times and dates for the school visits. After the meeting I left all the necessary documents with the principal, so that he could give them to the chosen teacher. The Principal, the educator and learners were required to sign the consent forms. The Principals assured me that they would be ready when I next visited the schools. Five of the seven schools had agreed to be part of this study. The two schools mentioned above did not participate. At school (G), the Head of Department

(HoD) informed me that the teachers did not want to be disturbed because they already had too much work to do. She assured me that they were implementing the road safety education programme as per the course packs. She also informed me that she and the teachers felt that road safety education was very important. She also informed me that the course packs were easy to use and that the teachers had no problems in implementing them in the classroom. She also informed me that all the teachers had completed all the lessons in the course packs because they were good lessons as well as easy to implement.

At School (F), the HOD and Principal did not attend the meeting because they had to attend a SADTU meeting on that day. The Deputy Principal was tasked with meeting me. He and two administration staff members were the only two people present at the school on that day. The learners were also dismissed early. He was quite amenable to me coming back to the school for the purpose of this study. He also gave me a date and time for the subsequent visit. On the day of the scheduled observation, the principal was again not available. The Deputy Principal was there to receive me. I had to wait for half an hour before the HoD came to the office. She did not look very happy about being called. The Deputy Principal suggested that I accompany her to the staff-room to discuss this matter with her. I was aware that two teachers from this school had attended the training workshop and that they were issued with the course packs. After chatting about the programme, she informed me that they had not implemented the programme. She also informed me that the teachers that attended the workshop did not cascade the information to the staff. The reasons that she had advanced were that teachers had too much work to do, they did not have time to implement this because it was not compulsory and examinable. It was regarded as being extra work because it was from the Department of Transport and not from the Department of Education. Subsequently the teachers did not see the value or the merit in implementing this programme. She iterated that learning about road safety was important, but that they did not have time to implement it. She also admitted that she did not look at the packs and does not know what the content of the course packs are because she did not have time to do so. She said that priority was given to directives from the Department of Education.

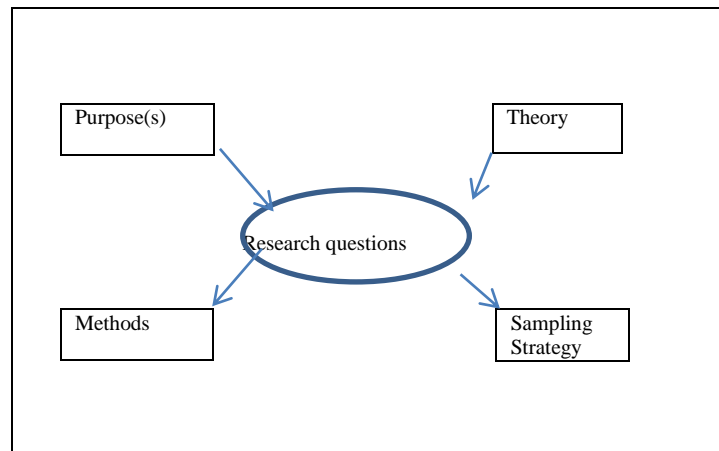
There is no method that is totally free of problems, and case studies are no exception. They may have problems in meeting the requirements of objective methodologies, just as quantitative methods have problems in meeting the requirements of interpretivist designs. Sarantakos (2005) argues that overall case studies are the most useful and popular method and it as legitimate as any other research method. This assertion is given credibility by (Yin, 2003 as cited in Gay et al., 2009) that case study research is an all-encompassing method covering design, data collection techniques, and specific approaches to data analysis.

5.4.3 Case Study Design

Research design is a blue print or structure within which research is conducted. It constitutes the blue print for the collection, measurement and analysis of data. According to Gay & Airasion (2000), “a design is a general strategy for conducting a research study. The nature of the hypotheses, the variables involved and the constraints of the ‘real world’ all contribute to the selection of the design.” Research design will help the researcher to carry out the study in a systematic way.

Case study design, because of its flexibility and adoptability to a range of contexts, processes, people and foci, provide some of the most useful methods available. The research design decisions that were employed in this project was governed by the research questions and the answers that were sought from the selected sample. The researcher had to repeatedly refer back to the purpose of the study in order to focus attention on where to look for cases and evidence that will satisfy the purpose of the study and answer the research questions posed. This is illustrated in FIGURE 11

FIGURE 11
Case Study Design



Qualitative research according to Mcmillan & Schumacher (1993) is naturalistic inquiry. Non-interfering data collection strategies are employed to discover the natural flow of events and processes and how participants interpret them as informed by the interpretative paradigm (Sarantakos, 2005, p. 212). Most qualitative research (Mcmillan & Schumacher, 1993) describes and analyses people's individual and collective social actions, beliefs, thoughts and perceptions, subsequently the goal is to understand the social phenomenon from the participant's perspective (Babbie & Mouton, 2006, p. 278). The data analyses focuses on the one phenomenon which the researcher selects to understand in-depth regardless of the number of sites, or participants. The phenomenon described during this study was the implementation of the road safety education programme in the five primary schools.

The researcher's decision to use multiple sites was to increase the external validity or generalizability of the study. The researcher was aware that the multi-site case studies allowed the researcher to make claims that the events described at one site were not necessarily idiosyncratic to that site and thus contributed to the researchers understanding about contextual variations, or lack thereof, across sites. According to Zucker (2009), the 'logic' underlying the use of multiple-case studies is: each case must be selected so that it either 1) predicts similar results (*a literal replication*), or 2) produces contrasting results but for predictable reasons (*a theoretical replication*).

According to (Wyness, 2010), an important feature of the case study is the possibility of revealing the depth of ‘embeddedness of social truths’ through the multi-method approach. Therefore, the last case study design feature involved the choice of methods to be used to generate data on the implementation of the road safety education programme and curriculum change. These methods will be discussed in the next section.

5.5 Data Collection

5.5.1 Introduction

A researcher’s epistemology according to Holloway (1997) is literally her theory of knowledge, which serves to decide how the social phenomena will be studied. The researcher’s epistemological position regarding the study can be formulated as follows: data is contained within the perspectives of people that are involved in the road safety education programme either as teachers or as learners. Because of this, the researcher engaged with the participants, the teachers and the students in collecting data. The researcher used interviews, observation and questionnaires to gather data about the implementation of the road safety education programme.

Programme implementation interviews, for example, aimed to capture the perspectives of programme participants, that is, the teachers and learners associated with the road safety education programme. Woods (2000) asserts that a great deal of qualitative material comes from talking with people, irrespective through formal interviews or casual conversations. Boyd (2001) regards two to ten participants as sufficient to reach saturation and Creswell (1998, p. 113) recommends long interviews with up to ten people for a phenomenological study. This aim is based on the assumption that the social world, as distinct from the physical world, does not exist independently, waiting to be discovered. They are influenced by specific political and social discourses. So these constructions are multiple and plural, contingent and contextual (Denzin and Lincoln, 2000). The first task is to understand people’s constructions of meanings in the context being studied, because it is these constructions that constitute social realities that underlie all human action. These mental constructs which constitute social reality are individually and socially created according to experiences and socio-cultural contexts. This, task itself is an

interpretive one. If interviews are going to tap into the depths of reality, of the situation, and discover subject's meanings and understandings, it is essential for the researcher to:

- to develop empathy with the interviewees and win their confidence
- to be unobtrusive, in order not to impose their own influence on the interviewee

The research interview has been defined as a two person conversation initiated by the interviewer for the specific purpose of obtaining research-relevant information (Cohen et al., 2011).

Woods (2000), states that the researcher engages in 'active listening', which shows the interviewee that close attention is being paid to what they say and also tries to keep the interviewee focused on the subject, as unobtrusively as possible. The researcher was mindful of these factors when she conducted the interviews as will be discussed in the following section.

5.5.2 Interviews

For this purpose, five teachers from the five different schools were selected for the interviews (see APPENDIX 4). This represented one teacher from each school. Two teachers from the Foundation Phase and three teachers from the Intermediate Phase were interviewed. This is referred to as purposive sampling where the participants are intentionally selected. Purposive sampling is also referred to as judgment sampling (Gay, Mills & Airasion, 2009). The researcher selected this sample because it is believed to be a representative of a given population and because of the researcher's knowledge and experience of the sample. Sampling according to Newby (2010, p. 231) is effective, because it seeks to link the findings from a selection of respondents or instances to the entirety of respondents or instances. In other words the researcher ascribes to the population the characteristics of the sample. It was essential that the identified participants will be able to uncover the realities of curriculum change in implementing the road safety education programme. These participants would be able to discuss their beliefs, attitudes and perceptions of curriculum change and implementing the road safety education programme. Three schools from the rural

areas and two schools from the urban areas were chosen (see Section 5.4.2). The researcher had chosen these schools because these schools are on the list of schools that participate in the Department of Transport's road safety projects. The researcher has previously worked with these schools. In an interview like any other instance of social interaction, both individuals influence each other. As such every interview is a unique interaction however closely, the interviewer tries to obey the rules and gain clarity from her own preconceptions.

The decision to use the semi-structured interview as a data collection method was governed by both the researcher's epistemology and the study's objectives. This was also governed by the constructivist point of view of the study and the interpretivist paradigm within which this study was designed. In a semi-structured interview conducted from an interpretive viewpoint it is not the response of the interviewee to a given stimulus (a question) according to (Dowling & Brown, 2010) that is of interest, but the manner in which it is interpreted by the interviewee. The interview is an investigation of how the interviewee constructs meaning. An interview allows the individual to report on what they feel. The researcher realized that this would be a suitable research tool, considering the focus of the study. Prior to interviewing, the phenomenological researcher will write a full description of her own experiences, thereby bracketing her experiences from those of the interviewee. Patton (2002) refers to this phase of the inquiry as the *epoche*. The purpose of this self-examination, according to Marshall & Rossman (1999) is for the researcher to gain clarity from her own preconceptions. The researcher used open-ended questions, which did not have any pre-coded response categories, to generate as much information as possible. Open-ended questions were used because they encouraged a fuller response and cannot be answered with a 'yes' or 'no'. The flexibility of interviews allows, for opportunities to solicit beliefs, attitudes and perceptions about issues relating to the implementation of the Road Safety Education Programme in the National Curriculum Statement. In-depth interviews allowed the researcher to increase her understanding of the issues involved by probing each interviewee about his or her answers. A topic guide, or also referred to as an *aide memoire* was used to steer the discussion and ensure that major interests were covered in each interview. However, it was not so restrictive that it discouraged the interviewee from raising issues that may not have occurred to the researcher. According to Turner (2010), the interview guide approach

is the ability of the researcher to ensure that the same general areas of information are collected from each interviewee and provides more focus but still allows a degree of freedom and adaptability in obtaining information from different people.

Because different people have different perspectives, a reasonably representative picture of the phenomenon's occurrence and absence may emerge and thereby provide a basis for interpretation of the phenomenon (Denzin & Lincoln, 2000). Varied viewpoints are obtained when qualified individuals with common or divergent backgrounds are brought together to explore a problem, to provide information or to evaluate the merits of a proposition. The five teachers represented qualified individuals with a common background, that is, they are all primary school teachers. They differ in the type of schools that they work in and as individuals with their own sets of beliefs and assumptions. As a data-gathering technique, the interview has unique advantages.

According to Patton (2002), the merit of an interview lies in its conversational nature, which allows the interviewer to be highly responsive to individual differences and situational changes. Dowling & Brown (2010) concurs with this view by stating that the unstructured interview closely resembles a conversation. The prime concern of the interviewer might be to explore the world of the interviewee from their perspective and to construct an understanding of whether the interviewee makes sense of their experiences. For this study it will be about the teachers making sense of their experiences of implementing the road safety education programme. Subsequently the analysis will focus on making sense of what the interviewee says and how they say it (Dowling & Brown, 2010, p. 78).

In areas where human motivation has revealed reasons for actions, feelings, and attitudes, the interview can be most effective. Through the interview technique, the researcher may stimulate the subject to greater insight into his or her own experiences, and thereby explore significant areas not anticipated in the original plan of investigation. The interview also does have definite limitations as a research tool. Most important, the very adaptability gained by the interpersonal situation leads to subjectivity and possible bias. The interactions between the respondent and interviewer are subject to bias from many sources. Eagerness of the respondent to please the interviewer to seek out answers that support his preconceived notions are

but a few of the factors that may contribute to biasing of data obtained from the interview (Gall, Gall & Borg., 2005). An interview can be biased if the interviewee views the investigation as an assessment rather than a learning experience. The interviewee may have been conscious of the fact that the road safety education programme is an initiative of the National Department of Transport and not the Department of Education. The researcher, who is an employee of the Kwazulu-Natal Department of Transport may be viewed as someone who has come to test their implementation of the road safety education programme and have high expectations, while some respondents may have viewed it as a spying operation. The interviewee may have a vested, interest in a positive outcome for the investigative study and may have felt that they had to provide the 'right answers'. It was easier to deal with issues in a face-to-face interview, where a rapport was, established very quickly. The researcher had assured the respondents that it was not her intention to test them, nor, to spy on them.

The researcher also, used a tape recorder to record the interviews. This was done to increase validity. The interviews were transcribed verbatim. Although the researcher realized that transcription time may be time consuming, it provided an accurate record of the interview that was used in the analysis. The researcher was also aware that the tape recorder could be off-putting or distracting, therefore permission was sought before it was used. The researcher also made notes as a backup during the interview. The researcher was also aware that in a multi-lingual society like South Africa, it was important that some of the respondents may prefer to respond in a language that they felt comfortable with, even though they spoke fluent English. For this purpose, the teachers from the two rural schools may prefer to respond in isiZulu and then explain in English. Interviews, as Nisbet and Watt (1984, p. 13) points out, provide important data, but they reveal only how people perceive what happens, not what actually happens. Cohen et al (2011, p. 413) supports this contention by stating that respondents answer the questions in their own ways and in their own words, that is, the research is responsive to participants own frame of reference and response.

Patton (2002) described the semi-structured interview as a natural extension of observation, because they happen as part of an ongoing observation fieldwork. He further argued that they rely entirely on the spontaneous generation of questions in

the natural flow of an interaction. Mason (2002) avers that observation will test and fill out accounts given in interviews and vice versa. One of the commonest forms of triangulation is to combine interviews with observation (ibid), therefore the researcher felt that classroom observations will be appropriate for this study. The researcher concurs with Woods (2006) assertion that the use of several methods to explore an issue increases the chances of depth and accuracy. In reporting data from this study the teachers were referred to as Teacher A from School A, Teacher B from School B, Teacher C from School C, Teacher D from School D and Teacher E from School E. This was done to ensure confidentiality and anonymity.

5.5.3 Observation

The other data collection instruments for this study was, observation (see APPENDIX 6) supplemented by questionnaires. To discover the extent and nature of teachers implementing the road safety education programme, it is essential to conduct classroom observations. The Principal had requested the HoD to identify the teacher who will participate in this study and to make the necessary arrangements with them. The teachers who were identified were teachers that had attended the initial training workshop or teachers who had participated in road safety activities with officials from the DOT. Observation of programme activities is often used to assess the delivery of the programme. Observation of the implementation of the road safety education programme enabled the researcher to gain informal opinions of the programme. The researcher kept notes of her experiences and of how the participants interacted with each other. Direct observation may be more reliable than what people say in many instances. It can be particularly useful to discover whether people do what they say they do, or behave in the way they claim to behave. Observation can often reveal characteristics of groups or individuals that would have been impossible to discover by other means. For the purpose of this study the actual implementation of the lessons in the classroom was observed, in the chosen schools. For this purpose the researcher used a video recorder in the classroom, so that she would be able to capture all the relevant aspects of the implementation of the road safety education programme. In addition to this the researcher took notes of the phenomenon that was being observed. The observer must know what to look for. The researcher must be

able to distinguish between significant aspects of the situation and factors that have little or no importance to the investigation.

During observation, it was essential to be objective, and careful and accurate methods of measuring and recording was employed when appropriate. The researcher was mindful that she had to be objective and non-judgmental and had to record only what was observed. Systematic observations of human behaviour in natural settings are to some degree, an intrusion into the dynamics of the situation. The researcher was aware that this intervention may produce confounding effects that could not be, ignored. It is widely believed (Gall, Gall & Borg, 2005) that individuals do not behave typically when they know that they are being observed. The researcher was mindful of the fact that the situation may become too artificial or too unnatural to provide for a valid series of observations.

The social world is socially constructed and its meanings, to the observer and to those observed, are constantly changing. This view concurs with the orientation of symbolic interactionism, which notes that meaning is always subject to negotiation that may lead to new interpretations of meaning, which could result in change (Bogdan & Biklen, 1998). As a consequence, no single research method will ever capture all of the changing features of the social world under study. Each research method implies a different interpretation of the world and suggests different lines of action the observer may take towards the research process. According to Keeves (1988) each research method implies a different interpretation of the world and suggests different lines of action the observer may take towards the research process. Observation methods according to (Cohen et al., 2011) are powerful tools for gaining insight into situations. Newby (2010) is of a similar opinion by stating that observation is discovery based, because as we learn more, our ideas develop and our thinking changes. Observation views the circumstances in its entirety. The implementation of the road safety education programme will be viewed in its entirety during observations. While there is a focus to an investigation, the context is an equally important source of data that aids understanding and interpretation (ibid: 364). The implication for the researcher is that it is important to know how the lessons are actually being implemented in the classroom in order to give depth and perspective to the study.

As with other data collection methods they are beset by issues of validity and reliability. For those reasons, the most fruitful search for sound interpretations of the real world must rely upon triangulation strategies to provide corroboration. This insures that reliable inferences are derived from reliable data (Cohen et al.,2011). Triangulation is more concerned with the correctness of the insight and the legitimacy of the interpretation rather than with the accuracy of measurement in qualitative research (Newby, 2010).

5.5.4 Questionnaires

The information gathered from the questionnaire (APPENDIX 5) would be of a more personalized nature (Denzin & Lincoln, 2000). For this purpose, ten learners from each school were, randomly chosen by their class teachers to respond to the questionnaires. The thirty learners from the Intermediate Phase were chosen to answer the questionnaires. An analysis of the answers to the questionnaire will reveal whether the learners had acquired the necessary knowledge to make them safe and responsible road users.

Researchers use questionnaires and interviews to convert into data, the information directly given by a person. By providing access to what is “inside a person’s head”, these approaches make it possible to measure what a person knows (knowledge or information), what a person likes and dislikes (values and preferences), what a person thinks (attitudes and beliefs) (Tuckman,1988, p. 213).

Questionnaires and interviews can also be used to discover what experiences have taken place and what is occurring at present. Information on attitudes and self-reported behaviour can be collected using questionnaires.

The researcher will use close and open-ended question to gather information. The researcher also had to ensure that the questionnaire was standardized, to ensure that the responses received were comparable. The researcher also had to ensure that the questions were easily answerable and free from any ambiguities because the respondents were primary school learners. The researcher took care to keep the questions short and ensured that there were no double-barrelled questions. This refers to single questions that ask for two items of information (Dowling & Brown, 2010).

The researcher was mindful of the fact that the response rate to the questionnaire might be low. To overcome this problem and to enhance the response rate, the researcher was personally involved in its distribution. The researcher concurred with (Dowling & Brown, 2010, p. 74) by distributing and collecting the questionnaires herself to ensure that there was a hundred percent response from the schools. The collection and distribution was done on the days that the researcher visited the schools to observe the implementation of the multi-media road safety programme. The researcher approached the class teacher for the best possible way to approach the learners concerning the questionnaires. For the rural schools the questionnaires were translated into IsiZulu, because the researcher was aware that the learners from the rural schools prefer to communicate in IsiZulu even though they are tested in English. The researcher discovered that the learners in the rural schools did not mind answering the English version of the questionnaires. The class teacher assured the researcher that because of the simplicity of the questionnaires the learners will have no problems in answering them. The class teacher chose the ten learners that they felt will have no problems in answering the questionnaires in English. The class teacher then explained to the ten learners what they had to do. The researcher discovered that there was no need for the class teacher to translate the requirements in Isizulu.

Following collection, the results will require analysis and interpretation. This will then need to be placed in context. This means clarifying the original objectives of the evaluation and relating the findings to the theory behind the programme.

Because the researcher will gather data by using phenomenological methods, this will have implications on the way the data will be analysed.

5.6 Data Analysis

For the purpose of this research, the researcher will use phenomenological analysis. Patton (2002) states that phenomenological analysis seeks to grasp and elucidate the meaning, structure and essence of the lived experience of a phenomenon that is, in this instance the implementation of the road safety education programme. The interpretivist orientation of hermeneutic phenomenology and symbolic interactionism that underpinned this research enabled a collaborative understanding between the researcher and the participants. Such a partnership engendered self-interpretation and

reflective analysis of data. This dialogue is consistent with the principle of the hermeneutic circle. This cycle of data collection, analysis and interpretation leads to further data.

Coffey & Atkinson (1996) regard analysis as the systematic procedures to identify essential features and relationships. Qualitative analysis transforms data into findings. Data analysis will consist of discovering groupings and relationships among the body of data as a whole.

The ability to use thematic analysis appears to involve a number of underlying abilities or competencies. Patton (2002, p. 452) refers to this as pattern recognition. This is the ability to see patterns in seemingly random information. Marshall & Rossman (1999) states that the most fundamental operation in the analysis of content is that of discovering significant classes of things. Content analysis, sometimes refers to searching text for recurring words or themes. Content analysis will, be used to analyse the interview transcripts to identify core consistencies and meanings. Cresswell (1998) states that delineating units of meaning is a critical phase of explicating the data in that those statements that are seen to illuminate the researched phenomenon are extracted or isolated. Cresswell (2012, p. 261) further states that coding data enables the researcher to describe people and places and to develop themes. The researcher will be required to make a substantial amount of judgement calls while consciously bracketing her own presuppositions in order to avoid inappropriate judgments.

Part of this phase is to evaluate the data for their usefulness and centrality (Marshall & Rossman, 1999). The researcher should determine how useful the data are in illuminating the questions being asked and how they are central to the story that is unfolding about the social phenomenon.

5.7 Trustworthiness

Another approach to clarifying the notion of objectivity as it is manifested in qualitative research is found in the highly influential work of Lincoln & Guba (1985). The basic issue of trustworthiness is persuading an audience that the findings of an enquiry are worth paying attention to. This can be done by ‘triangulation’.

Triangulation asserts Woods (2006) possess enormous strength. Amongst other things, they make the basic frames of bicycles, gates and house roofs. Triangulation enables extraordinary precision in measuring the height of mountains and astronomical distances (ibid). It also displays considerable strength in qualitative research. This is a multi-method approach known as ‘triangulation’, which enables the cross-checking of the existence of certain phenomena and the veracity of individual accounts by collecting data from a number of respondents and a variety of sources. Interpretations which are built upon triangulation are certain to be stronger than those that rest on the more constricted framework of a single method. Cohen et al (2011) supports this view by stating that exclusive reliance on one method may bias or distort the researcher’s picture of the particular slice of reality that is being investigated. Triangulation according to Flick (1998) reflects an attempt to secure an in-depth understanding of the phenomenon in question. Denzin (1989, p. 236) defines triangulation as the use of multiple methods, which is a plan of action that will raise sociologists above the personal biases that stem from single methodologies. Silverman (2010) refer to triangulation as the attempt to get a ‘true’ fix on a situation by combining different ways of looking at it. By combining methods, investigators in the study can partially overcome the deficiencies that flow from the use of only one method. For the purpose of this study the researcher used teacher interviews (see APPENDIX 4); classroom observations (see APPENDIX 6) and learner questionnaire (see APPENDIX 5) to get a ‘true’ fix on the implementation of the road safety education programme in the five primary schools in the context of curriculum change.

5.8 Validity

Validity according to Cohen et al (2011) is an important key to effective research. Lincoln & Guba (1985) as cited in Robson (2002) discuss various possible threats to the validity of qualitative research. This is divided into three broad headings of *reactivity*, *respondent biases* and *researcher biases*.

Reactivity refers to the way in which the researcher’s presence may interfere with the behaviour of the participants involved. Cohen et al (2011, p. 185) refer to reactivity as how far the research alters the situation being researched or the participants in the research. Respondent bias can range from withholding information to

obstructiveness. Researcher bias is what the researcher brings to the situation in terms of assumptions and perceptions. This according to (Robson, 2002) may in some way affect the way in which they behave, participants selected for observations and interviews, the kinds of questions asked, or the selection of data for reporting and analysis.

Phenomenological approaches to qualitative research stress the importance of reflexivity. This means that the researcher must be aware of the ways in which she will impact on the research process. The researcher in this study was aware of her background as a road safety practitioner and the impact this would have on the participants. This necessitated the researcher to put aside her personal feelings and preconceptions concerning the road safety education programme.

There is typically a close relationship between the researcher and the setting, and between the researcher and the respondents. Qualitative research is concerned with the description of the phenomenon under study from the perspective of these respondents. Validity is determined by the credibility of these descriptions. Credibility refers to the truthfulness of the data. Padgett (1988) as cited in Robson (2002) suggested the following strategies to deal with the threats of validity:

Prolonged involvement helps to reduce both reactivity and respondent bias. Researchers who spend a long time in the setting tend to become accepted and any initial reactivity reduces. It also permits a trusting relationship and the respondents are less likely to be biased. The researcher in this case is familiar with the schools as well as the teachers because these schools are involved in road safety activities besides the road safety education programme. Road safety talks and road safety edutainment were held at these schools.

Concurrent validity refers to the use of multiple sources and kinds of evidence to address research questions and to yield convergent validity like triangulation (Cohen et al., 2011). Triangulation can also help to counter the threats of validity. There is the possibility of discrepancies and disagreements emerging from the different sources. Robson (2002) argues that while triangulation is relevant to validity, it raises both logical and practical difficulties. He (ibid) further states that if findings collected by different methods differ to a degree, they make direct comparisons problematic.

The use of multiple sources of data allowed the researcher to present a more convincing conclusion. The multiple sources of data collection have already been discussed in Section 5.5. This is corroborated by (Marshall & Rossman, 1999) who state that the strength of the one method can compensate for the weakness of another method.

Member checking involved returning to the respondents and discussing interpretations that were made. This is a valuable means of guarding against researcher bias. This also demonstrates that the researcher values their input.

Audit trail ensures all activities relating to the research is well recorded and documented. This included all the field notes, interview transcripts and returned questionnaires. Internal validity demonstrates that certain conditions lead to other conditions and requires the use of multiple sources to uncover convergent lines of inquiry. The researcher strives to establish a chain of evidence forward and backward (Soy, 2006). The establishment of such an audit trail also served to indicate a strong correspondence between the results, the literature reviewed or knowledge already established about the phenomena as the contextual references reveal in Road Safety and the Decade of Action in Chapter Two, International Research on Road Safety Education in Chapter Three, Curriculum and Implementing Curriculum Change in Chapter Four.

Referential adequacy according to Babbie & Mouton (2007) refers to the materials that are available to document findings. This includes the classroom observations that were video-recorded during the implementation of the road safety education programme.

Transferability refers to the extent to which the findings can be applied in other contexts or with other respondents. Because the qualitative researcher is not interested in statistical generalisations (Babbie & Mouton, 2007), observations are defined by the contexts in which they occur. Within the quantitative tradition, it is the intention of the researcher to ensure that findings can be generalized from a target to its sample population. With qualitative studies the obligation for demonstrating transferability depends on the reader of the study (Babbie & Mouton, 2007). Translatability assumes that research methods, analytic categories, and characteristics

of phenomena and groups are so explicitly identified that comparisons can be confidently carried out (LeCompte & Goetz, 2007).

Soy (2006) maintains that external validity reflects whether or not findings are generalizable beyond the immediate case. The more variations in places, people, and procedures a study can withstand and still yield the same results the more the external validity (ibid). This view is shared by (Terre Blanche et al., 2006; LeCompte & Goetz, 2007), who state that a study has external validity when its findings extend beyond the confines of the study setting and the design. It is further stated that both internal and external validity are important and desirable attributes of a research design (ibid, p. 165). This was a qualitative study, which focused on acquiring thick, rich description of the cases in context in which the study was situated. The distinction made by (Geertz, 1973 as cited by Popay, 2007) between thin and thick description is useful here. Thin description is merely states a set of facts that are not dependent on intention or circumstances. In contrast, thick description provides the context of the experience, states the intentions and meanings that feed into the experience, and exposes the experience as a process. This view is supported by Denzin & Lincoln (1994) who noted that thick description facilitates thick interpretation.

For Shapiro (1983) research is viewed as process that emphasizes sensitivity to situation at hand rather than the capacity to make deductive inferences about what one might expect in any other apparently similar situation. According to (LeCompte & Goetz, 2007) the value of scientific research is partially dependent on the ability of individual researchers to demonstrate the credibility of their findings, but it is not the task of the researcher to provide an index for transferability. It is the task of independent researchers to discover the same phenomenon in a similar setting (LeCompte & Goetz, 2007).

(Lincoln, 1995 as cited in Zucker, 2009) argues that quality also involves ethics. The researcher's decision whether to embark upon the research must be considered in relation to the risk of harm to participants and their families.

5.9 Ethical Issues

Ethics according to Babbie (2007) is typically associated with morality and this is concerned with what is right and wrong. Morality and ethics on a daily basis is a matter of agreement among members of a group. This means that different groups would have agreed upon different codes of conduct. Part of living successfully in a particular society is knowing what that society considers ethical and unethical (Babbie, 2007). This is also true for the social research committee.

Anyone carrying out research needs to ensure that their activities are ethical. The researcher must also be aware of what is proper and improper conduct during the scientific enquiry. Social research intrudes into people's lives and this disrupts the participants' regular activities. Therefore for the purpose of this research, participants were not coerced to take part. The participants were informed that their participation was voluntary and they could withdraw from the study for whatever reason they wished. The participants were also informed that their participation and consent had to be voluntary for it to be valid (Silverman, 2010). The researcher obtained written, informed consent from the five teachers and the thirty learners. Because this study involved primary school learners, written consent was sought from their parents or guardians. This was based on the premise that because these learners are underage, they will be unable to knowingly, freely and rationally give consent (Robson, 2002).

The researcher is also aware that the participants will reveal personal information about themselves that may not be known to their friends or associates. Social research requires that this information may be revealed to strangers (Babbie, 2007). Silverman (2010) asserts that when participants are assured that the research is approved by an accredited, legitimate institution, the researcher earns their trust. This could help the researcher establish rapport and address any reservations that the participants may have about sharing their private lives. The above respondents identified for this research project will be treated with respect when information is collected and used. The respondents will know how the information is going to be used and that they must be happy for it to be used in that way. Participants in the research may well be concerned with how they appear in the report and whether their interests individually or collectively, are affected by the publication of the study (Robson, 2002, p. 501). The participants were also informed that their identities will not be revealed. In this

way anonymity is guaranteed. The principal means of ensuring anonymity according to Cohen et al (2011) is not to use the names of participants or any other forms of identification. The researcher ensured this by not using the participants' names, but rather referred to them as Teacher A, Teacher B, Teacher C, Teacher D and Teacher E. This implies that a reader will not be able to identify a given response with a particular participant. The researcher also ensured that there was confidentiality, because the researcher will be able to identify the participant's response from the interviews. Although the researcher knows who has provided the information, the researcher will in no way make this known publicly. The researcher will ensure that the boundaries surrounding the shared secret will at all times be protected (Cohen et al., 2011).

The researcher was also aware that harm to research participants must be avoided and all risks must be minimized. According to Silverman (2010, p. 156) participant's interests or well-being should not be damaged as a result of their participation in this research.

The researcher also ensured that she was independent and impartial and that she was not there to spy on the teachers on behalf of the Department of Transport or the Department of Education.

5.10 Limitations of the Study

The main limitations of the study arise from its qualitative and largely interpretative nature. The study is limited in the ways discussed below mainly because of the inherent features of qualitative studies conducted within an interpretivist framework.

The sample chosen was small. This limits the scope for making general principles and conclusions. The five teachers and thirty learners may not necessarily reflect the values, assumptions and beliefs concerning the implementation of the road safety education programme of all the teachers and learners in the country. The study focused on only five primary schools in Kwazulu-Natal and cannot therefore provide a valid basis for making comparisons and generalizations. The qualitative approach used in the study requires the researcher to play the role of research instrument. This could be, seen as a limitation because the researcher is from the Department of

Transport researching the implementation of the road safety education programme in schools. Combining the roles of trainer and researcher may compromise the value of data as individuals may withhold information and may slant information toward what they may think the researcher wants to hear. Participants may behave abnormally (Argyris, 1952 as cited in LeCompte & Goetz, 2007). This may be a consciously planned show in which the participants seek to reveal themselves in the best possible light. LeCompte & Goetz (2007) further state that it may be an unconscious distortion performed to provide what participants believe that the researcher wants to see. The researcher may encounter a language problem in some of the schools chosen for this study. Translators may be required for this purpose. This study will also involve primary school learners. For this purpose informed written consent was required.

5.11 Summary

The research methodology and the rationale governing the choice of the research design that was presented in Chapter Five was consistent with the humanist philosophical beliefs about implementing curriculum change and teaching and learning. For this purpose the researcher chose the qualitative research approach with its constructivist underpinnings, which was deemed appropriate for this study. Qualitative research is a broad umbrella term for research methodologies that is used to describe and explain people's experiences and interactions in social contexts. The research design was interpretivism, which incorporated the research orientations of hermeneutic phenomenology and symbolic interactionism. The case study approach was used because it focused on a particular event, that is, the implementation of the road safety education programme in a bounded context. Interviews are typically the technique of choice in phenomenological research, depending as it does on first-person description of experience. For this purpose the researcher chose the interview as a data gathering tool to solicit the experiences of the teachers to implementing the road safety education programme and what this could reveal about successful curriculum change. Observation is so called because the researcher's participation with the research participants in their social world was crucial to developing an understanding of what was being observed. Multiple data gathering techniques are used in qualitative research. This strategy was deliberately chosen so as to develop a more complex understanding of the implementation of the road safety education

programme and this was referred to as triangulation. The idea is that gathering data from multiple sources (teachers and learners) and multiple techniques (interviews, observations and questionnaires) will enhance different facets of the teaching and learning situation and the associated experiences. This will ensure validity and quality (rigour), so that the findings of the study are informed by the data gathered rather than the researcher's own pre-conceptions.

Qualitative analysis is a process of reviewing, synthesizing and interpreting data to describe and explain the phenomenon being studied.

In the next Chapter the data will be analysed in order to explore the teacher's attitudes, beliefs and understanding of implementing the road safety education programme and curriculum change. In the next Chapter it will also be the intention of the researcher to create an understanding of the findings by integrating the findings and discussions with the literature review. Here the literature on curriculum, curriculum change and road safety education and its implementation will be taken into consideration.

CHAPTER SIX

ANALYSIS AND DISCUSSION OF THE DATA

6.1 Introduction

The primary aim of this study was to investigate how teachers experience curriculum change in implementing the road safety education programme in primary schools. This chapter presents an analysis and subsequent discussion of the data gathered in order to solicit the teachers', attitudes, beliefs and understanding of the implementation of the road safety education programme in the context of curriculum change in the five primary schools and whether the learners had acquired the necessary knowledge to make them safe and responsible road users. A case study approach was deemed appropriate for this study because it seeks to understand the phenomenon in its natural setting.

The analysis of the data is done with the purpose of finding the emerging trends and themes. These emerging themes were cross-referenced with the research questions to ensure that the research stayed on track. In order to answer research Questions One and Two, data were gathered through semi-structured interviews with the five teachers and through classroom observations. To answer research Question Three, data was gathered by using questionnaires that were answered by the thirty learners.

The major research questions that framed this study were:

Research Question One:

What are the beliefs, attitudes and perceptions of the teachers to the implementation of the road safety education programme in the context of curriculum change?

Research Question Two:

What are the teaching and learning constraints that teachers experience to implementing the road safety education programme?

Research Question Three

Did the learners acquire the necessary knowledge and skills to make them safe and responsible road users?

Interpretative phenomenological analysis (IPA) underpinnings stem from phenomenology which originated with Husserl's attempts to construct philosophical science of consciousness, with hermeneutics (the theory of interpretation) and with symbolic interactionism, which posits that meanings an individual ascribes to events are of central concern but are only accessible through an interpretive process (Biggsstaff & Thompson, 2008). Consequently, IPA acknowledges that the researcher's engagement with the participant's text has an interpretative element. It assumes an epistemological stance to access an individual's cognitive inner world. IPA explores how people ascribe meaning to their experiences in their interactions with their environments (Smith, 2004). Hermeneutics is concerned with language and text, which has to be understood in the contexts of their meanings. Hermeneutic is viewed as an interpretive process that seeks to bring understanding and disclosure of phenomena through language (Laverty, 2003). According to (Ödman, 2007), these meanings are not analysed by statistics but is rather interpreted. One therefore needs to become as aware as possible and account for these interpretive influences. This interpretive process is achieved through a hermeneutic circle, which moves from parts of the experience, to the whole of experience and back and forth again and again to increase the depth of engagement.

According to Van Manen (1990), interviews allow the researcher to collect personal stories that are rooted in specific instances and events, as well as an opportunity to form a relationship to explore the meaning of an experience. For the purpose of this study it was the implementation of the road safety education programme. The researcher had interviewed the teachers after the lessons were observed. Each interview lasted between one to one-and-a half hours.

Ödman (2007) asserts that it is the means of contexts that we educate ourselves and create knowledge of what we study. By creating a context we are construing a pre-understanding which makes it possible to interpret the primary text as a part of a context of meaning (ibid, p. 122).

Teachers were encouraged to reflect on their experiences to determine the deeper meanings and themes from their experiences. Van Manen (1990: 79) states that “phenomenological themes may be understood as the structure of experience”. Van Manen (ibid, p. 93) suggests three processes for isolating thematic statements:

- the wholistic or sententious approach
- the selective or highlighting approach
- and the detailed or line- by- line approach

The first approach is more global, where overall meaning is sought. In the second approach, the focus is on phrases or sentences that are outstanding. The third approach focuses on each sentence in the text.

The researcher had decided to use Giorgi’s phenomenological method as presented by Holroyd (2001) to analyse the data for this study, as the researcher felt that this would present a more comprehensive analysis of the data.

Stage 1: Intuitive / holistic understanding of the raw data

This stage requires reading data , repeatedly if necessary, to achieve a holistic and intuitive understanding of the phenomena under investigation. It is essential that all preconceptions are bracketed.

Stage 2: Forming a constituent profile

This stage summarises the raw data from each participant.

2.1. **natural meaning units (NMUs):** are self-definable, discrete segments of expression of individual aspects of participants’ experience.

2.2. **central themes:** central themes reduce the nmus to recognizable sentences conveying a discrete expression of experience.

2.3. **constituent profile:** the reconstitution of central themes that provide a non-repetitive list of descriptive meaning statements for each participant, which is termed the constituent profile.

Stage 3: Forming a thematic index

Constituents profile from each participant are used as basis to construct a ‘thematic index’, which highlights major themes that have emerged.

3.1. delineating constituent profiles: as with central themes, constituent profiles are reconstituted to remove any repeated or non-relevant statements.

3.2. extracting referent: referents are defined as specific words that highlight the meaning of the experience being researched. Constituent profiles are searched for referents, which are extracted and listed separately.

3.3. The thematic index: the thematic index establishes a non-repetitive, sequenced list of meaning statements and referents used to search for interpretive themes. The thematic index contain the constituent profile statements attributed to singular meanings of experience. From this point on, the data is examined collectively.

Stage 4: Searching the thematic index

This enables the comparison of referents, central themes and constituent profile to form a set of interpretive themes. It is important to note that the focus is on the explication of data that reports the meaning of experience.

Stage 5: Arriving at an extended description

Interpretive themes are used to rigorously explicate meaning attributed to the phenomena under investigation.

Stage 6: Synthesis of extended description

This is a summary of interpretive themes to produce an in-depth picture of participant’s experience of the phenomenon under investigation.

Application of a phenomenological approach to the five interview transcripts

The researcher had read the transcripts several times, to thoroughly understand the phenomenon under study. The participants responses were divided into discreet units. These units are referred to as Natural Meaning Units (NMUs). This was further simplified by removing words that were repeated. These simplified versions were

then organized into Central Themes. These themes are a discreet expression of the teachers' experiences of curriculum change in implementing the road safety education programme.

The central themes were then searched for repetitive statements. These were removed, subsequently a list of descriptive statements for each participant emerged. This is referred to as a Constituent Profile. The Constituent Profile was reconstituted to form a Thematic Index. This highlights the major themes.

These steps were carried out for each of the five participants that were interviewed. The thematic index was combined to form one cohesive document and the data was examined collectively.

The following interpretive themes were extrapolated from the data. These themes were further grouped to answer the research questions. Themes that answered research question one were grouped together and themes that answered research question two were grouped together. Subsequently the analysis and the discussion of each theme was carried out. This will be followed by an analysis and a discussion of classroom observation. Lastly the questionnaire will be analysed and discussed.

1. Teacher attitude, belief systems and perceptions about the road safety education programme
2. The value of road safety education
3. Curriculum frameworks
4. Feedback sessions
5. Lack of resources
6. Time and curriculum changes in South Africa
7. Support from the principal
8. Support from colleagues
9. Staff training and professional development
10. Teachers role in curriculum decision-making

6.2.1.1 Theme One: Teacher Attitude, Belief Systems and Perceptions about the Road Safety Education Programme

All participants agreed that:

In view of the extremely high fatality rate in South Africa (see Section 1.1), where road accidents are concerned, it is important that learners are taught about road safety from the foundation phase upwards. Hopefully, this will ensure that the future generation of road users, are responsible road users. It was also extremely important that the learners develop the right attitude to road safety.

The participant's perceptions about the road safety curriculum were:

It is easy and user friendly. It is important for learners to learn about road safety, because it impacts on their everyday lives.

The language of the curriculum is clear and is easily understood by both learners and teachers. It is important for children to learn about road safety from an early age.

Participants A, B, C taught at schools that were predominantly attended by learners whose home language was IsiZulu.

The learners at our school did not have a problem with understanding this curriculum. The lessons for the different grades were manageable within that grade. Learners in a particular grade did not have a problem understanding the lesson. There was no need for translations.

6.2.1.2 Discussion: Teacher Belief Systems, Attitudes and Perceptions.

It has already been established from the literature review that teachers have a major role to play in curriculum implementation, because they are the ones that translate curriculum intentions into practices (see Chapter Four, Section 4.12). Van den Akker & Plomp (1993), state that biggest challenge for curriculum developers and their products is the impact that it has on their teachers. This view is shared by Scott (1994) who states that teachers control the degree and rate of change. Studies focusing on teachers belief's about their roles in curriculum implementation answers the questions about what is implemented and what is not. Ultimately it is what the teacher does, knows and believes will determine what is taught to the learners. Similar to findings in the literature review in Chapter Four, Section 4.12., teacher's beliefs, attitudes and perceptions were identified as major factors affecting the implementation of the road safety education programme. This section will focus on

the teachers attitudes, beliefs and perceptions to implementing the road safety education programme. The teacher will willingly enter into the change process if it is consonant with the teacher's beliefs and attitudes about teaching and learning. Marsh (1999) asserts that teachers will adopt and implement a curriculum package if it fulfills a special need for them. This view is shared by Cuban (1993, p. 256) as cited in Handal (2007), "the knowledge, beliefs, and attitude that teachers have shape what they choose do in the classrooms and explain the core of instructional practices that have endured over time". Teachers, who find the road safety education programme helpful, will believe in the importance of this programme and will consequently implement it in the classroom.

Innovations are often implemented according to the teachers' understanding and perceptions of what they believe, to be is good practice. Smith & Lovat (2003) refers to this as the decision-making space, which provides the classroom teacher with options. The teacher will implement an innovation if they find that the planned programme is viable and meaningful. Therefore Smith & Lovat (2003) assert that the teachers' attitudes, beliefs and understandings will greatly influence what happens in the classroom. This view is shared by Muijs (2010) who asserts that co-construction and buy-in of teachers is particularly important in the light of consistent findings, stressing the importance of fidelity of implementation (see Chapter One, Section 1.4.5). If teachers are provided with the opportunity make choices where the curriculum is concerned, it becomes more meaningful to them and boosts their confidence. This subsequently enables them to enhance the learning experience for the learners in the classroom.

Fullan (1993) states that the low degree of success in implementing curriculum change, is the major reason why teachers' beliefs need to be considered. It is not probable that teachers can amend their own instructional practice if their beliefs on teaching and learning is not explored. Changes in the classroom will be effected if teachers adopt a positive attitude and belief of the road safety education programme. The teachers in this study revealed a positive attitude and belief concerning the road safety education programme, therefore they were willing to implement it in the classroom. The teachers believed that it was very important to learn about road safety

because of the problems we currently experience in South Africa where road safety is concerned and the unacceptably high fatality rate.

If the road safety education programme is to be adopted in every single classroom in every single school in South Africa, it is important that curriculum designers take into account teachers, beliefs, attitudes and perceptions. These must be considered and confronted (Handal, 2007). It is further stated that a more grassroots perspective adoption, is needed in the implementation processes (ibid, 2007).

6.2.2.1 Theme Two: The Value of the Road Safety Education Programme

All five teachers interviewed agreed that this was a valuable programme.

It is good for the children to learn about road safety in a formal school environment, because some children do not learn anything at home, because of their home circumstances. The children from this area are extremely poor, their parents are uneducated and are unable to assist with any school work. These children will become safer road users for now and also as adults (Teacher A).

This is a valuable programme, as it teaches them life skills. This programme can be used across all learning areas. If they learn about road safety from primary school to high school, they will become safer road users (Teacher B).

It is extremely important that children learn about road safety as early as possible. It is important for us as teachers to educate children to become safer road users. By doing this, we will eventually have a safer generation of road users. I have noticed a change in behaviour, when I am on duty at the gate, after doing the lesson on safe ways to cross (Teacher C).

Most young children are not aware of all the dangers that the road environment presents. Learning about road safety at school will make them aware of all the inherent dangers on the roads (Teacher D).

Road safety education is important for all road users, these children will also be responsible road users as adults (Teacher E).

6.2.2.2 Discussion: The Value of the Road Safety Education Programme

If people have a deep understanding of the value and purpose of an innovation, then implementation becomes easy. This research indicated that teachers will embrace curriculum change and implement a new curriculum if they perceive the value of such an innovation. Fullan (2001) refers to this as moral purpose. He further explains

by saying that moral purpose is developed when individuals and groups act with the intention of making a positive difference in the lives of others.

This research indicated that readiness for curriculum change and implementation of road safety education occurs when teachers perceive the inherent value that this programme has. Teachers are more likely to engage with the change if they realize that by doing so, they will be responding to the changing social context of their work and especially to the needs of the learner. Change will more likely occur if the teachers acknowledge that the road safety education programme has the potential to develop a generation of road users that will ameliorate the scourge of road fatalities.

Fullan (2003) states that the value of a curriculum change will be noted if teachers know that this will make a tangible difference in the lives of the learners. For teachers to make improvements to the way learning occurs, the needs of the learners must take centre stage (Fullan, 2003). For change to occur, there must be an identified need. The need that was identified here was the high fatality rate in South Africa as a result of road accidents. Prior to this road safety education was not part of the formal school curriculum and not implemented by teachers. It was rather done on an ad hoc basis and sporadic basis by people from outside the school. In KwaZulu Natal the researcher is aware that road safety education and awareness has been implemented by personnel from the Road Traffic Inspectorate (RTI), Principal Road Safety Officials (PRSOs) from the Department of Transport and officials from the various municipalities that were involved in community safety and liaison projects.

Active participation in change, pressure and support for implementation, are necessary if there is a concomitant change in the teacher's professional beliefs and practices. Professional learning of teachers must also enable them to develop skills that will enable them to make professional judgments about curriculum change and implementation. The teacher must be able to make informed judgments about teaching and the way that learners will learn and the possible outcomes of that learning. In this context the learners must become safer road users.

All five participants acknowledged that the purpose of road safety education is to make the learners safer road users. The three participants from Schools A, B and C had experienced the loss of learners at their schools as a result of road accidents. At

school C, the teacher indicated that, two weeks prior to the researcher's visit to the school, a learner was knocked outside the school gates. The teachers acknowledged that they had an important role to play in ensuring that road safety education was effectively implemented in their classrooms. Ultimately road safety education was about saving lives. The teachers admitted that this was important.

Readiness to implement a new curriculum increases when teachers perceive that the innovation has the potential to make a difference in the lives of the learners because of its value and purpose. The innovation must be seen as improving the quality of their teaching and the lives of the learners. Teachers must also acknowledge that the high fatality rate in this country as a result of road accidents is not acceptable. Subsequently, readiness to implement a new curriculum like the road safety education programme must have the potential to realign the purpose of the new curriculum, pedagogical practices and the social context in which the change occurs. Fullan (2001), asserts that moral purpose must make a positive difference in the lives of the learners. He further states that the moral purpose of schooling in a democracy is to make a difference in the lives of all learners and to help to produce citizenry who are committed to the common good. In this context learners must learn to be safe and responsible road users. In this way the young learners can bring about a change as road users that is, urgently required in South Africa. Opportunities for assessment of an innovation during its implementation will enable teachers to make an evaluation of its worth. Teachers will be more willing to implement this curriculum if they know that it will make the learners safe and responsible road users. In other words as soon as the worth of an innovation is noted, teachers will engage further with the change process.

6.2.3.1 Theme Three : The Curriculum Framework

The curriculum frameworks are clear and can be easily understood. Rural children as well as urban children are catered for. The language is clear and easy to follow, even for the learners whose home language is IsiZulu. It was good for the Department of Transport to take this initiative (Teacher A.)

It is aligned with the learning outcomes of the learning areas, even though it is from the Department of Transport and not from the Department of Education. It is clear and easy to use. It will improve the learners' road safety knowledge (Teacher B).

It is efficiently introduced and is very user friendly. We do not have to do additional work. The outcome for each lesson is clearly stated and is achievable (Teacher C).

The lessons are varied and deal with all important aspects of road safety that the children encounter in their daily lives. It is easy to use. It will enhance the learners' road safety knowledge. It is age appropriate and relevant to learner levels (Teacher D).

Curriculum is well organized and sequenced. It is easy to use. The learners can easily identify with the examples that are used. It relates to their daily lives. The curriculum helps me to determine the content, outcomes and teaching and learning strategies to be used during each lesson (Teacher E).

6.2.3.2 Discussion: The Curriculum Framework

In leading curriculum change, the most important aim is to bridge the gap between curriculum as an idea and curriculum enacted in the classroom (Kelly, 2007). If the classroom teacher acknowledges the change and accepts the merits of the innovation, the implementation process must ensure the teacher's commitment to the change. Teachers are more likely to persist with curriculum change and willingly implement it in the classroom, if there is a connection between them and the curriculum framework and its appraisal. Thijs & van den Akker (2009) state that an effective curriculum is one that can be easily implemented as intended. Classroom interventions must be clear and sufficiently detailed. It must also be accessible to the average as well as the highly effective teacher (Muijs, 2010).

Because teachers cannot teach everything, standard curricula are planned to serve as framework and guide for curriculum decisions. These are compiled to provide performance indicators regarding knowledge, processes and attitudes essential for all learners. They also provide classroom practice to guide teachers in designing instruction (Okobia, 2011, p. 303).

Frameworks are official documents which establish general areas/themes and specific topics to be covered. The road safety education curriculum is prepared in a way that will make teaching and learning meaningful for both the teacher and the learner. The road safety education programme consists of these course packs that are aligned to learning areas and themes of the Revised National Curriculum Statement (RNCS). Each lesson is also topic specific. Each major topic is followed by a series of instructional outcomes. Teachers were able to relate to the road safety education

curriculum because its features and terminology were consonant with the RNCS. The road safety education programme did not contain any new and unfamiliar terminology, which teachers would have had to grapple with. This assisted with implementation in the classroom.

The road safety education curriculum emphasises the acquisition of the appropriate knowledge and skills that is essential for the learner to be a safe and responsible road user. According to Marsh (1999), this orientation to implementation implies that the classroom teacher must be thoroughly trained to use the new curriculum package and will subsequently teach it with a high level of proficiency. These course packs were mandated for classroom use by the RTMC. During the interviews, the participants made reference to the fact these mandates were from the Department of Transport and not the Department of Education. However, the participants assured me that because it was very user friendly, they did not have a problem with its implementation in the classroom. Fullan & Pomfret (1977) agree that an innovation which has clear specifications from the outset or entails procedures which are clearly defined and easy to use will be successfully implemented. Thijs & van den Akker (2009) supports this argument by stating that a detailed prescriptive curriculum presents a clear view of the desired results and offers much to hold to in practice. Such a curriculum model will lead to improved implementation and learning.

The participants agreed that it was an extremely good educational course pack and that they acknowledge its worth during implementation. Participants iterated that the packs were consonant with the language of the curriculum frameworks of the Revised National Curriculum Statement (see Chapter One, Section 1) and was applicable to all eight learning areas. This implies that an innovation will be successfully implemented if teachers can identify and link it with the current curriculum frameworks. The teachers must also be assured that what they are doing is very valuable and will enhance curriculum implementation.

In other words, the initial perception of an innovation by teachers and other individuals may be that it is new and different to what they were doing, but Marsh (1999) states that the worth of the innovation can only be judged after a while, when teachers are fully conversant with the innovation and its implementation. It is in this way that teachers will be able to enter into the change process. The inclusion of the

attribute 'improvement' in the concept of an innovative process also emphasizes the political nature of curriculum innovation. Innovations are initiated in schools because certain authorities are not satisfied with a particular situation in the country and want to do something about it. In this instance the government was not happy about the high accident rates in the country. They had realized that educating children from a very young age will help to make them safe and responsible road users. Caldwell (1993), as cited by Marsh (1999), suggests that governments are adopting a more powerful and focused role in terms of setting goals, establishing priorities and building frameworks for accountability. This is evidenced with the introduction of the road safety education programme.

An earlier assertion made by Fullan & Pomfret (1977) that the more detailed the direction in the materials, the stronger will the teacher adapt and implement them in the classroom. This assertion is supported by (Thijs & van den Akker, 2009), who state that a framework of innovation often helps to guide and monitor the implementation of an innovation at school level. Resource materials can support teachers with their initial concerns by anticipating potential user problems as much as possible and offering practical advice to prevent or solve such problems. Thus, it seems desirable that materials, intended for a teacher's initial use should contain a large amount of procedural specification: that is, very accurate advice focused on essential elements of the innovation (van den Akker & Plomp, 2003). The resource materials are most effective when they stimulate the teachers to a more elaborate and accurate 'internal dialogue' about the what, when, how and why of their own teaching role, and provides them with clear advice about the implications of these matters for classroom implementation (ibid). Material resources that are well designed and constructed can reduce personal uncertainty and anxiety that inevitably accompanies the implementation of an innovation.

The incorporation of specific outcomes was welcomed by the teachers and was viewed in a positive light. Some of the teachers iterated that the emphasis on outcomes made them and the learners more consciously aware of what had to be accomplished at the end of each lesson. This enables the teachers to be more focused on what they were doing and what had to be achieved at the end of each lesson. This enabled the learners to be focused on the lesson as well.

The analysis of the data in this theme has revealed that teachers will implement an innovation in the classroom if they can identify with the framework and what is expected of them to achieve at the end of every lesson. Effective curriculum implementation will take place when the level of pedagogical content knowledge and teacher confidence is high. The change process will be enhanced if the teachers see the strong link between the road safety education programme and the National Curriculum.

Many early studies of innovations tended to focus on knowledge, awareness and adoption decisions, but few penetrated the crucial area of implementation, to find out how, teachers were actually using an innovation. Therefore the researcher had decided on classroom observations to find out how an innovation like the road safety education programme was implemented in the classroom.

6.2.4.1 Theme Four: Feedback Sessions

All participant's responses to feedback and discussions regarding the implementation of the roadsafety education programme with peers were similar.

We do not have feedback sessions, regarding the implementation of this programme.

Teacher B, C

After I attended the workshop, with the HOD, this information was cascaded to the other members of staff. I am aware that staff members are implementing this (Teacher B). I am aware that some staff members are only implementing this during the life orientation lesson, because they feel that it has more to do with life orientation than any of the other learning programmes (Teacher C).

Teacher A received the course packs during the scholar patrol workshop.

When I returned to school, I discussed this with the Principal. The principal requested me to distribute the packs to other staff members. We did not have any discussions and feedback sessions regarding the implementation of the programme.

Teacher D and E were issued with the packs during road safety edutainment session at their schools.

The teachers at our school were given the packs. The teachers had agreed that the packs were very easy to use. There was no need for any workshops to be held.

Both these teachers had stated that they did not have meetings and feedback sessions regarding the implementation of this programme.

6.2.4.2 Discussion: Feedback Sessions

Feed-back mechanisms are a means for identifying problems encountered during implementation and providing support to address implementation problems. According to Fullan & Pomfret (1977), the absence of feedback mechanisms during implementation is a major problem. They (ibid) further state that feedback among peers, teachers and principals, are essential for encountering and finding solutions to problems encountered during implementation. Teachers iterated that there was no such platform at their schools during the implementation of the road safety education programme. They did not discuss the implementation of the programme nor discuss any problems that they were experiencing. Regular staff meetings were held, but the implementation of the road safety education programme was mentioned in a cursory way. The teachers said that the reason for this was because the course packs were very easy to use. They had not encountered any major difficulties with the implementation. The teacher at School C said that they did discuss the implementation of road safety education programme at staff and committee meetings that were held twice a month.

Since problems during the initial implementation are inevitable, feedback mechanisms are essential when social changes are attempted. Teachers that were interviewed were not aware whether all teachers were implementing the programme. Teacher C said that she was aware that other teachers were implementing the programme because this was discussed at their staff as well as committee meetings.

Communication is essential in implementing new curriculums. It is important for teachers to share ideas and to discuss the strengths and weaknesses of any new programme. At School B and C, Teacher B and C had indicated that after they had attended the workshop regarding the implementation of the road safety education programme, information was cascaded to other teachers on the staff. The manual has a step-by-step guide on how this should be conducted. Teacher B indicated that, that

was the only time that the implementation of the road safety education programme was discussed. No subsequent meetings or feedback sessions were held. At School B the teacher indicated that he was aware that teachers were doing this lesson only during the life orientation programme, even though the lessons can be used in all learning areas as per the manual. Teachers also indicated that they did not have sessions where new, innovative or different techniques were discussed. Davies (2002) states that curriculum implementation can be more effective if teachers discuss their beliefs about teaching and learning a new curricula. More structures within schools are needed for teachers to exchange ideas and learn from each other. More effective implementation strategies can be developed in this way. Anderson & Helms (2001) advocate the need for collaboration among teachers to enhance implementation. They (ibid) further state that working in isolation will not guarantee implementation. Johnson (2008) concurs by stating that teachers must have strong support, consistent feedback and continuous opportunities for professional discussions and engagements.

Bransford, Mosborg, Copland, Honig, Nelson, Gawel, Phillips & Vye (2010, p. 849), argue that dealing with rapid change often requires a professional identity quite different from viewing oneself as a master of one's trade who has finally arrived and can continue with the same basic set of practices year in and year out. Issues of feedback is central to organizational and individual learning. It is further stated that there are two types of feedback (ibid). Positive feedback enables one to move in the same direction, whereas negative feedback provides opportunities to change and adapt. Therefore it is important to have feedback sessions after implementing a new curriculum. A better understanding of what the organisation has learned and is capable of doing can be found in the learning interactions of the teachers. The key here according to Bransford et al (2010) is making the relationships and guiding information sufficiently active and transparent to realize the benefits of an open system that learns from regular feedback and practice.

6.2.5.1 Theme Five: Lack of Resources

Barriers may be viewed as negative forces that limit implementation, however, they can also be considered as beacons indicating areas for further development and improvement.

Lack of resources was cited as being another factor that impacted on curriculum implementation. The researcher was aware that schools were not issued with the course packs for the entire school. The teachers had to share and make copies of worksheets for learners.

Teacher A

The principal allows us access to the photocopying machine to make worksheets for our classes, but sometimes we run short of paper for photo copying. We have to wait for paper to be bought. We also raise funds to buy photocopying paper. I do the exercises on the board and ask the learners to complete the work.

Teacher A was also teaching two grades in the same class.

This also causes a problem, because while I am writing on the board for the Grade Four learners, the Grade Five learners must be kept occupied.

Teacher B

If we run short of paper for photo-coping, I usually do the exercises on chartpaper and paste them up on the board. It would be easier to implement the lessons if every teacher and learner was issued with their own course packs. This will save time and effort.

Teachers have to be resourceful in the classrooms, when they experience a lack of support material.

Teachers C, D, E

These teachers had adequate resources to make copies of the lessons. They had also stated that it would have been easier to implement if all the teachers and learners had their own copies of the road safety education guide book, this would save them preparation time.

The researcher is aware that rural schools experience considerable problems with resources and space. At School C there was barely any space for the teacher to move around the class to monitor work. This classroom was also divided by a partition and the researcher could hear the lessons being taught in the next door class.

The participant's response to this was:

One gets used to it, because I am aware that there is no quick-fix, solution to this problem, besides when I am busy and concentrating on my own class there is no time to focus on what is happening on the other side.

6.2.5.2 Discussion: Lack of Resources

The provision and availability of resources for the implementation of the road safety education programme was an issue of concern for all five teachers that were interviewed. Teachers expressed the opinion that not enough resources were available to support the implementation. They had to resort to making copies. This also depended on the vagaries of the photocopying machine as well as the availability of paper for copying. This impacted on costs which were not funded for.

Physical structures and resources play an important role in the implementation of a new curriculum. Although the lack of resources is symptomatic of socio-economic circumstances, it leads to serious conditions that may impact negatively on the effective implementation of curriculum change. This view is shared by Mahomed (2004) that primary school teachers are especially dissatisfied with the physical environment of the schools. He (ibid, p. 4) further states that the Culture Audit consistently found over the last three years that this dissatisfaction is specific to the physical plant and classroom size. Teachers are often frustrated at a lack of adequate facilities and resources at their schools. All five participants agreed that the road safety course packs were excellent packs, it enabled them to teach the lessons well. The guidelines were very effective. Stronkhorst & van den Akker (2006) support this view by alluding to the fact that curriculum materials are important, as it can aid or compromise the implementation of a new programme. They (ibid) further state that curriculum materials should be clear and unambiguous and the guidelines must be practical. This would reduce tensions where implementation was concerned. Bennie & Newstead (1999) also cite lack of adequate learning material as one of the factors

that restrict the implementation of curriculum innovations. They (ibid) further state that even if the teachers are highly motivated, a constant lack of resources will impede implementation. Another factor that affected implementation was crowded classrooms, and at School A, Grade Five and Six learners were in the same classroom. Inadequate infrastructure, insufficient learning materials and technical support were cited as major factors that impacted negatively on curriculum change and implementation. Marsh (1997) concurs by stating that, in most teaching programmes this crowded classroom situation does not adequately facilitate individual learner attention. Wiles (2009) corroborates this by stating that a noisy workplace, insufficient materials and limited workplace can sabotage good teaching and curriculum implementation. To facilitate the implementation of a new programme, spacious well, resourced classrooms are required. This will ensure that all learners are comfortably seated and meaningfully engaged in learning activities, with close supervision by the teacher. Skilbeck (1998) contends that resource constraints of some kind are ever present and while they indicate conditions, they are not to be used as an excuse for organizational inflexibility.

Hargreaves (1998) states that inadequate resources must not be used as an excuse for not wanting to implement innovations. The organisations must be so organized that they are able to solve ongoing problems, as effectively as they can. Teacher A indicated that they raised funds to buy photocopying paper if there was a shortage. Fullan (2001) supports this assertion by stating that our own individual capacities must be developed, to continue learning, and not allow ourselves to be defeated by the vicissitudes of change.

6.2.6.1 Theme Six: Time and the Constantly Changing Curriculum Scenario in South Africa

All five participants were concerned about time and the number of changes that the curriculum has undergone from 1996.

We, as teachers have to implement new curriculums all the time. Just as we are getting used to one, it becomes outdated and we have to attend workshops to implement a new one. This is very frustrating and confusing. It is also very time

consuming. Sometimes the guides are not very clear and we do not understand what is actually required of us. We try to combine the old methods with the new. It depends on what works in the class.

The guides and manuals for the road safety education programme is very easy to implement in the classroom. The participants also admitted that priority is given to lessons that prepare the learners for the examinations.

I try to align the lessons to the time table. For instance if it is an English lesson involving reading, grammar and comprehension, I will use the road safety manual to do this lesson, like the one I did today. The lessons lend themselves to being used across all learning areas (Teacher A).

I fit the lessons from the road safety manual to the timetable. For today's lesson, I was able to do maths as well as science from the one lesson. The road safety chart was helpful, because I was able to teach road safety as well as do multiplication sums (Teacher B).

I align the road safety lessons to the time table. Like the lesson for today, I was able to combine an English lesson with maths (Teacher D).

The lessons can be used in any of the learning areas. I align it to the time table (Teacher E).

6.2.6.2 Discussion: Time and the Constantly Changing Curriculum

Carter & Richards (1999) as cited in Bennie & Newstead (1999), refer to the universal issue / dilemma of time and the teacher's belief that if they do not spend time covering the curriculum they will be damaging the students. Priority is given to lessons that are examinable. Where the road safety education programme is concerned some of the teachers reflected ambivalent feelings. The teachers concurred that it was very important for the learners to learn about road safety from a very early age. But because this programme was not compulsory for assessment and promotion purposes priority was given to lessons that was examinable. The teachers were more concerned about this. Bennie & Newstead (1999) are of the opinion that teachers should implement innovations because they recognize the educational value of the innovation. The challenge will therefore be to get teachers to reflect on the purpose of the study of road safety education and its implementation and not to regard this as extra work or extraneous work from another department.

In South Africa there is a concern that new programmes are introduced even before the old one has been successfully implemented. C2005 was developed on a national

level in 1998. Teachers became involved only when they received training in the implementation of the new curriculum at the classroom level. A similar situation occurred with the introduction and implementation of the RNCS. This pattern was repeated with the phasing in of the NCS (Grades 10-12) in 2006. According to Carl (2005), the curriculum changes would have occurred at a National and Provincial level before teachers became involved in the implementation phase at the classroom level. Ornstein & Hunkins (1998) shares this concern that the band wagon approach to constantly introducing new curriculums will make teachers wary of implementing new curriculums. Teachers will subsequently find it difficult to master new skills to master the new curriculum. Generally teachers thought that the situation would improve in future if they gained mastery of the change.

Another factor that impacted negatively on implementing a new curriculum was time. Innovative teachers will find time to implement a new curriculum. The concern for these teachers was trying to fit this programme into the organized school timetable. Teachers also expressed their opinions of the workload associated with curriculum changes. Preparation of curriculum materials, because of limitations, was cited for increased workloads and time management constraints.

Too often we think in terms of change with respect to the teacher. In the change process everyone is implicated and must face the change in relation to their specific roles. In this network, because of the closeness to the classroom situation, probably the most powerful potential source of help or hindrance to the teacher is the school principal. In the next section of the data analysis and discussion, the role of the principal will be analysed and discussed.

6.2.7.1 Theme Seven: Support from Principal

The principal supports all the DOT road safety initiatives. She has acknowledged that the road safety education programme is a good programme and that it is important for all children to learn about road safety (Teacher A).

The principal supports us by allowing us to attend workshops and to cascade the information to the rest of the staff. Yes, he said that it was a good programme. He is also familiar with the contents of the course packs (Teacher B).

All correspondence concerning the workshops is addressed to the school principal. He informs us about the workshops and allows us to attend the workshops. He also makes time available for cascading information when we return to school. He is aware of the road safety education programme, he has also read through the course packs. He has indicated that it is extremely important that all children should learn about road safety (Teacher C).

When we received the packs at school, the principal allowed us to implement the programme in our classes, because he felt that it was important for children to learn about road safety (Teachers D, E).

6.2.7.2 Discussion: Support from Principal

According to Tanner & Tanner (2007), it is the Principal's job to lead. In order to meet the school's leadership needs, the principal has to know the curriculum, that is, the principles and practice of curriculum improvement. Fullan (2001) asserts that the Principal and the school is the unit of change. Principals are required to become active in curricular leadership in the schools. From the above interviews it is clear that principals have a limited role to play in implementing any innovation. Their support extends as far as granting permission to attend workshops. They also ensure that sessions to cascade information is held at school so that all the staff members are aware of what needs to be done.

Principals that become actively involved have a strong influence on how well the change progresses or the innovation is implemented. Tanner & Tanner (2007) assert that leadership can improve instruction. In the realm of professional leadership, there is scope for curriculum improvement (ibid, P. 428). Implementing a new curriculum will require the support of a principal who sets the pace, assumes directions and aligns his subordinate staff to keep forging ahead despite obstacles and resistance to change.

Conversely those who do not show an interest have an equally powerful influence on how poorly it goes. According to Fullan (2001), the serious problem at the implementation stage will be unresolved if the principal is uninterested or even if they support the change verbally but do not participate. School F's non-participation as yet could be attributed to the principal's non-intervention. In studies conducted by (Day et al., 2000; Donaldson, 2000; Elmore, 2000) as cited in Fullan (2001), states

that the degree of implementation of the innovation is different in different schools because of the actions and concerns of the principal.

When teachers perceive that the principal is supportive of the change and is willing to assist or to provide support, teachers are much more willing to change their classroom practice.

The principal as initiator can have a powerful influence on teachers provided that he or she is willing to work with teachers over a period of time, be open to modifications in the idea, and be sensitive to the need for teachers to develop their own sense of meaning in relation to the change. In other words the principal has to learn to manage the implementation process at the school level, taking into account all those factors known to influence change in practice. It is essential that principals translate changes and reform in the curriculum into practices that provide a supportive climate at schools and that this support is extended into the classrooms where the actual implementation occurs.

Effective principals see that individual teachers and school staff are aware of what resources are available for curriculum implementation. These include human resources and teachers who are creative. Tanner & Tanner (2007) state that the innovation, must also include materials and time for meetings with staff to plan and co-ordinate curriculum implementation. Tanner & Tanner (2007), use the analogy of the orchestra conductor to describe an effective principal. The orchestral principal provides intellectual leadership to individuals and groups of teachers. He is also able to bring the entire school staff together to improve the school in ways that are good for learners and the society. They (ibid), further state that the orchestral principal attends to conditions that are needed for curriculum implementation and improvement. The ultimate objective is to bring the curriculum into an harmonious whole.

Tanner & Tanner (2007), also advocate that effective principals should provide opportunities for at least two or more experienced teachers to visit schools where best practices are implemented and to share this with colleagues. Teachers will view this with more enthusiasm than by simply hearing of best practices being implemented in successful schools.

The principal at these five schools supported the implementation of the programme because they acknowledged that it was important for the children to learn about road safety.

An analysis of the data has revealed that an innovation will be successfully implemented if there is support from the principal and if the principal supports a collaborative culture in the school. A collaborative culture of sustainable change is built by effective educational leadership to support teachers and to subvert the negative consequences of change (Fullan, 2001). Smith & Lovat (2003) also agree by stating that the most important factor in successful school change and curriculum implementation is the explicit commitment of the leadership of the school. Teachers view the support from the principal as a positive contribution to curriculum change and implementation.

6.2.8.1 Theme Eight: Support from Colleagues

All five teachers interviewed stated that:

We basically work on our own.

We do not have time to engage in discussions or to share ideas with our colleagues about the implementation of new programmes. Each teacher basically does his or her own thing in their classrooms. I have shared the course packs with the other teachers, but we did not subsequently have any discussions about how or when we were going to implement the new programme (Teacher A).

We rarely discuss problems that we are experiencing in class with our colleagues. We try to solve the problems ourselves. We do not have time to have these discussions (Teacher A).

We sometimes mention the new curriculum casually during breaks in the staff room. We do not discuss how we can help each other with the implementation of new curricula because we do not have the time to do so (Teacher E).

We make copies of the worksheets for our own classes as well as for another class if the teacher requires it. The new programmes are discussed during staff and committee meetings (Teacher C).

The principal mentioned at the staff meeting that we attended the workshop. We cascaded the information to the staff. There were no further discussions as such about the new curriculum and how to implement it (Teacher B).

We have never discussed the possibility of observing each other's lessons to assist or to critique the lessons or to implement a successful lesson in our own classroom (Teacher D).

We have had information-sharing sessions with schools in our area. I am presently the convenor for CAPS in our region. We have meetings every alternate Mondays. We plan lessons for the two weeks. Road Safety is compulsory in the life-orientation learning area in the Foundation Phase. We use the days of the week chart to implement road safety lessons every morning. Prior to the introduction of CAPS the only time we met teachers from other schools, is when we were invited to attend workshops that were organized by the Department of Education (Teacher E).

None of the teachers interviewed stated that they had any interactions with the community regarding the implementation of the road safety education programme because this will involve after school time.

6.2.8.2 Discussion: Support from Colleagues

From the data analysis it is evident that teachers do not have time for or maybe as Fullan (2001) asserts their culture does not support it to analyse or to reflect either collectively or individually on their classroom practices. Research has revealed that school cultures are traditionally individualistic in which teachers keep to themselves rather than work together (Fullan, 2001). Teachers also do not willingly allow other teachers in their classroom. In South Africa as a result of the intervention by the trade union movement SADTU, teachers were not allowed to be critiqued in their classrooms by anyone for evaluation purposes. Subsequently teachers will not be able to recognize or develop needed changes. These changes might have been identified by themselves if they engaged in reflection and exchange. Large individualistic teaching styles can be attributed to the lack of analysis and interaction among teachers concerning the implementation of an innovation. From the data analysis it is also evident that teachers do not take the initiative to promote changes beyond their classrooms. This is because the culture of the school, the demands of the classroom, and the usual way in which change is introduced does not facilitate teacher involvement in exploring or developing more significant changes in classroom practice (Fullan, 1982, 2001).

Bernstein (1971) avers that creative teachers can teach a conventional curriculum in an unconventional way to make learning relevant and meaningful. Teachers are generally not sufficiently empowered to do so, and the transformation of the framing knowledge is also constrained. It is the culture of the school or the teachers' beliefs and attitudes that leads to curriculum conservation rather than transformation and innovation.

Hargreaves & Fullan (1996), describe collaboration between teachers as "comfortable collaboration", where a sort of constrained collaboration exists between teachers. This implies that communication between teachers does not include deep investigations into issues of teaching, learning and the profession. Couros (2003) concurs by stating that teachers often do not delve into deeper conversations that investigate the hidden assumptions concerning the teaching profession.

Fullan (2001) calls for the creation of authentic learning communities which continually convert tacit knowledge into explicitly shared ideas. Fullan (2001) advises reformers to focus on the collective good, to rediscover the close ties that education has with democracy and to understand that reform will happen through successes and failures. Schools should share such ideas pertaining to reform for the benefit of all learners. Not only should schools share such ideas pertaining to reform for all learners, these efforts must be shared with other schools. In a study conducted by Mahomed (2004) it was also stated that teachers wanted to be part of a schools cluster group to share ideas and worlds best practice. Fink & Stol (1998) also state that schools need to be part of a wider system, networking with other schools as well as the school district, community, higher education institutions, and business. The larger communities must also benefit from these changes (see Chapter Four Section 4.13). The road safety education programme should benefit the communities that surround the school. Leadbeater (2005) also believes that personalized learning will only become a reality when schools become much more networked, collaborating not only with other schools but with families, community groups and other public agencies. This will enable them to become safe and responsible road users as well.

Teachers need to help each other decide and when they do, the change is a more productive one. Teachers must be bound together by a moral commitment to growth, empathy and shared responsibilities, in so doing they will have the potential to

change the school culture rather than to maintain the prevailing school culture. Skilbeck (1998) asserts that it is the responsibility of the schools to facilitate local teacher development groups and effective co-operation in making and using new curricula. Fullan (2001) concurs by stating that teachers must apply their collaboration to educative, caring, socially-just and participatory activities. The concept of whole-school development is essential for the successful implementation of any new curriculum.

Thijs & van den Akker (2009) state that careful communication is essential for cohesive curriculum innovation in a school. To monitor implementation, it is important for all parties involved to inform each other, about their activities, to reflect on implications, and to indicate to what extent the initiatives correspond with the framework of the innovation.

For curriculum implementation to be successful, it is important that the schools' ambition regarding the implementation of the innovation is in line with the teacher's commitment and their willingness to change and the abilities of all teachers on the staff to commit to change. Teachers will benefit by analyzing the new curriculum and suggest ways for successful implementation. Currently, as is gathered from the data, teachers do not have a clear view of the educational practices of their colleagues.

Thijs & van den Akker (2009, p. 32) suggest that teachers should find common ground by discussing and analyzing the new curriculum. This could lead to further collaboration and suggestions for successful implementation.

This view is also shared by Ayres, Beechey & McCormick (2002) who state that a teacher who works with colleagues who articulate a supportive, positive, "can do" attitude to implementation of a new curriculum is likely to develop a higher self-efficacy for teaching than teachers who work in isolation.

Teachers must be provided with opportunities to share skills and knowledge in a collaborative culture. Communication is the key factor in the implementation of reforms. Communication provides opportunities for teachers to discuss problems that they are experiencing and to discuss possible solutions. This will provide a platform

for developing effective classroom strategies for teaching and learning. This will enhance the change process as teachers can also highlight their strengths and weaknesses by discussing them. (see Chapter Four Section 4.13). Collaboration will also enhance student learning.

This study revealed that there was a lack of collaborative cultures and support in three schools, and in two of the schools the teachers did have staff committee meetings, where new programmes were discussed and at school E the Teacher E was the cluster convenor for the implementation of CAPS. But from the interviews, it was clear that all the teachers would welcome such supportive, collaborative cultures from within and outside the schools. Elmore (2007) state that school teachers will seek out new knowledge and will willingly use it to change their practice if the change occurs through a web of supportive conditions. If teachers perceive that they are active participants in the change process and part of a supportive and collaborative teaching and learning community, they will be willing to implement curriculum change. Professional and collaborative learning communities will create an environment where teachers can learn about curriculum innovations and change and will be able to interact with it positively on a daily basis in the classrooms. Fullan (2001) asserts that change affects all members of an educational community and collaboration between the various stakeholders will support the implementation of a new curriculum framework. Successful change occurs when there is a shared perception of the nature and the purpose of the change (Smith & Lovat, 2003).

Ornstein & Hunkins (1998) define curriculum change and implementation as an emotional and collaborative effort, and by doing so they emphasise the need for peer support for the implementation process to succeed. They (ibid) also mention opportunities for teachers to work together, share ideas, solve problems together, and cooperatively create resource materials to enhance curriculum implementation and change.

6.2.9.1 Theme Nine: Staff Development and Training

We had workshops regarding the implementation of each curriculum change.

The facilitators were not very knowledgeable about the changing curriculum.

More often than not, the facilitators were office based DoE officials who were not very familiar with the realities of the actual classroom situation or they were teachers long ago and had forgotten the classroom realities.

Facilitators were not well prepared for the workshop. Sometimes they are not even familiar with the content. Read the content for the first time during the workshop. This was a waste of time. If the workshop extends beyond school hours, many teachers leave.

Facilitators come to workshops with a few copies of the relevant documents, expecting to make copies at the venue, only to find that the photocopier is not working properly or there is no resources at the venue to make the copies. They promise to send the documents to schools, but we never receive them.

All teachers cannot attend workshops at the same time, this means that the onus is upon the teachers that attend to cascade information when they return to schools.

6.2.9.2 Discussion: Staff Development and Training

It is essential that when curriculum designers set up a new programme with new organization, materials, assessment and teaching behaviours, they must include staff training in the design and implementation phases (Wiles, 2009). Loxley (2007, p. 4) highlights the importance of teacher training for the successful implementation of curriculum change by referring to the implementation of the primary school curriculum in Ireland.

“ it was argued by some of the senior figures involved in the planning of the new curriculum that perceived ‘mistakes’ in relation to implementing the 1971 curriculum would not be revisited. That is, professional development would form an integral and deliverable part of the 1999 curriculum and not an under-funded, unrealized aspiration as per the 1971 version. Accordingly, a national initiative, the Primary Curriculum Support Programme, was established in 1998 to mediate the curriculum to teachers in order to enable them to implement it effectively.” (p.4)

In South Africa professional development and in-service training of teachers tends to be de-centralised and lacks any strategic coherence.

There are many reasons why teachers have a low opinion of the in-service training they receive. The most frequently cited being the irrelevance of the experience (see Chapter Four Section 4.9). Teachers feel that there is little or no connection between the scheduled staff development experiences and what happens in the classroom every day. Teachers do not have the comprehensive perspective of training held by those persons in leadership roles. Neither teacher participants nor workshop leaders are satisfied with the results of their efforts (Fullan, 1982).

This problem is exacerbated by the fact that the selection of in-service opportunities for teachers is not made with school improvement in mind (Wiles, 2009). Teachers that are sent to staff development experiences without an explanation of why, often arrive with a set of negative attitudes that minimize the effectiveness of the training (Wiles & Bondi, 2004, as cited in Wiles, 2009). Fullan (1982) states that nothing has promised so much and has been so frustratingly wasteful as the thousands of workshops and conferences which led to no significant change in practice when teachers returned to their classrooms. In addition to not knowing why they are being trained, teachers report general unhappiness with training sessions as cited below

- The trainer is an outsider with no knowledge of local classroom conditions
- The teachers have had the training previously
- The timing of the training interferes with more pressing classroom events
- The trainer appears disorganized or unknowledgeable about the subject
- The environment or timing of the training is unsatisfactory
- The experience does not respect the teachers personal time.

All of the above issues can be overcome by curriculum designers if all these factors are taken into account when the in-service experience is being organized. Teachers must understand why they are being trained and how much of the training is necessary to improve classroom implementation of curriculum change. Teachers express a need for practical training that is directly related to their needs. This will assist in incurring a positive attitude to the innovation, because implementation is dependent on the classroom teacher. Fullan & Stiegelbauer (1991) explain that most forms of in-service training are not designed to provide the ongoing, interactive, cumulative learning necessary to develop new concepts, skills and behaviour. One

foundation of new learning is interaction. Learning by doing, concrete role models, meetings with fellow implementers, practice of the behaviour, and the fits and starts of cumulative, ambivalent, gradual self-confidence all constitute a process of understanding the change process clearly (ibid).

The limit on the number of teachers that can attend workshops was also viewed as a constraining factor to staff development. This placed a greater responsibility on the teachers who do attend to cascade and share information when they returned to school. Sometimes the sharing of information does not happen upon their immediate return to school. The principal has to create opportunities for this to happen. The teachers raised a concern about the time lapse before information is shared and the possible distortion of information if the time lapse is too great. Cascading information is an important factor in promoting teacher involvement in curriculum implementation. It is important that an exceptionally competent and well trained teacher disseminates information at school after attending a workshop. This must be done a day after the teacher attends the workshop to ensure that the information is accurately disseminated. Effective learning requires regular and meaningful dialogue concerning curriculum change and implementation rather than one-off presentations, with no follow up opportunities where teachers are provided with a platform to reflect on and discuss their teaching practices. If teachers are provided with the opportunities to work collaboratively this will allow them to contribute from their area of expertise and different perspectives to strengthen and consolidate the implementation of a new curriculum. Developing a collaborative work culture, will help to reduce the professional isolation of teachers. This allows for codification and sharing of successful practices and the provision of support (Fullan & Stiegelbauer, 1991).

If there is a lack of support for teacher and curriculum development and limited internal accountability structures, the implementation of a new curriculum will present difficulties at the school level.

6.2.10.1 Theme Ten: Teacher's Role in Curriculum Planning

The role of the teacher in curriculum planning was another theme that emerged from the data analysis.

The participants felt that they as teachers had absolutely no role to play in any of the curriculum changes in South Africa (see Chapter Four, Section 4.12)

From 1996 onwards we experienced many curriculum changes in this country.

Another response was:

We were bombarded with different curriculums. Just as we were getting used to a new one another one was being implemented.

We attended workshops, which confused us even more. More often than not the facilitators themselves did not know what to do. The facilitators are office based officials from DOE. They have obviously forgotten about local classroom conditions. They also did not understand all the terminology and were not able to adequately explain to us. They sometimes read to us from handouts. They were also not able to answer our questions.

The workshops were a waste of time. Valuable classroom time was taken.

The road safety workshops were conducted by the Road Safety Officials from the Department of Transport, after such a session.

The National Ministers of Education and Transport signed a memorandum of understanding (MOU) (see Appendix. Seven) for the implementation of all road safety projects in schools. Therefore road safety officials were allowed to conduct their training workshops after the workshops conducted by the DoE. The workshops were held at the same venue and on the same day. This was done so that the teachers were not inconvenienced and that no additional classroom time was taken. Invitations to these workshops were sent to school principals via the Department of Education. This meant that teachers that attended the workshop were tasked with cascading information about the NCS as well as the road safety education programme.

The participants' response to the road safety education programme workshop, were as follows:

The workshops for the implementation of the Road Safety Education programme, was short and conducted within the allocated time. The curriculum materials for this programme is very clear and explicit. A step-by-step guide is given for the implementation of the lesson. Even if we did not attend the workshop, we would be able to implement the programme in the class.

Teachers A, D and E who did not attend the workshop, but were issued with the course packs during school visits agreed with this:

The course packs are very easy to use. It is not complex and confusing. The learners are also enjoying the lessons because they are very interactive lessons which are consonant with the objectives of the NCS. We do not have to stand in front of the class and do all the teaching and talking while the learners do all the listening. These lessons are learner activity orientated.

As with all other curriculum innovations teachers were very perturbed at the fact that they have absolutely no say in curriculum innovations. There was a total lack of involvement by classroom teachers. All five participants agreed about this.

We have had no say in any of the new curriculums that we had to implement, even though there were so many changes. It would have helped if we were consulted about what works and what did not. We would have been able to give a first-hand account of this. If we were given this opportunity, the mistakes could have been avoided in the next phase of curriculum implementation. Even if teachers were asked for their input for remediation and improvement we are not aware of it.

Curriculum change happens far away from us at National government level. We wonder if the developers are mindful about our thoughts and opinions. We are tasked with the implementation because it is what we are supposed to do. We try to do the best that we can despite the circumstances we find ourselves in.

6.2.10.2 Discussion: Teacher's Role in Curriculum Planning

Carl (2005) states that from 1996, curriculum change has become a major feature of teaching in South Africa. Although this process involved various role-players and interested parties, teachers were in effect the major role players. In a study conducted by Ramparsad in 1995, as cited in Ramparsad (2000), it was found that teachers were hopeful that the new education dispensation would redress the lack of teacher participation in curriculum development. In a subsequent study conducted in 2000 by Ramparsad, it was found that inadequate mechanisms existed for teachers to participate in the design and development phase. A perception often held by teachers, as is evidenced from the interviews (conducted in 2011), is that the curriculum is developed "elsewhere". Subsequently the teachers need some guidance for the

“correct implementation” of the curriculum which is handed from the “top” (ibid: 223). The views of the teachers, that curriculum change happens far away from them is shared by Sahlberg (2006), that curriculum is a document that is prepared by the educational authorities and sent to schools to be implemented as a mandate from National Government. At government level a curriculum is defined with detailed regulations for objectives and content, school time, selection of education materials, teaching standards and tests. According to Muijs (2010) it is not at all clear that government or their agencies are necessarily the possessors of the pedagogical knowledge and evidence that a reliance on top-down strategies would suggest. There is very little input by schools and teachers (Thijs & van den Akker, 2009). Although teachers may have been used as experts in curriculum working groups, the end users, that is, classroom teachers have had only a very limited or no role in the actual planning process. Teachers are professionals and should not be seen only as technical implementers of externally prepared plans. Teachers should also have a role in deciding what, how and when to teach whatever they are teaching. According to (Thijs & van den Akker, 2009) the advantage of a more flexible curriculum, is the direct involvement and co-ownership of schools and teachers. This will not only encourage professional development but will lead to a more sustainable form of educational improvement (ibid).

Oliva (1997) state that teachers feel disempowered and left out of the curriculum planning and decision-making process. This is obviously always a problem according to (Muijs, 2010), with imposed changes and points to a need for involvement in the innovation process. Classroom teachers must be encouraged to take on new ideas and must be convinced of its merits. This way of working can extend the effectiveness approach to getting involved at the start of an innovative practice. Fullan (2001) shares a similar opinion in that curriculum innovation can only be beneficial to implementation if schools and teachers are constantly involved. Once teachers are involved, there can be considerable opportunity to alter or further develop the innovation, depending on the approach taken. Muijs (2010) state that this is important if the field has to progress and make the process of innovation more systematic than it has before. Teachers should not be regarded as gatekeepers by curriculum designers and developers, who should be overwhelmed or circumvented, but as partners in interactive and purposive learning processes. Therefore there should be an

opportunity for teachers to make inputs during the initial curriculum development process (Carl, 2005). It is further stated by Carl (2005) that teacher involvement in curriculum development means that they can participate in the development of the curriculum at various levels that is, on learning areas, in subject committees, at both the National and Provincial levels. Muijs (2010) supports this assertion by stating that a more bottom up approach involving practitioners and researchers working together to test and develop innovations based on sound scientific research would be a more productive way forward.

The data analysis and discussion presented here of the interviews with the five teachers from the five different schools provided valuable insights into the implementation of the road safety education programme in the context of curriculum change. Their main contribution was to identify the aspects of changes that could be related to the successful implementation of curriculum change and for opportunities to develop a sense of mastery over new curriculums.

The findings of the related literature concurs with the views of the five teachers interviewed for this study. In Chapter Four, Section 4.6 of the study, it is indicated that there must be a collaborative effort on the part of the teachers as well as the curriculum planners and developers regarding the planning, developing and implementation of a new curriculum for it to be successful.

In the next section a synthesis of the teacher interviews will be presented.

6.3 Synthesis of Teacher Interviews.

The data gathered from the interviews revealed that the teachers believed that it was important for the learners to learn about road safety from a young age. This will enable them to become safe and responsible road users. They believed that the road safety education programme was a good programme to teach learners about road safety. It was a well-developed programme that catered appropriately for each grade. The learning outcomes were linked to the RNCS outcomes and they were clearly stated. This made it easy for the teachers to achieve these outcomes at the end of each lesson. The teachers' guides were easy to use and follow. It also lent itself to being adapted and expanded on in innovative ways as was observed during the

implementation in the classrooms. The lessons also lent themselves to being integrated across all learning areas. This was also observed during the classroom implementation. The teachers had a positive attitude to implementing the road safety education programme because of its intrinsic worth and value.

Teachers cited lack of resources as the main barriers to implementing curriculum change. This included material as well as infrastructure resources. There were not enough teacher guidebooks. Teachers had to share. Teachers had to make copies of the worksheets for learner activities. At some schools they experienced a lack of paper to make photocopies. The teachers had to wait for funds to be available to purchase paper or out of desperation the teachers initiated fund raising activities. This in itself was a challenge as the communities that these learners came from were very poor. Teachers stated that the implementation process would be expedited if every single teacher and learner had a copy of their own resource books. Overcrowded classrooms were cited as another barrier to effective implementation. This included teaching two grades in the same classroom.

There were no feedback sessions after implementation to assist teachers that are experiencing problems. Teachers do not engage in collaborative work cultures where the implementation of the road safety education programme is concerned, teachers work in isolation in their classrooms. Principals supported curriculum change by allowing teachers to attend workshops. The principals in these schools believed in the importance of learning about road safety. They allowed their teachers to attend the workshops.

All teachers interviewed stated that there were too many curriculum changes in South Africa since 1996 which involved too many workshops. The teachers did not feel that these workshops were beneficial to their classroom practices. These workshops were often conducted by people that were not familiar with daily classroom dynamics. The trainers themselves were inadequately trained or lacked the skills to conduct worthwhile workshops. The workshops took up too much of classroom time. They also felt that once-off workshops did not achieve its objectives of preparing teachers adequately for implementing, curriculum change.

Teachers also expressed a concern that they were excluded from the curriculum design and development process. It was also clear from the data analysis that the participants felt that curriculum decisions and change were made on their behalf without consulting them. They were the end users that were never consulted about curriculum issues. They felt that for curriculum change and implementation to be successful, they must be consulted from the outset, to avoid many of the daily problems that teachers encounter in the classrooms. This emphasizes the need to develop an intensive teacher development strategy in order to ensure that teachers can make a valuable and an informed contribution to curriculum design and development. Despite the problems that the teachers encounter, they were quite positive about implementing the road safety education programme, because it was worthwhile to do so. The teachers iterated that they did the best that they could, because educating the learners was important to them.

Therefore, the next section is concerned not with the idealized curriculum but observation of the implemented curriculum in terms of how teachers and learners mediate the implementation of the road safety education programme in the classroom under conditions that prevail in the classroom.

In the next section the classroom observation of the five teachers will be analysed and discussed. As indicated in the literature review Chapter Four Sections 4.4 and 4.5, curriculum studies are concerned with intentions and what really happens at the classroom level as the teachers try to implement the intentions of the curriculum developers. As is indicated in the literature review section, there is a clear distinction between the planned and the implemented curriculum. A planned curriculum is only an idealization but an enacted curriculum is one that is tested in the context of the classroom.

6.4.1 Observation

This section reports the findings of the classroom observations of the five teachers. The purpose was to explore how the road safety education programme was implemented in the classroom.

Observation plays a critical role not only in classroom research, but also supports the professional growth of teachers (Hopkins, 2008, p. 75). It also encourages the development of a language for talking about teaching and provides a means for working on developmental priorities for staff as a whole. In addition the observation data was also used as a further check against the validity of the responses of the teachers gathered by the interviews. This is referred to as method triangulation.

Teachers are supposed to change their teaching practice and make a shift from teaching as coaching and facilitating student learning (Hoekstra, 2006). Teachers, according to Pinar et al (2002) are viewed as significant participants in theoretical and pedagogical discussion on the nature and development of human learning.

It was decided to focus on those concerns of teachers that deal with the changing role that the above mentioned reform requires them to adopt. Pinar et al (2002) state that teachers are the richest and most powerful source of knowledge about teaching and learning. If we hope to understand teaching and learning, we must turn to teachers themselves. Therefore, the researcher considered it important, not only to interview teachers concerning their perceptions about curriculum change and implementing the road safety education programme but also to observe them implementing the road safety education programme their classrooms.

Hargreaves (1998) as cited in Hoekstra (2006), found that teaching is not only driven by rational thinking, but to a large degree by emotion.

Vermunt and Verloop (1999) state that monitoring means that learners actively observe whether their learning activities lead to progress in the intended direction. Monitoring often happens on a less conscious level.

It is important to realize that in practice much teaching and learning takes place without conscious awareness. Teachers cannot reflect on things that they are not consciously aware of. Observations in the classroom and feedback sessions are essential for teachers' professional developments.

In studies, conducted by (Hay & Mcber, 2000) as cited in Fullan (2001), it was found that learner progress is most significantly influenced by teachers who display both

high levels of professional characteristics and good teaching skills. This leads to good classroom practices.

Teacher B, in this study favoured the interdisciplinary approach where road safety concepts are integrated across the learning areas. This involved good planning and identification of substantial concepts.

During classroom observations, the researcher noted that an array of learning and teaching strategies enabled teachers to plan an appropriate pedagogy to achieve the learning goals.

A challenge identified with the implementation phase was to encourage teachers to see beyond the mere advantage of time management and to identify the educational value of the road safety education programme. Teachers had to be convinced that this was part of the school curriculum and not separated from it, even if it was not an initiative of the DoE.

Certain teaching strategies empowered the learners so that they could make sense of the road safety rules leading to a more meaningful understanding of these rules. These strategies included a more interactive setting where learners engage with concrete materials and pictorial representations of road safety ideas as only symbolic forms of road signs

Furthermore, a conducive environment, (eg. Where learners could argue, raise questions and describe their thinking without any hesitation) was found to be an integral aspect in learning rules with understanding.

It becomes vital to examine the effectiveness of the implementation of the road safety education programme in the classroom.

According to Daley & Valdés (2006), there are three major types of measures for such analysis:

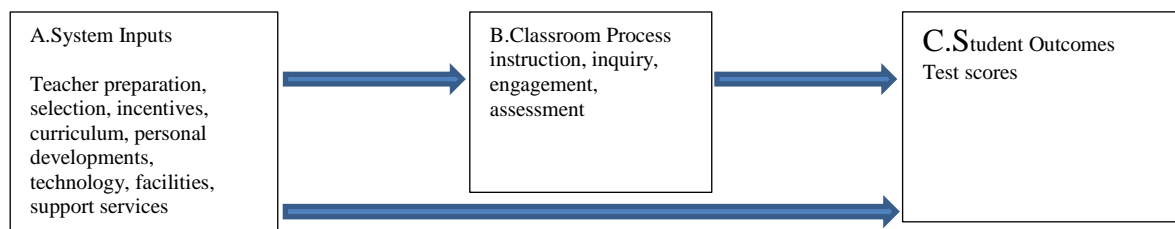
- A. System input measures. These include characteristics of the teacher identified by administrative data, such as length of experience, type of degree, and

credential status. These measures also include professional development, curriculum, facilities, technology, and support services.

B. Classroom process measures. The most informative measures are based on direct observation of classroom instruction.

C. Student outcome measures. This consist primarily of test score results. Measure C is an end goal of the system, while A and B represent means to the end. This is represented in FIGURE 12 (Daley & Valdés, 2006, p. 5)

FIGURE 12
A Model of Educational System Performance



Although teacher characteristics fall within the scope of measure A, teacher performance must be viewed from the perspective of either measure B- what the teacher does in the classroom- or measure C- what students achieve as a result of the teacher's instruction. For the scope of this study, the researcher will concentrate on measure B that is, what the teacher does in the classroom in implementing the road safety education programme. As far as the measure C is concerned, the researcher is not interested in test scores, but rather to determine whether the learners have acquired the necessary knowledge to make them safe and responsible road users.

Learner achievement is the ultimate goal for the implementation of any innovation, but at present can only be imperfectly linked to the contribution of individual teachers (Daley & Valdés, 2006, p. 5). The purpose of observing any one teacher's implementation of an innovation in the classroom and assessing the outcome of any one learner is to provide a basis for generalizing to the greater population of teachers and learners in a wide variety of context (ibid).

In this section the evidence of classroom observation will be described. According to Daley & Valdés (2006, p. 13) classroom observation provide a degree of nuance

about implementing an innovation that would not be attainable through any other method. Classroom observations were also carried out to explore the teachers' attitudes, beliefs and perceptions to implementing the road safety education programme. This was done to address all three research questions.

The observation field notes that the researcher had used were documentations of the teacher's implementation of road safety lessons in the classroom. The notes included description of the content covered in the lesson and the materials used. The notes varied in terms of the format because the five teachers had chosen different lessons to implement. The other factor that had caused the variation was the grades in which the lessons were implemented. Two of the lessons were conducted in the Foundation Phase Grade R at School (E) and Grade 3 at School (D). The other three lessons were in the Inter-mediate Phase. Grade 5 and Grade 6 at School (A); Grade 5 at Schools (B, C).

The substance of the field-notes was similar across the lessons observed and this allowed the researcher to make judgments on various aspects of the lessons being observed (See APPENDIX 6: Classroom Observation Rubric).

The theoretical framework used during observation was a constructivist one, which supposes that learning is a gradual internalization in the mind of the learner of interactions between the learner and the more capable other, in this case, the teacher (Vygotsky, 1978). The zone of proximal development refers to the difference between that which the learner can achieve on his/her own and that which can be achieved by working with a competent adult (ibid).

For the classroom observation, the researcher realized that she would not be able to report on everything that was observed during the implementation of the road safety education programme. Therefore she had to be selective about what had to be observed and reported, and analysed on. Selection was determined by what was significant and relevant to answering the critical research questions of this study.

For the classroom observation, the researcher used a 5 point multi-dimensional rubric modeled on one developed by the National Centre for Research on Evaluations, Standards and Students Testing, for judging the quality of classroom instruction as

proposed by (Clare, 2000) as cited in Daley & Valdéz (2006) The theoretical framework of this rubric is a socio-cultural one. The choice for this framework is consonant with the discussion in Chapter One Section 1.4.5.

Learning according to Vygotsy (1978), is a process in which the teacher gradually transfers to students the responsibility for managing their thinking through “a cognitive apprenticeship”.

Based on this assumption the researcher used a set of generic dimensions to assess the quality of instruction of the five teachers. It was not the intention of the researcher to compare, nor to contrast the quality of classroom instruction, but rather to determine the teachers’ attitude and beliefs to implementing the road safety education programme and to determine whether the learners were acquiring the necessary skills and knowledge where road safety is concerned. The dimension that the researcher had included in the rubric was:

- Learning goals,
- Discussion,
- Cognitive challenges
- Classroom management
- Contextualisation

TABLE 8 lists the dimensions and a brief description of each. The scales were written such that 1 was a reflection of weak implementation and 5 represented very good implementation.

TABLE 8
Classroom Observation Rubric

| Rubric dimension | Description |
|-------------------------|---|
| Learning outcomes | The extent to which the teacher presents clear, elaborate learning outcomes to learners to help them to achieve the desired outcome |
| Discussion | The extent to which he teacher organizes the class and the learning to facilitate discussions around the lesson |
| Cognitive challenges | The extent to which the road safety material challenge learners cognitively |
| Classroom management | The extent through which the teacher manages the class with minimal reprimands and reminders and how quickly learners settle down to work |
| Contextualization | The extent to which the teacher makes the content of the material meaningful to the learners and relates it to their backgrounds and home culture |

The first dimension *Learning Outcomes* measures the clarity with which the teacher teaches the lesson and what they were expected to accomplish at the end of the lesson. Clear and unambiguous learning goals will allow learners to strive for them. For learners to achieve this goal teachers must select appropriate instructional goals. Therefore it is important for teachers to focus their learners' attention on a learning task and help them from a cognitive structure to organize that learning.

Discussion this dimension refers to the discourse that occurs between learner and teacher. This dimension focused on the way the teacher organized the class to facilitate a discussion. To rate this dimension the researcher looked for evidence of dialogue between teacher and learners.

Cognitive Challenge for this dimension, the researcher rated the task and materials assigned to learners and also the learners engagement with the tasks. The essence of schooling is about what young people do in school. Many hours and days are spent working with curriculum materials (Pinar et al., 2002). There the quality of the curriculum materials must help learners to develop and grow, rather than to control their behaviour.

Classroom Management measured how effective teachers were in conducting the class, by ensuring that learners concentrated on their tasks, the routines that were followed and that the transitions between activities were smoothly accomplished.

Classroom management is an important part of teaching and learning. A teacher's competence is often measured by how well the class is managed. If learners are engaged in meaningful activities to achieve their outcomes, then this implies that the teacher has managed the class well. Teachers that cannot manage their classrooms well are often viewed as being weak and incompetent.

Contextualization refers to the teachers' ability to make content relevant to students by connecting the content to student's experience outside of the classroom. It is asserted that school learning is made meaningful by connecting it to learners' personal, family and community experiences. Effective education teaches how school abstractions are drawn from and applied to the everyday world. Research has revealed that it is important to make conceptualisations meaningful to students by relating them to their own experiences and backgrounds. Teachers are expected to connect learner's prior knowledge, life experiences and interests with learning outcomes. In an ideal classroom situation, a teacher would incorporate learner's everyday experiences into the design of lessons and allow learners to share their experiences from their homes and communities.

In the next section each classroom lesson, observed will be rated according to the above mentioned rubric and according to Appendix Six. This will be followed by a discussion of the observation as they relate to the teachers' beliefs, attitudes and perceptions of implementing the road safety education programme in the context of curriculum change, as well as to determine whether the learners are acquiring the necessary knowledge and skills to make them safer road users.

Lesson 1 School A. Teacher A

At this school the Grade 4 and 5 classes were combined, as discussed in Chapter Five Section 5.5.3. There were twenty four learners in Grade 5 and twenty learners in Grade 6. There were forty four learners in the class.

The teacher taught a language lesson using the same topic for both Grades. The topic was Safe Cycling Rules. The learning outcome as well as the assessment standards were linked to the RNCS. The teacher used the *Road Safety Education IP (Intermediate Phase) Storybook: Bright Sparks*. The teacher used the poster on Safe

Cycling for the IP as well as the story to combine activities that were common to both Grades as per the teacher guide book. Lesson 4, Activity 1 (Grade 5) on page 34 was combined with Lesson 9, Activity 2 and 3 (Grade 6) on page 64. This was done in a seamless manner without any disruptions. The teacher used the poster to discuss hand signals and the importance of wearing a helmet while cycling. Thereafter the story from the storybook was read and discussed.

TABLE 9
Learning outcomes and Assessment standards

| Learning Outcome | Assessment Standard: The Learners : |
|---|--|
| <p>Languages</p> <p><i>LO 5 Thinking and Reasoning-</i> The learner is able to use language to think and reason, as well as to access, process and use information for learning</p> <p><i>LO 3 Reading and viewing-</i>the learner will be able to read and view for information and enjoyment, and respond critically to the aesthetic, cultural and emotional values in text</p> | <p>Languages</p> <p><i>Grade 5:</i> Transfers information from one mode to another: use information from a chart, graph or diagram to write text</p> <p><i>Grade 6:</i></p> <p>Reads for pleasure: solves word puzzles.</p> |

Adapted from *Teacher's Book Intermediate Phase. A Road Safety Education Programme for South African Learners (2006)*

Road Safety Outcome:

- To ensure that learners understand that cyclists, together with motorcyclist, the elderly and people with physical or sensory challenges, are vulnerable road users. (Grade 5).
- To reinforce the rules for safe cycling, such as wearing a protective helmet, using good observation and defensive cycling skills, and wearing bright colours to increase visibility. (Grade 6).

FIGURE 13
Classroom Observation School A

During the implementation of the lesson on safe cycling rules the teacher presented the above road safety **outcomes** to the learners. The teacher started the lesson by using visual posters to ask questions and clearly explain the concepts of vulnerable road users. This was followed by concepts that were related to bicycle safety. She showed the learners the picture of the helmet and asked why, was it necessary to wear a helmet while riding a bike. The learners were able to answer that the helmet protected them. The teacher also demonstrated that while it protected the head, the ears and the eyes were exposed. She asked the learners to explain the reason for this. They were able to answer correctly. That we must be able to see as well as hear the traffic. To consolidate these concepts the teacher used a hat (improvised) to demonstrate what will happen if our eyes and ears were blocked by the helmet.

Outcomes were clear and explicit in terms of what the learners were expected to learn from the tasks and from the story that was read. This type of outcome statement enabled the learners to have an idea of the lesson that they were going to learn and what the expected outcome was. This was rated 3.

Discussion- rated a 4 because there was dialogue between the teacher and the learner. Concepts were discussed between the learner and the teacher before the story was read. The teacher did an interesting dramatization of the story. Each page was read and questions were asked and discussed before proceeding to the next page. There was active engagement and dialogue between teacher and learners. The teacher engaged the learners in a collaborative activity. The teachers questioned the learners and provided sufficient time to explain and to justify their answers. This was rated 4.

Learners were **cognitively challenged** by the learning tasks. They were required to synthesize, explain and process information. What did Themba do that was wrong? Played with a ball on the road. What is wrong about that? It is very dangerous to play with a ball on the road. Why is it dangerous? You could get knocked by the truck or even be killed. The learners were able to identify the problem related to the dangers of playing with a ball on the road. They were able to explain the cause and effect of playing with the ball on the road. The learners were also able to offer solutions to the problem, when they were questioned about this. They indicated which places were safe to play with the ball. It was safer to play in their yards or in the local soccer fields. They also mentioned that it was safe to play in parks even though they had no access to such an amenity in their neighbourhood. This was rated 4

For **classroom management**, the lesson was rated a 4. The teacher had control of the class and effectively managed the lesson without any problems, even though there were two different grades in the class. The learners were well behaved and responded to all the teachers instructions with minimal reminders. There was a smooth transition for instructions directed from one grade to another and learners were meaningfully engaged in their tasks assigned to them. There was a pleasant relaxed atmosphere in the classroom. It was obvious that there was a good rapport and respect between the

teacher and the learners.

For **contextualization**, the lesson was rated a 4. The teacher was able to make the content of the lesson meaningful to the learners and was able to draw on the learners own background and culture. The learners were able to identify with the story, because it depicted the type of background that the learners were familiar with. By doing this, the teacher was able to make connections with the learners' experiences outside the classroom. There was evidence of this in the lesson plan and the implementation of the lesson. Pupils could easily identify with characters in the story like Gogo (granny). Gogo is there to monitor them playing and make them snacks. Learners could easily identify with this, because their own Gogos at home keep an eye on them while they are playing and reprimands them, if the occasion warrants it. Gogos also provide them with snacks when they are hungry. The story contextualizes road safety rules from a perspective that the learners can identify with by using relevant materials. They play with wire cars and create their own road signs to learn about them.

Lesson 2 School B. Teacher B

At this school the researcher observed a Grade 5 lesson being taught. For this lesson the teacher used the poster for *Being Safe Near Roads*. The poster was used in conjunction with Lesson 1 (Grade 5). This lesson is linked to the RNCS.

TABLE 10
Learning Outcome and Assessment standard

| Learning Outcomes | Assessment Standards: The Learners |
|--|--|
| <p>Languages</p> <p><i>LO 2</i> Speaking- The learner will be able to communicate confidently and effectively in spoken language in a wide range of situations</p> | <p>Languages</p> <p><i>Grade 5:</i> Interacts in additional language: asks and answers questions; sustains a conversation on a familiar topic; expresses an opinion and gives reasons for it. Uses additional language creatively</p> |
| <p>Mathematics</p> <p><i>LO1</i> Numbers, Operations and Relationships - The learner will be able to recognize, describe and represent numbers and their relationships, and to count, estimate, calculate and check with confidence in solving problems</p> | <p><i>Grade 5:</i> Estimates and calculates by selecting and using operations to solve problems.</p> |
| <p>Life Orientation</p> <p><i>LO 1</i> Health Promotion- The learner is able to make informed decisions regarding personal, community and environmental health</p> | <p><i>Grade 5:</i> Investigates a local environmental problem using different data sources.</p> |

Adapted from *Teacher's Book Intermediate Phase. A Road Safety Education Programme for South African Learners (2006)*

Road Safety Outcomes

- To introduce learners to road safety and teach vocabulary that will be used for the road safety theme.
- To revise the difference between safe and unsafe behaviour near the roads.

- To help learners understand the reasons why certain activities are safe or unsafe.

FIGURE 14
Classroom Observation School B

Lesson outcome was rated 4. The teacher mentioned what he wanted to achieve by the end of the lesson. The outcomes were clear and explicit in terms of what was expected of the learners to learn. The teacher explained to the learners what lesson they were going to do for that day. The topic was being *Safe Near the Roads*. The learners were informed that they were going to be learning about safe and unsafe behaviour near the road. The learners were also asked about the challenges that they experienced while using the roads, near their school and homes. The learners were correctly able to state that there was a lack of sidewalks, the roads were too narrow, no proper facilities for taxis to park while embarking or disembarking. This compromised their safety. The learners were also asked to come forward to identify what was unsafe behaviour in the poster and to explain why that behaviour was unsafe. It was not safe, for the two girls to sit on the side of the pavement with their legs sticking out on the road. The learners explained that they could be knocked by the oncoming vehicles. The learners were able to identify all the unsafe behaviour in the poster and also to provide explanations.

Discussion was rated a 4. There was constant dialogue between the teacher and the learner. The teacher engaged learners in collaborative activities and discussion. Learners were also called to the board to explain their answers and justify their answers. The teacher gave the learners sufficient time to answer questions. The teacher was able to organize the class so that instructional conversations took place. There was also good rapport between the teacher and the learners.

Cognitive challenge of the learning was rated 3. Tasks assigned to learners were able to engage them in moderately complex thinking. They were able to infer mathematical rules and apply them. The teacher asked them how many wheels does a car have? They were able to answer, four. The teacher subsequently referred to the poster, he showed the learners the picture of the car and counted the wheels. He then asked them to count the number of cars in the poster. Some learners answered three and some answered one. He asked the learners to explain why their answers were different. The learner, who answered three, was asked to go to the board and show the three cars. The learner pointed to the car, the mini-bus taxi and the bakkie. For this learner all the vehicles were referred to as cars. The learner, who answered one, pointed to the car in the poster and said that there was only one car in the poster and correctly identified the mini-bus taxi and the bakkie. The teacher taught them mathematical concepts by asking the learners to multiply the number of vehicles by the number of wheels.

Classroom management was rated 4. There was good control and overall management of the

classroom. Learners settled down quickly and engaged with the day's lesson with minimal reminders and reprimands. Overall the learners were well behaved and responded to the teacher's instructions appropriately. The teacher was able to effectively implement the lesson. Learners were on tasks with very little or no disruptions.

Contextualization was rated 4. The teacher was able to make the lesson meaningful to the learners because they were able to identify with the poster. The poster displayed a typical township scene. The teacher was able to draw out the learners background and home culture to make the lesson relevant to the learners. By doing this, the teacher was able to make connections to the learners experience outside the classroom. There was evidence of this in the planning and the implementation of the lesson. The learners were engaged in a lively discussion about how some of the people in the area where they lived displayed similar unsafe behaviours. The teacher had explained to them why this was not safe and what they had to do to be safe on the road. The teacher also explained to them that what was being taught in the class must be practiced on the road and that as learners they must refrain from this type of behaviour. That is why it was important to learn about road safety. The teacher was able to integrate this lesson across three learning areas, that is Language, Literacy and Communication (LLC), Life Orientation (LO) and Natural Science (NS). For NS the teacher discussed carbon emission and pollution and how this affected the environment.

The teacher compiled his own worksheet for use after the lesson was done. See Appendix Eleven.

Questions relating to the different types of land, sea and air transport as well as a question on road signs were included in the September controlled tests. See APPENDIX 12: Question 2 and 6.

Lesson 3 School C. Teacher C

At this school the researcher observed a lesson on Road Signs for Grade 5. The teacher used Lesson 2 on Page 30 of the teacher’s guide. This teacher used this as a guide and compiled her own worksheet for learner activity rather than using the prescribed learner activity on page 31.

This lesson was a very innovative and an interactive one. The teacher also used the poster on road signs as well as a flip chart which she had compiled herself. This lesson is linked to the RNCS

TABLE 11
Learning Outcome and Assessment Standard

| Learning Outcome | Assessment Standards: The learner |
|--|--|
| Languages | Languages |
| <p><i>LO 2 Speaking-</i> The learner will be able to communicate confidently and effectively in spoken language in a wide range of situations.</p> <p><i>LO 5 Thinking and Reasoning-</i> the learner is able to use language to think and reason, as well as to access, process and use information for learning.</p> | <p><i>Grade 5:</i> Uses additional language to communicate information: describe the purpose of something. In this case, road signs.</p> <p><i>Grade 5:</i> Uses language across the curriculum: explains some concepts from other Learning Areas; knows and uses some of the vocabulary of other school subjects (eg. Life Orientation).</p> <p>Uses language for thinking: classifies things according to criteria</p> |
| Mathematics | Mathematics |
| <p><i>LO 3 Space and Shape (Geometry-</i> The learner is able to describe and represent characteristics and relationships between 2-D shapes and 3- D objects in a variety of orientations and positions.</p> | <p><i>Grade 5:</i> Describes, sorts and compares two-dimensional objects from the environment and from drawings and pictures according to properties including:</p> <ul style="list-style-type: none"> • Number and / or shape of faces • Number and / or length of sides |

Adapted from *Teacher’s Book Intermediate Phase. A Road Safety Education Programme for South African Learners (2006)*

Road Safety Outcome

- To revise and reinforce learners' awareness of the four different types of road signs, ie. Regulatory, Warning, Guidance and Information.(See APPENDIX.13)

FIGURE 15
Classroom Observation School C

Learning outcome was rated 4. The teacher started the lesson by discussing safe places to play and cross. She proceeded to tell them that they were going to learn about road signs. Goals were somewhat clear and explicit in terms of what the learners were expected to learn for that day's lesson. They were to learn about safe places to play and the road signs. The teacher first explained why the road signs had different geometrical shapes. After this there was a question and answer session. The teacher provided a structure for identifying the similarities and differences in the road signs with regard to their shapes and the reason for this.

Discussion was rated 4. There was good rapport and interaction between the learners and the teacher. The teacher was able to engage the learners in a collaborative activity, followed by discussions. The learners actively participated in the lesson. The teacher used the teacher guide and compiled her own lesson. She used the road sign poster as well as a flip chart which she had developed herself to compliment the lesson. She had also designed her own worksheet which she had distributed to the class after the discussion. The teacher asked questions and gave the learners sufficient time to answer and allowed for discussion by involving other learners as well. The teacher was able to organize the lesson that enabled instructional conversations to take place

Cognitive Challenges was rated a 3. The task that was assigned to the learners was moderately challenging. Learners were required to integrate knowledge by matching the signs to the meaning. Learners were required to cut and paste the signs in their own workbooks and to write down the meaning of the sign next to it. The meanings were also given in the worksheets. (See Appendix Fourteen). Learners were required to synthesise and process information to carry out this task.

Classroom management was rated a 4. Despite limited space, the classroom was divided by a wooden partition. From where the researcher was seated, she was able to hear the lesson being delivered in the next class. The researcher assumed that the learners in both classes were mindful of their close proximity and were subsequently very well behaved. They listened attentively to the teachers instructions and carried them out with virtually no interruptions or disruptions. All instructions were efficiently carried out. Learners had to also borrow a pair of scissors and Pritt (glue stick) if they did not have any. Even this was carried out in a quiet and unobtrusive way. The learners that did not have any, waited patiently until their peers were done and were able to lend it to them. The researcher wondered if they were always as well- behaved during learner activity or were the learners mindful of the researcher's presence and were therefore on their best behaviour. The teacher managed the classroom well with established routines with scant reminders. The students stayed on tasks during

the entire lesson and did not become unruly even if they had to wait to borrow the scissor or the Pritt.

The entire class was given a task-oriented activity that kept them busy and occupied. This obviously worked for teacher C. This contributed to teacher C achieving her goal. The teacher then walked around the crowded classroom to assist learners that were struggling with the exercise. These learners raised their hands to attract the teacher's attention if they required any assistance.

Contextualization of the lesson was rated 3. The teacher was able to make the lesson meaningful to the learners by asking which signs they were familiar with and where they had seen these signs. They were all familiar with Sign One (pedestrian crossing) and Sign Five (children crossing) because these two signs were outside the school gates. The learners knew the signs as well as the meaning and the reason for the signs. The other sign that they all readily identified with was the stop sign, which was shown on the poster. The teacher and learners engaged in a lively discussion about the stop sign, the meaning of the sign, the reason for it and the places where this sign is commonly found. The learners were able to answer this confidently.

Learners had difficulty identifying the traffic circle sign, because they had not seen a traffic circle in the area where they had lived. The closest traffic circle to their school is in Pietermaritzburg near the Royal Showgrounds. The Royal Showground is an iconic landmark that is two kilometers away from the Central Business District in Pietermaritzburg. This is about 25 kilometers away from their school. The teacher had to explain what a traffic circle was and how it operated. In this way the teacher was able to make casual connections to the learners' experiences outside the classroom. This was evident in the implementation of the lesson.

Lesson 4 School D. Teacher D

The lesson that the researcher observed in this school was in the foundation phase in Grade 3. The lesson was Lesson Six Grade 3 on page 58. This lesson was done in conjunction with the Foundation Phase poster on road signs. This lesson was linked to the RNCS.

TABLE 12
Learning Outcome and Assessment Standard

| Learning Outcome and Assessment Standard |
|--|
| <p>Mathematics</p> <p><i>LO 3 Space and Shape (Geometry)- Assessment Standard:</i> The learner recognizes, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures, including triangles, squares, rectangles; circles, cones and pyramids.</p> <p>Integration: Languages</p> <p><i>LO 1 Listening – FAL Assessment Standard:</i> The learner shows understanding of description by noting relevant information.</p> <p><i>HL Assessment Standard:</i> The learner listens attentively (extending concentration span) and responds to an extended sequence of instructions appropriate to the learner’s level.</p> <p><i>LO 5 Thinking and Reasoning-FAL Assessment Standard:</i> The learner uses language to understand concepts and vocabulary relating to different Learning Areas.</p> <p><i>HL Assessment Standards:</i> The learner uses language to develop concepts: understand and uses the conceptual language of different learning areas necessary at this level and in preparation for the next level.</p> |

(Adapted from *Teacher’s Book Foundation Phase. A Road Safety Education Programme for South African Learners* (2006))

FIGURE 16
Classroom Observation School D

Learning Outcome was rated 4. The outcome was for learners to recognize road signs relevant to pedestrians and understand their meanings. The learners must also be able to identify the shapes and colour of the common road signs. At the beginning of the lesson the teacher stated the outcomes in clear and explicit terms and what the learners had to know by the end of the lesson. The teacher started the lesson by having a discussion on pedestrians. The teacher asked the learners to explain who pedestrians were. There was an enthusiastic response to this question. The grade three learners were able to answer correctly. The gem was this definition: “Pedestrians are people who walk, because they cannot afford to buy cars.”

Discussion was rated 4. The teacher engaged the learners in a collaborative activity so that discussions could occur. The researcher was impressed with the level of the discussion that occurred because this was a grade three class. The learners and teacher had a good rapport and learners were not intimidated by the researcher’s presence, to the extent that when they discovered that the researcher was from the Department of Transport, the researcher was asked when the construction near on the N3 was going to be complete because it was causing a traffic congestion. Some of the learners even mentioned that their parents complained in the morning because there was no traffic police to control the traffic. The teacher had provided the learners with ample opportunities for discussion. After the teacher asked questions, the learners were provided with sufficient time to respond to the questions. The teacher displayed good listening skills. They were also provided with opportunities to justify and elaborate on their answers. The learners were quite willing to do this. The teachers teaching style encouraged confidence in the learners. The teacher was also able to elaborate on the learners responses.

Cognitive challenges was rated a 4. The learners were provided with tasks that challenged them cognitively. Tasks assigned to learners engaged the learners in complex thinking. The learners were very capable of handling these tasks. The teacher used the guide book in a very innovative way. The teacher used the foundation phase poster for signs. The teacher made her own meanings. Learners were asked to match the meanings to the signs. Several questions per sign were asked. The teacher even asked the learners general knowledge questions related to the signs. The teacher continually asked questions to reinforce concepts and to elaborate on these concepts.

The class was divided into groups to play the mime game. The road signs were mimed and learners from other groups had to guess what signs were being mimed. The learners were able to mime the signs with no prompts from the teacher. The learners identified the information sign. The teacher was able to discuss the meaning of the sign. The learners knew that this sign helped people that were not locals. This was followed by a discussion on foreigners and tourists.

Classroom management was rated 4. The teacher managed the class in an excellent manner despite the different types of activities. The learners were able to move from one activity to another with

minimal disruptions. They were always focused and on task. The teacher had control of the class at all times and implemented the lesson very effectively. The researcher deemed this to be the most innovative and creative lesson that was implemented. There were very little reminders for learners to be on task. The teacher had even composed songs with simple rhymes for the learners to guess which song was being sung. This lesson was a well-managed, interactive lesson.

Contextualization of lesson was rated a 4. The teacher was able to make the content very meaningful to the learners by being able to draw on the learners own experiences and personal backgrounds. During the entire implementation of the lesson the teacher made references to what the learner was familiar with and, what the learners could identify with. Because of this the learners were able to answer with confidence. The learners mentioned the construction on the N3 and the absence of traffic police to assist with congestion in the morning. The learners easily identified signs that were in and around their neighbourhood and school. They were able to relate these signs to their own experiences. For learner activity at the end of the lesson learners were given a worksheet on road signs which they had to colour with the correct colours as well as write the correct name and shape under each sign.

(See APPENDIX 16).

Lesson 5 School 5. Teacher E

For this lesson, the teacher used a range of road safety posters to discuss road signs, the traffic light as well as safe behaviour on public transport. The teacher also read a story from the Foundation Phase story book, *Road Safety Superstars*, and related it to the poster. The story was about Themba and Dudu walking to school on Page 6 of the story book.

FIGURE 17

Classroom Observation School E

Outcomes of the lesson was rated a 3. Goals were somewhat clear and explicit in terms of what the lesson outcomes were. The teacher presented a structure to the learners in terms of what was expected of them to accomplish. By the end of the lesson the learners had learned the key elements of the road signs and what they meant. The traffic light was discussed and what type of behaviours had to be observed at the change of each colour They were also able to colour the traffic lights correctly and paste them in their workbooks.

Discussion was rated a 3. The teacher engaged the learners in joint activities and engaged them in conversation. The learners actively participated in the lesson, because the teacher provided the opportunity for the learners to engage in conversation. The learners were able to confidently speak about road safety issues that they encounter in their daily lives, especially on the way to and from school.

Cognitive challenge of the learning tasks was rated 2. The teacher engaged the learners in tasks that required minimal complex thinking. The tasks that were assigned to learners required recall of basic information. The learners were engaged in skill drill activities. They were required to cut and paste the traffic signals in their workbook and to colour them appropriately. They were subsequently asked to explain what each colour represented and how the road users should respond to each colour that appeared while they were at the traffic lights.

Classroom management was rated 4. Classroom was well managed. Learners were on task in a quick and efficient manner. There was good rapport between the learners and the teacher. There were minimal reminders from the teacher to behave or to concentrate on their tasks. This lesson also involved different activities. There was a smooth transition from one activity to the next with minimal disruptions. The teacher had good control of the class this enabled her to implement the lesson efficiently and effectively.

Contextualization was rated a 3. The teacher was able to make the lesson meaningful to the learners by relating it to their everyday experiences. She started the lesson by showing the learners the

foundation phase on Safe Places to Play as well as the chart on Road Signs, the traffic lights and safe and unsafe behaviour on taxis and buses. The teacher was able to draw their attention firstly to what the learners could identify with and what they had already experienced. She also reminded them about the upcoming excursion that was scheduled for the following Tuesday. The teacher asked them to point to the chart that displayed the correct way to behave on the bus. They were able to do so. The teacher also asked them to list all the unsafe behaviour of learners on the bus. They were able to list all the unsafe behaviour.

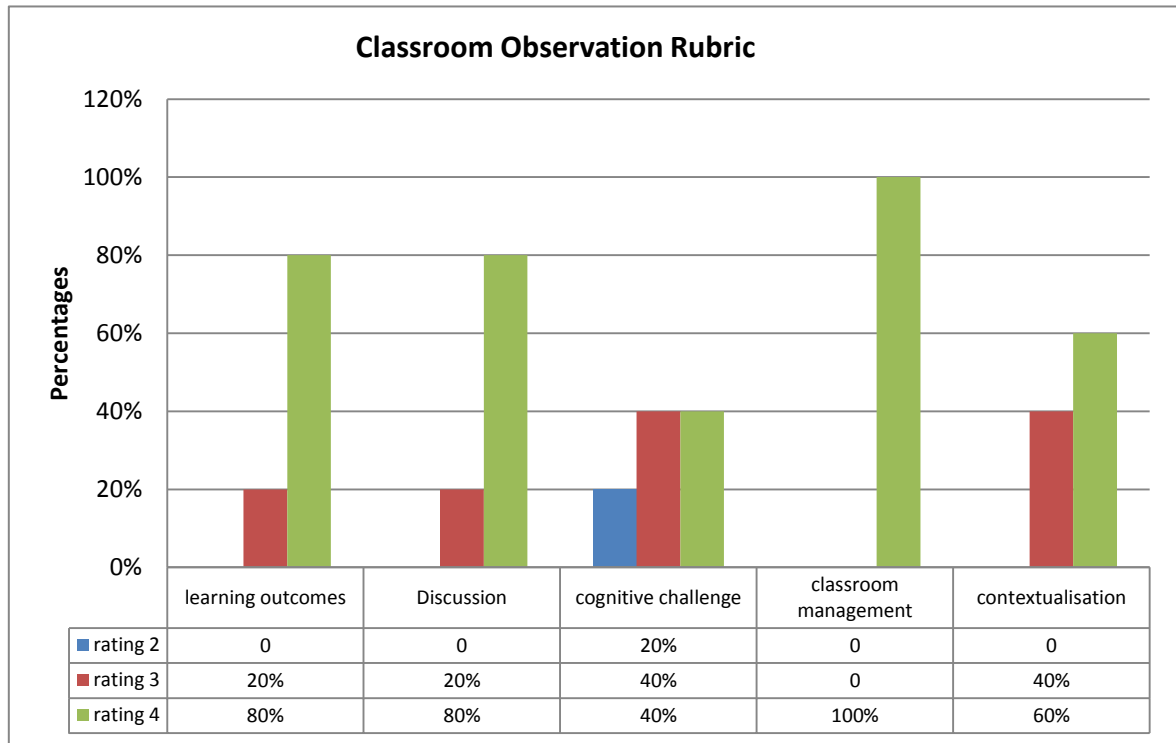
The summary of the ratings for the classroom observation will be presented in table form below in TABLE 13

TABLE 13
Classroom Observation Rating

| Dimension | Teacher A | Teacher B | Teacher C | Teacher D | Teacher E |
|--|------------------|------------------|------------------|------------------|------------------|
| Learning outcomes | 4 | 4 | 4 | 4 | 3 |
| Discussion | 4 | 4 | 4 | 4 | 3 |
| Cognitive challenge of learning tasks | 4 | 3 | 3 | 4 | 2 |
| Classroom management | 4 | 4 | 4 | 4 | 4 |
| Contextualization | 4 | 4 | 3 | 4 | 3 |

This summary will be presented in graph form in FIGURE 18

FIGURE 18
Classroom observation Rubric



6.4.2 Discussion of Observations

Pinar et al 2002, argue that strong teachers avoid following too closely textbooks and relying exclusively on teacher guides. They (ibid) further state that strong teachers often create their own lessons and teaching materials. Fullan (2001) supports this argument by stating that teachers who were successful with all students, taught in schools with a strong professional community, engaged in making innovations that support teacher and student learning and success.

In the constructive view, which underpins this study as discussed in Chapter Five Section 5.2., teachers are facilitators of knowledge and students are encouraged to construct their own knowledge through problem solving tasks. Constructivism posits that knowledge is actively constructed by the individual, while striving to make sense of the world on the basis of personal filters. These personal filters include experiences, goals and beliefs. In terms of learning, the theoretical principles, associated with social constructivism suggest that learners test and make interpretations of new experiences until satisfied (Ierland, 2005). They also construct

meaning through social interactions within the groups to which they belong. In the transmission mode, the teacher is the only source of knowledge and students are encouraged to acquire that knowledge without discussion (Handal, 2007). This supports the assertion of the characteristics of Outcomes-based education as discussed in Chapter Four Section 4.8, that there is a shift towards learning rather than teaching (Meyer, 2000).

All five teachers observed displayed good organizational and classroom management skills. Muijs (2010) state that fair and proactive classroom management, clear and focused direct instruction, interactive and active teaching that involves the learners using varied teaching methods and creating an academically focused but supportive classroom climate are linked to better performance. Subsequently this enabled the learners to maximize their opportunities to acquire the necessary knowledge, skills and attitudes to make them safe and responsible road users. Ornstein & Hunkins (1993) state that implementation involves attempts to change individuals' knowledge, actions, and attitudes. In this case the implementation of the road safety education programme will change the learners' knowledge, actions and attitudes regarding road safety. This view is consonant with the theoretical perspective of symbolic interactionism, within which the data gathering method is positioned. In this view according to Charon (2000), meaningful reality is based upon interactions between human beings and their world. It is also developed and transmitted through symbolic communication within a social context. It is through definition and action, if individuals are endowed with the appropriate knowledge and tools, they can assume control of themselves and their environment- defining, thinking, and controlling their choices into the future. The road safety education programme has been designed to enable learners to assume control of their environment by making the appropriate choices to make them to be safe and responsible road users.

Embedded in this theoretical framework is an epistemology of constructivism that assumes a pluralists and relativist view of the reality. In this view the road safety education programme is viewed in terms of multiple, mental constructions held by the teachers and the learners. A key feature of this approach, is that teachers' interactions with learners about learning did not focus simply on increasing learners' knowledge about road safety, but aimed to increase their awareness of their learning

and how meaning was constructed. In accordance with the phenomenological perspective which underpinned this study, the teachers also explicitly drew on the learners early conceptualisations of road safety and their experiences of it. It was discovered that learners hold a considerable body of knowledge of road safety. For instance they were able to easily understand the stop sign and all its inherent implications. This knowledge was modified on the basis of their experiences and knowledge. Cullen (1999) states that reconstructions are sometimes more realistic for young learners than the original road safety rule. Learners know that they can be knocked over if they play on the road. Such conceptions of road safety are constructed on the basis of their everyday experiences (ibid).

Teachers were able to integrate knowledge acquisition with the fun of being interactively involved in the lesson. The researcher had observed that all the learners enjoyed the learner activity. The learners in the five different classrooms were involved in different types of learner activity which they had thoroughly enjoyed. The teachers had provided opportunities for the learners to accomplish the tasks and activities assigned to them in different ways.

All five lessons observed that teachers were highly competent in the implementation of the lessons. They started the lessons by stating what road safety outcomes they had hoped to achieve by the end of the lesson. The outcomes were explicit and all the teachers had achieved their outcomes by the end of the lesson. The teachers were quite knowledgeable about the road safety content supplemented by their own knowledge of road safety issues. All teachers had implemented lessons that were well planned and organized. The lessons were varied and innovative. The teachers were able to engage the attention of the learners at all times even though some of the classes had large numbers.

The lessons were implemented in the style that was consonant with the RNCS. The lessons were learner-centred. There was a concerted move away by all five teachers, from the traditional, teacher-centred, direct instruction and drilling to a more learner-centred understanding. This involved active participation by all learners. None of the teachers observed indulged in the old style of standing before the class and drilling concepts to the learners. The resources that the teachers used were adapted and expanded from the teachers' guide book. The teachers' beliefs, attitudes and

perceptions of the road safety education programme influenced the way that the teachers used the resource materials in the class during the implementation of the lesson. This corroborated with what the teachers averred about the course packs and teacher's guide-book. That it was "easy to use and adapt", the "learning outcomes were clearly stated", the "language was clear and unambiguous", lessons are "connected to daily life", and learners can "relate content to their own experiences". The content chosen was significant and the learners could identify with it. These implicit beliefs about teaching the road safety education programme, heavily influenced the teacher's classroom practices. This contributed positively to accomplishing the intended outcomes of the lesson.

There was good rapport between the teachers and the learners. Learners were encouraged to actively participate in the lessons. They subsequently did so with confidence. The teacher provided ample time for learners to answer, even learners that were shy. The teacher prompted responses from these learners and praised them warmly for their efforts and ideas. The teachers even encouraged learners to ask questions and encouraged other learners to answer before the teachers provided an answer. All lessons observed were relaxed interactive lessons. The teachers were able to encourage learner engagement and understanding through the use of concrete visuals and also by incorporating games into the lesson. There was mutual respect between the teachers and the learners. Teachers and learners generally worked well together. Learners were allowed to come forward to demonstrate either on the board or in front of the class when the occasion warranted it. Learners were also provided with opportunities to engage in group work and for group discussions. Studies that have focused on connectionist beliefs (the belief that teaching is based upon dialogue between teachers and learners which helped teachers to better understand their learners and allowed learners to gain access to teacher's knowledge), found that this shaped their classroom behaviour and guided their classroom practice, Muijs & Reynolds (2002), as cited in Muijs (2010, p. 859). During the reflective dialogue between the teacher and the learners, the teachers were concerned not only with increasing the learners' knowledge of road safety rules and to acquire skills but also engaged the learners in order to increase their awareness of what they had learnt and how they had learnt it.

Lessons were presented to the learners that challenged them cognitively. Learners were continually asked to explain and justify their answers. The teacher asked learners questions and did not provide them immediately with the 'right' answers. Learners were rather prompted to think through the questions and were required to explain why they had answered so. The teachers had also encouraged alternate answers. If the answers were wrong, teachers did not just correct the answers or asked for the correct answers, learners were invited to state why that answer was wrong and was then asked to provide the correct answer.

All five classrooms observed were well-managed during the implementation of the road safety education programme. Learners were on tasks and required very little or in some classes, no reminders to behave or to concentrate on tasks. The pace of the lessons, were well managed for the different types of activities that the teachers had planned.

The teachers were able to contextualize the lessons so that the learners could identify with what was being taught. This is consonant with the constructivist theories, which underpins this study. This theory states that facilitating learning also requires an appreciation of how the theoretical principles that underpins the process of learning can be applied to real world situations. It was also observed that teachers took into account learner's prior knowledge and experiences where road safety was concerned. The teachers also ensured that the learners could relate their own experiences to the content that was delivered. This ensured that the learners were enthusiastically involved in the lessons. Active participation by all students was encouraged in all five classes. De Vries et al (2002), state that in most pedagogies based on constructivism, the teacher's role is not only to teach and assess but also to engage with the learners while they are completing activities. The teachers are also required to pose questions to the learners to promote reasoning. In this way the learning experience becomes a shared experience. The lessons that the teachers had chosen were also relevant to the learners' cultural and home backgrounds as was evidenced with Teacher A in School A. The learners could also readily identify with the concepts that were being taught. The teachers were able to connect the lessons to real world applications of road safety. The teachers were able to do this by relating the lessons to real road safety issues that learners confront daily to and from school. These issues were crossing the

streets safely, the dangers of playing on the roads, speeding, the importance of wearing brightly coloured clothes, wearing safety helmets while riding a bike. Discussing their activities with adults and fellow classmates made the cognitive learning embedded in their experiences more explicit and facilitated their understanding of traffic and the roads and how to negotiate in this in a safe and responsible manner (Cullen, 1998).

The analyses of the classroom observation revealed that the teachers had no problems with implementing the road safety education programme. This was corroborated by statements made during the interviews. The teachers found the course packs to be good resource material that was easy to use in the class. The teachers also iterated that it was easy to integrate the lessons across the different learning areas. It was observed that the road safety education course packs were viewed as a useful medium through which the teachers could begin to embed the curriculum and its associated methodologies into their classrooms and schools. The researcher observed a successful integration across the learning areas as implemented by Teacher B at School B. The teachers acknowledged the value and the merits of teaching road safety from an early age. This was evident in the way the teachers ensured that the lessons were interesting and interactive, so that learners could relate it to their own experiences of road safety. The observation data revealed that teachers had a broad repertoire of strategies to implement the road safety programme in creative and innovative ways. Teachers were able to make their own teaching aids to supplement the ones received in the course packs. They were also able to make their own worksheets and learner activity sheets. This gives credibility to the teachers' comments during the interview, "we do the best we can do under the circumstances". The researcher had observed that the teachers had indeed done the best that they could do. Teachers are always willing to help learners improve their learning despite the constraints that they had alluded to in the interviews. The various methods of delivery observed during the classroom observations had revealed the teachers' abilities to stimulate, motivate and engage learners in activities that sustained their interest and attention during the implementation of the lessons. Raftery & Wundersitz (2011) highlights the importance of this to learning.

Given the overwhelming support from the five teachers to the implementation of the road safety education programme, because of its intrinsic value and worth, in particular the understanding of the various factors that interact and contribute to potential harm in a road safety context and the learners' abilities to identify these factors as a road user will assist to making a safer generation of road users. In conclusion to the classroom observations, the researcher had noted that the implementation of the road safety education programmes in the five primary schools facilitated both constructivist and socio-cultural processes of learning.

In the next section the analyses of the questionnaire will be presented. This will be done to answer critical question three of this study.

6.5.1 The Questionnaire: Introduction

According to Pinar et al (2002) learners are a vastly under-resourced aspect of research on curriculum change. Sometimes the expectation is that conducting research with learners means engaging with people that are less capable than the adults of being part of a research project (Chritensen, 2010). It is important, therefore, to demonstrate through one's research practice that learners' views are indeed an important and a central part of the investigation. The researcher felt that it was important to include the learners in this study to answer research question 3., to determine whether the learners had acquired the necessary knowledge to make them safe and responsible road users. In the literature review in Chapter Four Section 4.14. summative evaluation was discussed to determine the impact of the new curriculum. The focus is on the extent to which the implementation of the road safety education programme will lead to the desired outcomes, that is to make the learners safe and responsible road users. Because learners are the ones that actively participate in the implementation process together with the teachers, their response to the implementation of the road safety education programme was deemed to be as important as the teachers' response.

Although the learners' role in curriculum implementation is interpreted through the teachers during classroom observation and the interviews, the learner's questionnaire will help to understand whether the learners were acquiring the necessary skills and knowledge to make them safe and responsible road users.

6.5.2 Administration of the Questionnaire

The questionnaire for learners consisted of ten questions. These were simple questions that the researcher deemed to be appropriate for primary school learners in the intermediate phase. The researcher did this to ensure there was consistency. The first two questions dealt with personal particulars of the learners. The remaining eight questions aimed at investigating their responses to learning about road safety at school.

In order to expedite this process and to ensure that there was a hundred percent response rate, the researcher requested the teacher to identify the learners who will respond to the questionnaire. The researcher did not make any stipulations to the teacher as to what type of learners to choose, based on either gender or academic ability. The researcher did not deem this to be important as this was not within the scope of the study.

The teacher explained to the learners what they had to do and requested their cooperation in completing the questionnaire. Initially the researcher had also compiled a questionnaire in IsiZulu for the rural learners. The teacher, as well as the learners, assured me that there was no need for this as the questionnaire was easy to understand and that they could answer it. The learners completed the questionnaire and handed them to me.

The researcher had initially planned to use fifty learners to answer the questionnaire. Ten learners, from each of the five schools. The researcher had subsequently decided to use only the thirty learners from the Intermediate Phase to answer the questionnaire. The researcher had felt that the learners from the foundation phase may have a problem answering the questionnaire.

6.5.3 Analysis of the Response to the Questionnaires.

The responses to the questionnaire were analysed and commented on from literature sources.

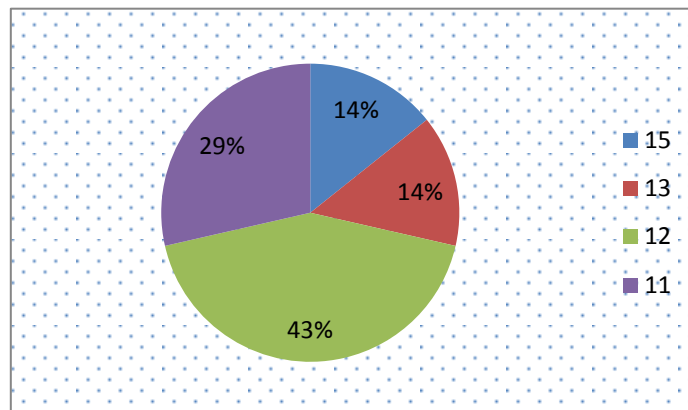
Question 1 and 2

Response to this question will be presented in table form in TABLE 13. There were seven Grade 6 learners between the ages of 11 and 15 who answered the questionnaire.

TABLE 14
Grade 6 Age Distribution

| Age | Number |
|-----|--------|
| 15 | 1 |
| 13 | 1 |
| 12 | 3 |
| 11 | 2 |

FIGURE 19
Grade Six Age Distribution Pie chart

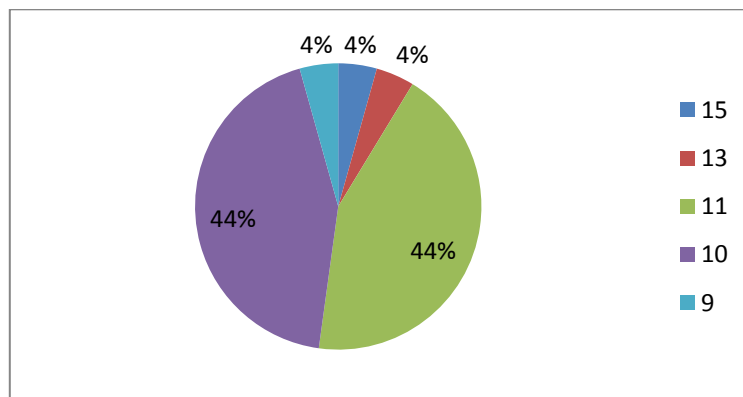


In Grade 5 there were 23 learners between the ages of 9 and 15.

TABLE 15
Grade 5 Age Distribution Pie Chart

| Age | Number |
|-----|--------|
| 15 | 1 |
| 13 | 1 |
| 11 | 10 |
| 10 | 10 |
| 9 | 1 |

FIGURE 20
Grade 5 Age Distribution Pie Chart



An analysis of the ages was carried out because the following discussions are based on what learners can accomplish in terms of road safety at certain stages in their developments. Development is considered to be continuous and lifelong. According to (Di Pietro, 2004), it is multi-dimensional and includes biological, cognitive and socio-emotional dimensions. Learners progress through a number of developmental phases from age six to fifteen years (the focus group for this study). Their abilities to negotiate the vagaries of the road environment in a safe and responsible manner,

develops with age. Learners are expected to achieve road safety knowledge and skills with increasing percentage of sophistication and competence as they progress through their schooling career.

Question 3

Did you learn anything about road safety before this lesson?

There was a 100% response to yes to this question.

This revealed that learners were learning about road safety in their schools, because this was not their first road safety lesson. If road safety is learnt on a continuous basis, learners can subscribe to norms and values that are inherent in road safety education to make them safe and responsible road users. The aim of road safety education is to deliver developmentally appropriate education that prepares learners to become safe and independent road users. Di Pietro (2009) asserts that road safety education raises the knowledge of learners and provides some skills to use the roads in a responsible and appropriate manner. It enables them to problem solve, so that if they encounter a dangerous or an unusual situation, learners will be able to address it in a safe and responsible manner.

From the responses of the learners to questions that were asked during the lessons observed, the researcher had noted that the learners were able to answer questions adequately on elements of road safety that were not part of that day's lesson. There was evidence of prior knowledge being gained about road safety. This suggests that the learners had been learning about road safety before. This concurred with the teacher's assertions that they were implementing the road safety education programme.

Question 4

Did you understand the lesson?

All learners (100%) responded by stating "yes" that they had understood the lesson. The lessons are organized according to the abilities of learners at particular Grades. There are a variety of approaches to implementing road safety education. Research as

advocated by the (OECD, 2004), strongly supports an age appropriate behavioural approach for younger children, while recognizing the need for resources to implement it. The road safety education programme fulfills the need to teach learners about road safety from an early age. The lessons that were implemented were appropriate for each phase, thereby making it easy for the learners to understand. The learners could also identify with the lessons because the teachers had chosen lessons that were within the realm of the learners' everyday experiences. This gives credibility to the theory of constructivism as espoused by Piaget, who articulated mechanisms by which knowledge is internalized by learners. He suggested that through the process of accommodation and assimilation, individuals construct new knowledge from their experiences. When the learner assimilates knowledge, they incorporate the new knowledge into an already existing framework. This may occur when the learner's experiences are aligned with their internal representation of the world (Wood, 1998). Accommodation on the other hand is the process of reframing one's mental experiences of the external world to fit in with the new. Therefore, where the road safety education programme is concerned, the learner will learn new experiences every year to fit in with their existing knowledge of road safety. Curriculum needs to maximize the learners' opportunities to establish an enquiry approach to learning and to use a range of resources with the intention of leading the learner along the most appropriate path to achieve the desired outcomes, Griffin (1998) as cited in Proudford (1999).

Question 5

Is it important to learn about road safety in all learning areas?

All learners agreed that it was important to learn about road safety in all learning areas.

According to the OECD (2004), road safety education is a lifelong learning process. For learners', education typically involves specific road safety education programmes introduced at different stages of development. This will include appropriate pedestrian behaviour, basic skills and traffic training for the intermediate phase. The lesson observed in the intermediate phase was for bicycle safety. These lessons will be expanded in the general education and training phase to include higher

level skills as learners transfer from primary school to secondary school. Understanding the basic elements of the traffic system and the behaviour of traffic implicitly underpins the skills and rules-based approach to education and training.

It is important to learn about road safety across all learning areas. This will emphasise skills and concepts learnt to become a safe and responsible road user. In this way information will be imparted which will be able influence attitudes and behaviour where road safety is concerned. Learning about road safety across all the learning areas will complement and enhance road safety education. The OECD (2004) argues that road safety education is considered to be important and effective in contributing to a reduction in road fatalities. Road safety education will be able to accomplish this by building knowledge, skills and pro-social attitudes to safer road use. Long term benefits can be achieved from a sound road safety education programme being delivered to learners from pre-school to Grade 12.

As learners progress through school, continuing integrated road safety education in all eight learning areas has been advocated in preference to occasional talks on road safety or less integrated approaches. Skills needed to interact safely with traffic are most effectively developed using a supervised problem-solving approach and guided experience (OECD, 2004). Education measures need to be tailored to the learner's stage of development. It must begin with practical pedestrian skills and later progress to higher level skills to match the learner's increasing independence from being pedestrians and ultimately to being young drivers.

The (OECD, 2004) report strongly advocates road safety education to be part of the National Education Curriculum at all levels from pre-school on, with regular high quality inputs to develop learner's skills, risk awareness, attitudes and knowledge.

Question 6

Do you know how to avoid dangerous situations on the road?

All thirty of the learners answered yes to this question.

According to (Di Pietro, 2009) learners between the ages of five and ten years have a conceptual understanding of danger. It is further stated that they are able to identify

some correctly and are able to casually reason about them. They are able to differentiate safe and dangerous situations and are able to explain why situations are dangerous. Learner's ability to discriminate against dangerous and safe situations improves as they get older, as is their ability to reason casually (UK, DFT, Report no.10).

Learners between five to seven years of age possess a global understanding of danger, but have limited knowledge of what to actually be aware of and what to ignore at the roadside. This may lead to the learner being influenced by whatever circumstances they find themselves in by dashing across the road or by displaying other types of impulsive behaviour. If learners are prompted they will be able to remember particular situations or incidences but cannot adapt the skills or behaviour to cope with something that is totally new or different.

At about seven to eight years of age learners show clear improvements in strategic thinking and the ability to undertake exhaustive visual searches of the road environment. In other words they make predictions rather than sample the road environment. Di Pietro (2009) explains further that around the ages of eight to nine years, learners experience developmental shifts in their understanding of the pedestrian tasks and ability to reason casually.

Question 7

Do you know all the road signs you have learnt?

All thirty learners responded yes to this to this question. The researcher had also observed that the learners answered very confidently, when they were asked to name the signs. The Foundation Phase as well as the learners from the Intermediate Phase were able to identify the signs easily. The learners were also able to know what the consequences were if the signs were not disobeyed.

Studies by (Di, Pietro, 2004; 2005), have revealed that learners easily learn to classify objects, such as road signs and objects. Learners at primary school level are able to reliably classify objects that differ in dimension or feature. This is true if the contrasts are fairly obvious, like colours or shapes. During the lessons it was observed that the

learners were able to identify the different road signs. The Foundation Phase learners were able to identify them by their colours and shapes. They were able to colour the shapes appropriately and explain what the signs stood for. These were the simple signs that learners could identify with and signs that they encounter on a daily basis. The Grade three learners were able to understand the concept of the *information* and *tourism* signs even though they may not have encountered these signs on a daily basis. This is attributed to variations in cognitive performance. This variation occurs because learners depend on the social context or circumstances to develop new thinking skills (Di Pietro, 2004).

Di Pietro (2004), further state that if appropriate education and training methods are used even learner's, younger than five years, understanding and behaviour can improve. The five year olds in the Foundation Phase were able to respond correctly to the teacher's question, "*What will happen if daddy sees this sign* (showed them the stop sign) *and did not stop*". Learners responded correctly by giving the following answers, "*He will knock the other cars*"; "*He will knock the people*"; "*There will be an accident*"; "*People can even die*". This revealed that learners did know the signs as well as what they meant and what the consequences will be if they did not obey the signs.

Therefore, it is important for learners not only to learn about road rules but to understand why the rule is applied. They should also understand what the consequences will be if the rule is not applied.

Question 8

Do you understand what the road signs mean?

Symbolic interactionism, is the process of interaction in the formation of meanings for individuals (Nelson, 1998). Blumer as stated by Nelson (ibid), defined three core principles to his theory. They are meaning, language and thought.

The first core principle of meaning states that humans act toward people and things based upon the meanings that they have assigned to those people or things. Symbolic interactionism holds the principle of meaning as important in human behaviour. It is

the meanings that learners assign to road signs that is important. Ultimately understanding the meaning of the road signs and the messages that they convey is important to become a safe and responsible road user. Learners become increasingly proficient at using symbols, words or actions that stand for other things (Di Pietro, 2004). Symbolic thinking helps learners to organize and process what they know. The entity or idea that the sign represents is decoded by the person who views it and interprets the sign. They extend their belief in object permanence to include identities, or constancies of different types. That is a road is still a road irrespective of its width, length or direction. Learner's cognitive skills are based on their ability to represent experiences symbolically.

The second core principle is language. Language provides individuals with a means to negotiate meaning through symbols. Mead believed that naming assigned meaning, subsequently naming was the basis for human society and the extent of knowledge (Nelson, 1998).

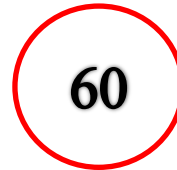


Symbolic interactionism posits that meaning for objects is the meaning given to it by society itself, the meaning given to it by an individual's experience of it and the meaning that the object is supposed to possess. For instance when the learners are first shown the stop sign, they must interpret the sign to understand its message and then its implications. When they are confronted by the stop sign in an actual traffic situation, they must recall what other road users' belief, attitudes, and meanings are attached to the sign (Blumer, 1969). The learner must then determine what meanings society expects the sign to possess. Finally, the learner will access his or her personal experiences with the sign. These experiences and thoughts combine to form the interpretation and ultimately the understanding of the sign leading to comprehension

as a whole. They organize behaviour with reference to what they symbolise (Strykes, 2011).

Learners in the foundation phase were able to identify the different shapes and colours. Learners in the intermediate phase were able to identify the shapes and colours as well as understand why the signs had different shapes. They learnt that:

Regulatory signs were round,



Warning signs were triangular,



Information signs were rectangular,



The third core principle is that of thought. Individual's interpretation of symbols is modified by thought. Thought based on language is a mental conversation or dialogue which requires role playing, or imagining different points of view. Language is a fundamental feature of development throughout the lifespan. Language acquisition as asserted by (Seifert, 2000) as cited in (Di Pietro, 2004), partly involves mastering its structures and partly involves learning how language usage is learned.

Question 9

Do you obey the road signs?

37% of the learners said that they obeyed the road signs sometimes and 63% said that they obeyed the road signs all the time. This reveals that over 60% of the learners obey the road signs all the time.

Road signs involved the learners in cognitive processes that enabled them to heed the signs. The learners were able to learn that disobeying the signs could be fatal for them. This was also related to their prior knowledge concerning road safety. The experience of manipulating the use of signs to convey meaning about traffic and pedestrian behaviour enabled learners to construct a holistic understanding about road safety. Cullen (1999) states that learners are able to rework conventional road safety rules and practices on the basis of their specific experiences. It is further stated that this is in accordance with cognitive constructivist explanations (ibid). Learners between the ages of five and twelve are skilled at concrete operations. These are referred to as mental activities which are focused on real, tangible objects and events. Learners at this age are able to understand and apply rules in given situations. This can subsequently be transferred to the road environment.

Question 10

Learning about road safety has made you a safe and responsible road user?

All thirty learners agreed that learning about road safety has made them become safe and responsible road users. The veracity of this can also be judged if the researcher actually observed road user behaviour over a period of time after the introduction of the road safety education programme. But since this was not within the scope of this research project, the researcher will not be able to verify this, but will be making an assertion based on the classroom observations, as well as to the response to the questionnaires, that learners have been learning road safety skills and knowledge to make them safe and responsible road users. Teacher C at School C had mentioned during the interview that she had observed a change in behaviour after these lessons were introduced. She had iterated that learners were more cautious when crossing the

roads after school and in the mornings outside the school gate. Teacher E at school E had indicated that in the Foundation Phase road safety education was conducted every morning as part of the Life Orientation learning area.

In their study (Milosevic & Gajic, 1986), revealed the effect of repeated presentation of the same road sign. They found levels of recall that ranged from 2% to 20% when the road sign was presented once. These levels subsequently increased to about 34% when the sign was shown repeatedly over a short time interval. The researcher hopes that by continually being exposed to road safety education, the recall of safe road user behaviour will enable the learners to become safe and responsible road users.

According to studies conducted by Cullen (1999), learners who had participated in reflective dialogues with adults were able to conceptualise their learning about road safety in a coherent, integrated way that revealed their understanding of roads and traffic, as a system while learners who did not participate in such activities reported discrete pieces of information. Learners that receive comprehensive road safety education are able to link separate ideas together to demonstrate understanding of how traffic flow can affect safety at a pedestrian crossing.

Siegler & Chen (1998) state that older learners transfer problem solving schema under a wider range of conditions as compared to younger learners. They (ibid) also warn that if younger learners are only exposed to a vague understanding of the rules, they do not assume the next step and search for deeper meaning or application of the dangers that they face. Subsequently, if they do not understand the rule, it cannot be applied to a new situation. Therefore it is vitally important for learners to not only learn the rules of the road, but to also understand why that specific rule is applied to a specific situation.

The development of a personal morality could involve making decisions about using the roads and vehicles in an unsafe or illegal way or in a conforming and conservative way (Di Pietro, 2005). This view is also consonant with the theory of symbolic interactionism as espoused by Plummer (2010).

Human knowledge is not fixed or impartial, but is rather located in pragmatic spheres and is grounded in practical social life itself. There is a need to develop an empathetic

and democratic grasping of the social life. This also allows one to get close to experience and to inspect the moral implications of living (Plummer, 2010). Education is the foundation, platform and catalyst that supports all programmes to bring about the desired changes in road safety behaviour, skills and attitudes. The key objective for road safety education is to make all road users risk- averse and equipped with the appropriate knowledge and skills (Di Pietro, 2009).

6.5.4 Synthesis of Analysis of the Questionnaires

In this section a synthesis of the analyses of the questionnaire will be presented to determine whether the learners have acquired the necessary knowledge to make them safe and responsible road users. Both measures B and C are important in implementing an innovation. Generally these measures are used to determine teacher success in implementing the innovation and teacher accountability. For the purpose of this study, the researcher will be able to determine teachers understanding and perceptions of the road safety education programme and the learners' response to the implementation process. Thus the combination of B and C is important in that an accountability system based only on one, will be distorted.

From the analyses of the questionnaires, it is revealed that the learners were quite enthusiastic about learning about road safety. They revealed that learning about road safety was important because of the number of accidents that occur in our country on a daily basis. The study also revealed that it was important to learn road safety rules, so that the road users will not cause unnecessary accidents. They also iterated that people must obey the rules of the road so that they could be safe. From the classroom observations the researcher noted that the learners enjoyed the interactive nature of the lessons. Learners were willing to participate in all the activities with confidence. The learners were active participants in the lessons. They were not passive receivers of knowledge. This was in-keeping with the outcomes of the RNCS. During observation it was noted that teachers were facilitators of knowledge rather than dominating transmitters of knowledge. It was also clear that during the classroom observations, the practical sessions were crucial in showing the learners how to relate the knowledge they had gained in the classroom to real roadside situations.

Geyser (2000), avers that both objectives and outcomes deal with what the learners should be able to do as a result of the learning opportunities presented by the teacher. He (ibid), further states that behavioural objectives are short term objectives, and on the other hand outcomes refer to what the learner should be able to do at the end of the series of lessons, or at the end of the course. With the implementation of the road safety education programme the desired outcome is to make the learners safe and responsible road users.

6.6 Summary

In this section the data collected from the interviews, classroom observation and questionnaire were analysed and presented using narratives, as well as tables and pie charts. The analysis, was supported by literature sources.

The three data gathering methods: teacher interviews, classroom observation as well as learner administered questionnaires, employed in this study allowed for triangulation of the results to ensure validity and reliability as discussed in Chapter Five Section 5.8.

In the next chapter the summary of the study, as well as the recommendations and conclusions will be presented.

CHAPTER SEVEN

SUMMARY, RECOMMENDATIONS AND CONCLUSION

7.1 Introduction

In Chapter Six, an analysis and an interpretation of the data collected on implementing the road safety education programme and curriculum change was presented. Data was collected from conducting interviews and by classroom observations of the five teachers and from questionnaires that the fifty learners answered from five primary schools in the Pietermaritzburg region.

This was done to answer the following research questions:

- 1). What are the teacher's beliefs, attitudes and perceptions to implementing the road safety education programme in the context of curriculum change?
- 2). What are the teaching and learning constraints that teachers experience during the implementation of the road safety education programme?
- 3). Did the learners acquire the necessary skills and knowledge to make them safe and responsible road users?

The aims of this study have been achieved by a literature study that was presented in Chapters Three and Four. The empirical investigation of the study was presented in Chapter Six.

7.2 Summary

7.2.1 Introduction

This section will present a synopsis of the study. This will include the theoretical underpinnings of the study, the design of the study and the data gathering methods that were used to answer the critical questions of the study. The next section will synthesise the major findings and discussions into a coherent whole regarding the teachers' beliefs, attitudes and perceptions to implementing the road safety education

programme in the context of curriculum change. Section 7.4. will make recommendations towards effective curriculum implementation in a context of change. Section 7.5. will make recommendations for further research to be carried out in implementing the road safety education programme and its effectiveness in enhancing safe and responsible road user behaviour. Section 7.6., will discuss the implications of this study for teaching and learning. Section.7.7. Conclusions are drawn from the teachers' beliefs, attitudes and perceptions about implementing the road safety education programme in the context of curriculum change.

7.2.2 The Theoretical Framework.

The theoretical framework that underpinned this study was discussed in Chapter Four. The study was based on Michael Fullan's theory of change and its influence on curriculum implementation. A review of the literature pertaining to educational change has been presented in Chapter Four to strengthen the underpinning theory of educational change within the context of implementing the road safety education programme.

Teachers fulfill an important role in curriculum innovation in school. The implementation of educational change is strongly influenced by teacher's perceptions of and attitudes towards a specific change. The aim of this research was to solicit the teachers' beliefs, attitudes and perceptions to implementing the road safety education programme in the context of curriculum change. These perceptions are not static but change and evolve during the implementation process (van den Akker, 2009). The extent to which teachers are prepared to innovate in schools is also affected by curriculum innovations. The willingness to change relates to the views that teachers have on the underlying problem that is addressed by this particular change. The underlying problem to this change is the unacceptably high incidence of road fatalities in our country. Thijs & van den Akker (2009) argue that if teachers view the problem in a serious light, they will feel that they can contribute to the solution. Subsequently their willingness to change and implement the innovation will increase. The study found that the teachers acknowledged the value and the worth of the road safety education programme, therefore they were quite willing to implement it in their classes. Teachers in this study accepted that the change was needed and were prepared to implement it. Thijs & Van den Akker (2009), also asserts that teachers

would like concrete information to help them with implementation. The teachers in this study were issued with road safety course packs and teacher guide books. These were the concrete materials that helped them with implementation. These course packs were aligned to the RNCS.

In Chapter Four, other factors that assisted with curriculum implementation was discussed. These included the school organization in which the change had to be implemented. The two main aspects of the school organization are the school culture and infrastructure. With regard to school culture, teacher collaboration and leadership were discussed as important issues. Collaboration between teachers in the same school as well as with teachers from other schools, was seen to be crucial to develop and implement change and to reflect on its outcomes. Communication between the teachers was important so that there was cohesiveness in implementing curriculum change. Good leadership was also seen to be essential to curriculum change and implementation. A productive school structure needs corresponding infrastructure and resource materials to assist in curriculum implementation.

Teacher development and training was discussed as another important factor for successful curriculum implementation

7.2.3 Design of the Research

In Chapter Five the research methodology was discussed. This study was interested in soliciting the beliefs, attitudes and perceptions of the teachers to the implementing of the road safety education programme. To research education in an era of globalization and transition requires the use of methodologies that are responsive to change and uncertainty (Hartas, 2010). For this purpose a qualitative research method was employed. This enabled the researcher to question, observe and interpret the responses of the participants in this study.

Theory in educational research entails multiple meanings, fluid explanations, interpretive frameworks, epistemological positions and personal reflections that should be guided by data collected (Hartas, 2010). The epistemological position of constructionism was adopted because it was mindful of how the participants constructed meaning in relation to teaching and learning about the road safety

education programme in the context of curriculum change. An interpretivist theoretical perspective served to structure the research that took into account the philosophical underpinnings of the research questions. The research orientations of hermeneutic phenomenology and symbolic interactionism was deemed to be appropriate for this study because they are concerned with the subjective interpretation of meanings in a particular instance (Sarantakos, 2005). Both these approaches acknowledge that the meanings that participants assign to experiences are shaped by their situation. Subsequently, it becomes necessary to observe the participants in their contexts. The participants for this study were observed in their natural context of teaching and learning about the road safety education programme.

The case study was used, because, according to Cohen et al (2011) a case study provides a unique example of real people in real situations. Stuurman (1999, p.103) as cited in Cohen et al (2011), argues that a distinguishing feature of case studies is that human systems have a wholeness of integrity to them rather than being a loose connection of traits. Case studies report real life situations. The real life situation in this context was the implementation of the road safety education programme in the five primary schools in the Pietermaritzburg region.

Data was collected through semi-structured interviews, classroom observations as well as by learner administered questionnaires after observing the lessons being implemented.

The participants' response to the interviews, were discussed in Chapter Six Section 6.3. To analyse the data, interpretive phenomenological analysis (IPA) was used. The themes that emerged from the interview transcripts were analysed and discussed with reference to literature pertaining to curriculum change and implementation.

Classroom observations were conducted. Teachers efficiently implemented the road safety education programme in an interactive and innovative way. The paucity of the resources did not deter the teachers from implementing this programme. The teachers were able to successfully combine lessons across the learning areas as well as create their own learner activity resources to complement the resources in the teacher guide book.

According to the major findings of this study, the five teachers were open to change and implementation. They had a positive attitude about implementing the road safety education programme because they believed in its worth. They also perceived that implementing the road safety education programme will help the learners to become safe and responsible road users.

The data collection procedure and the subsequent analysis of the data that followed was conducted within the need to engage the participants of this study in a process of configuration and reconfiguration of the data as it was collected. This was consistent with principles of the hermeneutic circle as discussed in Chapter Five Section 5.3.1 and the orientation of Symbolic Interactionism as was discussed in Chapter Five Section 5.3.2

Findings from the data analysis were presented and discussed under the following themes.

- Theme 1- Teachers beliefs, attitudes, and perceptions
- Theme 2- The value of the road safety education programme
- Theme 3- Curriculum Frameworks
- Theme 4- Teacher Feedback sessions
- Theme 5- Lack of Resources
- Theme 6- Time and Curriculum Changes in South Africa
- Theme 7- Support from Principal
- Theme 8- Support from Colleagues
- Theme 9- Teacher Training and Professional Development
- Theme 10- The role of the teacher in curriculum development

This study subsequently concludes that the successful implementation of curriculum innovation was dependent on the teachers' beliefs, attitudes and perception of the innovation. This influenced the way in which the road safety education programme was implemented in their classrooms.

In the next section the research questions will be re-examined to establish whether they have been answered by the findings of this study.

7.3 Critical Research Questions

Three critical research questions framed this study. In an attempt to answer these three questions, the researcher conducted a literature review in the major concepts that shaped this study. Curriculum change and implementation was the major thrust of the study. Road safety education featured as an important dimension of implementing curriculum innovations. The research questions were:

Research question one

What are the beliefs, attitudes, and perceptions of the teachers to implementing the road safety education programme in the context of curriculum change?

Research question two

What are the teacher and learning constraints that affect curriculum implementation?

Research question three

Did the learners acquire the necessary skills and knowledge to make them safe and responsible road users?

The response to the questions have been presented to provide an understanding of the teachers' beliefs, attitudes and perceptions of the road safety education programme and its implementation.

These responses do not claim to be the panacea for the woes that teachers experience with implementing curriculum change, but rather serves to understand the implementation of the road safety education programme from the perspectives of the five teachers and the learners that were involved in the study.

7.3.1 Research Question One

What are the beliefs, attitudes, and perceptions of the teachers to implementing the road safety education programme in the context of curriculum change?

The five teachers believed in the value of the road safety education programme. They believed that it was extremely important to learn about road safety in schools because of the high accident rate in this country. They displayed a very positive attitude to the implementation of the road safety education programme in the class. The researcher had observed this despite the problems that they had experienced. The perception was that if road safety was taught from the foundation phase to matric they will develop a generation of safe and responsible road users. The researcher observed that they were extremely efficient in the classroom. Lessons were well planned and the classes were well managed. The teacher demographics revealed that these teachers were experienced teachers with the maximum number of years being thirty-two and the minimum being eight. All these teachers had experienced the various curriculum changes that was introduced in South Africa since 1996 as discussed in Chapter Four, Section 4.8. The changing paradigm of education in South Africa as discussed in Chapter Four, suggests that educational changes in the context of schools will impact on the way road safety education will be implemented.

The teachers were regarded as being good because they had provided adequate learning opportunities for the learners as well as provided the learners with opportunities to ask questions. The learners were eager and motivated to learn about road safety. There was good rapport between the teachers and the learners. The lessons were very interactive where the teachers displayed roles as facilitators of learning rather than as lecturers. This was in keeping with the principles of the RNCS concerning teaching and learning. The focal point of investigating the implementation of a new curriculum is the classroom environment as this negatively or positively influences the implementation process. It was observed that all five teachers had provided a stimulating and a pedagogically sound environment for the learners to learn about road safety.

The teachers in this study brought their expertise as teachers to the implementation of the road safety education programme and critiqued it in terms of the current road safety situation in South Africa. This suggested that the successful implementation of road safety education is more likely to occur when teachers can identify characteristics within the framework of road safety education that are educationally rigorous and when road safety education shares a close connection not only with the

national curriculum frameworks but also the current situation in South Africa where road safety is concerned.

7.3.2 Research Question Two

What are the teaching and learning constraints that affect curriculum implementation?

The major constraint that all five teachers identified as affecting curriculum implementation was the lack of adequate resources in their schools.

These included human and material resources. At School A two different Grades (Grades 5 and 6) were being taught in the same class. Introduction of new curriculum imply the use of resources that schools, especially the rural schools in South Africa, do not have.

The constant curriculum changes in South Africa since 1996 have led to an increase in workloads not only for teachers but also for learners. This extra paperwork impacted on their classroom practices. Lack of time and adequate training and teacher professional development was also cited as factors that affected implementation. Teachers generally iterated that the training sessions and workshops did not really assist with implementation because the trainers themselves were inadequately trained. The teachers cited a lack of professional development opportunities as also affecting curriculum implementation. Teachers also did not have opportunities to have feedback sessions or opportunities to discuss with their colleagues the strengths and weaknesses of an innovation. But all teachers interviewed recognized the importance of such meetings, but also believed that in the real sense, professional experiences and collaborative work and opportunities were weak. This was due to the difficulty in managing time and the absence of a collaborative culture in schools. Teachers still work in isolation in their classrooms. From the analysis, it was clear that although the teachers favoured the implementation of the road safety education programme in their classrooms they were constrained by factors which was discussed in Chapter Six, Section 6.8. They claimed a lack of resources, inadequate teacher training, professional development and the absence of collaborative cultures in schools that affected the successful implementation of an innovation

The teachers also asserted that they would like to be involved with the process of curriculum change in which they play a major role as designers and curriculum developers and not only as the end users of the entire curriculum change process.

7.3.3 Research Question Three

Did the learners acquire the necessary skills and knowledge to make them safe and responsible road users?

There are ten lessons per grade in the teacher guide book. The duration of the lessons can be for about thirty to sixty minutes, depending on how the teacher implements the lesson. It also depends on how the teacher expands the resource materials to extend the duration of the lesson and the learner activity. According to Di Pietro (2009), a short exposure of 30 minute lessons over a period of ten weeks will not enable the learner to achieve higher order skills related to the cognitive, psychomotor, social and affective domains that are required for safety.

Di Pietro (2004) also asserts that in the early years, it would be difficult to measure the effectiveness of the educational approach. The nature and the way learning is applied, means that the effect of an educational programme may, in some cases, be immediate, and in others long term. Cognizance must also be taken of the fact that different children learn at different rates. In the case of road safety outcomes there may be a number of concurrent engineering and enforcement initiatives and education programmes that contribute to the outcome. It is the synergy between a number of approaches or safety initiatives that reduces the risk exposure of young learners and keeps road users safe.

However, during the observation of the implementation of the lessons, the researcher had observed that the learners were acquiring the knowledge that was required to make them safe and responsible road users. They were able to identify and justify safe and unsafe road user behaviour. They were also knowledgeable about what type of risky behaviour would compromise their safety. The analysis of the results of the questionnaire also indicated that they were acquiring the necessary knowledge to become safer road users. Overall, from the classroom observations and the response to the questionnaires, the researcher noted that learners demonstrated considerable

conventional road safety knowledge. They had demonstrated sound reasoning when probed for answers. As far their road user skills are concerned this can only be determined after observing their behaviour over a period of time.

Di Pietro (2009) asserts that there are some good examples of initiatives in and around schools that are making a measurable positive difference. For example, a UK programme, (Kerbcraft), and a Victorian Australian Programme (Safe Routes to School), that demonstrate statistically significant results in creating skills in children (Kerbcraft) and in reducing death and injury crashes by 18% (Safe Routes to School).

On the other hand (Raftery and Wundersitz, 2011) argue that road safety education is generally not an isolated event but continues over a long period of time. Because of this they (ibid) state that, it is difficult to determine what effect school-based road safety education might have, independent of other road safety initiatives. Realistic expectations of what school-based road safety education might achieve are necessary; it may not necessarily change behaviour but may be useful for helping to form beliefs or reinforce existing beliefs also.

Raftery and Wundersitz (2011) also assert that it may be difficult to prove that any single education programme has had a tangible effect, but state that it is possible that there is a cumulative effect over a period of time. The researcher shares this view and has noted it as such in the fifth paragraph of the above section.

7.4 Recommendations

Research into the relationship between the implementation of an innovation and student learning should contribute to a greater understanding of the fundamental task of teaching. Findings could be to inform teacher preparation, curriculum design, professional development, and school site leadership. Such research could also help to understand how to teach learners effectively with diverse abilities and socio-economic backgrounds as the present status quo prevails in South Africa.

The current approach to school based road safety education could be improved through the adoption of a more concerted and co-ordinated approach. At present as is evidenced from the teacher's interviews, the road safety education programme has no

fixed place within the curriculum and is currently implemented at the discretion of individual schools and even further at the discretion of the classroom teacher. The cause of this is the lack of room within the existing curriculum and the school time table.

In seeking to close the implementation gap and improve the implementation of the road safety education programme the Department of Transport and the Department of Education should look at strategies that will ensure that this comprehensive road safety education programme is implemented in every single primary school in South Africa before compiling a road safety curriculum for implementation in secondary schools.

Following development of the plan, which includes a teacher guide for implementation, teachers must receive training through an in-service programme. Armed with this training, the activity must be field- tested under controlled conditions before being disseminated into all classrooms. Often, such training reveals gaps in teacher preparation for delivering the curriculum. Besides these skills training workshops teachers need to participate in group activities as well as one-to-one encounters, or they should engage in simple conversations with their colleagues about the innovation. These encounters should be held with the specific purpose of giving and receiving help. Teacher training workshops must provide the opportunities for development in situations that are context specific. Cognizance must be taken of local school conditions. Site -based advice must also be provided to schools that are in dire need of such assistance.

Under these conditions, teachers will learn how to use an innovation as well as to judge its merits based on informed decisions. If this is done, teachers will be able to accept, modify, or reject the change. The more teachers experience the rewards of interaction, the more they will use the criteria of professional contact and development. Fullan (1982) states that focused teacher interaction is essential to successful change.

A comprehensive curriculum reform needs a clear vision that should encompass concurrently, conceptual, institutional and strategic aspects. It is essential that all three aspects are approached coherently and that all three aspects should enjoy equal

status. It is imperative that the teachers who are the vanguards of the implementation process are consulted at every step. Teacher inputs should be deemed as being very important before, during and after curriculum change and implementation. School-based processes and teachers professional development should be prioritized, so that the foundation for the actual implementation process is well prepared and will be able to cope with any contingencies.

For successful curriculum implementation it is important, that the school principal prioritise goals and establishes norms and standards. The school principal needs to plan well in advance. In order to do this, the necessary resources must be secured well in advance to expedite implementation. Facilities must be dedicated to certain types of instruction and appropriate funding must be secured to ensure that any new curriculum is fully implemented. Securing adequate funding is important, because according to Wiles (2009), money is the equivalent of fuel for promoting change. Adequate funding will ensure that the new curriculum is being implemented. Adequate funding will also ensure that all schools have access to all material resources that will ensure successful implementation of innovations. Lack of material resources frustrates teachers' attempts at implementation. Subsequently, a lack of funding will retard the implementation process.

Providing support with curriculum change implementation involves developing and improving teams through planning and activities. It is imperative that the school principal establishes curriculum change committees in schools. These committees will find the consensus for change and will be able to influence the rest of the staff members. The dynamics of such group interactions is immensely important for the success of any innovation (ibid).

Most principals are unaware of the power of the media. This can be well utilized to promote the implementation of the programme. In South Africa, road safety becomes an issue if there is a major accident involving multiple fatalities. Most people assume that television adverts, radio and newspapers are the only mediums for promoting road safety education. The school principal can use this opportunity to inform local communities about school based road safety activities via the media. The news media seeks stories about education and will follow stories suggested by the school principal. The principal must develop a good relationship with the local media.

Publicity should be used in conjunction with other measures as a powerful tool for delivering messages and influencing attitudes and behaviour in all areas of road safety. Publicity should be used to engage all sectors from policy makers, professionals and business communities and consumers.

Considering the means that can be applied for teaching road safety, one is inundated with the constant changes in the way knowledge acquisition and teaching methodologies are viewed. Today information and communication technologies contribute to the formation and materialization of new ways of teaching and learning. Schools that have good technological capacities should use this to their advantage to promote the road safety programme. Virtual road situations can be created for the learners to learn about road safety, without compromising their safety by taking them out on to the road. Virtual reality is a perceptual tool that enables users to feel 'present' in an artificial environment, the same way in which they will feel present in a real environment (Fokides & Tsolakidis, 2012). Given the interplay of many factors in a crash situation (human, vehicle and environment), the use of an educational simulation paradigm to represent multiple perspectives in a road safety context is advocated. It is hoped the experiences gained in these simulated situations will lead learners to a stronger understanding of the various factors that interact and contribute to potential harm in road safety contexts. The simulations must be designed in such a way that the learners will be able to identify these factors in their own personal contexts and subsequently will enable them to make decisions about modifying their behaviour to subvert potential harm. By providing a multiple context (passenger, pedestrian, cyclist and future driver), learners can develop an empathy for the different roles that they will be required to assume as road users. Fokides & Tsolakidis (2012) refers to evidence where learners were trained in pedestrian skills via problem based computer simulations (ie. Under circumstances which are both practicable and safe), has the potential to produce real benefits at the road side. He (ibid), further states that the effects were systematic, and provided clear indications as to how the interventions might be designed to increase their effectiveness. Simulation training resulted in significant conceptual and behavioural changes in all the examined skills. Tolmie et al (2002), state that simulations permit the practice of skills which really could not be addressed at the roadside because of the difficulties of creating the appropriate circumstances.

School principals can create their own road safety website or blog, so that more people become aware of what is happening at that school. Schools that do not have such resources should request sponsorship from private companies. Schools should also partner with car manufacturers, car dealerships and other stakeholders in the motor industry to promote road safety. In this way, the road safety education programme will garner more publicity which will assist the schools with their implementation.

All curriculum change is totally dependent on the classroom teachers' skills for successful implementation. The difference between the novice teacher and the veteran is more than time in service (Wiles, 2009). When curriculum designers set up a new programme with new organisations, materials, assessment, and teaching behaviours, they must include staff training in the design and implementation phases. Staff development and training is essential to develop the necessary skills and knowledge that is required for the successful implementation of curriculum change. Only if teachers in the classroom can do what is called for by the curriculum design, will the implementation process be a success. The development and training must be carried out by highly skilled and competent trainers. The training programme should include all the necessary experiences that will foster the skills needed for the successful implementation of the road safety education programme.

Human relations and communications need total support and promotion. There must also be consensus about evaluating not only the road safety education programme but also the actual implementation of the programme in the classroom. Wiles (2009) state that possessing the power to assess and evaluate the implementation of a new programme, represents a very strong steering lever for curriculum work.

Detailed, comprehensive reports must be compiled about the implementation of the road safety education programme from its inception. This will enable the principal to track the success or the failure of the innovation. Like all historical documents, the compiler of the reports has the power to project patterns from all existing information. The many periodic reports written during implementation of an innovation establishes the history of the event forever (Wiles, 2009).

It is important the school principal recognize that the above mentioned task is crucial for the success of any curriculum change.

The degree to which learners shape knowledge, for themselves, must somehow, be acknowledged in the design of the curriculum. Even if the disciplines do constitute the best articulations of what we know of the world (Rogers, 1997). Designing curriculum from the child's perspective (which knowledge may look different from how it does in the disciplines), may seem most appropriate for young children.

Helping learners and other road users to adapt their behaviour in order to interact safely with traffic in the road environment is only part of what is needed to keep learners safe in traffic. Traffic engineers, urban designers, and planners have a duty to design systems that take account of learner's mobility needs, travel behaviour and differences in perceptual and reactive capabilities in order to maximize their safety and mobility. This has also been advocated as the Decade of Action plan for road safety.

The future of road safety education in South Africa should give serious consideration to the development of road safety education programmes based on the principles and design that underpin all eight learning areas. This holistic approach will ensure that there is room in the curriculum for road safety education. This will also ensure that there is no time tabling issues where the implementation of road safety education is concerned. Road safety education must be part of the national curriculum statement and not an external entity to be implemented by the department of education. There is currently no road safety education programme for secondary school learners. There is an opportunity to bridge this gap through the provision of a holistic programme. Such a programme has the potential to produce a number of benefits, the most important of which is ameliorating the scourge that is associated with a range of adolescent risky road user behaviours.

7.5 Implications for Teaching and Learning

This research is significant for education, especially the teaching and learning about road safety in schools. Firstly, it contributes to the store of knowledge that is concerned with teaching and learning in a school situation. Secondly, this research

offered insights into the teachers' experiences of curriculum change in implementing the road safety education programme. This included soliciting the teachers' beliefs, attitude, and perceptions to implementing the road safety education programme in primary schools. This study also sought to determine whether the learners were acquiring the necessary skills and knowledge to make them safe and responsible road users.

The researcher hoped that the research participants in this study will critically reflect on their role as teachers in implementing the road safety education programme. They should be aware of the importance of their role in contributing to educating a generation of safer road users. The importance of this cannot be over emphasized especially in our country where the fatality rate as a result of road accidents is unacceptably high. Not only will the teachers be contributing to raising a safer generation of road users, they will also be contributing to the economy of the country. Road accidents cost the country billions in rands every year. This money could well be spent on developing material and human resources to enhance the education system in our country.

All the participants in this study, the teachers as well as the learners, revealed a very positive attitude to teaching and learning about the road safety education programme despite the teaching and learning constraints that were experienced by the teachers and learners on a daily basis.

7.6 Additional Research is Needed

The findings in this study, was based on five primary schools in the Pietermaritzburg region. The researcher advocates for more research to be done in this context to add value to road safety education and its implementation. The domain of road safety education must be moved from the Department of Transport to the Department of Education to give credibility and to enhance its effectiveness. It must be compulsory, assessable and examinable.

We have to move away from the stereotypical assumptions based on road safety. Most people think that road safety education is only for pre-school children and it is

not for adults. Adults assume that they know everything there is to know about road safety and there is nothing new that they can learn.

There is potential for educational research to be carried out in South Africa where road safety is concerned. This should include teacher effectiveness, including investigation of teacher preparation, policies regarding road safety education, apart from the road traffic act, which governs road user behaviour in South Africa, curriculum and professional development strategies and child-centred, constructivist instructional methods.

Additional research should also be conducted with observational data. This research, is the first of its kind, because the researcher is unaware of any such research is being carried out in the country on the road safety education programme. This study therefore cannot yield conclusive findings about the implementation of the road safety education programme in the context of curriculum change. The researcher is of the opinion that further research into the implementation of this programme and its effectiveness in promoting road safety, needs to be carried out to determine if the findings will yield fresh insights. This study was concerned with the teachers' experiences of implementing the road safety education programme in the context of curriculum change. This study also sought to know whether the learners had acquired the necessary skills and knowledge to become safe and responsible road users. This information was garnered by the classroom observations and by the learner response to the questionnaire. The veracity of this response needs additional research to be carried out only on the learner's road user behaviour. This must be done over a period of time to determine whether the learners do use the road in a safe and responsible manner as is advocated by the road safety education programme.

In addition the rubric described in this report can be improved and adapted for different purposes, including the possibility of improving tools for classroom observation in implementing the road safety education programme.

In order to ensure the continued evolution of the road safety education programme, further evaluation and research is required to narrow the knowledge gaps where road safety education is concerned. Furthermore, the development of an holistic cognitive-behaviourally based road safety education programme integrated into the mainstream

national curriculum is required to address the road safety problems in a South African context.

7.7 Conclusion

In the most successful schools and districts, there is a general feeling of being a team that exists to serve learners (Wiles, 2009). Curriculum problem-solving process that help students and the school, is the most cohesive organizational unit for such effective programme development. As the leader of that school effort, the individual in charge of curriculum change and implementation must convey to others that everyone is in it together .

Teachers need to know what is expected for their efforts and will want to know how all the parts fit together. The curriculum plan defines the boundaries of all activities. The curriculum leader must signal the staff and parents that the administration supports that effort, that resources are available, that the time commitment is defined, and that ultimately it is about the children in the classroom. Once the curriculum leader communicates these facts, the entire school community will embrace proposed changes.

If we understand that curriculum is not only a series of topics and learning areas to be implemented in schools, then we also know that curriculum can serve several purposes simultaneously. One of the most challenging functions of the curriculum is to guide the, evaluation and assessment of policies as part of the overall national educational policies.

Curriculum should be viewed by teachers as a powerful tool for teachers to develop their own schools, ensure that there is equity for all learners in the country. By so doing teachers will be able to raise the quality of teaching and learning. Successful curriculum implementation requires highly qualified experts to lead the development process and skilled competent people to motivate teachers and schools to strive for educational excellence.

Curriculum is at the epicentre of an educational system. The structure, the organization, management and the way it is resourced, is derived from the

curriculum. The resources around and within a curriculum include knowledge, time, space, human, material and financial resources. It is the degree of structural change in how these resources are accessed, organized and used that will indicate to what extent the curriculum and education system are being transformed or reproduced, and how successful curriculum change and implementation is.

The constantly changing nature of the curriculum and of the teacher's work requires teachers to be professionals and proactive in order to respond adequately to the ambiguity, uncertainty and increasing complexity which characterize the educational settings in which they are required to work.

Whilst it is clear that effective road safety education will assist children and the youth to become more responsible as road users, it is also obvious that schools have a crowded curriculum with competing demands and agendas. School curricula are based around eight key learning areas. Road safety is not explicit in any of those eight learning areas. In view of the fact that South Africa ranks low in terms of international standards where mathematics and science is concerned, numeracy and science enjoy a privileged status. A permanent space must be found in the CAPS school curricula to deliver appropriate and effective road safety education from Grade R to Grade 12.

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APPENDIX ONE

Principal's Consent Form

Date: _____

Mrs.M.Govender
Student Number: 202519395
Faculty of Education
University of Kwa-Zulu Natal
Edgewood Campus

Dear Mr/Ms _____

I, Muniamma Govender, will be conducting research towards a PhD in Education. The research will investigate the beliefs, attitudes and perceptions of the teachers to the implementation of the Road Safety Education Programme. My supervisor is Dr.M.Combrinck. The research is titled

The Road Safety Education Programme: A Journey Into The School Curriculum

The purpose of this study is to investigate the implementation of the Road Safety Education Programme. This will be done by capturing and exploring the meanings that teachers and learners assign to their experience of teaching and learning about road safety. Participants are experts on their own experiences and can offer researchers an understanding of their thoughts, commitments and feelings through communicating them in their own words, and in as much detail as possible. This study concerns itself with the premise, that underlie actions, articulating with teacher's and learner's educational values and worldviews. This also involves reflecting on the cultures in which they work, their social positioning, personal interpretations of life and teaching and learning and sense of identity.

The research / interview processes will be:

- Conducted during the months March- October 2011.
- Conducted by the researcher through the medium of English/ interpreted in IsiZulu if required.
- Classroom observations will be video- recorded.

As you were part of the identified schools to participate in this study, I would like to invite your participation in my research. Please study the consent form below, and respond based on your decision.

Yours sincerely

Mrs.M.Govender
Student Number: 202519395
Contact Tel: 082 886 0819

Dr.M.Combrinck (Supervisor)
Tel: 083 787 3688

I _____(Full name of Principal) hereby confirm that I understand the contents of this document and the nature of the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

Signature of Principal

Date

APPENDIX TWO

Teacher's Consent Form

Date: _____

Mrs.M.Govender
Student Number: 202519395
Faculty of Education
University of Kwa-Zulu Natal
Edgewood Campus

Dear Mr/Ms _____

I, Muniamma Govender, will be conducting research towards a PhD in Education. The research will investigate the beliefs, attitudes and perceptions of the teachers to the implementation of the Road Safety Education Programme. My supervisor is Dr.M.Combrinck. The research is titled

The Road Safety Education Programme: A Journey Into The School Curriculum

The purpose of this study is to investigate the implementation of the Road Safety Education Programme. This will be done by capturing and exploring the meanings that teachers and learners assign to their experience of teaching and learning about road safety. Participants are experts on their own experiences and can offer researchers an understanding of their thoughts, commitments and feelings through communicating them in their own words, and in as much detail as possible. This study concerns itself with the premise, that underlie actions, articulating with teacher's and learner's educational values and worldviews. This also involves reflecting on the cultures in which they work, their social positioning, personal interpretations of life and teaching and learning and sense of identity.

The research / interview processes will be:

- Conducted during the months March- October 2011.
- Conducted by the researcher through the medium of English/ interpreted in IsiZulu if required.
- Classroom observations will be video- recorded.

As you were part of the identified teachers to participate in this study, I would like to invite your participation in my research. Please study the consent form below, and respond based on your decision.

Yours sincerely

Mrs.M.Govender
Student Number: 202519395
Contact Tel: 082 886 0819

Dr.M.Combrinck (Supervisor)
Tel: 083 787 3688

I _____(Full name of Teacher) hereby confirm that I understand the contents of this document and the nature of the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

Signature of Teacher

Date

APPENDIX THREE

Learner's Consent Form

Date: _____

Mrs.M.Govender
Student Number: 202519395
Faculty of Education
University of Kwa-Zulu Natal
Edgewood Campus

Dear Mr/Ms _____

I, Muniamma Govender, will be conducting research towards a PhD in Education. The research will investigate the beliefs, attitudes and perceptions of the teachers to the implementation of the Road Safety Education Programme. My supervisor is Dr.M.Combrinck. The research is titled

The Road Safety Education Programme: A Journey Into The School Curriculum

The purpose of this study is to investigate the implementation of the Road Safety Education Programme. This will be done by capturing and exploring the meanings that teachers and learners assign to their experience of teaching and learning about road safety. Participants are experts on their own experiences and can offer researchers an understanding of their thoughts, commitments and feelings through communicating them in their own words, and in as much detail as possible. This study concerns itself with the premise, that underlie actions, articulating with teacher's and learner's educational values and worldviews. This also involves reflecting on the cultures in which they work, their social positioning, personal interpretations of life and teaching and learning and sense of identity.

The research / interview processes will be:

- Conducted during the months March- October 2011.
- Conducted by the researcher through the medium of English/ interpreted in IsiZulu if required.
- Classroom observations will be video- recorded.

As you were part of the identified learners to participate in this study, I would like to invite your participation in my research. Please study the consent form below, and respond based on your decision.

Yours sincerely

Mrs.M.Govender
Student Number: 202519395
Contact Tel: 082 886 0819

Dr.M.Combrinck (Supervisor)
Tel: 083 787 3688

I _____(Full name of Parent) hereby confirm that I understand the contents of this document and the nature of the research project. I understand that my child/ward is at liberty to withdraw from the project at any time, should my child/ward so desire.

Signature of Parent

Date

APPENDIX 4

Teacher's Interview Schedule.

Response of the Teachers to Implementing the Road Safety Education Programme in the Context of Curriculum Change.

1. General:

- 1.1. How many years have you been teaching for?
- 1.2. What qualifications do you have?
- 1.3. How many learners are there in your class?
- 1.4. Is there only one grade in your class?

2. Teacher's beliefs, attitudes and perceptions of the Road Safety Education Programme.

- 2.1. What are your beliefs about the road safety education programme?
- 2.2. What are your attitudes about the road safety education programme?
- 2.3. What are your perceptions of the road safety education programme?
- 2.4. How do these beliefs, attitudes and perceptions impact on the implementation of the road safety education programme?

3. The value of the road safety education programme.

- 3.1. Do you think that there is value in teaching road safety at schools?
- 3.2. Do you as a teacher recognize the positive impact of the road safety education programme on the learner's learning?
- 3.3. At what grade is it appropriate to start teaching road safety at schools?
- 3.4. Is it appropriate to teach road safety to all grades?
- 3.5. Should road safety education be continued at secondary school level?

4. Curriculum Frameworks

- 4.1. Do you think that the road safety education programme is suitably aligned to the National Curriculum Statement?
- 4.2. Are the outcomes of the road safety education programme aligned to the outcomes of the National Curriculum Statement?
- 4.3. Do you plan your lessons accordingly?
- 4.4. Do you follow the step by step guide in the teacher's guide?
- 4.5. Do you use the teacher's guide book to develop your own lessons?
- 4.6. Are the lessons suited for integration across all eight learning areas?
- 4.7. Do you integrate the road safety lessons into all the learning areas?
- 4.8. How do you enhance learner achievement in the class?
- 4.9. How do you assess what the learners have learnt about road safety?

5. Feedback Sessions

- 5.1. Do you have teacher feedback sessions at your school?
- 5.2. If yes, how often do you have these sessions?
- 5.3. Do you feel that these sessions are assisting you where the implementation of the road safety education programme is concerned?
- 5.4. If no, what are the reasons for not having these feedback sessions?
- 5.5. Have you tried to initiate feedback sessions?

6. Resources

- 6.1. Is there adequate resource material (the road safety education packs and teacher's guide books) to assist in your implementation of the road safety education programme?
- 6.2. Is your school adequately resourced in terms of infrastructure and other material resources.
- 6.3. Do you experience any problems with obtaining resources that you lack at the school?
- 6.4. How do the resources / or the lack thereof impact on the implementation of the road safety education programme?

7. Curriculum Changes in South Africa

- 7.1. How do you feel about the changes in the National Curriculum?
- 7.2. How did this impact on your teaching?
- 7.3. How were you able to cope with the many curriculum changes in the country since 1996?

8. Support from the Principal

- 8.1. Do you receive support from the principal with the implementation of the road safety education programme?
- 8.2. What type of support would you require from the principal to assist with implementing a new curriculum?

9. Support from Colleagues

- 9.1. Do you receive support from your colleagues during the implementation of the road safety education programme?
- 9.2. What type of support do you receive from your colleagues?
- 9.3. Does this support lead to an evaluation of the implementation of the road safety education programme?
- 9.4. Does this support identify areas of strength and areas for development?
- 9.5. How do you gather evidence of the impact of the implementation process on classroom practice and learner achievement?

10. Staff Training and Professional Development

- 10.1. Did you receive training for the various curriculum changes that had taken place since 1996?
- 10.2. Were the trainers adequately trained to conduct the training sessions?
- 10.3. Did you find the training sessions helpful in assisting you to implement the curriculum changes successfully?
- 10.4. Did you receive training for the implementation of the road safety education programme?
- 10.5. Was this training adequately conducted to assist with the implementation of the road safety education programme?
- 10.6. Do you think that there is room for improvement with the training sessions?
- 10.7. Were the venues for the training sessions suitable and accessible?
- 10.8. Besides these training sessions, did you attend any professional development training courses?

11. Teacher's Role in the Curriculum Decision Making

- 11.1. Were you consulted about any of the curriculum changes that took place?
- 11.2. Were you consulted about the implementation of the road safety education programme?
- 11.3. Would you like to contribute towards curriculum decisions?

APPENDIX FIVE
Learner Questionnaire

Mrs.M.Govender
202519395
University of Kwazulu-Natal
School of Education
Edgewood Campus

Questionnaire

1. How old are?

| |
|--|
| |
|--|

2. What grade are you?

| |
|--|
| |
|--|

3. Did you learn anything about road safety before this lesson?

| | |
|-----|----|
| Yes | No |
|-----|----|

4. Did you understand the lessons?

| | |
|-----|----|
| Yes | No |
|-----|----|

5. Is road safety important in all learning areas?

| | |
|-----|----|
| Yes | No |
|-----|----|

6. Do you know how to avoid dangerous situations on the road?

| | |
|-----|----|
| Yes | No |
|-----|----|

7. Do you know all the road signs you have learnt?

| | |
|-----|----|
| Yes | No |
|-----|----|

8. Do you understand what they mean?

| | |
|-----|----|
| Yes | No |
|-----|----|

9. Do you obey the road signs?

| | | |
|-----------------|-----------|-------|
| All the time | Sometimes | Never |
|-----------------|-----------|-------|

10. Learning about road safety has made you a safe and responsible road user?

| | |
|-----|----|
| Yes | No |
|-----|----|

APPENDIX SIX

Classroom Observation Rubric

| Rubric Dimension | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| Learning outcomes <i>The extent to which the teacher presents clear, elaborated learning goals</i> | The teacher does not present outcomes to learners or outcomes are stated in terms of activities. | Outcomes are vague. Teacher does not present a structure of ideas. | Outcomes are somewhat clear and explicit in terms of what learners are supposed to learn from tasks | Outcomes are mostly clear and explicit in terms of what learners are supposed to learn and are presented for all activities. Parts are connected to the whole of the lesson | Outcomes are clear and explicit in terms of what learners are supposed to learn from tasks. Outcomes are frequently presented, throughout the lesson with elaborations and clarifications. |
| Discussion <i>The extent to which the teacher organizes the class and learning so that discussions can take place</i> | <p>The teacher does not provide any opportunities for joint activities.</p> <p>No interaction between the teacher and learners or between learners themselves</p> | The teacher provides opportunities for joint activity but mediates all interaction between the teacher and learners. minimal opportunities for learner discussion | The teacher engages learners in joint activities. Attempts to provide some opportunities for learners to engage in discussion | Teacher engages learners in collaborative activities. Learners respond to teacher and to each other. Teacher asks open ended questions | Teacher functions as a guide /facilitator as learners engage in collaborative activities. The teacher encourages active participation, in discussion. The teacher guides learners in constructing or understanding authentic problems. Learners share in a discourse with the teacher and peers. |
| Cognitive challenges <i>The extent to which the materials and activities challenge learners cognitively</i> | There are no cognitively challenging tasks Learners merely engage in coping what the teacher does | Tasks require minimal degree of complex thinking | Task engage learners in moderately complex thinking | Tasks engage learners in complex thinking or demonstrate reasoning | Tasks engage learners in complex thinking as an extensive, major focus of the lesson. Task requires learners to treat a situation as a problem and to research |
| Classroom management <i>The extent to which the teacher manages the class well through established routines, minimal high profile reminders, and smooth transitions and the extent to which learners are on tasks</i> | The class is chaotic, and the teacher makes no attempt to control the class | Some instruction is accomplished, but the class is disorganized, and the teacher consistently reminds learners to comply with the rules | The class is organized and most learners are actively involved in the lesson. There may be sporadic incidents of learners being unruly | The teacher has control of the class and effectively implements the lesson | The teacher has control of the class. There is no evidence of disruptions. There is mutual respect between the teachers and the learners |
| Contextualization <i>The extent to which the teacher knows how to make the content of the material meaningful and is able to draw out learners background/home culture to make the material relevant</i> | There is no evidence of the teacher connecting classroom learning to learners, personal, family, or community experiences | The teacher makes feeble attempts to relate tasks to some aspects of learners home culture or experiences outside the classroom | The teacher makes casual connections during the lesson to learner's experience in their larger community outside the classroom | The teacher makes connections to learner experiences outside the classroom. There is evidence of this in both the design and carrying out of the lesson. | The teacher effectively incorporates content of the lesson into everyday experiences of learners and or their communities in their classroom. The teacher effectively integrates learner's interests and experiences into the delivery of the content and makes it relevant and meaningful in its application to their lives. |

APPENDIX SEVEN

Letter from Mr.D.Hindle (Director General) to Mr.R.C.Lubisi (Superintendent-
General: KwaZulu-Natal. Department of Education)

8/05 2006 16:08 FAX 0117146899
18. MAY. 2006 14:50

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0117146899

NO. 827 P. 10 001



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

Private Bag X896, PRETORIA, 0001, South Africa, Sol Plaatje House, 123 Sohoeman Street, PRETORIA
Tel: +27 12 312 4911, Fax: +27 12 321 6770, www.education.gov.za

Dr RC Lubisi
Superintendent-General: Education
KwaZulu-Natal Province
Private Bag X9137
PIETERMARITZBURG
3200

By fax: (033) 846 5180

Dear Dr Lubisi

**Rollout of the Road Safety learning and teaching support material for the General
Education and Training band.**

The Department of Transport (DoT) has developed teaching and learning support material on road safety for the General Education and Training band. Officials of the Department of Education have collaborated with the DoT in the development process. The material will be very useful in sharpening learners' awareness of the importance of road safety.

Officials of the DoT presented the plan to HEDCOM on the 9th May 2005. It was agreed at HEDCOM and at the subsequent meeting of the Curriculum Management Committee on the 21st February 2006 that the training of teachers on road safety:

18/05 2006 16:08 FAX 0117146899
18 MAY 2006 14:51

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- will not interfere with the normal teaching time at schools; and
- will not have any financial implications for the Department of Education or the provincial departments.

The DoT intends training teachers throughout all the provinces from May 2006. The DoT has been advised to consult with Curriculum Heads of the various provinces to finalise dates for the training.

Your co-operation in this matter is much appreciated.

Yours sincerely


Mr D Hindle
Director-General
Date: 12 May 2006

PAGE 01/19

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APPENDIX EIGHT

Lesson One, School A, Teacher A

Grade **5** Lesson 4

TOPIC: **Safe Cycling Rules!**

LANGUAGES, ARTS & CULTURE

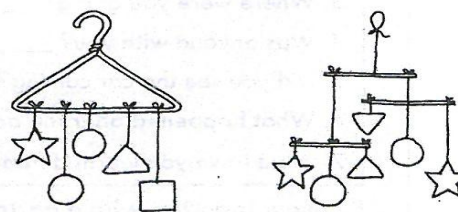
| Links to the Revised National Curriculum Statement (RNCS) | |
|---|---|
| Learning Outcomes | Assessment Standards: The learner: |
| <p>Languages LO 5 <i>Thinking and Reasoning</i> – The learner is able to use language to think and reason, as well as to access, process and use information for learning.</p> | <p>Languages Grade 5: Transfers information from one mode to another: uses information from a chart, graph or diagram to write text.</p> |
| <p>Arts and Culture LO 1 <i>Creating, Interpreting and Presenting</i> – The learner is able to create, interpret and present work in each of the art forms.</p> | <p>Arts and Culture Grade 5: <i>Visual Arts</i> – Designs and creates artwork and craft works which explore the use of natural and geometric shapes and forms in two and three dimensions, in observational work, pattern making and design, and in simple craft projects.</p> |

Outcome:

- To ensure that learners understand that cyclists, together with motorcyclists, the elderly and people with physical or sensory challenges, are vulnerable road users.

Notes for Activities:

- Use the pictures on the **Road Safety Education IP 'Safe Cycling' poster** to briefly revise the correct hand signals for safe cycling. Revise the sequence for using hand signals correctly – 'look, signal, look, turn'. Practise using the signals correctly with the whole class saying, 'look, signal, look, turn', while doing the actions. You can do the activities on the back of the poster for more cycling fun! Revise some of the **rules** for safe cycling. You can read the story and use the pictures in the **Road Safety Education IP Storybook: Bright Sparks** to talk about the importance of being seen while cycling.
- Discuss the differences between a car, a bicycle and a motorbike. Emphasise the fact that drivers as well as cyclists and motorcyclists are road users. Talk about the word 'vulnerable' which means 'in a weak position'. Talk about why **cyclists, motorcyclists, the elderly** and people with **disabilities** such as wheelchair users, people on crutches, blind or deaf people, are more vulnerable on the road.
- Road Rules:** Use chalk to draw a thick **solid white line** on the classroom floor. Pretend to be a motorcyclist driving on the one side and then crossing over the solid line. Ask learners what you have done wrong. Now draw a **broken (striped) line** and repeat the activity. Explain to learners that solid lines on the road mean that road users such as drivers and motorcyclists must not cross over the line, i.e. they must not overtake. Broken or striped white lines mean that you may overtake. Emphasise that **road rules** are there to protect us, for example a solid line might prevent us from overtaking because 'there is a sharp bend coming up in the road and oncoming vehicles will not be seen.'
- Learner Activity:** Learners can work in groups to **make road mobiles**. Learners cut out geometric shapes from cardboard (they can use empty cereal boxes). They look for pictures of road users such as cyclists, pedestrians, etc. and of different types of transport, such as motorcycles, cars, bicycles. Learners paste the pictures onto the shapes, thread a piece of string through the top of each shape and attach it to the crossbars of a mobile (see picture below). These road mobiles can be donated to the Grade 1 and 2 classes for use with the Road Safety topic.
- Learner Activity Sheet (opposite page):** Make photocopies of the Learner Activity Sheet.
 - Learners decode messages about safe cycling.
 - Learners make up their own safe cycling coded message and give it to a partner to try and decode.

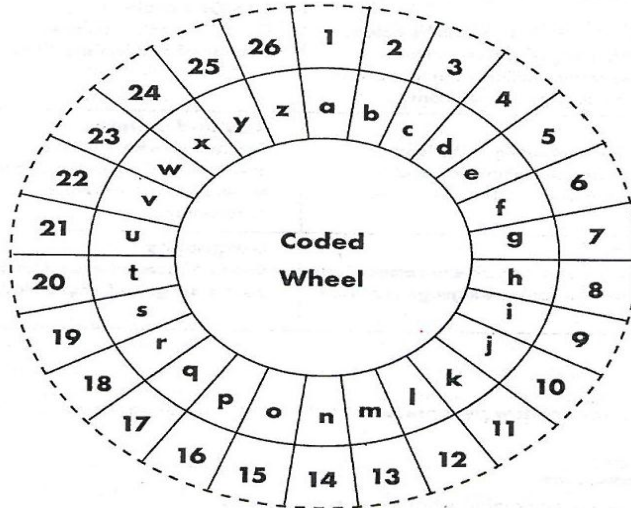


Safe Cycling Rules!

LANGUAGES, ARTS & CULTURE

Learner Activity Sheet

A. Use the coded wheel to find out what the hidden safe cycling messages are.



- ① 1 12 23 1 25 19 23 5 1 18 1 8 5 12 13 5 20
- ② 21 9 5 8 1 14 4 19 9 7 14 1 12 1
- ③ 12 15 15 11 19 9 7 14 1 12 12 15 15 11 20 21 18 14

B. Now make up your own safe cycling coded message. Write your message in the box below. Give your message to a partner to try and find out what you wrote.

Self Assessment

Did you find all the coded messages?

| | |
|-----|----|
| Yes | No |
|-----|----|

Did your friend find your coded message?

| | |
|-----|----|
| Yes | No |
|-----|----|

Appendix Nine

Lesson One, School A, Tecaher A

Grade **6** Lesson 9

Teacher's Notes

TOPIC: **Safe Cycling Rules!**

LIFE ORIENTATION & LANGUAGES

Links to the Revised National Curriculum Statement (RNCS)

| Learning Outcomes | Assessment Standards: The learner: |
|--|---|
| Life Orientation LO 4 <i>Physical Development and Movement</i> – The learner will be able to demonstrate an understanding of, and participate in, activities that promote movement and physical development. | Life Orientation Grade 6: Demonstrates refined sequences emphasising changes of shape, speed and direction through gymnastic actions. |
| Languages LO 3 <i>Reading and Viewing</i> – The learner will be able to read and view for information and enjoyment, and respond critically to the aesthetic, cultural and emotional values in texts. | Languages Grade 6: Reads for pleasure: solves word puzzles. |

Outcome:

- To reinforce the rules for safe cycling, such as wearing a protective helmet, using good observation and defensive cycling skills, and wearing bright colours to increase visibility.

Notes for Activities:

- Revise some of the **rules for safe cycling**, for example wearing a protective helmet and wearing white or bright colours to improve visibility. Explain the meaning of the words **observation** (watching carefully) and **defensive** (doing things to protect yourself). Divide the class into **5 groups**. Give each group a **flash card** with one of the sentences in the box below written on it. (Note: Not the words in brackets, as they are teacher's notes.) Each group has 5 minutes to talk about what their sentence means in terms of what a cyclist should do to be safe. Groups should report back to the whole class.

Cyclists should do the following to be safe:

- **Look around.** (Move head and eyes to see.)
- **Use good observation skills.** (Check the situation behind, i.e. blind spots. Be alert and aware of surroundings.)
- **Ride in the correct position on the road.** (Keep left, single file.)
- **Think ahead and be ready to react to what other road users might do.** (Judge/predict what others might be planning to do or accidents that might happen.)
- **Be alert and ready to avoid danger.** (Stay focused and ready to brake, swerve, etc. to avoid danger.)

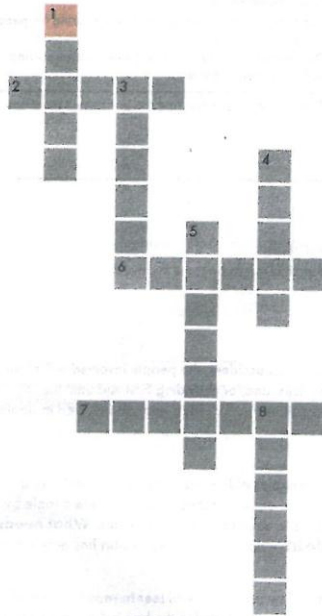
- Use the **Road Safety Education IP 'Safe Cycling' poster** to revise the correct hand signals for safe cycling. Revise the sequence for using hand signals correctly – 'look, signal, look, turn'. Practise using the signals correctly with the whole class saying, 'look, signal, look, turn', while doing the actions. You can do the activities on the back of the poster for more cycling fun!
- Play the **'Bumper Bikers' game** together with the learners. Ask all learners to bring a short stick (30cm) to school. This will act as their bicycle handlebars. Take them to the playground. Holding their handlebars, they should pretend that they are cycling and move around the playground, between trees, rocks, etc. They must use the correct hand signals and safe cycling behaviour. Watch them carefully, and call out each learner who brakes a cycling rule – they have to sit out until the next round. The last learner left in the game wins the title of 'Safest Cyclist'.
- Learner Activity Sheet (opposite page):** Make photocopies of the Learner Activity Sheet. **A.** Learners complete a **crossword puzzle**. **B.** Learners work with a partner to list possible dangers for cyclists. They should discuss possible solutions for the dangers they have listed. Pairs can take it in turns to report back to the class.

Name:
Grade: Date:

Safe Cycling Rules!

LIFE ORIENTATION & LANGUAGES

A. Use the clues in the box to help you fill in the words on the crossword puzzle. Ask your teacher if you do not know how to do a crossword puzzle.



Crossword Clues

Across:

- 3. Use your _____ hand to signal that you are turning right.
- 6. Don't do t_____ on your bike when riding on public roads.
- 7. A person riding a bicycle is called a _____.

Down:

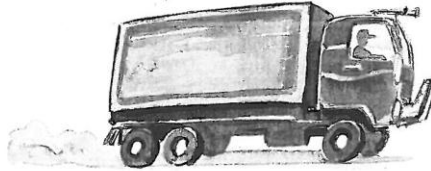
- 1. Wear _____ or bright colours at night.
- 3. Wear a _____ to protect your head.
- 4. Be alert in case you need to b_____.
- 5. Use hand _____ to show where you are going.
- 8. Cyclists must ride in s_____ file.

B. Work with a partner to write a list of some of the dangers for cyclists.

APPENDIX TEN

Lesson One, School A, Tecaer A [Story]

Intermediate phase.



It is the school holidays and Themba is visiting his cousin Dudu and her family in the village where they live.

"Yo, Dudu! Wait!" says Themba as he tries to keep up with his cousin.

"You city boys can't walk very far without your skateboards!" Dudu teases.

Themba is not so used to walking longer distances. In the city, they always take a bus or a taxi if they want to go somewhere, or he rides on his bicycle.

One Saturday morning they are all walking to town to visit Dudu's friend Khanyi. Dudu has to hold her little sister Thandeka's hand and Themba carries his brand new soccer ball. He really misses his bicycle.

"Bet you can't do this," says Themba, as he starts dribbling the ball. "Themba!" shouts Aunt Zinzi. "Be careful! This is not a good place to play!" They have to walk next to a big road to get to town. "But Aunt," he replies, "the road is very quiet!"

The ball spins across the road.

WHOOOOSSHHH! A big truck passes and just misses the ball. They all jump with fright.

"You see," says Aunt Zinzi, "that was close. I know how dangerous this road can be and you must listen to me!"



The children follow Andile to the shack in the back yard.

"Welcome to my workshop!" he says, opening the door proudly.

Inside the shack, Themba sees what looks like a pile of junk in the corner - old wire, empty tins, cardboard, and plastic bottles. On the floor there are rows of wire cars.

"They look just like real cars," shouts Dudu, rushing over. "They even have little drivers in them, wearing seatbelts! Andile, you're a genius!"

"Wow! I wish my friends in the city could see this!" says Themba.

"Gogo calls him Mr Fixit," says Khanyi, "because he is so good with his hands!"

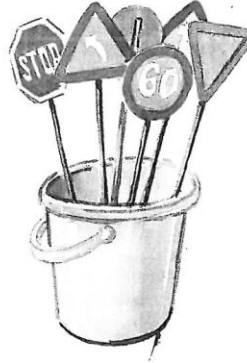
"Can I take one for a test drive?" asks Themba.

"Us too! Us too!" beg the girls.

"Ewe!" replies Andile. "But don't mess them up! I still want to sell them!"

Soon the children are all having fun racing around the yard with the wire cars. "This is better than any bicycle ride!" thinks Themba, as he screeches his car around the trees.

"You kids be careful!" shouts Gogo from the kitchen.



After a while, Gogo brings the children something to drink. She finds them hard at work in the back yard.

"What are you doing?" she asks puzzled.

Khanyi is the first to answer. "Gogo, we're building a road for our little cars."

"See, we are laying out the road and putting on the proper markings," Andile adds.

"And we are also putting up road signs that we've made with some of the junk that we found in Andile's shack," says Themba beaming.

Dudu is busy drawing some markings on the surface. "Yes, now we can all drive our cars safely and not have any more accidents."

"Oh, you children are clever!" Gogo laughs. "I just hope you all know the rules of the road!"

"I know all the rules, because there is a lot of traffic in the city," Themba says proudly. "We learn about the rules in school ... and I can't wait to be a grown up, so that I can have my own car!"



The children walk back to Andile's house, crunching their chips.

"I had so much fun today. It beats anything in the city!" says Themba.

"I was glad you came," says Andile, "I would have been surrounded by girls all day!"

"Hayi suka maan!" says Khanyi, and the children all laugh.

A little way down the road, Khanyi asks Themba, "Are you going to walk home like that?"

"Like what?" he asks, confused.

"In those dark clothes," Khanyi explains. "It's getting dark and if you wear dark clothes drivers won't be able to see you walking."

"She's right," adds Andile. "We need to make you visible to the traffic. I have a plan!"

As soon as they get home, Andile asks the children to give him their empty chip packets. Then he disappears into his shack.

Just as Aunt Zinzi arrives to collect Themba and Dudu, Andile comes out of his shack with a white bundle in his hand.

"What's that?" Themba asks.

"Look!" Andile replies, as he shakes out a big white cloak. "It is made of white plastic bags, with the silver insides of the chip packets stuck all over it." He puts the cloak over Themba's shoulders. "For extra reflection," he winks.

Themba spins around in his new cloak. "Nobody in the city has a cloak like this!"

APPENDIX ELEVEN

Lesson Two, School B, Teacher B [Teacher Road Safety Worksheet]

ROAD SAFETY WORKSHEET

GRADE 5

QUESTION 1

State whether the following statements are True or False.

1. Always wear a protective helmet while cycling. _____
2. You know that the redman in the traffic lights says stop. _____
3. Always keep your bicycle in a roadworthy condition. _____
4. You can play hop scotch in the road. _____
5. Always assist young children to cross the road. _____

QUESTION 2

Why South Africa has many road accidents?
Give 5 reasons.

- a. _____
- b. _____
- c. _____
- d. _____
- e. _____

APPENDIX TWELVE
Lesson Two, School B, Teacher B [Test]

LIFE ORIENTATION COMMON PAPER SEPTEMBER 2011 TERM 3

GRADE 5 P+ MARKS: 50

LEARNER NAME:

45
50
V. Crossed

QUESTION 1

The following table has been muddled up. Match the age to the stage.

| Age | Stage |
|------------------------------|---|
| 6 to 7 years | Baby begins to balance, crawl, walk and feed himself. |
| Approximately 7 to 10 years | Starts playing, running and can now control his bladder. |
| 3 to 5 years | Pre-school. Starts tying own shoelaces. Realises that boys and girls are different. |
| Approximately 11 to 17 years | Grows little by little and prepares for the big changes |
| 0 to 2 years | Puberty. Physical and emotional changes caused by hormones. |

QUESTION 2

SORT OUT THE INVENTIONS BELOW ACCORDING TO LAND, AIR, SEA TRANSPORT.

WRITE ONLY TWO IN EACH.

Sort out the inventions below according to land, air and sea transport. Once you have done this translate the words into a second language eg. IsiZulu, Afrikaans, Sesotho, etc.

| | | | |
|--------------|------------|---------|--------------|
| TAXI | HERCULES | BICYCLE | FREIGHT SHIP |
| AIR BALLOONS | SUBMARINE | TRUCKS | TRAIN |
| MICROLIGHT | TANKERS | MIRAGE | BAKKIE |
| LINERS | HELICOPTER | CANOE | CONCORDE |
| ROWING BOAT | MOTOR CAR | YACHT | BUS |

| LAND TRANSPORT | AIR TRANSPORT | SEA TRANSPORT |
|--|--|---|
| Taxi Bicycle Trucks Train Bakkie BUS Motor car | Air balloons Concorde Helicopter Hercules Microlight | Canoe Yacht Freight ship Submarine LINERS Rowing boat TANKERS |

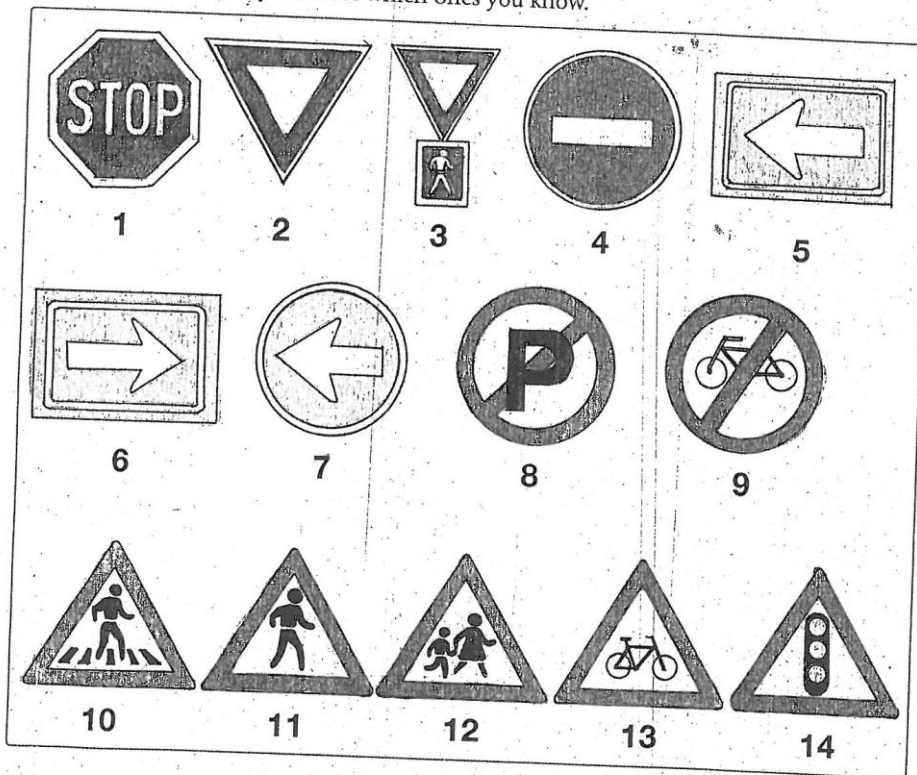
are five rules to keep you safe. But, the rules are mixed up!
 In a partner, match the first half of the rule with the second half.
 Write the rules in your exercise book.

| | |
|--------------|-------------------------------|
| Try to wear | chances on the road. |
| Never play | at a robot if you can. |
| Always use | a light colour at night. |
| Do not take | in the street. |
| Always cross | the pavement if there is one. |

5)
 (5)

QUESTION 6

To keep safe in traffic, it is important to know your road signs.
 There are lots of road signs, but you probably only come across
 some of them every day. Let's see which ones you know.



Activity 13 [Solo/Pairs] Learn your road signs

1. Match each of the road signs named here with the numbered pictures:
- a no parking = 8
 - b no entry = 4
 - c cyclists = 13
 - d one way, left = 5
 - e one way, right = 6
 - f traffic lights ahead = 14
 - g keep left = 7
 - h stop = 1
 - i no pedal cycles = 9
 - j yield to pedestrians = 2
 - k pedestrian crossing = 10
 - l pedestrians = 3
 - m yield = 12
 - n children = 11

(14) 9

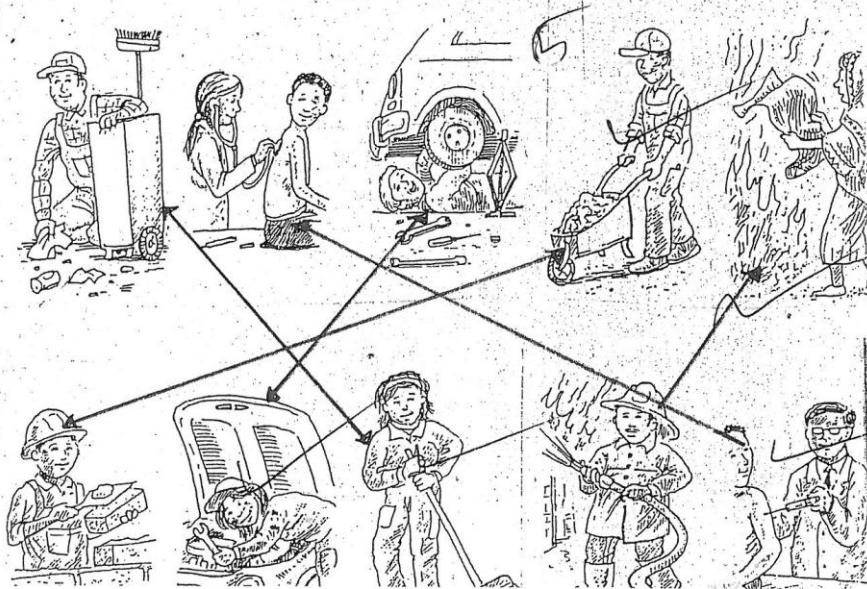
QUESTION 3

1. Match the leaders in the left column with their duties in the right column. Write the correct number in the empty block.

| | | | |
|----|----------------|--------------------------------|----|
| 1 | President | leads a school. | 4 |
| 2 | Sports captain | leads a town. | 9 |
| 3 | Matron | leads a province. | 6 |
| 4 | Principal | leads a sports team. | 2 |
| 5 | Chairperson | leads a business. | 7 |
| 6 | Premier | leads a newspaper. | 10 |
| 7 | Manager | leads a country. | 1 |
| 8 | Minister | leads a committee. | 5 |
| 9 | Mayor | leads nurses in a hospital. | 3 |
| 10 | Editor | leads a government department. | 8 |

QUESTION 4

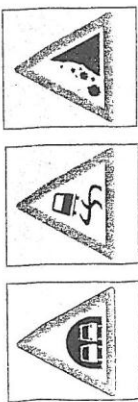
1. Draw lines to match the pictures which show men and women doing the same things.



APPENDIX THIRTEEN

Lesson Three, School C, Teacher C [Worksheet on Signs]

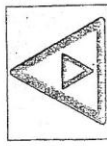
Briefly discuss why signs and symbols are more useful than words in this case.



Signs and symbols



A symbol is a picture that stands for something. It may not even look like. For example, this sign is called a yield sign:



A yield sign tells a motorist to allow others to pass before she or he proceeds. Why does an upturned triangle symbolise this? There is no good reason for this other than that this is the meaning we have learned to give to an upturned triangle on a road sign!

Other signs, like the stop sign, are easy to understand because they say exactly what they mean. Let's study a few road signs so that you can learn how to interpret signs and symbols.

Shape is very important in road signs. Regulatory signs, are signs that have to be obeyed. These signs are mostly (not always) circular in shape, like the ones below.



What is the difference between these signs?

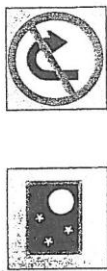
Some regulatory signs have a diagonal line running across them. This means no.



Sometimes two signs are joined together to form a combination sign, which sends a specific message to the road user. For example:



Look at what these two signs mean:



Can you combine the above two signs and then work out what the combination means?

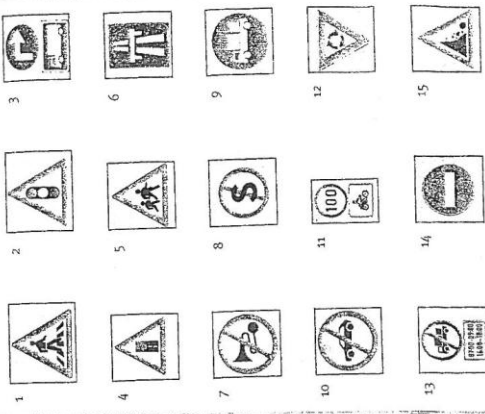
Warning signs warn the driver of dangers ahead on the road. The driver has to take note of these signs and respond accordingly to avoid accidents. Warning signs are always triangular in shape.



Choose a meaning to match each sign.

- Meaning**
- a) No hooping
 - b) Children crossing
 - c) Traffic circle
 - d) No stopping
 - e) Pedestrian crossing
 - f) Robot ahead
 - g) Gravel road ahead
 - h) Loose stones
 - i) Dual freeway begins
 - j) No entry
 - k) No cars allowed
 - l) Delivery vehicles only
 - m) Right turn for trucks only
 - n) No entrance for trucks between the
 - o) Maximum speed for cyclists only

Sign



APPENDIX FOURTEEN
Lesson Three, School C, Teacher C

Grade **5** Lesson 2

Teacher's Notes

TOPIC: Road Signs

LANGUAGES & MATHEMATICS

| Links to the Revised National Curriculum Statement (RNCS) | |
|---|---|
| Learning Outcomes | Assessment Standards: The learner: |
| <p>Languages LO 2 <i>Speaking</i> - The learner will be able to communicate confidently and effectively in spoken language in a wide range of situations.</p> | <p>Languages Grade 5: Uses additional language to communicate information: describes the purpose of something.</p> |
| <p>LO 5 <i>Thinking and Reasoning</i> - The learner is able to use language to think and reason, as well as to access, process and use information for learning.</p> | <p>Grade 5: Uses language across the curriculum: explains some concepts from other Learning Areas; knows and is able to use some of the vocabulary of other school subjects (e.g. Life Orientation). Uses language for thinking: classifies things according to criteria.</p> |
| <p>Mathematics LO 3 <i>Space and Shape (Geometry)</i> - The learner is able to describe and represent characteristics and relationships between 2-D shapes and 3-D objects in a variety of orientations and positions.</p> | <p>Mathematics Grade 5: Describes, sorts and compares two-dimensional shapes and three-dimensional objects from the environment and from drawings or pictures according to properties including:</p> <ul style="list-style-type: none"> • Number and /or shape of faces • Number and /or length of sides |

Outcome:

- To revise and reinforce learners' awareness of the four different types of road signs, i.e. Regulatory, Warning, Guidance and Information.

Notes for Activities:

- 1 **Introduce** the topic by explaining that road signs have the important purpose of keeping everyone safe on the roads. Ask learners if they have seen road signs that have been damaged by people (e.g. spray painted, bent, etc.). Talk about how dangerous this type of vandalism is, because as a result road users cannot see the sign clearly and this could cause an accident. We should all respect public and private property.
- 2 Show learners the **Road Safety Education IP 'Road Signs' poster** and ask questions like:
 - What shapes do you see? (triangles, circles, octagons – eight sides)
 - What colours are the signs? (red, black, blue, white, yellow)
 - What do you think the signs mean? (Explain the correct meanings after hearing learners' explanations.)
- 3 Introduce the four **types of road signs**. Use the information included below to help you.

| | | | |
|--|---|--|--|
| <p>Regulatory Signs Signs that control the actions of road users, for example stop, no entry, yield, one-way road, no stopping, no parking and speed limit signs.</p> | <p>Warning Signs Signs that warn drivers of what lies ahead, for example signs warning of a pedestrian crossing, slippery road, children crossing and/or pedal cyclists ahead.</p> | <p>Guidance Signs Signs that give information and guide us to certain places, for example a sign indicating an airport or a freeway turn off.</p> | <p>Information Signs Signs that provide information of a very general nature and are not direction bound, for example a sign showing a cul-de-sac or a town name.</p> |
|--|---|--|--|

- 4 Play a **game** with the learners. Have learners volunteer to come up and draw a road sign on the board. They must not say what they are drawing and only draw the outer shape. The class has to guess what sign the learner is drawing. The learner who gives the correct answer, gets to draw the next sign.
- 5 **Learner Activity Sheet (opposite page):** Make photocopies of the Learner Activity Sheet or draw the road signs on the board and let the learner copy them onto a blank sheet of paper. Display the **Road Safety Education IP 'Road Signs' poster** to help learners with this activity. Learners fill in the correct letter (A, B, C or D) to categorise the road signs and then colour them in correctly.

APPENDIX FIFTEEN

Lesson Four, School D, Teacher D

Grade **3** Lesson 6

Lesson Plan

CONTEXT: **Road Safety**
LESSON 6 TITLE: **Road Signs**

LEARNING PROGRAMME: **NUMERACY**
ALLOCATED TIME: **+/- 1 hr 45 min**

Links to the RNCS

Learning Outcomes and Assessment Standards

Mathematics

LO 3 Space and Shape (Geometry) – Assessment Standard: The learner recognises, identifies and names two-dimensional shapes and three-dimensional objects in the environment and in pictures, including: triangles, squares, and rectangles; circles, cones and pyramids.

Integration: Languages

LO 1 Listening – FAL Assessment Standard: The learner shows understanding of descriptions by noting relevant information. HL Assessment Standard: The learner listens attentively (extending concentration span) and responds to an extended sequence of instructions appropriate to the learner's level.

LO 5 Thinking and Reasoning – FAL Assessment Standard: The learner uses language to understand concepts and vocabulary relating to different Learning Areas.

HL Assessment Standard: The learner uses language to develop concepts: understands and uses the conceptual language of different learning areas necessary at this level and in preparation for the next level.

Notes for Activities:

- 1 To help learners recognise road signs relevant to pedestrians and understand their meanings, introduce the topic by asking learners about the road signs that they might have seen on the way to school. Learners can volunteer to come up to the board and draw some of these signs. They can talk about what they think each sign means. Explain that road signs have the important purpose of keeping everyone safe on the roads.
- 2 To enable learners to recognise the colour and shape associated with each common road sign, show learners the **Road Safety Education FP 'Road Signs' poster** and ask questions like:
 - What shapes do you see? (triangles, circles, octagon – eight sides)
 - What colours are the signs? (red, black, blue, white, yellow)
 - What do you think the signs mean? (Explain the correct meanings after hearing learners' explanations.)
 - Where do you think a good place would be to put each of these road signs? (e.g. 'A scholar patrol ahead sign should be just before you get to a school so that motorists have time to slow down'.')

Focus on:

- **Stop Sign:** Means that drivers must stop completely behind the stop line, look for traffic and move when safe to do so.
- **Pedestrian Crossing:** Shows that it is safer to cross here but we must still look to see if it is safe and then cross the road in the correct way, i.e. 'Think, stop, look and listen' procedure.
- **Traffic Light Ahead:** Shows that there is a traffic light ahead. This will be a safer place to cross.
- **Scholar Patrol:** Shows that there is a scholar patrol ahead. This will be a safer place to cross.
- **Cycling Path:** Shows where cyclists should ride.

- 3 To enable learners to recognise the colour and shape associated with each common road sign, play a **Mime game** with the learners. Divide the class into two teams. Each team takes a turn to send one learner to the front of the class. They use mime and sound effects - but no talking - to act out one road sign. The other team must guess which sign on the **Road Safety Education FP 'Road Signs' poster** is being shown, for example 'You are saying ride your bicycle here'.
- 4 **Learner Activity Sheet (opposite page):** Make photocopies of the Learner Activity Sheet. You can first go through the activity orally using the learners' home language. You may wish to write the words on the board in the learners' home language - learners can look at the pictures on the Activity Sheet but complete the activity in their home language. Learners join the dots to draw particular road signs. They use the **Road Safety Education FP 'Road Signs' poster** to help them colour in each sign correctly. Learners use the words in the box to write the correct name and shape under each sign.
- 5 **Assessment:** Use the Learner Activity Sheet to assess learners' performance against the listed Numeracy Learning Outcomes and Assessment Standards. You should also observe learners informally to assess their understanding and progress. Listen carefully to learners' conversations and discussions.

APPENDIX SIXTEEN

Lesson Four, School D, Teacher D

Learner Activity Sheet

Name:
Grade: Date:

Lesson 6

Grade

3

Road Signs

NUMERACY

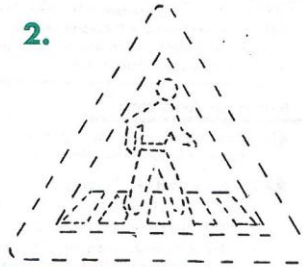
Join the dots. Colour in the road signs using the correct colours. Find the name and shape of each sign in the box below. Write the correct name and shape under each sign.

Cyclists only Stop sign Traffic light ahead circle
Pedestrian crossing ahead octagon triangle

1.



2.



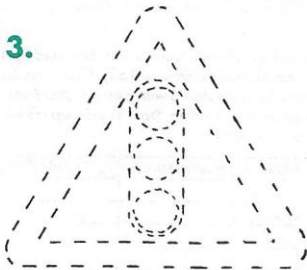
Name: _____

Name: _____

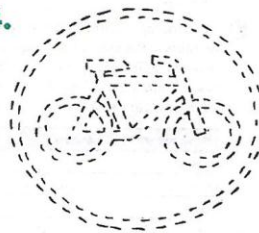
Shape: _____

Shape: _____

3.



4.



Name: _____

Name: _____

Shape: _____

Shape: _____

APPENDIX SEVENTEEN

Lesson Five, School E, Teacher E



The next morning, Dudu and Themba walk to school with Themba's mother, Sarah.

Themba says, "Dudu, I'm so glad that you can come to my school today! We are going to the library!"

"We're going to the library. We're going to the library!" they both sing. Themba is so excited, he does a little dance.

"Themba, you're so funny!" laughs Dudu. Themba's mom laughs too. "You really love books, don't you Themba?" she says.

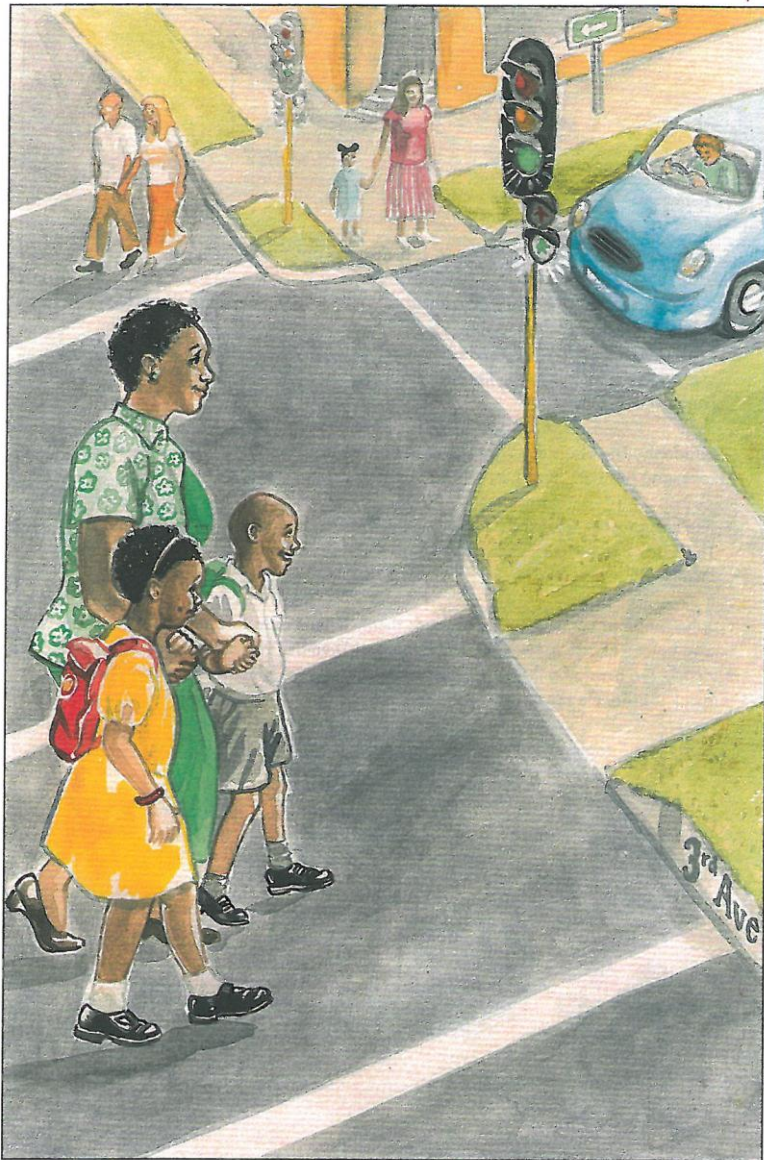
"I love books too!" says Dudu.

"That's very good!" Aunt Sarah replies. "Come now, let's get to school."

On the way to school they have to cross three busy streets. It is early in the morning. People are going to work so there is a lot of traffic. Each time they cross the street, Aunt Sarah holds the children's hands.

Dudu loves the little green man on the traffic light that tells you when to walk and the little red man that means stop. In her village, they don't have a traffic light like that!

"Look, Dudu!" shouts Themba as he starts walking just like the little green man. Dudu can't stop laughing.



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