

CHAPTER 5. DATA ANALYSIS AND RESULTS: THE LIVED EXPERIENCES OF CHILDREN AND THEIR RESPONSE TO ROAD SAFETY EDUCATION

5.1 Introduction

In Chapter 4 I discuss the research design and the methods that I used to collect the data for this study. Chapter 4 also provided a rationale for the chosen methods and the data analysis procedures. In Chapter 5 I offer an analysis of the data collected about the experiences of children and their responses to the road safety inputs that they receive. This chapter offers an understanding and interpretation of the children's voices.

The interpretivist paradigm of the study enabled me to move from the premise that reality could be created from multiple inputs or realities, hence the various instruments used to collect the data. The purpose of this chapter is to make meaning of the data collected through various instruments and to understand the linkages and interrelatedness of the data. A variety of instruments like interviews, activities, field notes and photos were used in order to ensure that the data collected helped in answering the research questions as set out in Chapter 1. The purpose of the study is to understand the RSE phenomenon as it unfolds in the school of the case study.

I used a constructivist grounded theory analysis in the analysis of the data, which means that I moved from the specifics to more general information. This makes the approach used inductive (McMillan & Schumacher, 2001). The constructivist grounded theory analysis aligns with the distinguishing feature of qualitative data analysis, emphasising the systematic process of selecting, categorising, comparing, synthesising and interpreting data to provide explanations of the single phenomenon of the study (ibid.). Through the constructivist grounded theory analysis, concepts emerged.

In true constructivist grounded theory analysis tradition (Glaser, 2002), the concepts that emerged from the data were noted. Through the data analysis, categories of information emerged and these were grouped together according to themes. The common themes were coded and marked during the process of data analysis with different colours in order to identify the emerging patterns and themes. The themes that emerged from this process were studied with the research questions. My intention was

to understand in depth the phenomenon of RSE in the Moloto primary school (McMillan & Schumacher, 2001; Field & Morse, 1985; Seaman, 1987, p. 169; Fox & Bayat, 2007). From the responses given by children I attempted to evaluate how many road safety concepts children knew, and their applicability in a real road environment situation (Field & Morse, 1985).

5.2 Process used in the analysis of data

As indicated in Chapters 1 and 2, children suffer proportionately more pedestrian road traffic accidents than adults. In part this reflects basic skills needed in interacting with traffic, such as the ability to identify safe places to cross the road (Thomson *et al.*, 1996). Educating to remedy such deficits must be prominent in RSE.

The children who took part in the study were in the age category of 9-14 years in the Intermediate Phase. The teachers' voices were analysed as interesting ideas emerged in their interviews. The questionnaire data also helped in understanding the children's responses to the teaching of RSE in the school. Parents' interviews input were also analysed and enriched this study as their views and ideas were used in the analysis of the children's responses.

Participants' data were recorded with a tape recorder. The information was then transcribed in A4 format. This first transcription was done by way of paraphrasing the children's views in order to make sure that I understood them. Where the responses were in Sepedi, they were translated. The second phase was to transcribe the information onto larger A3 sheets to assist me in making the analysis more visual and understandable. The third phase was to colour code the participants' responses and see which categories and themes were emerging. If the same ideas or concepts were being repeated by participants, I decided on a colour and coded that specific idea with the same colour. I then categorised the ideas with the same colour in groups, to form overarching themes. Emerging themes were identified and coded with different colours. The same process was followed with all the other data collected from parents and teachers. During the analysis, a constant comparison was done with all the data

collected once all the colour coding and categorising was done, until saturation was reached regarding the themes and categories.

The themes that emerged from the three sources of data have been summarised in Figure 5.1. The process followed could be graphically demonstrated as follows:

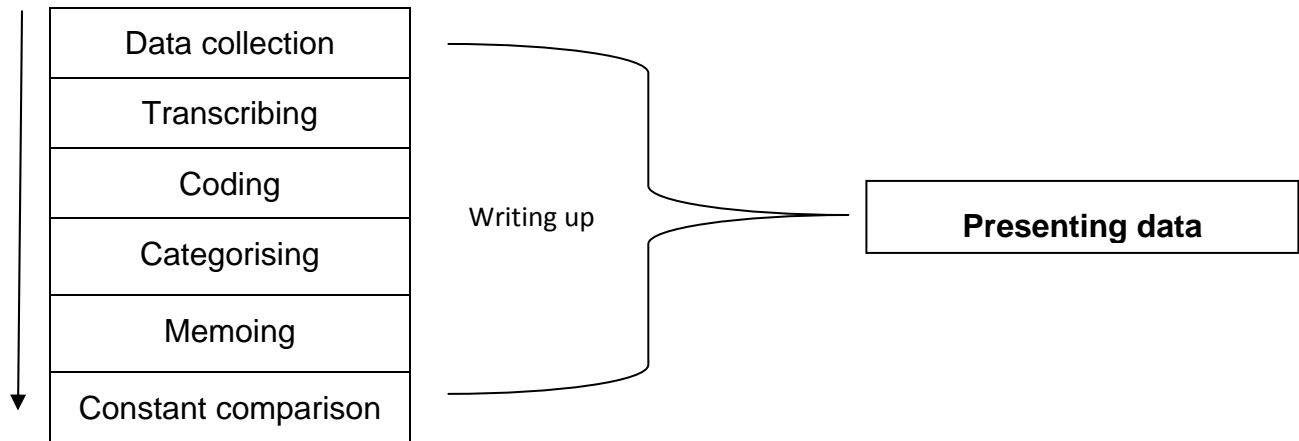


Figure 5.1 Data analysis process

The process involved writing the emerging categories from the data on 76 x 127 record cards. The constant comparison phase included the data collected through observation where photos were taken from children crossing a road to assess the relationship between practice and theory (Cozby, 1989, pp. 48-49; Treece & Treece, 1986, pp. 332-333).

The themes that emerged from these processes were summarised in Table 5.2. below. The children's data are presented in the form of tables or blocks presented and analysed to answer the research questions. The photos of children and other community members taken in the real road environment are presented as evidence to support the themes. They form part of the analysis of the data. A large number of photos were taken but only those relevant to the study have been used.

Two classes were given a drawing task in order to get rich data. Ten drawings that provided rich data for the study are used and they also form part of the analysis. Two teachers were used in the study. They took part unstructured interviews. This helped me to clarify questions they did not understand and for me to ask clarity on the issues

they were raising while answering the questions. Their voices were also recorded. Ten parents were interviewed. The interviews conducted with all participants were individual face-to-face interviews.

In terms of children’s responses to RSE (RSE) the following key themes areas emerged from the data:

- Children’s development of pedestrian skills;
- Children’s’ construction of road safety knowledge and their value of life;
- Children’s being influenced by an unsafe “road environment”;
- Children’s attitudes to road safety.

Table 5.1 Summary of themes and categories

Themes	1. Children’s development of pedestrian skills	2. Children’s construction of road safety knowledge and their value of life	3. Children being influenced by the unsafe ‘road environment’	4. Children’s attitudes to road safety
Category of themes	Look right, look left, look right again; waiting for oncoming cars to pass before crossing 1.1 Road safety skills for pedestrians	Do not leave your child alone on the road; obey the signs that tell them how to cross the road 2.1 Road safety rules 2.3 Children’s understandings of the importance of road signs	Children walking in groups in the middle of the road 3.1 Children’s ignorance of road safety rules 3.2 Adults setting negative example regarding road safety rules	Road safety in South Africa is stay alive, arrive alive 4.1 Children’s positive attitude to road safety

Themes	1. Children's development of pedestrian skills	2. Children's construction of road safety knowledge and their value of life	3. Children being influenced by the unsafe 'road environment'	4. Children's attitudes to road safety
	Do not cross the road when wearing black Do not cross the road when wearing black clothes; walk carefully look at the signs		Parents are using the roads in an unsafe way by walking in the middle of the road, walking in a file and crossing where there are no pedestrian crossings	
	Cross at stop sign or robots	Do not talk while driving.		Do not leave children alone on the road
		Do not drive when pregnant Going to school alone as a sign of being clever.		

5.3 Results of the theme analysis

In the following sections I present the themes which emerged from the data analysis and the subsequent categorisation. I commence with theme 1 and provide evidence for the emergence of the children's development of pedestrian skills and the related categories that supported this theme in the context of RSE.

5.3.1 Theme 1: Children's development of pedestrian skills

Accidents arise from daily, routine behaviour. Pedestrian skills are important to children as they are exposed to traffic when they go to school or coming back from school. It is this level of exposure that makes the teaching of pedestrian skills to children critical so that they could be able to negotiate their way to and from school safely.

The data showed that there was significant development of pedestrian skills among children, in that they indicated what was required of them before they crossed the road to ensure that they crossed safely. Many children showed that they understood the basic rule that they should observe before crossing the road. The rule is: *Look right – look left and look right again before you cross*. Below is a discussion of categories under this theme from child responses.

5.3.1.1 Road safety skills for pedestrians

From the responses of the children during the interviews the category that emerged to support the theme of road safety skills was the children's understanding of what they had to do to cross the road safely. The children's responses are presented in the study as they were given to capture the sense of authenticity and originality.

"I stop look both sides and then I cross" (C1)
"I look left and right and runs across the road" (C2)
"I look left and right and right again then I cross" (C3)

The basic principle of crossing the road is understood, although to varying degrees. The correct procedure to follow will be: *Look right, look left, look right again and then walk across the road*. On the basic level, children knew that they had to stop and look at both sides of the road to assess whether there was *danger* in the form of oncoming cars before crossing. This skill is internalised among most children. The disturbing behaviour is that children stated that they had *to run* in order to be safe when crossing the street. To them, running fast meant avoiding the danger by crossing fast and quickly. This is not safe behaviour. If they fell, the oncoming vehicle would injure them, perhaps fatally.



Photo 1: Children crossing road in unsafe manner

What the children showed when answering the question about the way they crossed the road is that the development of the pedestrian skill of stopping, looking left and right and right again has been learnt and internalised by most children. Theoretically, this has been done.

5.3.1.2 Road crossing skills for pedestrians

Children indicated that they stopped, looked left, looked right and right again. However, they indicated that they did not know why they had to do so. Through the interviews it became apparent that this was what they learnt in the classroom but there was never an explanation as to why they were supposed to look right twice. As traffic keeps to the left of the road in South Africa, vehicles that pose immediate danger are those coming from the right-hand side of the pedestrian when crossing the road. Running across the road is not a safe behaviour or practice at all.

What became clear to me through the interviews with parents is that the children got pieces of information from different sources, e.g. teachers and parents, and then constructed their own realities in the face of danger on the road. In assessing whether parents taught their children the safe way of crossing the street, it became evident that their skills were generic, thus leaving the children to construct their own realities.

A sample of what parents said they taught their children is presented and discussed below.

“I teach my children to stop for oncoming cars” (P1)

“I teach them to be careful” (P2)

“They must cross where there are no cars” (P3)

“Wait for vehicles to pass ”P7

“Be careful all the time ”P9

“Take care of themselves on the road” P5

Given the high level of exposure to traffic by children it would be reasonable to expect the parents to emphasise exactly how the children should cross the road. This is not a message that came out clearly from the corpus of data from parents. When one considers that the children in this rural environment all came to school unaccompanied, the situation is less than satisfactory. Another suggestion was that parental input was not very strong. The messages are vague and generic. Furthermore, the parents themselves did not know what was the right thing to do. This is corroborated by the fact the children indicated that they learned the skill of crossing the street at school.

The other disturbing trend in the theme of developing pedestrian skills among children is that in their task to write road safety messages, the emphasis was on drivers, not on themselves as pedestrians. They thought that if drivers were to act according to the messages they wrote, then the problem of accidents would be ameliorated. The role of development in understanding children’s response to RSE and behaviour on the road is captured in the Department for Transport’s Research Report number 09 (2007) which states that:

The way we represent what we are supposed to be doing about road safety changes developmentally. The younger child understands little about how traffic accidents happen. S/he does not understand that his or her behaviour might cause an accident. S/he conceptualises "good" behaviour on the road as a matter of not damaging things, without reference to the events leading up to any damage. As the older child becomes more aware of the causes of accident, and the role his or her behaviour might play in precipitating an accident, responsibilities on the road are re-conceptualised in a new way: "good" behaviour on the roads becomes a matter of avoiding the behaviours (errors) which might lead to an accident.

Given the view above I conclude that the children need to develop both cognitively and psychologically in order to respond positively to the RSE input. To understand the role of developmental theory, it is important to situate it within the works of Gibson, Piaget and Vygotsky (Department for Transport, Report No. 1). The views of the three development theorists are essential for understanding why the children in the six to 14 years age range behave as they do on the road. In Gibsonian terms, road crossing is a perceptual-motor skill. Therefore, according to Gibson, the road crossing task is at root a perceptual-motor problem rather than one of higher-order interpretation and cognitive construction (ibid.).

On the other hand, for Piaget all knowledge is the result of a process of internal construction directed towards ever more accurate and more parsimonious representations of the world in terms of the activities that could be carried out within it and the objects to which those activities apply. The basic building block of this process of construction is what Piaget calls the *Scheme* – a cognitive unit which defines the sequence of action to be performed towards an object in a particular context, i.e. a form of action plan (Slavin, 2000, p. 172, Mayer, 1987, pp. 18-23).

In Piagetian terms, crossing the road safely would require that the child should be cognitively developed in order to be able to read the environment or situation and adapt to changing conditions. The Piagetian emphasis on learning as a bottom-up process of construction from specific actions in specific contexts has obvious correspondences with the account of skills acquisition provided by Gibsonian theory, that learning road safety skills involves perceptual-motor skills. This in turn provides a link to the work of Vygotsky. While Piaget regards learning as a process of internal construction, for Vygotsky learning takes place via the internalisation of socially constructed or guided behaviour. For Vygotsky, whilst the child may be capable of more advanced activity when working under the direction of another person, learning will not occur until the children begin to take upon themselves the responsibility for directing their own behaviour (Eggen & Kauchak, 2001, pp. 212-246).

Despite Vygotsky's emphasis on the socially directed nature of learning, in common with Piaget he characterises it as a bottom-up constructive process. More complex

activities or functions build upon simpler ones, and the range encompassed by the zone of proximal development moves as learning progresses (Department for Transport, No. 1, 1996).

It is against this understanding that the developmental level of the child has a bearing on their understanding of what causes accidents and their responsibilities on the road that the theory of development is discussed in Chapter 3. The purpose was to illustrate that the child's behaviour is determined by his age and level of development. This makes it very important that teachers should have an understanding of this human development.

5.3.2 Theme 2: Children's' construction of road safety knowledge and their value of life

Another theme that emerges from children through the various instruments used to collect the data is that children have constructed their own knowledge about road safety. They are also well aware of the inherent danger on the roads. As has been shown, crossing the road safely requires competence in perceptual-motor and cognitive skills. Children themselves say going to school alone is an indication that they are cognitively ready to face the challenges of the roads.

5.3.2.1. Road safety rules

The following responses from the children enlightened the understanding of this category:

"I go to school alone because I am clever" (C1)
"I come to school alone... I know what to do" (C3)
"I know the road. I know how to cross the road" (C4)
"I am big enough to go to school alone" (C6)
"I am clever I have been taught about road safety" (C7)

Children took their safety on the roads as their responsibility. They expressed their confidence in using the road to school. Their sense of being clever as pedestrians was

expressed as the ability to walk to school alone unaccompanied by their parents. I observed that no parents accompanied their children to school. This means that anyone who is being accompanied by parents or relatives would be regarded as not clever and not ready to be at school. A child who was accompanied by parents is likely to be despised by other children in the school. They had reached a stage where their road use confidence was very high and they did not see the reason why they should be accompanied to school. According to them, they were confident about negotiating the road to school, to the extent that being accompanied by parents would be a sign that they were not ready to be at school among their peers. They felt that they had been taught the rules of the road and should be set free. They protected their freedom jealously.

In this theme children showed an understanding that is against the common community behaviour of walking in the middle of the road expecting the vehicles to yield for them. Children's views illustrate this point.

"I walk on the side of the road" (C1)

"I use the small space next to the road" (C3)

"I walk on the side of the road. I cross at the stop sign. I wait for cars to pass before I cross". (C4)

"I do not play on the road" (C10)

What came out clearly in the child responses was that there was inherent danger in walking in the middle of the road. This theme builds on the first theme about the development of safe pedestrian skills. What is critical is that the child participants knew where the danger for pedestrians was but this was not borne out by the general community behaviour, where walking in the middle of the road was the norm. The photographic data indicates that the children contradicted themselves, by not doing what they "preached" about road use. They walked in the middle of the road, as did the adults in the community. Photos 2 and 3 contradict what the children say they do when using the road above. Photo 2 shows children walking in a file and crossing where there

is no pedestrian crossing marks. While photo 3 shows children from school walking in the middle of the road.

“Do not drive when pregnant” C6

“Do not smoke and drive” C7

“Do not talk on the cell phone while driving” C7

“When you are in a car you must be sure that you know the sign of the road” C 10



Photo 2: Children walking in the middle of the road



Photo 3: Children walking in the middle of the road

Coupled with the concept of the danger of playing in the road is the acknowledgement by children that road safety is important in their lives as pedestrians and it should be taught at home and at school. Children expressed their views in the following way:

“Yes – each child should know how to cross the and avoid being knocked down by cars” (C2)

“Yes Road safety is important because people do not take care” (C1)

“Yes road safety education is important because most cars drink and knock down children. Children should be careful as well.” (C3)

“Yes road safety is important as some people do not know the road rules” (C4)

“Yes many children are killed on the road” (C9)

“Yes they must teach children to look for vehicles” (C10)

In an activity where children had to write road safety messages, one child participant encapsulated this theme in this way:

“If you get in a roid you must look at the lerft and to the rite If you not see a car coming you must go most of the people thei do n’ t look at the left and to the rite please does who don’t know to go at the street please Do n’t live children to play at the street Because the car will bite them at the street is danger to send children to go at the roit to go and buy something at the shop” [verbatim transcription]

The above statement shows recognition that the roads are dangerous. The child respondent is making a plea that parents should not send children alone to the shops. The child is well aware that the exposure that they are going to be subjected to when out on the street might cost them their life. This is lived experience as the children pointed out that the child who was recently killed by a car in the village was sent by the parents to the shop. The level of exposure means that the child is exposed to the ever present danger of being knocked down by a vehicle.

Another value of life that came out on the road safety messages from children was that they understood family values and the importance of the family and their value of life. The following messages are instructive in this regard:

“When you drive think about your family” (C3)

“Drive carefully do not kill your family, yourself. You will cry forever” (C3)

“Don’t live children to play at the street Because the cur will bite them at the street is danger to send children to go at the roit to go and buy samething at the sho”(C8)

Dnot send ababy like at the market and he/she is going to gross the road because the car is goind to kill the child”(C2)

“your parent will cry foever and forever don’t try to kill your self” (C3)

The purpose here is to understand and make sense of children’s constructions of danger or the reality that faces them as pedestrians. The concern of the child is that a driver who is reckless will kill his family, and if he survives the accident he will regret his actions for ever. This shows the child’s ability to appreciate the value of life and the importance of a family with all parents present.

Children did not seem to be concerned about their safety as pedestrians, but they were concerned about drivers. A sample of messages illustrates this point clearly.

“Check your car before you go on a long trip” (C5)

“Do not talk while driving” (C6)

“Do not drink a black label” (C9)

“Do not smoke and drive” (C7)

Of the ten child messages I used, only four children had one message each dedicated to pedestrians; the rest of the messages were directed at drivers. This is a disturbing finding in that children thought that the problem of deaths on the road was with the drivers. They did not see pedestrians as contributing to the problem of fatalities on the road. In other words, they did not take responsibility for their own road safety skills. They blamed drivers for knocking down pedestrians.

Another disturbing trend is that in the case of the four children who wrote messages to pedestrians, their messages did not go beyond the concept of *look left – right and cross the road*. The only message for pedestrians that stood out from one child was “wear bright clothes”. This is an important message in the sense that the child was aware or understood that if a pedestrian was using the road and wearing dark clothes, drivers would not see him. The theme of visibility on the road is critical for pedestrians as it goes together with developing safe pedestrian skills.

In a group activity where children were required to draw a typical road environment with all the safety features, two children drew an informative picture of pedestrians crossing on a pedestrian crossing. However, when they summarised their picture, all the messages were directed at drivers, and there was no message for pedestrians.



Drawing 1: A picture of a typical road safety environment with road safety features

The two messages from the two children accompanying this picture highlight the fact that there is a need that children should be taught to develop pedestrian skills (verbatim):

Child 1	Child 2
<p>“Don’t drink and drive because you are in ntrable”</p> <p>“Please don’t drive more speed like speed 220</p> <p><i>Arrive Alive</i>”</p> <p>“Follow rotes safe</p> <p>And follow rotes traffic sign”</p> <p>“And when you drive wear belt of car because belt will safe your life when you do an accident the belt of car will safe your life”</p> <p>“If you are a drink person do nt even drive because you will surely die”</p>	<p>“Don’t drink and drive: <i>Arrive Alive</i>”</p> <p>Speed kills people Don’t drive a speed of 280</p> <p>“Do not play on way if you are a child”</p> <p>“If you want to jump on the way please look at the robot when it say red”</p> <p>“You must stop a car and people jump roads”</p>

The expectation is that the children should have focused more on the concerns for pedestrians as the picture illustrates. However, the emphasis is on what drivers should do. The conclusion drawn is that as pedestrians they see the problem as with reckless drivers. No responsibility is apportioned for pedestrians to ensure their safety by crossing at pedestrian crossings as the picture clearly shows. Children are not aware of their responsibilities as pedestrians – hence, there is a need for the development of pedestrian skills among children.

During interviews, children pointed out that they knew how to cross the road safely. .In contrast to what came out strongly in children’s responses regarding the theme of developing pedestrian skills of crossing the road safely, the teachers expressed the contrary view that children had not yet developed the pedestrian skill of safely crossing the road.

5.3.2.2 Road safety rules for drivers of vehicles

One disturbing finding that emerged in the study is the shifting of responsibility by the children to the drivers to ensure safety on the roads. This confirms what I pointed out in 5.3.2.1 that children do not see their behaviour as a potential cause of an accident or

them being hit by a car. In their thinking it could only be the fault of the driver if they are hit or get involved in an accident. In this section a number of messages from children are discussed to show that they shift the level of responsibility on the road to the drivers, Most of their messages are directed at drivers as opposed to pedestrians.

Table 5.2 Comparison of messages to pedestrians and drivers

Messages for drivers	Messages for pedestrians
<p>“Do not drink more than two beers when using the road” (CA7) – Theme: Drinking and driving</p> <p>“Slow down for your safety” (CA6) – Theme – Speeding</p> <p>“Ensure your vehicle is road worthy”- (CA) – Vehicle Fitness</p> <p>“Do not talk on the cell phone while driving” (CA7) Moving violation</p> <p>“Get rest every two hours” (CA6) – Theme: Fatigue.</p>	<p>“Do not leave your child alone on the road” (CA7)</p> <p>“Do not cross the road when wearing black” (CA7)</p> <p>“Obey the signs that show you how to cross the road” (C4)</p>

One of the messages that children were asked to write summarised the impact and input of the *Arrive Alive* campaign in teaching road safety through the mass media by saying “*Road Safety in South Africa is stay alive – Arrive Alive*”. On the issue of causes of accidents I noticed that the drinking and driving, speeding, lack of road signage, featured prominently on a list of children as the major causes of accidents in Moloto area, the site of the study. The following is a sample list of causes of accidents given by child participants.

“Drivers speak on cell phones” (C2)

“People go to taverns before driving” (C3)

“Lack of traffic police, people do not follow rules” (C4)

“No road signs , people do not obey traffic rules” (C9)

“People play on the road” (C10)

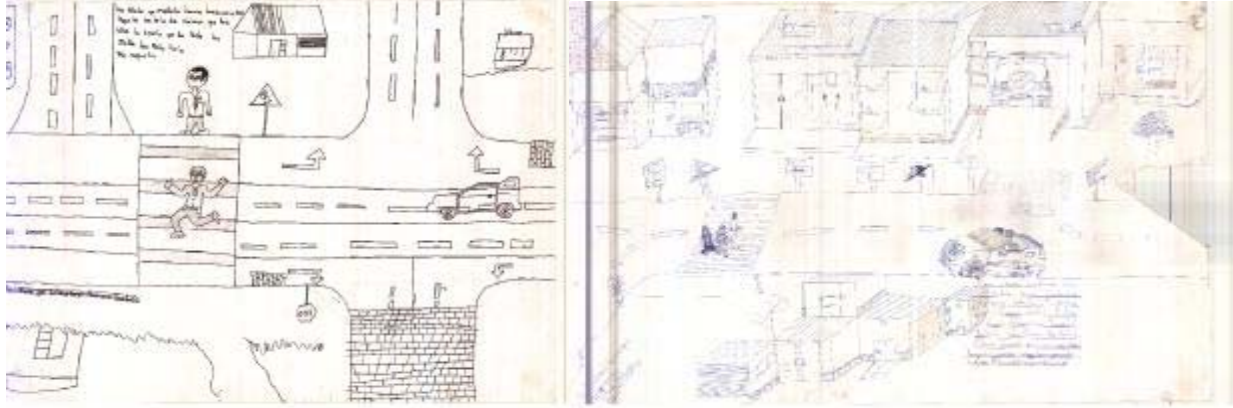
“Children go to shops alone” (C2)

“Moloto road has no robots” (C7)

What I realised from all the information collected from children through the various instruments is that the theme of the role of signs in the prevention of accidents features prominently among children. They were convinced that the erection of road signs on the roads that they used would lead to a decrease in traffic accidents. This theme is discussed later.

5.3.2.3 Children’s understanding of the importance of road signs

Another category of Theme 2 is children’s expression of their understanding of how relevant road signs were. Road signs play a very important role in road safety. They regulate the movement of both cars and pedestrians. They warn road users of danger on the road. This theme was critically important to the children who participated in the study. This comes out in all the instruments that were used to collect the data. What is interesting is in the task where they were requested to draw an ideal Moloto road, the road signs featured. What is even more important is that the road signs that appear on their drawings were not on the Moloto road at the time of doing the study. The signs that feature prominently are the stop signs, pedestrian crossings, robots, pedestrian crossing signs, and warning signs indicating that no pedestrian crossing is allowed.



Drawings 2&3. Signage: the Moloto road

Almost all drawings indicated children's ideal Moloto road with all the features in a form of road signage which they hoped would reduce accidents. What is significant for the study is that the child participants seemed to have a clear understanding of road safety and what a safe route for pedestrians like them should be. They proposed that the Moloto road should have a four-way stop where pedestrians could cross safely. Another proposal was that it should have robots to regulate the movement of both vehicles and pedestrians and all other road users.

The theme of knowledge of road signs and their importance in road safety also featured prominently in parents' input to children's education in road safety. What I observed is that parents taught their children and schools taught the children the following messages:

- "Walk on the side of the road" (P1)
- "Walk on pavements – look for cars" (P6; P9)
- "Cross where pedestrians cross" (P10)
- "Face on coming traffic" P5

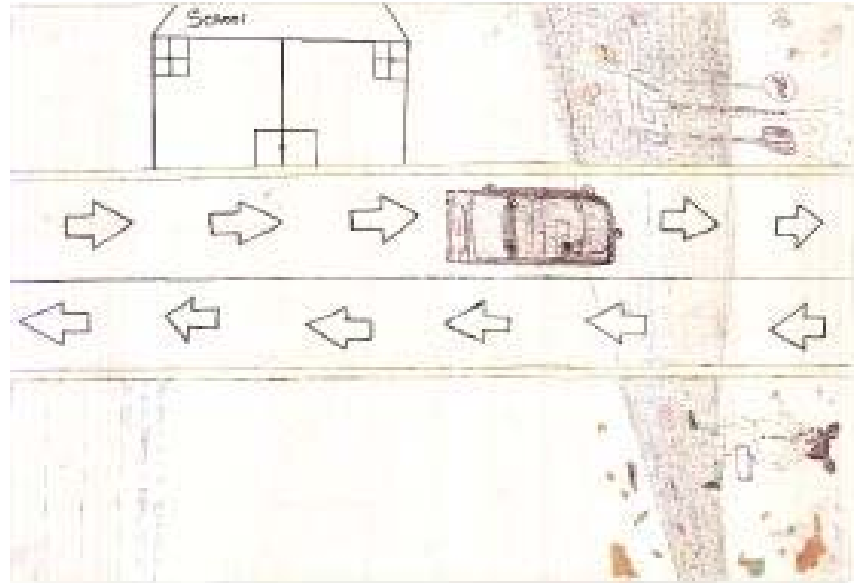
What I observed was that although children were taught the importance of road signs, of walking on pavements and crossing at the pedestrian crossing, the roads were

designed for cars. There were no pavements and in the whole of Moloto village, there was only one pedestrian crossing far from the school. Children or any other pedestrian would not walk a distance to cross at a relatively safe spot. They would rather take chances and cross where they are not supposed to cross. In most road infrastructures the design is for vehicles and pedestrians are supposed to fit into that design, which is not pedestrian-friendly. This is the reason why pedestrian facilities are always added after the completion of the building of the road – in most cases only when the community exerts pressure after a number of pedestrian fatalities.

Information from parents did not yield any new information that differed from what emerged from child interviews. Only aspects that did not come from the children were discussed. However, what was important about the data from the parent interviews is that parents did not relegate the teaching of RSE to schools and teachers, but saw themselves as an integral part of the endeavour to teach their children road safety. One parent said: “Batswadi ba swanetse ba tlaleletse se mathitšhere arutang bana” (*parents should complement what teachers are teaching the children*).

There were also some disturbing aspects revealed by the pictures. The first disturbing feature was children observed and photographed playing soccer by the road.

Another disturbing feature presented by the drawings data was children crossing where there were no pedestrian crossing lines.



Drawing 4: Children crossing where there are no pedestrian crossing lines

This is dangerous for children as vehicles are supposed to drive at 80 kilometres per hour through the Moloto village and the observation revealed that very few drivers obeyed this speed limit. Besides, even a vehicle travelling at 40 kilometres per hour can kill a child.

What the theme of the significance of road signs in road safety shows, is that child participants in the study believed that if there were signs, drivers or all road users would obey these signs and accidents be minimised. Unfortunately, the reality is that in South Africa the level of compliance with traffic legislation on the road is very low and the law enforcement aspect very weak and disjointed. Reckless drivers are well aware that chances of being caught are very low.

Interviews were conducted with teachers. Some representative comments were:

“Children lack knowledge of safety rules; they do not know the basics when crossing the road; they underestimate vehicle speed” (T1)

“Lack of basic safety rules among children for crossing the road; they do not face oncoming traffic, they **compete with cars on the road**” (T2) [emphasis mine]

“Children do not practice what has been in class they with unsafe manners taught at home” T1

“Lack of supervision to ensure they practice what has been taught” T2

The concerns raised by the teachers indicate that although the children indicated overwhelmingly that they had internalised the basic skill of crossing the road safely, the teachers indicated that this was not the case. As an interpretivist, I came to the conclusion that the children, although they knew what was the right thing to do when crossing the road, in practice did not behave as they had been in taught in class. The knowledge they acquired from the class had not been translated into safe road use behaviour.

There is therefore a disjuncture between what they knew theoretically and what they did in the real road environment. This phenomenon is borne out by the fact that in the messages that they wrote in the message exercise, the children did not regard pedestrians as a source of or contributors to causes of accidents. Their messages were directed at drivers and driver behaviour, but never pedestrian behaviour. The photos taken during observations of children using the road show that the behaviour of the children did not indicate that they practiced the skill of looking right, and left and looking right again before crossing the road.

I conducted the observation during the first week of my fieldwork. I parked the car at a strategic point and observed how children and even community members used the Moloto road and the arterial roads. I chose areas mostly used by children on their way to and from school. The mornings and the afternoons were characterised by movement of children negotiating their way either from or to school.

I observed that children crossing the Moloto road everywhere. They did not cross where there were pedestrian crossings. They crossed in a file. Another unsafe behaviour observed is that children walked in the middle of the road. Children, although they knew the right skills, did what other community members were doing. This indicates an unsafe community influence. This theme is discussed later.



Photo 4: Children walking in the middle of the road

The following characteristics of pedestrian behaviour can be drawn from the data and evidence presented above:

- Children were crossing the road away from pedestrian crossings – they were crossing everywhere;
- Children knew what they should do before crossing a busy road like the Moloto road, but they did not put their knowledge into practice;
- They walked in the middle of the road as everybody did; especially in the road in the village they expected vehicles to yield for them;
- They crossed the road in a file.

5.3.3 Theme 3: Children's ignorance of road safety rules

Two distinctive categories emerged in this theme. The one is *children's ignorance of road safety rules* and the other one is *adults setting a negative example regarding road safety rules*.

5.3.3.1 Children being influenced by the 'unsafe' road environment



Photo 5: Children walking across the road in a file

Another example of unsafe road use behaviour by children is that they walk across the road in a file. This is a very dangerous behaviour when one considers that they are crossing where there are not supposed to cross. Photo 5 shows both adults and children in the middle of the road. In the long run children internalise this unsafe behaviour and becomes difficult to change it when they are adults. Pedestrians are supposed to cross safely on a pedestrian designated area as indicated by the pedestrian crossing like the one shown on photo 6.



Photo 6: A typical pedestrian crossing

The children's understanding of road safety was reasonably good, as evidenced by the data collected through the drawing activity and the children's response obtained through interviews. On the other hand, a feature of children's use of the road was that they walked in the middle of the road and expected vehicles to yield for them. I conclude this is owing to the influence of the community. My observations and the photographs I took show that it is a norm in the village of Moloto to walk in the middle of the road.

5.3.3.2 Adults setting a negative example regarding road safety rules

Another example of unsafe road use behaviour by adults is that they walked across the road in a file. This is very dangerous behaviour when one considers that they were crossing where they were not supposed to cross. Pedestrians are supposed to cross safely in a pedestrian-designated area, indicated as pedestrian crossings.

The second category of *adults setting negative example regarding road safety rules* is clearly illustrated by the photo 5. The adults are seen using the road in an unsafe way with the children, thus setting an unsafe example for the children. They are even crossing the road at a very dangerous part of the road with no pedestrian crossing. It is this kind of unsafe community influence that undermines the theoretical input that the

children might be learning from the classroom during the LO period. A concerted effort between the school and the community is lacking in the village of Moloto. In South Africa a pedestrian crossing is marked with white lines across the road.

The photos of children and community members using the Moloto road and the arterial road into Moloto road indicate that children had internalised the community practices even though they theoretically knew that they were supposed to cross at pedestrian crossings as the drawings indicate. Specifically, one of the features children recommended for making the Moloto road safer is pedestrian crossings for children and pedestrians in general. It seems, however, that there is no correlation between what children knew with regard to pedestrian safety and what they did in practice. An explanation for this anomaly is that the community as a whole uses the road in such a way that it is unsafe and children have internalised this unsafe behaviour.

5.3.4 Theme 4: Children's attitude to road safety

Two discernible categories emerged from this theme. They are *positive attitude to road safety* and *contradiction between theory and practice of road safety*. Although the children's road use was unsafe, what emerged from their interviews and the road safety messages that they wrote is that they had a positive attitude to road safety. I was heartened by this attitude as the number of road deaths on the South African roads is increasing exponentially as in indicated in Chapters 1 and 2. It gave me hope that maybe the new generation of drivers will take road safety seriously.

5.3.4.1 Children's positive attitude to road safety

The child respondents were very much concerned about road accidents as the following responses and comments in the written messages from them show (verbatim transcription). This positive attitude could serve as a foundation in which road safety teaching and consolidation could be build.



Child no. 4

Message number 1

Don't drink and drive.

If do you drive, drive carefully at the road.

If you walk walk carefull look the sign.

You must look Left and right to jump the road.

And the sign show you How to jump the road.

Child no. 8

Meassage number 2

1. Don't drive speet kill.
2. When you drink alcohol don't drave car because you are going to have problem.
3. When you go at roud you mas go slow you mas see awer sane [*sign*] at roud let say maby her you drave speet you mas drave speet when sane of the roud set her you drave slow you mas drave slow.

Don't say no dis sane he did not spoke anything you set no I drive speet you are gowing to cose a trable When you drink alcohol don't drave car at the bing [*busy*] roud let say mabe at forwehi [*fourway stop*] When you drive car you mas be caful maby dis is forwah [*fourway stop*] you mas storp and youma cherk Left and right maby you did not see anything you mas cros.

Child no. 10

Message No. 3

Road save:

When you are in the road you must be careful.

When you are in a car you must be sure that you now [*know*] the sign of the road.

When you to cross the road-you must look at the right hand and left hand.

You must not play in the road some of the car they will cose a problem to you.

You must go with some one! When you afrait.

5.3.4.2 **Contradiction between theory and practice of road safety**

The positive attitude of the children is contradicted by what I call the unsafe culture of road use which permeates the community of Moloto where the primary school in the case study for the study is situated. The photos taken during the observation phase of collecting data time and again show this contradiction between the enthusiasm and positive attitude to road safety and what the children do on the road. The photos show children crossing the road recklessly. They are violating the basic rule of crossing the road, *look right, look left and look right again* before crossing. They are seen crossing in a file, crossing where there is no pedestrian crossing. Not even the presence of a police vehicle deterred them from this unsafe behaviour.

I finally came to the conclusion that there was no correlation between what children learn about road safety and what the community environment and culture offered them. My conclusion is that this presents a dilemma for the children. They are modelling or imitating the behaviour of community members, who are in the general sense the parents of the children.

The general picture that emerges here is that children were confident about their use of the road as evidenced by their dislike of being accompanied by parents to school, as they regarded themselves as “clever or big enough”. Children’s responses could be evaluated at two levels: theoretical and practical.

On the theoretical level, children have revealed a reasonable understanding of what they had to do to ensure that they used the road infrastructure safely. They also understood and appreciated the role that road signs play in ensuring that the roads are safe for pedestrians as evidenced by the drawings of an ideal safe Moloto road. They were crying out for road signs that would improve the safe movement of children when crossing the Moloto road. They recommended robots, pedestrian crossings, and stop signs, and signs prohibiting pedestrians crossing.

On the practical level, though, child participants were observed behaving in an unsafe way on the road by crossing in a file, and walking in the middle of the road expecting vehicles to yield for them. This is a culture that could be deadly in an environment

where the child is outside his village. What they knew theoretically was not practiced in the real road safety environment.

What also emerged strongly is that children's attitude to road safety was positive as there was an awareness that using the road infrastructure in a reckless way was dangerous. The central argument is that road safety is important, as "a ba hlokomele mo di tseleng" (most people are not careful on the road) – the implication being that those who are careless on the road get killed.

The community practice of walking in the middle of the road has been internalised by the children even though theoretically they knew what they had to do to be safe. Parents were also aware that that they had a role to play in the road safety of their children. Understandably, their input was generic and limited to exhorting their children to take care of themselves when out on the road. This is a good start as it conscientises the children's about the general need for them to look out for danger in the form of vehicles.

There are a number of disturbing factors that emerged from the analysis of the responses of the child participants. They are:

- They did not use the road safely;
- There was no correlation between what they knew and what they did in practice;
- Their level of confidence in using the road safely was significantly high;
- They understood the value of receiving RSE in school.

5.4 Teacher input into the road safety phenomenon in the school

Teachers were important in the study in helping the researcher to understand teachers' views and perspectives regarding the teaching of road safety, as they were the main role players and particularly as they were in contact with the impressionable minds of the young children who were the focus of the study. Two teachers were used in the study. They were chosen as they were teaching LO, which encompasses RSE. The themes that emerged from the teacher interviews and questionnaires are discussed in this section.

Although RSE is part of the mainstream curriculum, its implementation depends both on school policy or practice and to a large extent also on the attitudes of individual teachers to the subject. Harrison, Penman and Pennela (1997) indicate that where a teacher is strongly motivated to include RSE it would be expected that this area would receive greater emphasis than might be the case when teachers are less motivated. Highly motivated teachers would be expected to include RSE resources and activities in a range of key learning areas, which in terms of learning outcomes is highly desirable.

The teacher interviews and questionnaires revealed some thematic dimensions to the understanding of the road safety phenomenon in schools as part of the mainstream curriculum. In this section I discuss themes that stood out in the data from teacher participants. The triangulation of data from children, parents and teachers gave me the whole picture of what is happening regarding road safety in the Moloto primary school. The ideas that emerged from the responses of the teacher participants are summarised in Table 5.3.

Table 5.3 Summary of ideas that emerged from the teacher participants

Ideas	Lack of training for teachers to teach road safety	Unavailability of resources	Lack of road safety skills	No co-operation between road safety officers and teachers	Road safety is not regarded as a priority by government
	No training	No media	Children crossing where they are not supposed to cross	Road safety officers no dot visit regularly	Road safety is not taken seriously by government
	More workshops	Department of transport must provide posters, newsletters	Walking in a file ; running across the road	Road safety officers do not visit schools when invited	Teachers not well trained
		No facilities for simulation			

The data collection for the study relied on a number of instruments to enable me to understand the phenomenon of teaching road safety as part of the mainstream curriculum in schools in Mpumalanga. Data sets were triangulated between responses from the children, teachers and parents. This was informed by the premise that for a RSE to be effective it should involve the inputs of these three role players.

5.4.1 Lack of training for teachers to the teach road safety education

As indicated above, teachers are very important role players in the teaching of road safety education as they are in contact with impressionable children. An introduction of any programme that has to be taught to children must of necessity be preceded by through training of the people who are to implement that programme. Anything short of that will not succeed. Teachers were very emphatic that although they were required to teach road safety competences they had not been trained adequately where training occurred. In the case of this study one teacher pointed out that she never received any training or attended any workshop regarding the teaching of road safety. The other teacher indicated that she had attended a one-day workshop where they were workshopped on road safety rules. She felt, however, that “More follow-up workshops” were necessary to equip them with the knowledge to teach road safety competencies adequately.

By their own admission, one may conclude that whatever the teachers were teaching the children about road safety depended on what they themselves had gathered. As one teacher indicated, the children were unable to use the road safely as the road environment on the national roads and towns is different from what they have in the village. Therefore, she asserted: “more information is need on national roads”.

5.4.2 Unavailability of resources

The inadequacy of the teachers in teaching road safety competencies was compounded by the lack of suitable resources. The resources for which teachers are crying out are posters, pamphlets, magazines, newsletters, and a Junior Training Centre (JTC) for road safety simulation. Teacher 1 indicated that they were fighting a losing battle, because when such resources did become available, they were soon damaged as there

was “no space to store the resources”. The classes are overcrowded and there are no cupboards to store the teaching materials. As a result the children destroy them, according to Teacher 1. A typical class accommodates on average 60 children at the primary school that was used in the focus study.

The lack of resources means that whenever teachers teach RSE, their teaching remains only theoretical. According to the teachers, there were no practical activities taking place to assess whether children understood the theoretical input in the class. As one teacher pointed out, there was no supervision to ensure that children practiced what they have been taught. It is not even expected that one can measure the behavioural impact of RSE in a school when there is virtually no use of road safety resources and practical activities in teaching road safety. In this context, it is understandable why children behaved the way they did on the roads – they had not been shown safe road use behaviour in practice to support the theoretical teaching. The literature reviewed in Chapter 2 stressed the importance of RSE programmes based on behaviour rather than cognition and therefore the preference and bias towards schoolground or on-road activities over classroom activity.

5.4.3 Problem areas identified by teachers regarding reasons for children’s unsafe road use behaviour

Teachers listed the following aspects as problem areas regarding the behaviour of children using the road in an unsafe way.

“insufficient road safety teaching in schools” – T1

“Children do not know the road signs – T1; T2

“Lack of knowledge of safety rules” – T1; T2

“Children do not practice what they have been taught in class” – T1

“Lack of practical input for road safety simulation” – T1

“No practical road safety activities” – T1

“Road safety is not taken seriously by government” – T1; T2

“Low level of education among parents” – T1

“Lack of training, resources” – T1 , T2

“No cooperation between road safety officers in the area and teachers.”

“Lack of basic knowledge for crossing the road safely” – T2

“Lack of synergy between what is happening in schools and at home.”

This data correlates somewhat with what the children and parents expressed on their road safety behaviour.

5.4.4 No co-operation or working relationship between road safety officers and teachers

The teachers bemoaned the fact that road safety officers did not visit the schools regularly. As one teacher pointed out: “They do not visit the schools even when invited”. This is a major weakness in the attempt to teach road safety from a holistic point of view. Road safety officers as “experts” are ideally supposed to help the teachers, particularly with issues relating to content and resources like pamphlets, posters, road signs and other media that could be of help to teachers who teach in an environment where they do not have the luxury of a library and technology.

The sharing of expertise and best practice is the cornerstone of any RSE programme (Department for Transport, 2009, p. 62). The absence of a working relationship between teachers and road safety officers implies that there is no sharing of expertise and maximisation of resources. Maximising effective delivery of road safety in school requires the cooperation of all the stakeholders even those outside the education realm.

What seems apparent is that most road safety officers are not aware of the role that they are to play in supporting teachers to implement the road safety competencies.

There is a strong case to be made for role clarification if any sort of working relationship is to be achieved. The Department for Transport's Road Safety Research Report 99 (2009) indicates that much of road safety officers' work is hands-on, with the majority of staff involved in the direct delivery of RSE, instead of *focusing on publicity or capacity building activities*. The situation in the Moloto area calls for the road safety officers to focus on working with teachers by workshopping them on the various road safety competencies that they have to teach instead of trying to visit schools themselves in trying to deliver road safety directly.

5.4.5 Road safety is not regarded as a priority by government

As I indicated in the literature review in Chapter 2, political will is critical in successful implementation of RSE. In South Africa, RSE competes with other social needs like the provision of water, electricity and housing. In a developing country such as South Africa, road safety as a social imperative is likely to take a back seat. In the context of the teacher participants' responses, RSE is not regarded as a priority because government is not supplying materials (resources) and workshops to empower teachers to be effective in their delivery of RSE.

Curriculum 2005 requires that teachers in the new teaching paradigm should be resourceful and ingenious. The implication for the teachers in the case study was that they should look beyond the narrow learning area that encompasses road safety competencies and look for resources outside this realm if they are to manage the task at hand. Parents and the community are a better resource for teach road safety. In-service training in this regard could go a long way in broadening teachers' horizons in the road safety realm.

5.5 Summary of data from interviews

One significant theme that emerged from interviews with child participants was the development of pedestrian skills at theoretical level. During interviews child participants indicated that they have internalised the basic principle of crossing the road safely. The principle is: *look right, look left and look right again and then walk across the road*. However, there is a disturbing finding in that child participants do not know why they

have to look left, right and right again. It seems that they have just been taught but have no understanding that they look right twice before crossing the road because in South Africa we drive on the left and the vehicles coming on the right pose an immediate danger when a pedestrian is crossing the road.

What also came out during interviews with parents, teachers and child participants was that the child participants received this road safety principle from different sources without thorough practical experience. In other words, they have been told to do that as the right and safe thing to do. In short the child participants were reciting this road safety skill without comprehension. Another feature of the child participant's interviews was that they are very confident in using the road and they do not want to be accompanied by their parents. For them to be accompanied by parents means that they are not clever. Nearly all child participants commented that parents and teachers contributed to their knowledge of road safety. To a lesser extent they pointed out that brothers and other siblings contributed as well. Strangely, child participants disliked the idea of being accompanied to school. They felt that they would be ridiculed by other children as not being "clever". They guarded their independence jealously and they were surprised that during the interviews I would also bring up such an issue. An interesting finding is that child participants' road side behaviour is in direct contradiction to the theoretical knowledge that the research shows they have. For instance the research found that child participants respect road signs and value life. But the way they use the road without obeying the basic rules of using the road and obeying the road signs belies this theoretical knowledge. They cross where there is no pedestrian crossings, cross the road in file, walk in the middle of the road

On the other hand teacher interviews revealed the following themes: lack of training for teachers to teach road safety competencies, unavailability of resources, lack of a working relationship with road safety officers and road safety being regarded as no priority by the teachers. All the above aspects contribute to low morale and the ignoring of the teaching of road safety by the teachers.

With regards parents, the interviews revealed that although parents indicated that they do their bit to teach road safety to their children it does not go beyond warning their

children to be careful on the roads. Parents were aware that their children faced danger on their way to and from school in the local environment within the Moloto village. This danger related to traffic. Although parents accepted and acknowledged the inherent danger posed by traffic to their children they strove for a balance between offering RSE to their children and encouraging independence to their children within the safety framework. What also came out among parents and observed by me was that parents in this village are hapless mainly because of a variety of reasons. Key among them are: limited knowledge of road safety and inability to read and write; their struggle for survival meant that they are away in the Tshwane metropole working as domestic workers and selling wares along the roads and near schools. As a result, parents do not have sufficient time to be with their children. They are absentee parents.

Commenting about the absentee parents in the Moloto village Muller, (2009, p.50) points out that most of the region's working people endured a long daily commute down the infamous Moloto road to Pretoria, affordable only because government subsidises the bus companies. He further says it would have been far more sensible to spent the subsidies and Development Bank of Southern Africa (DBSA) loans building houses in Pretoria. And that was before considering the quality of life of hapless workers whose working day often began at 04:00 and ended after 20:00. Interestingly the above conditions notwithstanding parents accepted their responsibility and offered what ever road safety advice they could offer to their children.

5.6 Summary of data from participatory methods

In the following paragraphs I expand on my understanding of the interviews from participants. The observation of child participants and parents yielded a paradox which negated the finding of the interviews that child participants know the basic road safety principle of crossing the road safely. What the child participants indicated that they do when crossing the road i.e looking right, left and right again they are not doing it in their every day use of the road. Children of schoolgoing age and adults were walking in the middle of the road. They cross the road where there is no pedestrian crossing. Remarking about this theme de Klerk (2010, p. 16) says the following about what she observed in one of Johannesburg's roads "...Also seen on the way to school ... a man

and his small son, about five years old crossing a road in heavy traffic. He had the child by the hand and was dodging the cars. Only a few metres up the road was a robot and a pedestrian crossing. Why didn't he walk the extra distance and cross safely? What kind of message and teaching is he giving his child?" They also cross in a file. Photographs and drawings as part of the audit trail are discussed in Chapter 5 to prove this.

The written road safety messages corroborated what the interviews revealed but one striking feature is that most messages from the child participants were directed at motorists. This indicates that child participants think that it is the responsibility of motorists to ensure that accidents do not happen. The child participants do not see themselves as an important variable in the causing of accidents. According to them if motorists drive carefully they will be safe as pedestrians. A sample of the messages from child participants illustrates the point.

<p>"Drivers please drive safely" C7 "Speed kill slow protect your life" C6 "Check your car before you go a long trip" C5</p>
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The road safety messages emanating from child participants which show that they see drivers of vehicles as being mainly responsible for accidents provide a theoretical framework within which children's roadside reasoning, actions and behaviour could be interpreted and explained. They use the road in this unsafe way because their thinking is informed by the perception that the driver sees them. In this regard one child participant summed up this thinking by saying "drivers in the Moloto village drink Nyaope" in trying to explain the reason for the number of accidents occurring on the infamous Moloto road. The child is not even aware the Nyaope is smoked not drunk. [Nyaope is explained as a mixture of low grade cocaine and dagga, it is popular in the poor Black townships particularly in the Pretoria and surrounding areas]. In the field of road safety the skills in the child's repertoire are of no use if the child does not use them. The implication is that in teaching and training children on road safety skills we

ought to foster a culture of error avoidance by the children when using the road and road user responsibilities.

5.7 Conclusion

The holistic picture that emerges is that if RSE related to children is to succeed over the long term, there has to be cooperation between parents, teachers and road safety officers. In the long term, RSE has to move beyond the school environment. There has to be some standardisation of the aims and objectives of RSE so that all the role players could work towards the same goals. The co-operation of the Departments of Education, Health and Transport is crucial for the effective delivery of any road safety programme.

The central thread that emerges is that the profile of RSE has to be raised as a first step towards achieving improved delivery, but that by itself is not sufficient. Many education professionals already have the perception that road safety is not a priority to government but they do recognise that road safety has a role to play in the nation's health and wellbeing, especially that of children and young people. However, this is seen as secondary to many other social issues which currently have a higher profile like the provision of water, houses and health care (see Department for Transport, 2009).

Raising the status of road safety education needs to be targeted at a wide number of stakeholders. It needs to encompass both those who are making decisions about budget and resources allocation and core road safety professionals, as well as staff from other organisations who are increasingly involved in road safety education delivery and who also need to ensure that they are offering integrated approaches. Raising the profile of road safety education also needs to be targeted at parents and communities who have a role to play in reinforcing messages received through formal education. Capacity building is one thing that road safety officers in the communities must recognise as a part of their brief.

CHAPTER 6. SYNTHESIS, SIGNIFICANCE AND IMPLICATIONS OF THE STUDY

6.1 Introduction

Chapter 6 offers a synthesis of the study by reflecting on the findings that were identified in Chapter 5. The chapter offers the significance of these findings for the corpus of knowledge in the field of RSE in the South African context. The findings as discussed in Chapter 5 as they relate to children and their challenges when they learnt road safety skills as pedestrians form the basis for the recommendations that could be implemented to improve the situation offered in Chapter 6. In Chapter 6 I also present the limitations to my research project that I encountered as a researcher and the limitations of the study.

To understand the findings and implications of the study and appreciate their importance and space within the RSE corpus of data, one has to understand the philosophical underpinnings of the investigation or study. This will help situate the findings and implications and to facilitate an understanding and appreciation of the conclusions reached in the study.

As indicated in Chapter 4, the philosophical underpinnings of the study were to explore meanings and patterns, inconsistencies and conflicts in people's thoughts and behaviours. I was centrally positioned in the enquiry, and immersed in my research project. This position required a high degree of reflexivity on the part of the researcher. I was aware of the importance and centrality of this position and that my prior knowledge and assumptions on the topic could impact on all aspects of the research (McMillan & Schumacher, 2001; Cugno & Thomas, 2009). I focused on the data collected and observed all activities that could help in answering the research questions without influencing the participants in any observable way. I also conducted unobtrusive observation where the participants were unaware of my presence and what I was doing. I used triangulation to corroborate in order to lend credence to my data (Stake, 1995)

Qualitative research is by its nature explicitly interpretative. The analytical process involves interpreting the meanings, values, experiences, opinions and behaviours of the

children participants. This process of data analysis is described as descriptive-inductive to distinguish it from the hypothetico-deductive means of drawing results in quantitative research (ibid.). Jaye (2002) says this interpretative and interactive quality of qualitative research is a reflection of ontological and epistemological assumptions. In short, qualitative research is informed by constructivist paradigms that view the world and its “facts” as fundamentally interpreted as constructed by individuals within social groups (ibid.; Heppner, Kivlighan & Wampold, 1992; Seaman, 1987; Tobin & Begley, 2004).

6.2 An overview of the study

The study focused on one school in the Moloto area as the central unit of analysis. Children in the Intermediate Phase were used for the study; their ages ranged from eight to 14 years. Although children were the central focus, their parents and teachers were also used as participants in the study because they were in a position where they could influence how these children responded to the road safety inputs. The RSE Programme Booklet for the Intermediate Phase prepared by the Road Traffic Management Corporation, The Department of Education and SABC Education succinctly provide the rationale as outlined in Chapter 1 for focusing on children as participants for the study:

Every 48 minutes a person is killed on our roads and the cost of traffic collisions in South Africa is R48 billion per year. Using the road 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. The good news is that many accidents can be prevented if children from a young age are taught the correct knowledge, skills and attitudes about road safety (Road Traffic Management Corporation, 2006).

These children are taught the new national curriculum which has road safety competencies as part of the mainstream curriculum in order to produce children who are conscious of their own safety and the safety of others. Insights gleaned from children’s responses and my observations as well as input from parents and teachers were critical in answering the research questions of the study. With the analysis of data the following themes emerged: Children’s development of pedestrian skills, children’s construction of road safety knowledge and their value of life, children being influenced by the unsafe ‘road environment’ and children’s attitudes to road safety. In the following section I

pursue the insights gained in the study and findings to answer the research questions of the study.

The main research question of the study is: What is the response of rural primary school children to RSE programmes? Other sub-questions of the study were:

- What are the views of the parents in the broader rural community in inculcating RSE to their children?
- What are the views of the teachers on teaching road safety as part of mainstream curriculum in the rural community?
- How appropriate are the methods used by the teachers for the teaching of the RSE programme?
- What is the impact of the rural environment on the learning of road safety?

6.2.1 Implications of the findings for the study

Article 29 of the Constitution states that education shall aim at developing the child's personality, talents and mental and physical abilities to the fullest extent. Education should prepare the child for an active adult life in a free society and foster respect for the child's parents and his or her own cultural identity, language and values and for the cultural background and values of others (Constitution of South Africa, 1996). The National Curriculum envisages a child who will be conscious of his own safety and the safety of others. The study shows that children are at risk of being killed by vehicles when walking riding bicycles and playing. The Road Traffic Management Corporation's RSE programmes state the good news is that many road accidents can be prevented if road safety is taught from an early age. In the next paragraphs I answer the main research question by answering each of the sub-questions.

6.2.1.1 What are the views of the parents in the broader rural community in inculcating road safety education to their children?

Parents indicated that they were involved in the teaching of their children about road safety. The interviews revealed that parents' contribution was limited to teaching their children how to cross the road. Their input extended to warning the children to be careful when crossing the road. The child participants revealed that they understood the basic rule applicable when crossing the road, particularly at a place where there is no pedestrian crossing, namely that they are supposed to *Look right, look left and look right again* before they cross the road. However, the findings revealed that although children had this basic understanding, there is no correlation between what they knew and what they did in real life. De Klerk (2009) says the following about this theme and its importance to road users:

If there isn't a zebra the technique is: 'Look right, look left and look right again'...then, if no cars are coming, you can cross the road. I was taught these basic rules by my parents and at school. That also does not seem to happen any more – a flash etched in my memory for all time, a crumpled body in a school uniform at a busy crossing on Louis Botha Avenue, paramedics bending over, an ambulance standing by.

I cite this article in detail to illustrate its correlation with the findings of the study that although the children of my case study have been taught this basic rule, they do not necessarily apply it on the road; in their everyday life.

I argue that this disjuncture between what the children know and what they do on the roads is a clear indication that the community as a whole should practice safe road use behaviour in order to serve as models for children. The literature review revealed that most accidents and children's deaths on the roads could be prevented if from an early age children are taught correct knowledge, skills and attitudes about road safety (RTMC, 2006; Sida, 2006). The theory of 'role modelling' also subscribes to this statement. As the study shows that the children's pedestrian skills were not developed to a level where they could make safe decisions on the road, there is a need for intensified teaching of pedestrian skills among the children in the school. This has to be a joint effort between the parents and the teachers. This is borne out by the realisation

that some child participants indicated that they looked both ways and then ran across the road when cars were not coming. The child participants seem very confused. They think running ensures safety. On the contrary, running across the road is dangerous as they might fall and be killed by vehicles. If parents do not set a positive example to the children the children will not change their unsafe road use behaviour.

The children's behaviour on the road cannot be predicted from a child's road safety skill level per se. Children do not behave consistently on the roads. They may search carefully for traffic at one crossing, but run straight out without looking at the next (such inconsistent use of skills is typical of children in many different tasks). Thus teaching a child a given skill does not guarantee that the child will actually use that skill. Understanding how and why children use – or fail to use – their skills is critical for RSE. There are a lot of variables that may hamper the child from practicing the skill taught (see Department for Transport, n.d.). It is against this background that child development is a critical factor to be considered as it sheds light on the behaviour and activities of children in the growing process. The child has to be cognitively, socially and emotionally developed in order to learn and benefit from the road safety teaching process.

6.2.1.2 What are the views of the teachers on teaching road safety as part of mainstream curriculum in the rural community?

Teachers bemoan the lack of support from government in a form of training. As a result of this lack of training and support by providing teaching aids teachers are not enthusiastic in the teaching of road safety skills. There is admittance that they do not have confidence in the teaching of these skills. They are also not sure whether what they are doing is right or wrong as there is no cooperation or support from road safety officers. They indicated that road safety officers rarely visit the school to give support in the teaching of road safety skills. The feeling is that what the children are practising on the road is what they learnt at home. Teachers are surprised that even if they teach the children to use the roads safely when they get to the roads they still do not practise what they have been taught in class by the teachers. They blame the situation at home

or the parents for this state of affairs. What is encouraging is that there is an agreement that with the support of parents they can do better in the teaching of road safety skills.

6.2.1.3 How appropriate are the methods used by the teachers for the teaching of the road safety education programme

The study also revealed that child participants use the mass media like radio advertisements and to a lesser extent TV advertisements to construct their own knowledge and reality of the road situation. Most of the messages that emanated from children on road safety were a paraphrasing of the messages that were run by the Department of Transport's road safety campaign, *Arrive Alive*. The following examples illustrate the point:

"Rest every 02h00" [*tired – fatigue*] (C3)

"Don't drink a Black Label [beer] because you are drunk [*Drinking and driving*] (C9)

"If you walk walk carefully look the sign" [*Obey the road signs all the time*] (C4)

"Make sure your car is in safety place" [*vehicle fitness*] (C6)

(Information in square brackets mine.)

I was involved in the *Arrive Alive* campaign from 2002 and the above samples of children's knowledge of road safety messages are a construction of the road safety messages that the *Arrive Alive* campaign ran throughout the years. Children used the messages that they learned from the mass media to construct their own knowledge of road safety. This is positive. Though the messages are simplistic, they form a foundation that teachers and parents can build on. On the second level this not what the children learnt in the school environment, but what they learnt from the community through the mass media. For the purpose of this study, the significance of this finding is that children use the social setting around them to construct their own understanding and reality of road safety. What is also heartening is that the *Arrive Alive* campaign is making a positive contribution to children's understanding of road safety and their construction of road safety understanding.

Coupled with the understanding of the road safety campaigns in constructing knowledge that is applicable to their environment is the understanding that the children of the school have of the value of life. Child 2 wrote the following road safety message:

“While you are going with your family and they stay at the back and they want to show you something don’t look at the back because you are risking with your family’s lifes”

What is impressive about this learner’s understanding of road safety is the insight that road safety is a public health issue. If you drive recklessly you endanger not only your life but that of your family and create a burden for the public health system should they be injured (World Health Organization, 2004).

Road signs are very important in road safety. The level of importance that the children attached to road signs is impressive. This emerged in both the task in which the child participants drew their ideal Moloto road and in the messages that they wrote. However, the study revealed that whatever was taught to the children in the school was not complemented by real road environment practice. Practice is very important in the teaching of road safety skills. Theory has to be matched by practice in the real road safety environment.

You must look left and right to jump the road and the sign show you how to jump the road.

Masswao a re thusa go laola sephethephethe [*Road signs help us to control traffic*]

Maswao a re thusa go thibela dikotsi [*Road signs help to prevent accidents*] (C4)

When you are in a car you must be sure that you now the sign of the road (C10)

Lamenting the general lack of respect for the road signs, De Klerk (2009) writes that basically the answer is very simple. Roads are meant for cars and pavements are meant for people. But on hot summer evenings, the pavements are sociable places.

People gather, sit and chat. Groups of teenagers hang out in the streets, so busy comparing their text messages (sms messages) that they do not even look up when a car tries to pass them. What I observed was that although there was a high degree of respect for road signs and a clear understanding of the purpose of the road signs, there was no compliance with these road signs by the children or community members when using the road. This shows that children are taught the theoretical aspects of road safety but there is no practical input to enhance practical application of road safety.

The characteristics outlined above show that there is more to pedestrian competence and crossing the road safely as there are a lot of other variables at play. Having looked right and left and right again in itself is not enough. For children as pedestrians to avoid the danger depends on a number of underlying processes. Developmental and psychological factors play a critical role in determining the danger posed by vehicles on the roads. Children's safety on the road depends on their ability to co-ordinate auditory and visual skills. Unless children develop these skills, their competence to cross the road safely will be questionable. A common tendency among children is to apply what they have been taught in a rigid and blind manner without a clear understanding of why they are implementing the rule they have been taught.

The situation is even more dire where the children learn through the educational programmes that favour a rule-based approach and where children learn the rules without the context to which the rules apply. Visual timing is one of the most important skills in road crossing skills. Every pedestrian must learn to estimate accurately how much time will elapse before an approaching vehicle arrives at their intended crossing point. On busier roads it is important that children learn to identify gaps in the traffic flow that are safe to pass through and differentiate those that are not. Studies of pedestrians in traffic suggest that such skills are well developed in adults and even young teenagers (Routledge, Howarth & Repetto-Wright, 1976; Van der Molen, 1981; McLaren, 1993.) In children, on the other hand, they are not (Lee, Young & McLaughlin, 1984).

The top performing countries in the area of reducing deaths on the roads, pedestrians deaths particularly, share a common characteristic of approaching road safety in a holistic way. This is done through campaigns, through the media and in communities

and having road safety as part of the mainstream curriculum. The child participants in the study gave road safety messages that showed that they had learned these messages from the South African road safety campaign run by the Department of Transport. The *Arrive Alive* campaigns are conducted in communities through road shows and advertising through the media, particularly radio and television. The messages given by children were common messages for drivers and pedestrians that were part of the *Arrive Alive* campaign in the past. Teachers must understand the developmental stages of their children in order to structure their teaching content to the level suitable to the children as indicated in Chapter 3. I observed that this was not happening and each lesson is taught to all children. Coupled with the fact that they were not given a practical session on the road safety lesson they had learnt in the class, made it unlikely that they would practice what they had been taught in the class.

6.2.1.4 What is the impact of the road environment on the learning of road safety education

The study revealed that parents did not set a good, positive example to their own and other children. According to literature children learn road safety skills through modelling. If parents walk in the middle of the road, as shown in the study, the children will behave in the same way. De Klerk (2009) points out that in many rural communities lovers stroll down the middle of the road, so engrossed in each other they wouldn't notice a UFO, let alone a vehicle. Families with toddlers walk side by side, children spill over into the street, skateboarding, roller-skating and kicking soccer balls.

The significance of the discussion above for the study is that while the focus of the study is to assess the response of the children of my case study to RSE from the formal environment in schools, there is also a significant input of road safety education that the children are receiving from the community, in this case from the National Department of Transport's road safety campaign, *Arrive Alive*.

The sample of road safety messages taken from children's messages are the themes and messages that children heard and internalised from the electronic media particularly radio and television. These are the messages that were run by *Arrive Alive*

over the years on radio and television, particularly during Easter and Christmas holidays. This holistic approach is in line with best practice. Studies show that countries like Sweden and the Netherlands (SIDA, 2006) that have succeeded in reducing pedestrian deaths follow this holistic approach, where road safety is part of the mainstream curriculum, and there are other road safety initiatives and campaigns running parallel to complement each other. Road safety skills are learnt through modelling but in this case study the unsafe 'road environment' including parents and other community members do not do not contribute to the internalisation of road safety skills of the child participants of my case study.

The concept of attitude is defined as the overall affective reaction deriving from a set of beliefs, intentions, and behaviours, each of which involves some degree of affective response (Bergan & Dunn, 1970, p. 143). The findings of the study revealed that the children were positive about road safety and that they valued life. This is expressed in their road safety messages where they exhorted drivers and other road users to be careful on the road. In answering the question whether road safety should be taught in school, the child participants gave the following responses:

"Yes because people do not take care" (C1)

"Yes each child should know how to cross the road and avoid being knocked by cars" (C2)

"Yes most cars drink and knock down children" (C3)

What the study revealed is that the children were enthusiastic about road safety and saw the importance of its being part of the mainstream curriculum. Attitude is important in the teaching of road safety skills. My argument is that if children have a positive attitude it will facilitate their learning of road safety skills, although attitude seems not to be the only factor. In the following paragraphs I describe shortly the core of the different chapters of this research study.

In Chapter 1 I state the problem that in countries where RSE is part of the mainstream curriculum, like the Netherlands and Sweden, the number of children of schoolgoing age who are being killed on the road has been reduced significantly but in the countries that do not have this arrangement, the fatalities are very high. The study seeks to explore and understand in depth the RSE phenomenon as it occurs in a rural school, hence the choice of the one school and the children from the one school. Field and Morse (1985) point out that qualitative methods are suitable for a phenomenon of which very little is known; the problem is then approached from the “native point of view”. In the case of this study the children, the teachers and parents are the “natives”, the role players in this particular situation.

Chapter 2 explores the literature review in order to compare best practices and see what research has been done in this field so far. The literature review helped me in the following ways:

- Becoming acquainted with the past and latest developments in this field of study;
- Understanding the facts and theories related to road safety and RSE;
- Gaining insight into ways in which to conduct the research that is what are the best methods and techniques;
- Interpreting my research and relating it to the existing research;
- Gaining a better idea as to what could be done (Fox & Bayat, 2007; Seaman, 1987, p. 141).

Although there is not much literature related to South Africa on the subject of road safety and RSE, worldwide there is extensive literature in the field of RSE. What emerged from the literature review was that research was done in the developed world where there are ample resources available and most families own cars. In these countries child accompaniment especially to school is the norm and this reduces the child’s level of exposure to or risk in traffic. From the literature review it was also evident that theories of development and learning are also critical in understanding how children learn and the role that the level of their development might play in planning RSE interventions.

From the literature review it was evident that education is regarded as one of the major intervention measures in the fight against deaths on the roads, alongside engineering and law enforcement. Education complements these other intervention measures. In countries that have made significant progress in reducing child or pedestrian deaths on the road, safety is an integral part of the school curriculum. However, in countries where pedestrian deaths are high, very little or no road safety is taught in schools. For the developing countries the other challenge is that a significant number of children of schoolgoing age are still outside school. However, for South Africa and for the school of my case study the situation is reasonably positive as primary education is relatively affordable (The Presidency, 2001). There is also an agreement that teaching road safety during the early years of the children, when they are still impressionable, is beneficial to them.

Chapter 3 delves into the understanding of the role that developmental theories play in RSE. Development theorists discussed in the chapter are Vygotsky, Bandura and Piaget. The chapter also discusses the implications of the various stages of development for the learning of RSE. The core issue that emerged from the developmental theories is that road safety learning depends on a number of variables. The key aspects are the cognitive level of children, their maturity and social interaction. What is critical for the study is that road safety learning has to be underpinned by the involvement of other community members for it to be effective in practice. Another key issue in this regard is the role that parents in the rural environment play in the construction of children's road safety skills.

Chapter 4 discusses the research design that is used in this qualitative enquiry and offers a rationale for the methods chosen for data gathering and their suitability for yielding useful data. A research design is defined as a plan for selecting participants, research sites, and data collection procedures to answer the research question and the sub-questions (McMillan & Schumacher, 2001; Treece & Treece, 1986). Seaman (1987), on the other hand, sums up a research design as the way in which the researcher plans and structures the research process. The design provides the flexible guideposts that keep the research headed in the right direction. As designs vary from

one study to another, the research design for this study was chosen for its relevance to the focus of the enquiry and the age of the participants. It was structured as a qualitative study that focused on one school in rural Mpumalanga in a village called Moloto, forty kilometres east of Pretoria.

The goal of a sound research design is to provide results that are credible. Credibility in research therefore refers to the extent the results approximate reality and are judged to be trustworthy and reasonable. In choosing the research design all the major factors that could affect the credibility of the study were considered and taken into account. I am mindful that not all errors can be avoided in research. Proper planning and following of principles such as obtaining permission from participants and not influencing participants in any way have been followed to minimise potential errors (McMillan & Schumacher, 2001; Seaman, 1987; Heppner *et al.*, 1992; Field & Morse, 1985).

Methods for gathering data in the study comprised a literature review, interviews, observations, questionnaires, drawings and photographs. The rationale for using the various instruments was to improve or enhance the validity and reliability of the study. The multimethod strategies used to gather the data assisted me in gathering rich data that enabled me to answer the research questions (McMillan & Schumacher, 2001). As an interpretivist I approached the data gathering process from a constructivist perspective or philosophy which moves from the premise or assumption that reality is multilayered, interactive, and a shared social experience interpreted by individuals. I see reality as a social construction. People's perceptions are what they consider "real" to them and what directs their actions, thoughts and actions (*ibid.*). It is from this perspective that I let the child participants share their experiences, while I interpreted their experiences in the context of the topic.

Informed by the above research design the data analysis was conducted inductively using concepts and constructions from the participants to reach conclusions. The constructivist grounded theory was employed.

6.3 Contribution of the study to the body of knowledge in road safety

In Chapter 5 I discussed key thematic areas that emerged from the data. The themes that emerged from the study are:

- Children’s development of pedestrian skills
- Children’s construction of road safety knowledge and their value of life
- Children being influenced by the unsafe ‘road environment’
- Children’s attitude to road safety

6.3.1 Development of pedestrian skills

The key finding in this theme is that the child participants had a theoretical understanding of the skill of crossing the road but they did not apply this skill when they crossed the road. Their road use behaviour was very unsafe. There are two contributing factors seemingly informing the children’s road behaviour. The input they received in the class was not backed by practical input on the road so that the children could internalise this pedestrian skill. They did not apply their knowledge gained in school when crossing the road, like stopping to look right, left and right again. Another contributing factor seems to be that the parents’ input was generic and lacks purpose. They only exhorted their children to be “safe” on the road or to “look out for vehicles”. As a result, the children were bound to use opportunities and their own impressions of safety conditions to cross whenever they thought it was safe without taking the necessary precautions.

The implication for RSE is that there is a general agreement that pedestrian skills should form part of children’s RSE and that this intervention should include a practical component where children are taken to a “real-life” situation or environment to teach them how to cross the road safely. This cannot be done by teachers alone. It has to be a holistic approach involving parents and teachers. With regard to policy it is my insight that it should be legislated that this endeavour has to be an interdepartmental effort between the Departments of Transport and Education.

6.3.2 Children's construction of road safety knowledge and their value of life

The study revealed that child participants recognised the importance of road signs on the road. This emerged from the task where they were requested to draw the ideal Moloto road. What emerged through this activity was that child participants suggested that there should be a number of road signs on the road. They seemed to be suggesting that this would facilitate the safe movement of children as pedestrians on the road. All the signs that they drew in their drawings along the road were standard signs for regulating the movement of both cars and pedestrians. The signs that featured prominently were robots, pedestrian crossings, speed limits and stop signs. The functions of all these road signs are to facilitate the movement of pedestrians.

Coincidentally, teachers also indicated that they did not have miniature road signs and road sign charts to help them facilitate the delivery of RSE. It is important that the children view the Moloto road on a scale model. The Moloto road is a dangerous road because the signs that the participants recommend are not available on the road to control and regulate the movement of both pedestrians and vehicles. One of the challenges cited by teachers is that they did not do practical role play or experiential teaching with the children as they did not have the necessary equipment and JTTC to simulate the real road environment.

The implication for road safety is that when roads are designed and built they have to consider the needs of pedestrians as well. Pedestrian infrastructure should form an integral part of the entire road infrastructure from conception to completion so that pedestrian concerns and safety features should not only be added after many accidents and as an afterthought – in most cases as a result of pressure from the community – but have to be planned as a proactive safety measure. Given my experience in this field I am convinced that in future some of the recommendations from the children as they represent community concerns regarding the dangerous scenario at the Moloto road might be implemented as a result of ongoing pressure from the community.

6.3.3 Children being influenced by the unsafe ‘road environment’

There is agreement in the literature that community involvement in RSE for children is critical if effective road safety delivery is to take place. What this study revealed is that parental involvement in RSE of children was too low to make any significant impact (Department for Transport, 2009). This is due to many factors. A major factor was that the parents were working in the Tshwane Metropolitan Municipality and commuted every day. Some parents worked far away from the Moloto area and only returned home during the month-end or over weekends. Lastly, it is not the norm for parents to be actively involved because of their low level of formal education.

According to the social learning theory which is based on behaviourism as described in Chapter 3, social learning is a modelling process through which observed behaviours become behaviours executed by children. From the information above it can be concluded that many human behaviours are constructed through the observation and imitation of other people such as road safety skills. There is a Sepedi proverb that summarises this process succinctly as “pinyana ge ere ping kwile ping e kgolo” meaning when a child does something they have seen the behaviour of elders or parents doing it.

What the study further revealed is that parents as community members in the Moloto settlement used the road in an unsafe manner. I observed this behaviour practised by both adults and children. They expected vehicles to yield for them. Children had internalised this unsafe behaviour and I observed them using the Moloto road, which is a national road, replicating the behaving that was prevalent in the community. Invariably, therefore, children will from a social learning theory point of view observe and copy the behaviour of their parents and other members of the community.

The implication for road safety is that parents have to be proper role models for their children. They cannot behave in an unsafe way on the road and expect their children to internalise safe road user behaviour. Herbst (2009) in her article *Model drivers the role of parents in promoting healthy driving behaviour* says children are like sponges, they absorb everything and as much information as they can at any given time. How much

they take in and how they integrate that information, depends on their level of development or developmental stage.

6.3.4 Children's attitudes to road safety

Although traffic safety education is widely regarded as an important part of the school curriculum, its implementation depends to a large extent not only on the school policy and practice but particularly on the attitudes of individual teachers and the children to RSE (Harrison, Penman & Pennela, 1997). With regard to this research project the study established that children were positive about the subject and their enthusiasm was informed by the need to be safe on the roads. In general their attitude to road safety was very positive.

The parents' attitude was also positive because they wanted their children to be safe. However, they were rather disillusioned by the lack of support from government, the lack of training and lack of cooperation from road safety officers who did not visit the school even if invited, according to one teacher. The lack of resources was also cited as an aspect that is hindering effective delivery of road safety competencies. The conclusion I draw is that teachers could be enthusiastic about RSE if the necessary support were offered to facilitate their delivery of the road safety competencies.

The implication for road safety teaching and education is that if teachers are motivated, their teaching of road safety skills and RSE will be effective and successful; but when they are demotivated, the opposite might occur. With regard to children their motivation and positive attitude to RSE was evident through their drawing tasks and the road safety messages that they constructed as road as part of the data. They knew the right decisions to make to be safe on the road.

The focus of this study was on children's responses to RSE. The findings discussed are those that relate to the research questions. However, there are other factors that impact negatively on children's uptake of RSE. They are the lack of training for teachers, the lack of resources, the lack of cooperation between road safety officers and teachers and the fact that road safety is not regarded as a priority by government.

The impact of these factors on children's internalisation of RSE is that they receive contradictory input from teachers who are frustrated, demotivated and lack resources. In addition, the teachers responded that they needed training. This in my view explains the uncoordinated RSE that children of my case study received. As a result they were confused and unable to implement the educational input that they received from teachers in the classroom environment. It is my opinion that they received RSE that is devoid of context.

6.4 Extended further findings

The research project revealed findings which I extend in the domain of road safety and RSE. My perspective of this topic is based on the findings and my personal experiences of RSE, as well as knowledge of the specific Moloto area.

The following are findings that are extended from the main findings:

- The teaching of road safety is the responsibility of both parents and teachers.
- The RSE that children receive in the classroom context is disjointed, not evaluated and inadequate to be of any help to the child in his everyday life.
- In the 6 to 14 years age category years children are prone to make a lot of mistakes when using or crossing the busy road, therefore they need road safety skills.
- Children's road use behaviour is very unsafe despite the RSE they receive in class.
- There is no cooperation or coordination between the parents, teachers and road safety officers with regard to the teaching of RSE.
- There is a dearth of teaching resources or media to assist teachers in the teaching of RSE which can be implemented.
- Teachers need training in the area of RSE and this should be done by the government agency responsible for road safety, the Road Traffic Management Corporation.
- There seems to be a paradox to be a paradox between what the children of my case study learnt at school and from campaigns and what they apply to their real

life in their rural community. Thus it seems that these children have internalised the unsafe road use skills modelled to them.

The children's road safety behaviour must be understood in the context of the developmental theories that were discussed in detail in Chapter 3. The thrust of the theories is that children behave in a particular way at a particular age. In the context of this study, although they did know the road safety skills which they should employ when using the road, they behaved in a way that endangered their lives. This type of behaviour could only be explained through the development stage of the children. It is clear from the data that teachers did not consider the age of the children in their learning of road safety. This age group has to construct their knowledge by physical experiences, which were not provided at the school.

The study shows that children can be taught road safety skills, but if the community does not provide them with an environment for practising the learnt skills, their road use behaviour will always be unsafe. According to the ages of my participants in constructing knowledge, the children need positive examples regarding road safety behaviour.

6.5 Recommendations

This study contributes to the understanding of the responses of children to the road safety input they receive at school and what needs to be done to maximise learners children's learning of road safety skills in a rural setting like the Moloto area. The following recommendations are offered as guidelines:

6.5.1 Recommendations for schools

- The development of road safety skills among children should be centred on the children. Any input should structure the learning process from the perspective of the children. Those involved in this process should therefore understand that children of this age group learn and behave in a particular way. The teaching of pedestrian skills should be structured in such a way that they are taught in a real road safety environment, at traffic parks so that they could practice what they

learned in a classroom setting. In top performing countries where pedestrian deaths are reduced to a minimum, children are consulted about road safety and encouraged to research and find more knowledge about road safety by themselves.

- Pedestrian skills education should include visual literacy. Road signs education has to be part of the education process. Children should know the signage that regulates the movement of both traffic and pedestrians. This could mean the difference between being safe on the road and being killed. Apart from just knowing the signage, it should be inculcated in them to obey the road signage. Children should know that the signs are meant for all road users – drivers, pedestrians and children.
- The approach used for teaching pedestrian skills and RSE for children should be a holistic one. Parents and teachers and all other role players should be involved and their roles clearly delineated. This will avoid a situation where parents are not consulted and they in turn leave the responsibility of teaching their children road safety skills to teachers. The role of parents should be appreciated and constantly evaluated. Child-centred planning should of necessity include parents and road safety officers.
- Children's road safety should be a community concern. Children learn the behaviour and the practices of their own communities. If the community sets the wrong example of how to use the road the children are going to internalise this unsafe use of the road and the circle will continue for ever. In other words, children's road safety education has to be complemented by community efforts. There has to be a concerted effort between the school of my case study specifically and in general and the community to ensure that there is synergy between the two environments. Parents who set wrong examples to their children cannot expect their children to behave positively on the road. The sad truth is that schools like the one in the case study have to play a parental or family role as most parents are absentee parents as a result of working far away from home.

6.5.2 Recommendations for teacher development

- Teacher development should form the integral part of the teaching of road safety skills. Teachers should be trained in the teaching of road safety competencies before they are required to teach the competencies. A once off workshop is not enough. Best practice models should be adapted from developed countries and schools should be resourced with relevant practical literature to help teachers. The success of the teaching of road safety competencies depends on competent and motivated teachers. In a country where fifteen thousand (see Chapters 2 and 3) are killed by road accidents annually road safety has to be prioritised at both Departmental and school level. Teacher training should involve the teaching of road safety modules so that the graduates are competent from universities to teach road safety competencies rather than relying on one day workshops which are not effective.
- Teachers should realise that the teaching of road safety requires a community approach where they are prepared to work with parents in empowering children with road safety skills. Interactive learning approaches are best in achieving results in the teaching of road safety skills as opposed to didactic methods. The implications for this is that they have to counterbalance theoretical inputs in the class with practical inputs taking place in a real setting at the road environment. They must be prepared to spend sometime out in the road with the children to give them real experience.
- The community approach to the teaching of road safety skills presupposes a paradigm shift on the part of teachers. They have to share space with both parents and road safety officers. Teachers will have to establish what the children are capable of achieving as success in the learning and teaching of road safety skills depend on both age and developmental stage.
- Training of teachers to teach road safety should of necessity include devolvement psychology. Children conceptualise good or safe behaviour on the

road as not damaging things. They are not aware that their actions might lead to accidents. It is against this background that they shift the responsibility for road safety on the roads to drivers. But when they grow up they realise that their actions might contribute to the causing of accidents. The understanding of child psychology should be at the core of teacher training.

- The teaching method for teaching RSE should also include or focus on group discussions to foster a spirit of peer learning among children. This approach should see the teacher taking a backseat to open up the forum to be used as an argument forming sessions among children. This approach is in line with the recommendation that in rural schools like Moloto Primary School should be child-centred so that road safety could be taught from the child's perspective. This type of collaborative group work will help children to improve their conceptual frameworks of road safety situations gained at the actual road side. The stronger children will help the weaker ones.

6.5.3 Recommendation for policy makers

- There has to be a political will at the government level to ensure that funds are dedicated to the teaching of road safety in school. Teaching road safety should be prioritised and should be part of mainstream curriculum and there has to be an incentive for the teaching and learning of road safety. Children should acquire their driver licences as part of their school programme so that when they graduate they should be having their driving licences. The introduction of the demerit system where reckless drivers eventually lose their drivers license is long overdue. More resources have to be dedicated to research to ensure that what ever programmes are implemented in schools are based on solid research and have a chance to succeed. The teaching of road safety has to be outcomes-based. South African universities are under-utilised as research institutions in the field of road safety. This is due mainly to lack of research funds.

- There has to be an inter-departmental cooperation between the Departments of Education, Health and Transport. This will ensure the sharing of resources and expertise. This cooperation will go a long way in realising a greater understanding of the aims, objectives and Road Safety Educational strategies among the key role players in delivering the road safety message, in order to appreciate the importance of each role player and to break down barriers and put in place structures to promote more coordinated working relationship. This is critical if government is to meet the Millennium Development Goal (MDG) of halving deaths by 2014.
- Policy makers should realise that certain road safety challenges are situation specific. South Africa is vastly rural and this has to be considered when designing Road Safety Educational programmes. The challenges facing a rural child in the Moloto Primary School are different from those facing an urban child in say Pretoria. Therefore policy makers have to consider what works, for whom and where when designing road safety educational countermeasures and objectives. This process has to be guided not only by age of children but by the developmental level of children as well. In short, considerable research has to be undertaken to establish which skills are trainable and which ones are not.
- Interactive learning approaches require that time has to be made available for practical training of road safety skills. Besides, practical training is more effective but has resource implications. Schools should be equipped with video machines and TV Monitors, JTTC for simulation purposes. Practical training means that the road safety content within the school curriculum has to be clear about the road safety outcomes that have to be taught.
- Teacher training should include the teaching of road safety. Policy makers should fund research in the field of road safety to establish effective models for the teaching of road safety skills in a country with such stark contradictions where you have both first world and third world conditions existing side by side. Effective teaching of RSE is resource dependent. In South Africa RSE has to be

treated as a national emergency. Teaching road safety skills in poor schools poses challenges. The majority of schools have limited resources: large, unwieldy classes; undertrained and underpaid principals and teachers; no libraries or laboratories; few textbooks; sometimes apathetic or unskilled school governing bodies and uninvolved, absent or dead parents (Ndungane, 2010, p.47). In a situation like the one described above children are deprived in the most basic sense. They are denied the opportunity for good education let alone RSE. The constitution of the Republic of South Africa (1996) Chapter 6 guarantees children these basic rights like education and safety but without reasonable education a rural child will not access these rights.

- Policy makers should legislate speed reduction measures and signalised crossings in roads that pass through built up rural areas like Moloto village where the case study was conducted. Once this is done have legislation that assumes driver responsibility for accidents involving child pedestrians in these build-up residential areas.
- A coherent and general conceptual framework covering both rural and urban dynamics and challenges should be developed by the National Department of Transport to guide policy and recommend countermeasures that will cover even schools and areas in rural areas like Moloto Primary School the site of the case study. This will ensure inclusivity and relative successes of the programmes implemented. Universities like the University of Pretoria could be roped in to facilitate such a process. Further more Universities could be harnessed to form road safety research units like the Children's Institute at the University of Cape Town. In the absence of such framework our countermeasures are random and province specific, in most cases reactionary as opposed to being proactive. Any teaching method is as good as the teachers who are to teach through it and the content of the programme to be taught. The low level of road safety teaching skills among teachers particularly at rural schools requires that the outcomes should be clearly outlined and activities to achieve the outcomes also clearly

delineated. Rural teachers have a problem of resources and large unwieldy classes.

- The NGOs have a role to play in the teaching of RSE particularly in rural areas where well qualified teachers are loathe to go. Government should make funds available for NGOs to fund road safety countermeasures and NGOs' staff could share the work load with teachers to implement these road safety intervention measures in rural schools. Coupled with this is cooperation between teachers and road safety officers so that they could maximise efficiency in the delivery of road safety teaching.
- Incorporate parents of schoolgoing children in RSE programmes as they play an important role in their children's acquisition and application of road safety.

6.6 Recommendations for further research

The study has revealed some key 'lessons' for RSE, particularly in a rural environment. The findings have far-reaching implications for policy and legislation in the area of RSE, especially in the Moloto area. Encouraging safety practice through schools may help develop ownership of the problem and engender a safety awareness culture. There could be more national support for promoting safe and sustainable travel to school by linking these themes with explicit and clear curriculum topics, and by making safe travel to school an aspect of the school inspection process. International practice shows that countries that are successful in the reduction of pedestrians deaths are already at this level. The study and its limitations notwithstanding shows that there is a need to conduct parallel studies in other campaigns aimed at behaviour modifications like drugs and alcohol abuse, smoking and unsafe sex to see if there are lessons that could be learned from these campaigns. The following recommendations resulted from the enquiry:

Theme 1: The learning of pedestrian skills

- How do pedestrians learn road safety skills in a rural environment?

- What competency levels should they have in order to teach pedestrians road safety skills effectively? At what age does this commence?
- Can pedestrian skills be taught in a more appropriate way to young children?
- What specific resources are required for pedestrian teaching to be effective?

Theme 2: The importance of road signs

How can road signs facilitate the uptake of RSE and road safety skills learning?

- Why are road signs not obeyed by child pedestrians?

Theme 3: Unsafe road use by the community

- How can parents in a rural community play a more prominent role in RSE?
- How can parents' input be evaluated and stimulated?
- How can the attitude of the community be changed?

Theme 4: Attitude to road safety

- Is there a correlation between positive attitudes to road safety and safe road use behaviour?
- How can attitudes to road safety be facilitated more directly in the teaching and learning of road safety?
- How can government assist in enhancing positive road safety attitudes?

6.7 Conclusion

Although the findings of the study cannot be generalised they provide insights into the learning of road safety particularly in a school that are situated in a rural setting without resources. They provide insights for teachers who are faced with the teaching of RSE with very little support if any. The findings also provide guidelines for officials in designing programmes. In South Africa officials should reflect in depth what needs to be done in terms of RSE in a rural environment and how this should be addressed. A major focus should be the safety of the child using the dangerous roads like the Moloto road.