

**IDENTIFYING THE NEEDS AND ASSETS OF THE
LEARNER WITH DIABETES IN THE FOUNDATION
PHASE**

by

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This study is dedicated to

my husband, Len,
our son, Wilhelm and
my parents, Cor and Heleen.

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KEY WORDS

**Foundation phase learner
Child development
Learning
Learners with special educational needs
Developmental assets
Diabetes mellitus
Ecological perspective
Chronic illness
Qualitative research
Case studies**

SLEUTELWOORDE

**Grondslagfase leerder
Kinderontwikkeling
Leer
Leerders met spesiale onderwys behoeftes
Ontwikkelingsbates
Diabetes Mellitus
Ekologiese perspektief
Chroniese siekte
Kwalitatiewe navorsing
Gevallestudies**

ABSTRACT

Diabetes is a illness many people have heard of and think they understand, yet many diabetic learners go unrecognised and unnoticed.

The research question of the study was to determine the developmental and learning needs and the assets of the learner with type I diabetes in the foundation phase.

The study had the following aims concerning learners with type I diabetes in the foundation phase:

- To identify the developmental and learning needs and the assets of these learners
- To provide knowledge about and understanding of these learners
- To rally friends, family, the school, teachers and the community to become external and internal asset builders in the development of these learners.

The ecological perspective was viewed as an appropriate framework for conceptualising this study. The needs and asset-based approach was included in the theoretical framework to gain a holistic view of these learners.

This was a qualitative ethnographic study using case studies. The research was based on the interpretative paradigm. After an in-depth literature survey, data were collected in four phases in questionnaires, followed by semi-structured interviews held with a non-random sample of three learners with type I diabetes drawn from different cultures, their parents and teachers.

The semi-structured interviews were recorded and transcribed and the data coded and analysed inductively. A narrative approach was used for interpreting the data.

The relationship between the participants and their ecology was investigated to determine the factors in the learners' environment. The learners' developmental and learning needs and the assets inherent in each unique participant were identified.

CHAPTER 1

INTRODUCTION, STATEMENT OF PROBLEM AND AIM OF STUDY

1.1 INTRODUCTION

“DIABETIC, WE DIDN’T KNOW YOU WERE THERE” (Van den Aardweg, 1973:1)

When entering a child’s world, one realises a child never exists in isolation. Children are an integral part of the community where there are interdependent relationships between friends, family, teachers and the school. These relationships are irreplaceable for children. Every individual has something to contribute to another individual or group, even though it may not yet have been mobilised.

The family is the basic source of security and support and the springboard for the physical, emotional, cognitive, moral and social development of children (Donald, Lazarus & Lolwana, 1999:184). The family gives guidance about personal values and social behaviour. The family helps to develop positive interpersonal relationships and provides an environment that encourages learning both in the home and in school (Schor, 1995:287).

Children tend to select friends who are like them in a variety of ways. Friends make one another feel important and special, and create a desire to spend time together (Cole & Cole, 2001:580). Friends are able to enter into and sustain relationships by making connections with other individuals, establishing common ground, balancing their interests and providing support in times of need (Hatch, 1997:70).

For children, school is more than just a place where they acquire knowledge and skills. It is also a place where children meet new friends, discover how to interact with other children and their teachers, experience success and failure, have expectations about themselves and others, and learn about themselves. Children learn many important social skills and behaviour at school, including sharing and empathy. They gain an understanding of rules, and how to deal with peer pressure. During their school years, children want to be accepted by their peers. They want to look and behave like their classmates and participate in the same activities. Their self-image and self-confidence are influenced by whether they are accepted or not (Schor, 1995:531).

In the White Paper on special needs education (RSA, 2001:7) the Ministry of Education states that there is a broad range of learning needs among the learner population. Where these needs are not met, learners may fail to learn effectively or be excluded from the learning system. In this regard, different learning needs arise from a variety of factors, such as physical, mental, sensory, neurological and developmental impairments, psycho-social disturbances, differences in intellectual ability, a particular life experience or socio-economic deprivation.

Rosenthal-Malek and Greenspan (1999:39) argue that to meet the physical and psychological needs as well as the federal mandates for learners with diabetes (who are regarded as health-impaired), teachers need to know the basic elements of the illness, the general aspects of the medical management of the illness, the best way to work with parents, and the best approach to including the child into the classroom routine. According to Thies (1999:393) children who are health-impaired may have limited strength, vitality or alertness due to chronic or acute health problems such as heart conditions, tuberculosis, rheumatic fever, nephritis, asthma,

sickle cell anaemia, haemophilia, epilepsy, lead poisoning, leukaemia and diabetes which adversely affect a child's educational performance. The young people who deal best with the stress of these illnesses seem to be those who have the inner resources of intelligence and adaptable temperament, whose parents have high self-esteem, good mental health and a positive belief in health care, and who also have a strong support network (Papalia & Wendkos Olds, 1996: 445).

It should be noted that the school is not only an education institution but is also part of the community. Each community has a number of diabetic learners who attend school. Donald, *et al.* (1999:36) view the individual in interactive relationship with different levels of organisation in the social context. Each of these levels can be seen as interacting with (influencing and being influenced by) other levels in the total ecological system. White and Wehlage (1995:23) emphasise that the teacher is a community educator and involved in community development. Collaboration between the school and the community is intended to provide a more holistic, comprehensive and effective set of responses to learners whose problems tend to be complex and multifaceted. This collaboration could help to build the knowledge and understanding that would support learners with diabetes (White & Wehlage 1995:26).

Perrin, Shayne and Bloom (1993:43) emphasise that schools fill both education and socialisation needs and are the link between other community activities that integrate the child into community life. Children are strongly influenced by the models they see around them. Communities in South Africa differ widely in terms of resources and values. Each community has certain values, attitudes and ways of seeing things, which can influence the development of the children in the community (Donald, *et al.* 1999:181).

1.2 REASON FOR THE CHOICE OF THE STUDY

The researcher has been a secondary school teacher for the past fourteen years. During this period there were several learners with diabetes in the school, and many teachers expressed a need for knowledge and greater understanding of the learner with diabetes. They also wished to know how best to improve and maintain the relationship between the school, teachers and parents of the learners with diabetes.

Only a limited number of studies on learners with diabetes have been done in South Africa. As far as could be ascertained in the present study, the following studies on diabetes mellitus and education were completed between 1973 and 1998: *A psycho-pedagogical study of diabetes mellitus in secondary school pupils* (Van den Aardweg, 1973); *The young diabetic in career and employment* (Van den Aardweg, 1975); *The diabetic diet: education, compliance and practical applications* (Smith, 1983); *The diabetic personality* (Naud, 1990); *Stress and coping in families with diabetic children* (Corna, 1992); *The psychological aspects involved in white children with type I diabetes mellitus* (Struwig-Scholtz, 1995); *A critical review of education for diabetic adults in the Mafikeng, Mmabatho area of the North West Province: are there messages for health education?* (Direko, 1997); *The experience world of the adolescent with diabetes mellitus, with reference to the supporting role of the family* (Badenhorst, 1998); and *Glycaemia control and educational status of insulin-dependent diabetics following an educational programme in nursing* (Harrison, 1990).

Most of the available research referred to in this study was done in other countries. The aim of the present research study is to attempt to contribute to a better understanding of the learner with type I diabetes in the foundation phase of school, in the South African context.

This in-depth study was selected because of its topicality, significance and complexity.

Goleman (1997:xv) notes that the most influential early developmental psychologists, such as Piaget, focused on cognitive development, setting the early research agenda for that field of study. In recent years, research into child development has expanded its scope to study the unfolding of children's social and emotional lives. The result has been a new understanding of what makes a child socially adept or better able to regulate emotional distress.

Children in primary school will probably accept a classmate who has diabetes mellitus. They are likely to show more interest in why he or she is allowed to eat in class when they are not, and when given an explanation will be quite solicitous towards their friend. Their perception of the condition may be that the child has developed diabetes because he/she has done something wrong, they may even wonder if diabetes means that he/she will die, and they need to be told that it is not contagious (Ingersoll & Golden, 1995:450).

Learning always involves feelings and those feelings are experienced as much by the teacher as by the learner (Saarni, 1997:35). Van den Aardweg (1973:11) notes that the diabetic learner often passes unnoticed, unrecognised, with no help or understanding in the school. The primary cause of this neglect is ignorance, as the majority of teachers have little or no knowledge of diabetes and do not know the implications that such a disorder has for a learner. If the teacher were to understand the effect of diabetes on the learner and adopt a positive attitude towards the child, this would help to maintain the stability of the learner with diabetes.

The school and teachers need to understand how diabetes affects a learner's ability to function effectively in the classroom. A nine-year old learner described how he felt when his blood sugar was low: "I feel weak, irritable, hungry, and ready to kill anybody that bothers me." A thirteen-year old said: "It feels very weird. Sometimes I don't even know I am high. When I do think I am high, I feel like I am going to throw up, and I feel like I need to drink every 5 seconds or go to the bathroom" (Rosenthal-Malek & Greenspan, 1999:39).

According to Frieman and Settel (1994:196) chronic illnesses such as asthma, diabetes, epilepsy and sickle cell anaemia afflict a large number of children. A chronic illness may be defined as a medical condition that requires continued treatment. Considering the large number of chronically ill children, most teachers will probably, at some point in their careers, work with one or more of these learners in the classroom. Although most teachers encounter these learners, studies indicate that the teachers do not believe they have adequate information about chronic illnesses. Teachers need to be well informed so that they can more effectively meet the needs of the chronically ill learner. They need to learn the best ways of working with parents, the basic elements of the particular chronic illness, the relevant aspects of the medical management of the illness and the best approach to including the learner in the classroom (Frieman & Settel, 1994: 196).

The American Diabetic Association argues that children with diabetes require medical care to remain healthy. The need for medical care does not cease while the child is at school (American Diabetic Association, 1999:1). Appropriate diabetes care in the school is

necessary for the learner's long-term well-being and optimal academic performance. There is a significant link between blood glucose control and the later development of complications from diabetes. The school and teachers ought to have an understanding of diabetes and its management to facilitate the appropriate care of the learner with diabetes. Knowledgeable teachers are essential if the learner is to achieve the good metabolic control required to decrease the risk of developing serious complications from diabetes (American Diabetic Association, 2000:1).

Frieman and Settel (1994:197) note that basic knowledge of the learner's illness process and relevant aspects of medical management are necessary for effectively meeting the developmental and learning needs of a chronically ill learner. With this information the school and teacher will not only be able to teach the other learners in the class about the illness, but will also be prepared to meet the diabetic learner's medical needs in the classroom. If the teacher is not completely comfortable about handling the learner's medical condition, however, medical assistance should be summoned immediately if a crisis occurs. The teacher can therefore play an important role in the classroom as an asset builder in the development of learners with diabetes.

Rosenthal-Malek and Greenspan (1999:40) argue that although everyone has heard of diabetes, and many think they understand the illness, there are still many classic misconceptions about the manifestations of the symptoms and their effect on learning and the child's behaviour in the classroom. Some of the misconceptions are that the learner will tell you when his or her blood sugar is either too high or too low, diabetes is affected only by food intake, and if a learner eats properly, the diabetes will remain under control and bathroom and other privileges can wait a few minutes. Only with knowledge and understanding of diabetes can the misconceptions about a diabetic child's development, learning and behaviour be eliminated.

Thies (1999:393) points out learners with chronic health conditions are at the intersection of the health system and educational system, which traditionally operate in separate realms with different policies and philosophies. The chronically ill learner's health, developmental and learning needs are often not well integrated at school, reflecting this separation. School, teachers and family often do not discuss the impact of a learner's health condition on his/her ability to learn. When learners are acutely ill, academic achievement is seldom perceived as a priority but when the same learners seem to be well, health is not perceived as a factor in their education. It is seldom clear who bears the responsibility for addressing the actual or potential impact of a health condition on learning.

The child with diabetes mellitus is a chronically ill learner. The illness will not go away, it is a permanent factor in the learner's life. The learner has to take eventual responsibility for managing his/her illness. Friends, family, the school, church, teachers and the community should play an important role in these learners' lives.

1.3 AIM OF STUDY

The proposal is that an in-depth study should be done to understand the learner with type I diabetes in the foundation phase.

The aims of this study are as follows:

- To identify the developmental and learning needs and the assets of learners with diabetes in the foundation phase.
- To provide knowledge and understanding of learners with type I diabetes in the foundation phase.
- To rally friends, family, school, teachers and the community to become external and internal asset builders in the development of the learner with type I diabetes in the foundation phase.

1.4 STATEMENT OF THE PROBLEM

In order to understand the learner with type I diabetes in the foundation phase, the following research question was investigated:

What are the developmental and learning needs and the assets of the learner with type I diabetes in the foundation phase?

1.5 THEORETICAL FRAMEWORK OF THE STUDY

The ecological perspective was viewed as an appropriate framework within which to contextualise this study. This approach emphasises the multiple contextual influences on human behaviour and the concept of reciprocity between the individual and the environment.

The ecosystemic perspective has evolved from a blend of ecological and systemic theories. Its main concern is to show how individual people and groups at different levels of the social context are linked in dynamic, interdependent and interacting relationships (Donald, *et al.* 1999:34).

Ecological theory is based on the interdependence and relationships between different organisms and their physical environment. These relationships are seen holistically. Every party is as important as another in sustaining the cycle of birth and death, regeneration and decay, which together ensure the survival of the whole. Figure 1.1 presents a way of viewing these relationships (Donald, *et al.* 1999:35).



[Figure not available]

Figure 1.1 Interacting levels of organisation within the social context
(Adapted from Donald, *et al.* 1999:35).

Figure 1.1 is based on the idea that the individual interacts in relationships with different levels of organisation in a social context. Each of these levels can be seen as interacting with (influencing and being influenced by) other levels in the total ecological system (Donald, *et al.* 1999:36).

According to Kapp (1991:13) the ecological perspective presents a school of thought, which stands in direct opposition to the medical or clinical paradigm. Instead of placing the emphasis on the child who has a certain deficiency, the child is studied in a certain ecological context. The ecology is considered to be of particular importance because it may eliminate or intensify a child's problems. The learner with diabetes is a good example of this ecological context. In an uncomplicated ecosystem he/she is able to comply with all the requirements of his/her environment and can pass as "normal". By contrast, in a complex environment where he/she is expected to have or to learn physical, emotional, social, moral and cognitive skills, he/she could be labelled "ill" and "abnormal".

Neisser's (cited in Saarni, 1997) notion of the ecological self is premised on the way we perceive our environment in terms of what opportunities it gives us for interaction. The ecological self is much like the subjective self in that the emphasis is on the individual engaged in transaction with those features of the environment that permit or afford interaction. The ecological self is also significant for the development of emotional competence because of its emphasis on the self in relation to an environment. Obviously the environment includes other people, such as friends, family, the school, teachers and the community, which means that the social environment can also be regarded as presenting an array of opportunities for interaction to the individual. This becomes deeply interesting in a classroom where the individual learners may differ in their assumptions of how social relations are defined and how assets are being used (Saarni, 1997:42).

The ecosystemic perspective has particular relevance for the following:

- Understanding the development of children in more holistic and interactive terms
- Understanding the classroom and school by viewing these as systems within the social context
- Understanding how the origins, maintenance and solutions to social problems and special needs cannot be separated from the broader context and systems within which they occur (Donald, *et al.* 1999:39).

It was also important for the purposes of this study to have a holistic view of the learner with type I diabetes in the foundation phase. The research question and aims of the study required adopting a needs-based and asset-based approach. Firstly, the needs-based approach was important in that it focused on the problems, deficiencies and needs of the learner with type I diabetes in the foundation phase (Ebersöhn & Eloff, 2003, 5). The needs assessment done in this study provides legitimacy for support without labelling the learner with type I diabetes in the foundation phase or blinding friends, family, school, teachers and the community to the capacities of these learners (Ebersöhn & Eloff, 2003,6). Secondly, the learner's external and internal assets could help the child thrive in spite of being chronically ill with diabetes. However it would not be possible to build these assets without the support of the learner's family, friends, teachers, the school and the community.

Every individual has needs and shortcomings. Every individual, every family, every classroom setting, school or learning environment also has a unique combination of assets and capacities. Every individual has something to contribute, even though it may not yet have been mobilised. In every ecosystem there are resources available that are still unacknowledged. Effective living depends on whether those capacities can be used, these abilities expressed and these gifts shared. If they are, the individuals will be valued, will feel powerful and connected to the people around him or her (Ebersöhn & Eloff, 2003:9).

The asset-based approach focuses on what is currently present in the environment. It sets out to identify the capacities inherent in individuals in their environment. It does not start out by determining what is absent or problematic. It has a strong internal focus, which means that problem solving and mission development should come from within. The asset-based approach is relationship-driven and should be based on the strengths and talents (assets) of the individuals involved, and not on their weaknesses and problems. Relationships should be built and rebuilt constantly (Ebersöhn & Eloff, 2003:10).

Every child is unique. Children are comfortable being themselves. Roehlkepartain and Leffert (2000:8) note that children have meaningful ways to spend their time and many opportunities to explore and learn. They have positive values, social skills and a positive identity. They have developmental assets and people in their lives who help them build and strengthen their assets.

Roehlkepartain and Leffert (cited in Briedenhann, 2003:28) mention the effect of assets on young children as follows: "Those who have many assets when they are young are more likely to hang on to them as they grow" (Briedenhann, 2003:28). The more assets young children have the more likely they are to grow up doing positive things that the community values (Roehlkepartain & Leffert, 2000:8).

The relationship between the child and his ecology should be taken in account to identify the needs and assets of the learner with diabetes in the foundation phase. These learners' environment is relationship-driven and includes other people such as friends, family, the school and teachers, which form a community. They are part of a joint effort to provide understanding and support for the diabetic learner. They can also help to identify capacities and build his/her assets to promote healthy and effective development and learning.

1.6 RESEARCH DESIGN AND METHODOLOGY

This study is qualitative in nature. It is an ethnographic study using case studies. The unit of study is the foundation phase learner with type I diabetes.

The research was based on the interpretative paradigm characterised by a concern for the individual (Cohen, Manion & Morrison, 2002:22).

Qualitative research concerns the context, human experiences and situations of the individuals being studied. The research takes place in a natural setting where the learner with type I diabetes in the foundation phase is studied holistically, taking in account all factors and influences in the given situation (Ary, Cheser, Jacobs & Razavieh, 2002: 424).

An ethnographic study is characterised by its socio-cultural interpretation. Gray and Airasian (2003:166) assert that ethnography is one of the best-established qualitative research approaches. They explain ethnography as follows: "It seeks to describe and analyse all or part of the culture of a community by identifying and describing the participant's practices and beliefs" (Gray & Airasian, 2003:166).

The purpose of the case studies was to collect detailed information from a small group of learners with type I diabetes in the foundation phase. Based on these case studies, conclusions were drawn, but only about the participants and only in this particular context. By using case studies to identify the needs and assets of learners with type I diabetes in the foundation phase, the researcher endeavoured to give a more holistic interpretation of the findings obtained in the qualitative research.

Haslam and McGarty (1998:55) define a case study as "research (usually quite intensive) that involves a single participant or group of participants" (Haslam & McGarty, 1998:55). Case studies provide a real example of real people in real situations. They investigate and report on the complex and unfolding interactions of human relationships in a unique instance (Cohen, *et al.* 2002:181).

Yin (cited in Cohen, *et al.* 2002) identifies three types of case studies in terms of their outcomes: exploratory, descriptive and explanatory case studies. For the purpose of this study the descriptive case study was used for providing narrative accounts.

The research data were collected in four phases:

- Phase one consisted of an exploratory interview followed by compiling a letter and questionnaires.
- Phase two consisted of administering three questionnaires that were completed by the participants' parents, teachers and the participants in collaboration with the researcher. The information from the questionnaires formed the basis of the semi-structured interviews
- Phase three consisted of semi-structured interviews conducted with the participants' parents as well as the participants. The interviews were semi-structured as the completed questionnaires formed the basis of the discussion.
- Phase four consisted of semi-structured interviews conducted with the teachers of the participating learners with diabetes.

Data analysis took place simultaneously through a process of inductive data analysis (Ary, *et al.* 2002: 425). The data were interpreted by means of a narrative approach through which people describe their worlds (Silverman, 2000:122).

The semi-structured interviews were recorded on audiotape and transcribed, after which the data were coded and analysed.

1.7 DESCRIPTION OF THE RESEARCH POPULATION, SAMPLING METHODS AND LIMITATIONS

The unit of study for the research was learners with type I diabetes in the foundation phase. The names of the participants were obtained from the Ferncrest Diabetic Clinic at Rustenburg in the North West Province. The participants were between seven and nine years old.

The participants were selected on the basis of non-probability samples. This method involves non-random procedures for selecting the members of the sample (Ary, *et al.* 2002: 169).

Through purposive sampling, as a type of non-probability sample, the researcher selected a case because it illustrated some feature or process of interest. The samples were carefully selected to comprise only learners with type I diabetes in the foundation phase, aged between seven and nine years (Silverman, 2000:104).

Permission to conduct the research was obtained in writing from the parents of the participants, and all possible information was given about the goal of the study and the procedures followed during the study.

For the purpose of this study the following ethical aspects were taken into consideration (Ary, *et al.* 2002:437-438):

- The researcher should communicate the aims of the investigation to the learners, their parents and the teachers involved.
- Participants should give their informed consent before participating in the research.
- Honesty should characterise the relationship between the researcher and the participants.
- Participants would have the right to withdraw from the study at any time.
- The researcher would be mindful of cultural, religious and gender differences in the planning, conducting and reporting of the research.
- The researcher should communicate the findings and significance of the research to the participants.
- The participants would have the right to remain anonymous.

The research setting was the Ferncrest Diabetic Clinic in Rustenburg in the North West province. According to Bender (2002:16) all participants have to be assured that any data collected from them would be kept confidential. All participants in the study had the right to withdraw from the study or to request that data collected about them should not be used.

The possible limitations of the research are that it might not be possible to generalise the findings of the case studies. Case studies are not a tool for testing hypotheses but rather for producing a hypothesis which can then be tested through rigorous investigation. The

primary aim of case studies is to gain knowledge (Ary, *et al.* 2002:441). Another limitation of the case study is that the findings it produces may be unreliable because they are peculiar to the particular case being studied (Haslam & McGarty, 1998:55). To increase the validity of the research, more than one case study was conducted.

Other limitations of the research might be the lack of participation by learners and parents and the small number of learners diagnosed with type I diabetes in the age group of seven to nine years.

1.8 DEFINITION OF KEY CONCEPTS

To establish the developmental and learning needs and the assets of the learner with type I diabetes in the foundation phase, the following key concepts are discussed below.

1.8.1 Foundation phase learner

The foundation phase learner is part of a comprehensive approach to children from birth to nine years of age with the active participation of their parents and caregivers. The purpose of this approach is to protect the child's right to develop his/her full cognitive, emotional, social and physical potential (RSA, 2001:14). The foundation phase learner is part of the umbrella term for early childhood development applied to children from birth to nine years as they grow and thrive, physically, mentally, emotionally, spiritually, morally and socially (RSA, 2001:15).

This phase extends from Grade 1 (\pm 7 years) to grade 3 (\pm 9 years). Learners in the foundation phase have all kinds of potential abilities and possibilities to progress on their journey to childhood with the aid of education. They move progressively out of the protective, safe haven of the family and venture into the larger, unfamiliar world of the school and community. In addition, they have already acquired a great deal of independence and shows signs of a quest for knowledge an urge to complete tasks. Their yearning to mix with friends increasingly impels them to form constant relationships. Their language competence and general knowledge enable them to communicate meaningfully with teachers, friends, family and other people (du Toit & Kruger, 1991:103).

The early care that foundation phase learners receive from parents and teachers determines how these learners will learn and relate with others at school and in life. Through such care a child develops the key elements of emotional intelligence, confidence, curiosity, purposefulness, self-control, connectedness, capacity to communicate and co-operativeness (RSA, 2001:11).

1.8.2 Child development

The Interim Policy for Early Childhood Development (RSA, 1996:2) states that child development is "an umbrella term which applies to the process by which children from birth to at least nine years develop and thrive, physically, mentally, emotionally, spiritually, morally and socially" (RSA, 1996:2). This term conveys the importance of a holistic approach to child development and the significance of considering a child's health, nutrition, education and social factors within the context of the family and the community (RSA, 1996:18).

According to du Toit and Kruger (1991:7) development means a “gradual growth, taking shape, unfolding”. Development refers to the gradual perceptibly unfolding change which manifests in the mastery of development tasks as the child reaches the objectives of becoming an adult during his/her progress to adulthood.

The way children develop is determined by the way they think, reflect and learn. Their development determines the way they think about themselves and about their relationships and interactions with friends, family, school and the community.

1.8.3 Learning

Cole and Cole (2001:34) add: “Learning as the process by which an organism’s behaviour is modified as a result of experience.”

Cole and Cole (2001:155) add: “Learning is a relatively permanent change in behaviour brought about by experience of events in the environment.”

The experiences and circumstances a learner with diabetes undergoes throughout childhood may change his/her behaviour permanently. The extent of such change can be controlled by the physical, social and cultural context of the environment in which a child lives. Friends, family, school, teachers and the community have a huge impact on the learning of the child.

1.8.4 Learners with special educational needs

According to Donald, *et al.* (1999:15) “special educational needs are where learners require special help and support if they are to overcome the particular contextual, social, and individual disadvantages and difficulties they face”.

The Interim Policy for Early Childhood Development (RSA, 1996:2) defines learners with special educational needs as “learners with special academic and learning problems, physical health problems concerns and particular social needs” (RSA, 1996:2).

These learners require a strong support network within a community and environment to help and support them with overcoming and managing their disadvantages in coincidence with their development and learning.

1.8.5 Developmental assets

Ebersöhn and Eloff (2003:14) define assets as the “skills, talents, gifts, resources, capacities and strengths that are shared with individuals, institutions, associations, the community and organizations”.

Developmental assets are critical factors for young people’s growth and development. These assets are some of the essential tools and materials children need to grow up healthily. The 40 developmental assets identified by the Search Institute offer a set of benchmarks for positive child and adolescent development. The assets clearly show the important role that family, friends, schools, churches and the community can play in children’s lives. The Search Institute divides these 40 assets into external and internal assets, which are described in Chapter 2 of this study (Search Institute, 2003).

1.8.6 Diabetes mellitus

Insulin-dependant diabetes mellitus, also referred to as type I diabetes, is the focus of the study. However, to place diabetes mellitus into a full context, type II and type III diabetes mellitus are also included in the definition of key concepts.

Petray, Freeseemann and Lavay (1997:57) point out that diabetes is a chronic metabolic disease that interferes with the body's ability to produce or use insulin or both. The body fails to burn carbohydrate intake properly, so glucose accumulates in the blood stream. This condition is known as hyperglycaemia, an overabundance of blood sugar. The name diabetes mellitus literally means sweet urine and refers to excessive blood sugar in the urine of the uncontrolled diabetic.

The cycle of normal glucose metabolism is shown in Figure 1.2 below (Petray, *et al.* 1997:57).

[Figure not available]

Figure 1.2 Normal glucose metabolism cycle
(Petray, *et al.* 1997:57).

As the cycle begins, food is consumed and digested (**Phase 1**). Most of the food is converted to glucose and the blood sugar level in the bloodstream rises (**Phase 2**). The increased blood sugar stimulates the secretion of insulin by the pancreas (**Phase 3**). The insulin enables the glucose to enter the body's cells, providing energy for the body to perform normal functions (**Phase 4**). As the insulin acts on the raised blood sugar, the food intake is metabolised and broken down into a form which can be used by the cells of the body, thus decreasing the blood sugar level to a normal range (**Phase 5**).

Diabetes is the result of the body's inability to produce or use insulin. Because little or no insulin is secreted from the pancreas, glucose cannot penetrate the body's cells and the body cannot perform normal functions. As the glucose remains unused in the bloodstream, continuing to increase the blood sugar level, the body's cells begin to rely on converting stored fat cells into energy. As this continues, ketone bodies – waste products resulting from fat metabolism – accumulate in the bloodstream and are eliminated from the body through the kidneys, spilling over into the urine. In uncontrolled diabetes, the concentration of ketones becomes very high and leads to a strong acid effect known as ketoacidosis. If left untreated, ketoacidosis can be life-threatening (Petray, *et al.* 1997:58).

The American Diabetic Association (2001:1) provides the following classification of diabetes mellitus.

➤ **INSULIN-DEPENDENT DIABETES MELLITUS (IDDM)**

Insulin-dependent diabetes mellitus is defined as diabetes that requires insulin treatment from within 3 months of diagnosis and/or with episodes of ketoacidosis. It is sometimes referred to as Type I diabetes, and in the past has been known as juvenile diabetes, juvenile-onset diabetes mellitus (JODM), brittle diabetes, and childhood diabetes. IDDM is a lifelong, incurable illness, affecting individuals at a younger age than non-insulin-dependent diabetes mellitus. It is regarded as the major form of the disease and is the primary focus of this study.

➤ **NON-INSULIN DEPENDENT DIABETES MELLITUS (NIDDM)**

- i) Non-obese
- ii) Obese

NIDDM is sometimes referred to as Type II diabetes. This includes terms such as adult-onset diabetes mellitus (AODM), stable diabetes mellitus and maturity-onset diabetes mellitus. NIDDM patients are usually over 40 years old, are not necessarily dependent on injection insulin, and are not prone to ketosis.

➤ **OTHER TYPE OF DIABETES RELATED TO:**

- A. Pancreatic disease / surgery
- B. Other endocrine syndromes, e.g. Cushing syndrome
- C. Iatrogenic disease (drugs and chemically induced)
- D. Certain genetic syndromes
- E. Miscellaneous causes

This category of diabetes is sometimes referred to as Type III diabetes, and in the past has been referred to as secondary diabetes (American Diabetic Association, 2001:1).

1.9 CONTENTS OF RESEARCH REPORT

This chapter contains an introduction to the present study. The chapter is an orientation to the contextual and theoretical framework guiding the study, and contains the purpose of the study, the statement of the problem, the research methodology employed and definitions of key concepts. The remainder of this dissertation of limited scope is divided into the following three chapters: **Chapter 2** consists of a literature survey of diabetes mellitus in the development and learning of the learner in the foundation phase. **Chapter 3** focuses on the research design, methodology and findings. **Chapter 4** contains a detailed account of the major conclusions, recommendations, limitations of the study and future research.

CHAPTER TWO

LITERATURE SURVEY: DIABETES MELLITUS AND THE FOUNDATION PHASE LEARNER

2.1 INTRODUCTION

In order to identify the needs and assets of the learner with diabetes in the foundation phase it is necessary to investigate diabetes mellitus as a chronic illness. The first section of this chapter explores the definition, epidemiology, aetiology, signs associated with diabetes, management of diabetes, characteristics and complications of diabetes and the incidence of diabetes in South Africa. The characteristics of the chronically ill learner and the implications of diabetes mellitus for the learner, the family, the school and the community are investigated. In the second half of this chapter the development and learning of the foundation phase learner will be discussed in conjunction with his/her developmental assets.

When the child is studied from an ecological perspective, the interacting relationships become evident. In relationship with his/her ecology the foundation phase learner with type I diabetes, which is regarded as a major and serious form of the disease of diabetes, has an impact on friends, family, the school and teachers, which together form a community. Socio-economic, cultural and language barriers as well as illiteracy influence the community. To understand the needs and assets of the learner with diabetes in the foundation phase it is important to note that children's state of health involves more than merely the physical aspects. It concerns the whole person as a physical, affective, social and spiritual being in his/her totality (Kapp, 1991:157). Every living person has some gifts or capacities of value to others. In a strong ecology, these gifts are recognised but in a weak ecology the friends, family, teachers and the school cannot give their gifts and express their capacity (Kretzmann & McKnight, 1993:27).

Kapp (1991:157) emphasises that every person strives to avoid illness and to enjoy good health. In terms of the constitution of the World Health Organisation, "health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, and political belief, economic or social condition" (WHO, 1946:1).

The goals of a public school education for early childhood education include emotional development; intellectual and perceptual development; communication, literacy and language development; the development of numeracy and mathematical concepts; the development of cultural, artistic and arts and crafts skills; the development of an understanding of technology and technological processes; the development of an understanding of economic principles, spiritual, moral and ethical development; the development of human and social awareness and physical development (RSA,1996:23). However, chronic illness may compromise each goal. Disease processes, absenteeism and diminished expectations for academic performance all take their toll (Thies, 1999:396).

2.2 DIABETES MELLITUS

2.2.1 What is diabetes mellitus?

2.2.1.1 Definition

Type I diabetes mellitus is defined below for the purpose of this study.

According to Sandberg and Barrick (1995:163) “type I diabetes is a chronic disease in which the body does not produce adequate insulin, a hormone synthesized by the pancreas. Insulin is released into the bloodstream when glucose (sugar) increases as it does after a meal. By binding to receptors on body cells, insulin allows glucose from ingested food to move from the bloodstream into the cells where it is broken down for energy. When inadequate quantities of insulin are produced, body cells can not utilize glucose for energy production” (Sandberg & Barrick, 1995:163).

2.2.1.2 Epidemiology of diabetes mellitus

Diabetes occurs worldwide and the incidence of both type I and type II diabetes is rising. It is estimated that 150 million people worldwide had diabetes by 2000, and this is expected to double by 2010. This global pandemic principally involves type II diabetes, and is associated with factors including increased longevity, obesity, unsatisfactory diet, a sedentary lifestyle and increasing urbanisation. The prevalence of both types of diabetes varies considerably around the world and is related to differences in genetic and environmental factors. A rise in prevalence occurs in migrant populations going to industrialised countries, e.g. Asian and Afro-Caribbean immigrants to the United Kingdom. The prevalence of known diabetes in Britain is around 2-3%. In Europe and North America the ratio of type II: type I is approximately 7:3. In Northern Europe the prevalence of type I diabetes in children has doubled in the last twenty years with a particular increase in children younger than five years old. The onset of type II diabetes is also occurring at an earlier age in many populations and in some ethnic groups, such as Hispanic and Afro-Americans, is now being observed in children and adolescents (Frier & Fisher, 2002:644).

Type I diabetes is most often diagnosed in children aged from 5 – 6 years and 11-13 years, although the individual may first become symptomatic at any time from infancy to early childhood. The prevalence of type I diabetes varies from 0,6 to 2,5 cases per 1000 children and the incidence of newly diagnosed cases has been shown to vary by age (increasing with age from childhood to adolescence), race (higher among Caucasians than any other racial groups) and season (higher in winter than in summer). The illness affects both sexes with equal frequency (Sandberg & Barrick, 1995:163).

2.2.1.3 Aetiology of diabetes mellitus

Frier and Fisher (2002:653) state that although the precise aetiology of both main types of diabetes is uncertain, environmental factors interact with a genetic susceptibility to determine which people with the genetic disposition will develop the clinical syndrome and at what time the diabetes will commence. Factors associated with type I diabetes include genetics, environmental factors, viruses, diet, stress, immunological factors and pancreatic pathology (Frier & Fisher, 2002:653).

2.2.1.4 Signs associated with diabetes mellitus

According to Frier and Fisher (2002:643) the following signs and symptoms are associated with diabetes mellitus:

- “Weight loss (insulin deficiency)
- Obesity – may be abdominal (insulin resistance)
- White spots on shoes (glucosuria)
- Dry mouth and tongue
- Deep sighing respiration (Kussmaul breathing)
- Skin infections – boils, candidiasis” (Frier & Fisher, 2002:643).

2.2.1.5 Characteristics of diabetes mellitus

Votey (2001:2) states that type I diabetes is characterised by the inability of the pancreas to secrete insulin because of the autoimmune destruction of the beta cells. The distinguishing characteristics of a patient with type I diabetes are that if insulin is withdrawn, ketosis and eventually ketoacidosis will occur. These patients therefore depend on exogenous insulin for their survival.

Often called juvenile-onset diabetes, type I diabetes is typically diagnosed in childhood, adolescence or early adulthood. Type I diabetes also develops in older adults. Its incidence peaks in adolescence (Votey, 2001:3).

Diabetes mellitus in children is a multifactor genetic illness, caused by the interaction between various genes and environmental factors such as infection, stress and certain types of food. Diabetes mellitus is a disturbance of metabolic function, in particular involving fats and carbohydrates, as a result of a deficiency of effective insulin secreted by the pancreas. This illness affects almost every system in the body. Diabetes mellitus in children is a lifelong illness and these children require continuous attention, twenty-four hours a day, seven days a week. However, the development of assets during the child’s growth and development makes this an illness with which anyone can live, especially if it is controlled (Kapp, 1991:164).

2.2.1.6 Treatment of diabetes mellitus

Three methods of treatment are available for diabetes patients: diet alone, oral hypoglycaemic drugs and insulin. Approximately 50% of new cases of diabetes can be controlled adequately by diet alone, 20-30% will need an oral hypoglycaemic drug, and 20-30% will require insulin (Frier & Fisher, 2002:656).

The goal of treatment for type I diabetes involves injections of insulin once or twice a day. The treatment is intended to keep blood glucose levels as close to normal as possible. Meal planning involves both choice and timing of snacks and meals, to match the times and doses of insulin injections. Exercise is considered beneficial because it facilitates the utilisation of insulin by the body and reduces blood glucose levels. However exercise may result in hypoglycaemia (low blood sugar) if the diabetic person has consumed insufficient calories prior to exertion. Illness and stress (including psychological stress) may impair insulin action, leading to hyperglycaemia (high blood glucose). Because of the complex interaction between these variables, it is unrealistic to expect that blood glucose will

remain constantly stable, particularly in young diabetic children (Sandberg & Barrick, 1995:163).

Two basic types of diet are used in the treatment of diabetes: low-energy, weight-reducing diets and weight maintenance diets (Frier & Fisher, 2002:657).

2.2.1.7 Complications of diabetes mellitus

Silink (1995:311) states that it is generally accepted that the complications of diabetes are largely the consequence of poor metabolic control in patients (including children) with type I diabetes.

Table 2.1 illustrates several indicators of poor diabetic control, that Silink (1995:312) identifies as associated with diabetes complications.

TABLE 2.1: Indicators of poor diabetic control (Silink, 1995:312).

1	Polyuria and polydypsia
2	Enuresis
3	Blurred vision
4	Skin infections
5	Weight loss
6	Poor growth
7	Pubertal delay
8	Deteriorating school performance and school absenteeism
9	Signs of diabetes complications
10	Blood lipid abnormalities
11	Elevated glycosylated haemoglobin
12	Elevated fructosamine

Pal (2002:36) lists the complications of diabetes mellitus as blindness due to retinopathy, the development of cardiovascular disease, renal disorders, delayed healing of wounds, infected skin wounds and severe circulatory disorders. Diabetes can also cause anaemia, which may be a warning sign of serious kidney disease.

2.2.1.8 Diabetes in South Africa

It is estimated that there currently over 2 million persons diagnosed with diabetes in South Africa, and that the current rate of growth of this disorder is about 11% per annum – i.e about 220 000 new cases every year. This means that South Africa currently has an estimated average of more than one new case of diabetes diagnosed every 3 minutes. More than 25 new cases of diabetes are diagnosed every hour and more than 603 new cases of diabetes every day. To make matters worse, informal estimates suggest that there are currently a further 1 million persons with diabetes in South Africa, who have not yet been diagnosed (Diabetes South Africa, Pretoria Branch, 2003).

2.2.2 Diabetes as a chronic illness

Corna (1992:1) notes that an acute illness typically involves an emergency reaction in which normal routines are suspended and all energies and resources are mobilised to cope with the trauma for a defined period of time. The potential for stress is high, but the duration of the episode is relatively short. By contrast, a chronic illness may involve an adjustment of broad aspects of life-style over an extended, even indefinite period. This quest for adjustment is not restricted to the individual but also affects friends, family, the school, teachers and the community as a unit.

Rosenthal-Malek and Greenspan (1999:38) point out that diabetes is an autoimmune illness, similar to rheumatoid arthritis or multiple sclerosis. Autoimmunity is a problem where the body's white blood cells, which normally fight infection, turn on a part of the body. In diabetes, the white blood cells target the cells that produce insulin. After a certain amount of time, there is a lack of insulin and one of the two main forms of diabetes, eventually develops, either non-insulin-dependent diabetes, the more common form, or insulin-dependent diabetes, the more serious form.

In diabetes mellitus the lack of insulin leads to the inability of the body to use the glucose, and consequently to increased glucose levels in the blood. The kidneys are unable to cope with the excessive glucose and it becomes excreted in the urine. When an excess of glucose is excreted in the urine, the body loses large quantities of water and dehydration occurs as a result of the large volume of urine excreted. A lack of effective insulin causes symptoms of a serious condition called ketoacidosis, which may lead to diabetic coma. It is important for teachers to know the following typical symptoms in learners with type I diabetes, particularly those in the foundation phase:

- Children with type I diabetes have an excessive output of urine, generally pale in colour
- Excessive urination leads to severe thirst and dehydration
- The increased loss of fluids may alter the pressure in the eyeball, leading to disturbances in vision
- These children lose weight because the food they eat does not nourish them properly, so their bodies react in a way similar to starvation by metabolising their fat cells
- The child shows signs of drowsiness, fatigue and general weakness
- The urine contains sugar as well as acetone leading to a sweetish smell of apples or acetone.

Knowledge and understanding of diabetes mellitus is important, because it may initially take several weeks for the symptoms to develop to the stage where coma occurs. However, when a child is being treated and does not get insulin regularly or gets too little or the treatment ceases, the same symptoms will present themselves within a day or two (Kapp, 1991:164).

Schools and teachers should also note that children who are chronically ill are also at high risk of having developmental and learning problems because they do not feel well, cannot pay proper attention, are often absent, etc. (Kapp 1991:29). Among children diagnosed with insulin-dependent diabetes before the age of five years, chronic mild fluctuations in blood glucose levels, or severe episodes of hyper- or hypoglycaemia, can impair the development of their visual scanning and spatial abilities. This process suggests that critical periods may occur during development when the brain is sensitive to fluctuations in blood glucose and the associated alterations in acid-based balance. Children may have difficulty with reading and performing planning tasks. Episodes of acute hypoglycemia can

cause temporary confusion in all age groups. Chronic hyperglycemia will eventually damage the retina of the eyes (Thies, 1999:395).

Kapp (1991:179) states that chronic illness affects the moral development of the child in the sense that he/she may develop an unfounded feeling of guilt. Children with chronic illnesses often feel that they are perhaps to blame for getting the illness. They may also feel guilty about the expense and inconvenience that their illness causes. They can sense a silent reproach from their parents. For the child in relationship with his/her ecology it is necessary to note that this feeling of guilt about the illness may remain with the child and even reappear later during adulthood. Some adults consider illness as a punishment for their sins or question why they are being punished in this way by an illness.

Learners with a chronic illness such as diabetes should be encouraged to lead as normal a life as possible, both at home and at school. Unnecessary restrictions of activities may reduce the learner's enjoyment of life and interfere with friendships and social activities. A normal life for a child with a chronic health problem means more than merely controlling the illness and minimising hospital visits. It includes developing realistic expectations, keeping up with schoolwork, forming friendships and participating in the same activities as other children of his/her age whenever possible (Kapp, 1991:179).

2.2.3 Characteristics of the chronically ill child

Moos and Tsu (cited in Edwards & Davis, 1997) identify a number of tasks facing the child with a physical illness:

- Coping with pain and incapacitation
- Dealing with the hospital environment and developing relationships with the hospital staff
- Keeping an emotional balance by managing feelings of anxiety, resentment and isolation
- Maintaining a positive self-image
- Preserving relationships with family and friends
- Preparing for an uncertain future (Edwards & Davis, 1997:18).

A child's confidence, positive self-esteem and self-reliance are strong protective factors, as are the child's cognitive abilities, both in terms of understanding the illness and the range of coping strategies available to him/her. The child's age is important, in terms of not only the experiences and possible coping resources available but also how the child may be affected. Younger children seem to be more severely affected in their scholastic achievement, whereas older children seem to be more severely affected in their social adjustment (Edwards & Davis, 1997:19).

Outwardly, the diabetic learner is no different from any other learner and fits in well at school. Yet the focus should not be on the learner and not include the illness. The illness is part of the learner and the diabetic cannot lay down this burden, however much he or she longs to, nor can the teacher ignore the illness (Van den Aardweg, 1973:7). The continual striving to keep a balance between hyperglycaemia and hypoglycaemia is in itself enough for us to assert that the diabetes mellitus learner is an exceptional learner. The following factors compel us to recognise the learner with type I diabetes as an exceptional learner in our schools:

- The diabetic learner is chronically ill. Diabetes is one of the severest of the endocrine disorders

- The adolescent who is a diabetic is the most difficult diabetic to control.
- Stress and tension cause swings in blood glucose levels, which affect the learner adversely
- The diabetic learner goes to school each day carrying an emotional burden of perpetual daily injections, the discipline of adhering to a diet, a regular routine of testing blood or urine, injections, eating at regular and frequent intervals, taking exercise and the various emotional stresses and other factors which are unforeseeable (van den Aardweg, 1973:5).

As the learner with diabetes is chronically ill, he/she is often absent from school and hospitalised from time to time. Kapp (1991:177) argues that changes take place in a person during illness. These changes affect not only the child, but also everyone with whom the child has a relationship. When a person is ill, being with others may have a positive influence on relationships. A feature of the illness is the isolation it entails. Life continues at home and at school but the diabetic child is no longer a participant. The sick child may endure many long, empty hours. During a long sickbed the child's friends may possibly visit him/her only once, if at all. They find the situation unfamiliar and consequently the visit may be an unsatisfactory experience. Regression occurs at a social level during an illness, which leads to fixation on the child. The child withdraws, becomes introverted and his/her interest in the outer world diminishes. In a healthy child, his/her body is the point of departure for self-involvement. By contrast, in a sick child his/her body is the point of departure point for retreat and withdrawal. The sick child may have less control over his/her body than previously, leading to doubt about his/her abilities and shyness. As the child is less productive, he/she receives less recognition. This may lead to a feeling of inferiority in the group and cause a loss of self-worth (Kapp, 1991:177).

Kapp (1991: 177-178) mentions the following about chronically ill children:

- More egocentric
- Everything revolves around them to the extent that they reach out differently to other people
- Their relationship with friends, family, teachers and the school changes because they have changed
- They become more dependent on others
- Taking medicine illustrates one of the most obvious forms of dependence and the illness increases the gulf between these children and other people
- Their illness makes them spectators instead of participants
- Young children who are ill lag behind in learning the skills required for playing with other children
- They are consequently cast out from the group when they eventually recover
- Chronically ill children often have to make new social contacts because they have lost their status in the group, owing to their illness
- Chronically ill children reach the unpleasant realisation that they are expendable in the group
- The world of chronically ill children is a world in which they can lose their relationships
- These children may feel that they have been left out. This may lead to distrust, which in turn makes it difficult to build relationships with other children
- The social relations of chronically ill children may change. The relationship they establish with their peers may be more superficial
- They may use defence mechanisms such as clowning or defiance (Kapp, 1991:177-178).

2.3 IMPLICATIONS OF DIABETES MELLITUS

2.3.1 The learner

Diabetes mellitus has several implications for the learner. The diet of the learner with diabetes has to be strictly controlled. The amount and type of food eaten by diabetics is important, for example food with a high sugar content should be avoided, and it is preferable to eat almost the same amount at the same times each day (Corna, 1992:60). Snacks may often be needed, sometimes during school hours. Urine or blood tests are required 2 to 3 times daily to monitor blood sugar levels. Insulin injections are administered once or twice a day, depending on the child's age and how long he/she has had diabetes. In young children, the parents have to take responsibility for administering the insulin. The child will eventually have to take responsibility for controlling the illness. Deciding how much insulin to give a child depends on factors such as exercise and nervous tension, since diet and insulin dosage are adjusted to different levels of physical activity. However it is not always possible to predict the physical activity for the day (Corna, 1992:61). The management of type I diabetes places considerable responsibility on diabetics and their families, and requires major changes in life-style and frequent daily attention to the illness (Corna, 1992:62).

Corna (1992:63) points out that diabetic children have to gain special knowledge about medicine and nutrition, learn to test urine, to inject insulin, to regulate their diet and to adjust their physical activity. They have to follow special routines, and need to accept that they are different from their friends and classmates. The diabetic child faces far more conflicts and pressures than children who do not have diabetes or other chronic illnesses.

Learners with diabetes will sometimes feel overwhelmed by the task of managing their illness. They may think that diabetes is taking over their lives, that they are alone, and that no one else understands what they are going through. At such times, many children feel ambivalent about improved self-management. On the one hand, it may seem that this is too much of a struggle for their efforts to be worthwhile; while on the other they may at the same time feel guilty and fearful about the results of their poor self-control. This feeling of hopelessness, the sense that there is no solution, no way to alleviate what seems to be an unbearable situation, invariably leads to even less control of their condition. At these times they have the greatest need for care and close attention from their friends, family, school and teachers (Plotnick & Henderson, 1998:17).

When a child is ill, his/her environment changes. It no longer has an inviting appeal to participate. As illness makes it difficult for sick children to learn about things in the world and to relate to them, there is a negative effect on cognitive development. These children withdraw and demonstrate a general disinterest and unhappiness. Chronically ill children show poor motivation, which adversely influences their willingness to learn. Their sick bodies play a restrictive role in these children's relationship with their ecology. The stress caused by the illness causes regressive behaviour. Newly acquired skills are easily "lost" and this causes anxiety. This regression, which results in attenuated cognitive activity, are often more threatening than the illness itself. Chronically ill children are often absent from school. The class continues the schoolwork while the sick child is absent. Shortcomings and gaps develop in the child's education. It should be noted that it is difficult for these children to understand new work because they have not caught up with previous work (Kapp, 1991:180).

Rosenthal-Malek and Greenspan (1990:40) identify ways in which learners with diabetes are affected in the classroom:

- Lunch and snacks have to be eaten at specific times which may not always coincide with the schedules and routines of the classroom or the school
- Moreover, they may have to test their blood sugar after break or after exercise, because exercise reduces the blood sugar levels
- Diabetes affects learners in other ways that are not as obvious. For example although diabetes does not affect learners' performance in the long run, it may affect learning on specific days
- Although diabetics do not have a higher incidence of learning problems than learners without diabetes, what does happen is that when diabetics have low blood sugar they may think about how hungry they are, or that they are dizzy or shaky
- In addition they may occasionally have problems with reading or writing clearly because of blurred vision. This is a temporary condition caused by either high or low blood sugar levels
- Diabetes may affect behaviour at specific times. Many learners become belligerent and moody when their blood sugar is low
- Attendance may also be a problem for some learners. Because the timing of the highs and lows in blood sugar levels affects all learners differently, attendance problems vary for every learner with diabetes (Rosenthal-Malek & Greenspan, 1999:40).

When diabetic learners in the foundation phase were asked about their diabetes, there were responses such as "I worry about getting stuck somewhere without any insulin or any food. Like getting separated from my mother at the mall", or "I don't want the kids in my class to know I have diabetes, because they'd tease me and wouldn't pick me for their sports team. If they knew I have diabetes, I'll be the last kid picked". The hurt from these rejections, and perceived rejections, could remain with a child for many years. Even if it is not important to play the game, it is still important to be accepted and picked for the team. The feelings engendered by these situations, and their relation (or perceived relation) to diabetes, will become intertwined with children's feelings about their illness and its impact on their lives (Plotnick & Henderson, 1998:12).

In research carried out by van den Aardweg (1973:6) it was found that all forms of stress play an important part in reducing good control over diabetes. Such stress often manifests during tests and examinations. During an examination, the diabetic's blood glucose level tends to rise and hyperglycaemia and even hyperglycemia with ketosis may result. The learner with diabetes now shows fatigue, loss of the ability to concentrate, lack of reasoning ability and a lack of willpower. Friends, family, the school and teachers seldom realise the battle the diabetic child wages during such times of stress. In addition, diabetic children seem to be slower in performing their mental and/or manual skills, so they have difficulty with completing tests and examinations or any project within the time allotted. The psychological problems of diabetic children ought to be kept to a minimum. They need a larger helping of understanding and encouragement than average learners do. The diabetic learner in the foundation phase has difficulty with keeping to a strict routine at school. The regimen of regular, adequate meals is sometimes impossible to adhere to as it may conflict with the demands of the school. For some diabetic children, for example those in rural areas, the long time spent travelling to and from school increases the interval between main meals, which is detrimental to good control. Conduct at school may vary from good and attentive in the morning to poor and inattentive later in the day, due to a tendency to become mildly hypoglycaemic prior to a meal and especially after exercise (van den Aardweg, 1973:6).

The chronic nature of an illness such as diabetes saps the child's energy, making it difficult for the learner to participate fully in the social and academic life of the school. Falling behind academically leads to a need to catch up, and catching up takes time away from keeping up with schoolwork. Self-confidence, achievement and motivation become undetermined. Not surprisingly, children with chronic conditions feel more anxiety and depression than their peers. Their stress does not arise as much from the illness as from dealing with other friends, family, the school and teachers whose expectations of them is altered by common attitudes to illness (Thies, 1999:395).

Corna (1992:65) states that the main developmental tasks of learners with diabetes include independence and identity formation, and diabetes interferes with the accomplishment of these and other developmental tasks. However, this could be overcome by focusing on the presence of the assets and capacities available in the learner's ecology.

2.3.2 The family

Every family is a balanced system where individual people have interacting relationships. After learning that a child has a chronic illness, families tend to lose some of their equilibrium, which threatens their stability. The stress of the illness may cause severe disruptions, particularly if each parent attempts to deal with his/her own fears and frustrations alone. Mothers and fathers can become consumed by the need to care for the sick child, at the expense of nearly everything else in their lives. They may find themselves constantly investigating new options, reading about new treatments and pondering the future. By contrast, a child's chronic illness often has positive effects on families. It may bring parents and other family members closer together. Families who communicate openly may be strengthened by the experiences associated with managing their child's health. The family's management of the child may provide a sense of cohesiveness, mission, mastery and pride (Schor, 1995: 541).

According to Kapp (1991:178-179) when a child falls ill, not only does his world change but so does the world of other members of the family. The life of the ill child becomes subservient to the overpowering demands of the illness and the lives of the other members of the family also become subservient. The result is that the ill child can become a sort of tyrant around whom the family revolves. Often the mother makes better contact with the child because she has more time to devote to him and converses with him in a calm, patient manner. The father also tends to be more aware of what is going on in the home when a child is ill. The sick child enjoys everyone's attention. The other children may be neglected and consequently become jealous because the sick child has the lion's share of the parent's attention. This may upset or harm the relationship between the sick child and the other children in the family.

When a child is ill, life changes for the entire family. Schor (1995:542-543) notes that brothers and sisters often feel neglected. Some may feel guilty because they are not sick too. As part of the magical thinking of childhood, they may wonder whether an evil thought they had about siblings might have caused the sick sibling's illness. They may feel anxious about becoming sick themselves, or they may sometimes wish they were sick, too, so they could become the centre of the family's attention. They might become angry if they are asked to assume more household chores than their sibling, or feel guilty about resenting the additional responsibility.

Parents sometimes feel responsible for the illness that their child has developed. They have guilt feelings about the child's illness. They may react by being over-indulgent and over-protective. Parents may think the young child's illness is a family catastrophe and blame the child for the inconvenience and expense the illness causes (Kapp, 1991:179).

The diagnosis of diabetes may cause any number of feelings in each family member as well as in the extended family as a group. These feelings often follow a pattern similar to the grief process. The learner may deny the disease or feel deeply sad. Anger is very common, as are fear and guilt. Schoolteachers are in a position to listen and provide support (American Diabetic Association, 2001:1).

Ordinarily the family provides for the protection, nurture, socialisation and development of its members, but a chronic illness makes it more difficult to provide such physical and emotional well-being. Maintaining morale, setting goals and establishing values may be more difficult for the families of chronically ill children, as physical and emotional resources are already strained (Corna, 1992:18). During early and middle childhood, the child may have difficulty achieving independence within the family, as the parents assume the major responsibility for the child's performance of health behaviours. The feeling of being different from their friends may interfere with the development of peer relationships. The development of a positive self-esteem may also be affected (Corna, 1992:64).

The responsibility for diabetes control will gradually shift to the child, but parental supervision should be part of the process every step of the way. Responsibility should not be shifted on the basis of age alone. Cognitive ability varies widely in children. If responsibility is transferred too soon, diabetes control is likely to worsen (Plotnick & Henderson, 1998:15).

Table 2.2 shows several common feelings among parents of children with chronic illnesses, as listed by Schor (1995:540).

TABLE 2.2: Common feelings among parents of children with chronic illnesses.

Negative	Positive
Anger	Achievement
Anxiety	Closeness
Embarrassment	Joy
Frustration	Love
Grief	Mastery
Guilt	Pride
Isolation	Self-confidence
Powerlessness	Self-esteem
Sadness	Strength

Guilt is common among parents, as they often feel that they somehow caused the illness. Guilt can be an excruciating and disabling emotion, adding to the stress within the family and sometimes making it difficult for parents to support their child and each other (Schor, 1995: 540).

2.3.3 The school

At school where individuals and groups of people are interdependent on one another, most teachers will probably work at some stage with one or more of these learners with diabetes in the classroom. Frieman and Settel (1994:196) note studies indicating that teachers do not believe that they have adequate information about chronic illnesses.

Freeman and Settel (1994:200) emphasise that the illness should not define the chronically ill child. The teachers and school should expect the same standards of acceptable behaviour from the chronically ill learner as they do from any other learner. The learner should be praised when appropriate and disciplined when necessary. The teacher has to set appropriate limits for behaviour, even for learners with a serious illness. Teachers need to accommodate the chronically ill learner, but in several areas the classroom environment should be compatible with the learner's medical restrictions. For example, a diabetic child's dietary restrictions need to be considered before a teacher plans a class party or celebrates a classmate's birthday. A diabetic learner might also have to make some dietary or insulin adjustments before doing physical activity.

The American Diabetic Association (2001:1) mentions that it is necessary for teachers and schools to note the following implications of diabetes mellitus:

- Learners with diabetes have to be allowed to check their blood sugar at school
- When a child with diabetes has low blood sugar (*hypoglycemia*), he or she should be given access to emergency glucose to treat the low blood sugar
- When a learner with diabetes has high blood sugar (*hyperglycemia*), he or she should be allowed free access to water and the restroom
- Teachers should allow learners with diabetes to eat snacks when prescribed by their doctor
- This means that physical education teachers and athletic coaches should consider keeping a supply of emergency glucose on hand to treat hypoglycemia. They can provide glucose tablets, which work best and will not be confused with sweets.

If a learner with diabetes is left untreated, hypoglycaemia could lead to loss of consciousness, convulsions and coma (American Diabetic Association, 2001:1). Some of the symptoms of hypoglycaemia are behavioural, such as mood changes or temper tantrums, and parents may have difficulty deciding whether these are acting-out behaviours or symptoms of hypoglycaemia. Children may use hypoglycaemia to manipulate their parents, for example by faking early symptoms of hypoglycaemia or using it as an excuse for unacceptable behaviour. Hypoglycaemia is therefore a source of great stress for the family as well as for the child (Corna, 1992:57).

Plotnick and Henderson (1998:1) state that a wide constellation of factors in everyday life influence a learner's blood glucose levels, and these factors change frequently – not even hourly, but from minute to minute. Stress, changes in routine, travelling, sleeping late and parties – these all affect blood glucose. Different types of insulin produce different peaks and troughs in insulin levels. What is right on Monday may not be right on Tuesday. If a blood glucose level is too high, that is a problem; but if it is too low that is an even greater problem. A balance has to be constantly maintained. In addition, the consequences of wrong decisions or missed judgements may threaten the diabetic's health or life. Missing a dose of an antibiotic or a session of physical therapy usually poses little risk for a child with medical problems requiring such treatments. However, missing a day of insulin would be as dangerous for the learner with diabetes as injecting too much insulin.

Some schools and teachers may think that learners with diabetes sometimes feign the symptoms of low or high blood sugar levels to get out of the classroom, or to get let off an activity they do not like. This is highly unlikely, however, as most learners with diabetes do not want to be different, and they do not want to be treated differently from the other children (American Diabetic Association, 2001:1).

Childhood diabetes mellitus is usually insulin-dependent. It has a fairly low incidence, so there is usually only one or two such diabetics in a school. As a result, few diabetic children will have diabetic friends. Diabetic learners' reaction to their illness depends on their age: for example, pre-school children often have problems with feeding and other behaviours, whereas children aged 5-12 years are usually able to understand the problem, and to co-operate with the therapy (de Villiers, 1995: 21).

Careful observation of the diabetic learners in our schools will reveal that some of them use insulin several times a day. Their eating habits differ from those of the other schoolchildren. Diabetics have to take special care to avoid injury, unlike the other learners at school. Taking proper care of diabetes is complicated by factors such as ignorance, cultural differences, the diversity of the community, varying family involvement and socio-economic factors. Friends, family, the school, teachers and the community should be informed of the special needs of the diabetic learner. Each community ought to work with the assets present in their ecology and focus on the assets and capacities that would meet the needs of their learners with diabetes.

2.3.4 The community

A child is an individual and is part of a community which comprises groups of people living in a area that is regarded as a whole, and which has some important common interests and concerns (Donald, *et al.* 1999:9). Any child, not only the diabetic child, can develop a positive attitude within a community. Community members can be asset builders who can improve interaction so as to strengthen the relationships among families, teachers and the school. When the child in the community is empowered through the value of assets to identify his/her own needs and to improve his/her own skills, the community as a whole becomes empowered.

Various aspects of a community may affect the learner with diabetes. For the purpose of this study, the following aspects are explored below.

2.3.4.1 Socio-economic implications of diabetes mellitus

Cole and Cole (2001:436) emphasise that poverty touches all aspects of family life: the quality of housing and health care, access to education and recreational activities. Poverty influences parenting by raising the level of parental stress. Parents who are under stress are less nurturing, more likely to resort to physical punishment and less consistent when they interact with their children. Unexpected large bills, illness in the family and quarrels increase their irritability and at the same time place the rest of the family under pressure. Poverty decreases the likelihood that the family will have the means to deal with multiple stresses.

Poverty crushes peoples' spirit, makes them feel depressed and interferes with their ability to form and maintain mutually enriching relationships. Children from impoverished homes bear the particularly heavy burden of their parents' distress. Parents who live in poor

housing worry about their next meal. They feel they have little or no control over their lives, and become anxious, depressed and irritable. They discipline their children by using the least effort, such as corporal punishment and authoritarian commands, rather than explaining, reasoning and negotiating. They may ignore a child's good behaviour and pay attention only to misbehaviour. Consequently their children may have social, emotional and behavioural problems. The child's own characteristics also play a role: a child who has a difficult temperament or is unattractive has even worse problems. The mediating influence of community support is extremely important for creating networks and forming beneficial relationships (Papalia & Wendkos Olds, 1996:527).

Learners with diabetes who live in poverty-stricken rural and remote areas have poorer health than those living in more urban areas, because of the higher risk factors and difficulties in accessing health services in such rural areas. Diabetes is one of the main reasons for increased rates of death among people in rural and remote areas. People in rural and remote areas also have disadvantages in accessing adequate and appropriate health care. These disadvantages include long distances, a shortage of health professionals and inadequate training, poor economic infrastructure and ongoing logistic and communication problems (American Diabetic Association, 1999:1).

Poor socio-economic conditions may hamper the learners' development and learning to such an extent that his/her potential cannot develop fully. Such learners do not have the extent of pre-school and extramural experiences required for optimum school achievement. They are not brought up in a way which prepares them for school, and the consequence of this is usually poor school achievement (Kapp, 1991:30). Poor children often do not eat properly, grow properly or get the immunisations and medical care they need (Papalia & Wendkos Olds, 1996:318).

Poverty and poor socio-economic conditions have a major effect on the diabetic's health management. Ebersöhn and Eloff (2003:31) note that assets may be used for addressing some problems. The learner with diabetes who lives in poverty will need to develop supportive sustainable relationships and recourses to manage his/her diabetes properly.

2.3.4.2 Cultural implications of diabetes mellitus

Corna (1992:131) notes the stress levels of black parents with diabetic children, which may indicate an over-sensitivity to the illness. In the South African context these stress levels may be particularly relevant because some cultures regard diabetes as a disability and diabetics are shunned in many black communities, perhaps owing to a lack of understanding of the illness. Distrust of the medical system may lead black parents to seek unorthodox medical assistance, for example from traditional healers, resulting in poorly controlled diabetes which limits the diabetic child's normal participation in activities.

Limited opportunities for parents in the community to learn about the management of diabetes may make the task of caring for a diabetic child more difficult for black parents, and the children might fail to learn self-management of their diabetes. Failing to learn about the nature and control of the disease may lead to feelings of helplessness and insecurity about what diabetic children can or cannot do (Corna, 1992:132).

Corna (1992:133) also notes that black families with diabetic children utilise an informal support system such as members of the extended family, friends and members of the community. Black parents do not believe they are the only ones who can care for the child, but tend instead to delegate the responsibility for care to others in the community, such as

siblings, extended family or friends. Corna (1992:137) notes in his study the difference between these black parents and white parents. The white parents find there is a lack of support from the community, possibly indicating self-contained family units, whereas black communities in South Africa rely on family, friends and the community for support.

Cultural factors may influence the way in which a family perceives the meaning of illness and its treatment. In some cultures people think that illness is a punishment. They may believe that God is punishing them and that they must have done something bad to deserve this illness. Some stricter religious beliefs may reinforce this perspective. Another attitude that may be culturally related is a fatalistic approach; a sense that there is nothing that can be done to change the outcome of the disease. Naturally, such an attitude to the management of diabetes could not be further from the truth (Plotnick & Henderson, 1998: 10).

Many cultures regard illness as a form of punishment inflicted upon someone who has either transgressed himself, who did something wrong in a previous life, or who is paying for an ancestor's sin. People who believe in such causes tend to distance themselves from and are often unsympathetic towards the afflicted person. In some religious households, parents hope and pray for a miracle. This may improve the child's quality of life temporarily but may also discourage certain treatments (Papalia & Wendkos Olds, 1996:477).

Children from culturally different environments, such as immigrant children, are most at risk. They have problems with language and socialising, and have poor self-concepts. There also tends to be a lack of support from friends, family and the community (Kapp, 1991:30).

2.3.4.3 Illiteracy and diabetes mellitus

Plotnick and Henderson (1998: 10) point out that parents with poor learning skills and ability may take years to master the tasks of caring for their children with diabetes, and may never master these tasks fully. In cases where the parents of a learner with diabetes are illiterate, the regimen of care should be simplified as much as possible. For example, the learner's mother could be shown how to use pre-mixed NPH and regular insulin, the clinician could put a piece of tape on the syringe at the dose mark to which the insulin should be drawn, and identify morning doses with a picture of the sun and evening doses with a picture of the stars. However, such a child's diabetes would never be under as strict a control as would that of someone on a multiple-shot regimen, who is able to make the many decisions that are required every day to maintain such a regimen.

2.3.4.4 Language barriers and diabetes mellitus

Language can be a barrier to parents of a learner with diabetes from non-English speaking backgrounds in accessing the range of diabetes services available, appropriate education and information for effective self-management, and ongoing community support. A significantly higher proportion of adults in some ethnic groups reported two major risk factors for diabetes, namely physical inactivity and obesity. The prevention and care of the learner with diabetes among people from backgrounds where English is not spoken, could be improved through regional co-ordination and the dissemination of information in community languages. The strategy also recommended is that education courses should include training in cultural sensitivity (American Diabetic Association, 1999:1).

2.4 DEVELOPMENT AND LEARNING OF THE LEARNER IN THE FOUNDATION PHASE

Child development and growth have been viewed over the years from different social and cultural perspectives. The child in his/her reciprocal relationship with his/her ecology is part of a community where friends, family and community members play an important role in each developmental phase.

In many communities adults begin to have new expectations when their children approach middle childhood. Cole and Cole (2001:468) note the example of the Ngoni of Malawi in central Africa, where adults believe that the loss of milk teeth and the acquisition of secondary dentition (which begins around the age of six years) signals that children are ready for a different kind of life. When this physical change occurs, Ngoni adults expect these children to begin to act more independently. Children of both sexes are held accountable for being discourteous. They are expected to stop playing childish games and to start learning the skills that will be essential when they grow up. The boys leave the protected control of women and move into dormitories, where they have to adapt to a system of male dominance and male life. In the late Middle Ages, at the beginning of modern times, and for a long time after that in the lower classes, children mixed with adults as soon as they were considered capable of doing without their mothers or nannies, not long after a delayed weaning (in other words, at about the age of seven years). These children immediately went straight into the great community of adults, sharing the work and play of their companions, old and young alike. Society in modern times expects children around the age of six or seven years to begin learning reading, writing and arithmetic at school to prepare them for productive adult life.

Identify the needs and assets of the learner with type I diabetes in the foundation phase requires knowledge and understanding of the development and learning of this learner. There is an integrated relationship where communities, schools, teachers, friends and family interact with one another, with development processes in the lives and experiences of individual learners and in the life of every teacher.

2.4.1 Physical and motor development and learning

Any foundation phase classroom has learners of all shapes and sizes: tall ones, short ones, fat ones and slender ones. They have a markedly different appearance from children who are a few years younger (Papalia & Wendkos Olds, 1996:431).

According to du Toit and Kruger (1991:104) changes in the foundation phase take place mainly in the proportions of the body, in contrast with the major changes in height and mass that occur during the pre-school years. Therefore learners in this phase grow more slowly than in both the pre-school and adolescent phases.

Table 2.3 shows the description by du Toit and Kruger (1991:105) of the physical changes taking place in the learner in the foundation phase.

TABLE 2.3: Physical changes in the learner in the foundation phase (du Toit & Kruger, 1991:105)

HEIGHT AND MASS	The primary school child's height and mass increase more slowly and more evenly than in the pre-school years
PROPORTIONS OF THE BODY	The child's body begins to take on a more adult-like appearance. Although the head is still large in proportion to the rest of the body, the disproportion between the various facial features disappears. The mouth and chin enlarge, the forehead becomes broader and flatter, the lips thinner, and the neck longer. The child's chest and abdomen gradually become flatter and his/her legs and arms grow rapidly in length.
BUILD	The child's mass depends to some extent on his/her particular build, which may vary from being extremely ectomorphic (thin), or mesomorphic (muscular or average build) to extremely endomorphic (fat). The child's build often determines how others respond to him/her, as well as the way he/she perceives himself/herself. The endomorphic child, for instance, is usually less popular and often manifests negative feelings about his/her body. Ectomorphic (fat) and mesomorphic children (average build) are more readily accepted by the group. They generally have positive feelings about their bodies.
GENDER DIFFERENCES IN HEIGHT AND MASS	In the foundation phase, boys are usually a little taller and heavier than girls.
SENSES	Visual maturity is usually reached between the sixth and eighth year. Peripheral vision is fully developed and the primary school child is able to discriminate between very minor differences in colour.

The following physical changes occur during the primary school years:

- The brain reaches adult size and mass
- Breathing becomes slower and deeper
- Blood pressure rises, but heartbeat decelerates (du Toit & Kruger, 1991:106).

Papalia and Wendkos Olds (1996:438) noticed that when a group of learners in middle childhood went home after school, some of them would run or skip and others would leap onto narrow ledges and balance until they jumped off, trying to break distance records but occasionally breaking a bone instead. Some of these youngsters would go home, eat

something and dash outside again. They would skip with skipping ropes, play ball, skate or cycle. They kept getting stronger, faster and better co-ordinated. They derived great pleasure from testing their bodies and learning new skills. However, these authors also noted that many children went inside their homes after school and did not emerge for the rest of the day. Instead of practising new skills that stretched and strengthened their bodies they would stay indoors, often in front of the television or computer.

The school beginner's motor skills are sufficiently developed for performing certain fine hand and finger movements. For instance, these children can already trace figures, paint and draw and they also quickly learn to write. The gross motor movements are better developed, however, and at this stage these learners' increased strength, co-ordination and muscular control enable them to use their bodies confidently. The balance, elegance and suppleness of their physical actions improve considerably, and for this reason they thoroughly enjoy climbing, jumping and ball games. Children are tremendously active physically during this period. Their improved motor ability and concomitant greater self-confidence are beneficial to various facets of their personality development. Specific motor abilities may increase their popularity (social) and enhance their self-esteem (affective growth) (du Toit & Kruger, 1991:106).

Green (2001:87) states that "the physical self-concept arises out of perceptions of one's own body in terms of how it looks and what it can do, and is the early basis for gender identity. It is strongly influenced by feedback from others with regard to one's physical appearance and competence". However, physical development is at risk in poor communities. Learners whose physical development has been impeded by poor health are likely to have missed out on opportunities for cognitive, language and social development and will require extra input (Green, 2001:91).

Green identifies several strategies for promoting learning and physical development, namely that the school and teachers should be aware that –

- some learners need to be part of a school-feeding scheme;
- tiredness can cause irritability and restlessness;
- learners are not equally developed in their motor skills;
- a range of activities can develop perceptual and motor skills;
- learners need physical activity;
- some learners are not developmentally mature;
- the school and teachers have a responsibility to teach learners about health-related issues (Green, 2001:93).

2.4.2 Cognitive development and learning

Thomas (1991:147) notes that “Piaget believed as children grow older they gain more experience with direct physical knowing, while at the same time their nervous systems are maturing. They are gradually freed from having to carry out direct physical behaviour in order to know something. They come to produce mental images and symbols (words, mathematical figures) that represent objects and relationships. The older child’s knowledge increasingly becomes mental activity. Older children think about things by carrying out interiorised actions on symbolic objects” (Thomas, 1991:148).

In Piaget’s system this process of development for generating a growing complex of schemes, is governed by four factors: heredity (internal maturation), physical experience with the world of objects (spontaneous or psychological development), social transmission (education or instruction) and equilibrium. The first of these factors has to precede the second (Thomas, 1991:148-149).

Piaget identifies different stages for different aspects of growth and development: the sensory-motor period (birth to age 2), pre-operational-thought period (about age 2 to age 7), concrete-operational period (about age 7 to age 11) and the formal-operations period (about age 11 to age 15). For the purpose of this study, which is to identify the needs and assets of the learner with diabetes in the foundation phase, the concrete-operational period (about age 7 to age 11) will be examined (Thomas, 1991:151).

In the concrete-operational period the learner between 7 and 11 years old becomes capable of performing true operations, ones directly related to objects. Concrete does not mean that the learner has to see or touch the actual object as he or she works through a problem, but rather that the problem involves identifiable objects that are either directly perceived or imagined. It is during these years that a learner’s understanding of conservation matures (Thomas, 1991:151).

Conservation refers to those aspects or events that remain constant when other changes are produced in objects or situations. Distinguishing between what has been changed and what has been conserved during transformation marks a major advance in a learner’s reasoning skills during this stage. By the end of this stage, children have markedly increased their abilities to account for the causes of physical events so that they are now ready to solve not only problems that involve objects but also ones concerning hypotheses and propositions about relationships (Thomas, 1991:151).

Table 2.4 lists a number of intellectual characteristics at different age levels, as identified by Humphrey and Humphrey (1989:83).

TABLE 2.4: Intellectual characteristics at ages seven, eight and nine years
(Humphrey & Humphrey, 1989:83-85).

SEVEN-YEAR-OLD CHILDREN	EIGHT-YEAR-OLD CHILDREN	NINE-YEAR-OLD CHILDREN
<ul style="list-style-type: none"> • Abstract thinking begins • Are able to listen longer. • Can read some books by themselves • Are able to reason, but have little experience upon which to base judgements • Their attention span is still short and retention poor, but they do not object to repetition • Reaction time is still slow • Learning to evaluate the achievements of themselves and others • Concerned with own lack of skill and achievements • Becoming more realistic and less imaginative 	<ul style="list-style-type: none"> • Can tell the day or month or year • Voluntary attention span is increasing • Interested in far-off places, and ways of communication now have real meaning. • Becoming more aware of adult world and their place in it • Ready to take on almost anything • Show a capacity for self-evaluation • Like to memorise • Not always good at telling time, but keenly aware of time 	<ul style="list-style-type: none"> • Individual differences are clear and distinct • Some real interests are beginning to develop • Beginning to have a strong sense of right and wrong • Understand explanations. • Interests are closer to those of ten or eleven year olds than seven or eight year olds. • As soon as a project fails to hold interest, it may be dropped without further thought • Attention span is greatly increased • Seem to be guided best by a reason, simple and clear-cut, for a decision that needs to be made • Ready to learn from occasional failure of their judgement as long as learning takes place in situations where failure will not have serious consequences • Able to make up their own minds and come to decisions • Marked reading disabilities begin to be more evident and may tend to influence the personality. • Range of interest in reading in that many are great readers though others may have little interest in books • Will average between six and seven words per remark

Green (2001:87) states: "An academic self-concept is formed from experiences of success and failure in school and in the related feedback and responses from teachers, parents and peers."

Kitson and Merry (1997:49) assert that cognitive development always has to interact with learning demands. Not only do learning relationships change when a child goes to school, but they also becomes increasingly complex and differentiated as the child progresses through the later primary years.

During the foundation phase there is cognitive change in the transition to the more adult use of strategies. Repetition (sometimes called rehearsal or rote learning) tends to be the first strategy to emerge and by the age of ten about 85 per cent of children are able to use it, though they may not always do so without being reminded. Repetition literally imprints the material before it can disappear, and enables it eventually to become part of long-term memory, but on its own repetition is not a particularly efficient strategy. Other powerful techniques for learning are also beginning to emerge during this period. These other techniques do not simply prolong the information for a few seconds, but transform or elaborate on it, enriching it and linking it to things the learners know already. Forming visual images for words brings into play the powerful visual memory system and makes it far more likely that the items can be retrieved. If the order of words is not important, regrouping them into categories forges links between the items, so that recalling one word makes it likely that it will remind the learner of the others in that category. If the word order is important, linking the words in a different way in order to preserve the sequence, for example in a story, would similarly make it far more likely that each item will be remembered in turn. Imposing a structure or meaning seems to be the key. Without such strategies the learner would be able to remember very little (Kitson & Merry, 1997:51).

Kitson and Merry (1997:52) emphasise that simply having strategies is not enough to guarantee improvements in learning; there are at least two other cognitive skills that learners need to develop. Both of these require an ability to reflect on their own thinking and are therefore called metacognition.

- Learners should be able to recognise when a strategy is appropriate and generally be able to control their use of different strategies so that they use the best one. To do this they have to be able to compare new problems with familiar ones and to transfer or generalise from previous experience.
- Self-checking is an important general strategy and can be applied to a wide range of problems. Negative information can apparently be just as useful as positive, though younger children may not always appreciate this in their desire to get the right answer.

Children need to have a range of strategies available. They also need to develop skills for deciding which strategies are appropriate and to use feedback to monitor their success. Children may have such skills without being able to describe them to someone else, and a correlation between improved learning and the reported use of metacognitive skills could mean that either one could be the cause of the other. The growth of metacognition in child development is a major factor influencing children's success in school and also enabling them to feel increasingly involved in and responsible for their own learning (Kitson & Merry, 1997:52).

Green (2001:94) notes the following strategies for promoting learning and cognitive development:

The school and teachers should try to –

- create a classroom atmosphere in which learners feel safe to air their opinions and express their thoughts;
- find out what interests different learners and at times let them choose what they will study from a list of different opinions;
- let learners sometimes decide how they will study;
- explain why something they are doing is relevant and important; and
- show a positive attitude to mistakes.

Vygotsky (cited in Green, 2001) emphasises that what children know is already important. Teachers should note that learners already possess a great deal of everyday general knowledge, of which part is accurate, part incorrect, part relevant to school learning and part irrelevant. It is advisable for learners to connect their everyday knowledge and the new information they are taught to build generalisation skills. This would show an open attitude to knowledge and learning (Green, 2001:94-95).

2.4.3 Emotional development

Brenner and Salovey (1997:168) define emotions as “a response that guides the individual's behaviour and serves as information that helps the individual achieve goals”.

Emotions are thought to have the following three components:

- The cognitive-experiential component comprises thoughts and awareness of emotional states (i.e. one's feelings)
- The behaviour-expressive component comprises such domains as speech, body movement, facial expression, posture and gesture (i.e. the visible signs of emotions)
- The physiological-biochemical component comprises physical states, and is reflected in such measures as brain activity, heart rate, skin response and hormone levels. (Like the cognitive-experiential component, this dimension is generally not visible to others) (Brenner & Salovey 1997:183).

Understanding the developmental changes in children's capacity to regulate emotions can help friends, family, the school and teachers to assist learners when they became upset or emotionally distressed. In most of the research on learners' methods of coping with stressful experiences, coping is viewed as a process comprising two principle components: stressor and strategy. Any event that evokes distress in the child is considered a stressor. Any effort to manage distress is considered a strategy. Successful coping or emotional regulation is determined by the range of strategies available, the ability to select the strategy that best meets the demands of particular stressors, and the ability to implement these strategies (Brenner & Salovey 1997:170).

Du Toit and Kruger (1991:117) note that the emotional development of the primary school child is characterised by a greater measure of emotional flexibility and differentiation. By means of greater emotional differentiation, the child is able to express a variety of emotions which are more specific, diverse and sophisticated than those of younger children. In turn, learners in the early junior primary phase realise that their emotional life differs from that of learners in the senior primary phase. Firstly, the sort of situation leading leads to the manifestation of the emotions differs and secondly, the way in which the child

reveals his/her emotions differs. In this phase a gender difference in emotional response also develops. Gender role identification plays a major role in the way that children reveal their emotions. A boy often refrains from showing that he is afraid or sad because he fears that he will be labelled a “sissy” whereas girls are taught not to be as aggressive as boys, since aggression is not regarded as feminine (du Toit & Kruger, 1991:117).

Du Toit and Kruger (1991:119-120) list the following characteristics of the primary school child’s emotional life:

- The child shows ever-increasing understanding of the feelings of others
- The child learns to express his/her emotions according to social rules and also to control, suppress or hide these emotions
- The manifestation of his/her emotions not only meets the requirements of his/her cultural and peer group but also accords with the community’s view of how a boy or girl should behave
- The child gains deeper insight into his/her feelings and also learns to understand other children’s feelings.

Pre-school children express anger physically. School-age children have a greater ability to control their bodies and to use words. They also know what is and what is not acceptable. Anger may be shown in the forms of impertinence (not showing respect), sulkiness and using a scapegoat (blaming others for one’s own mistakes). Children in this age group also show anger by gossiping, plotting and even imagining the downfall of their enemies. Withdrawal from a situation such as giving up or doing less than one’s best may be another sign of anger. The kind of anger and aggression changes with age. Like pre-school children, school-age children become angry when what they want is denied them and when their possessions are threatened. However, in contrast to pre-school children, school-age children are also angered by what they see as wrong to others. In later years, anger at social wrongs may be turned into positive social actions (Decker, 1990:354-355).

Humphrey and Humphrey (1989:66) state: “Dealing with childhood emotions implies that sympathetic guidance should be provided in meeting anxiety, joys and sorrows and that help should be given in developing aspirations and security.” A child is emotionally healthy when his/her emotions are properly controlled and he/she is becoming emotionally mature. This depends to a certain extent upon factors such as fatigue, inferior health status, intelligence, social environment, family relationships and aspiration levels, as such factors influence emotionality in childhood.

Humphrey and Humphrey (1989:74) identify the following emotional needs of children:

- The need for a sense of security and trust
- The need for self-identity and self-respect
- The need for success, achievement and recognition
- The need for independence.

Table 2.5 lists the emotional needs reflected in the developmental characteristics of different age levels, as identified by Humphrey and Humphrey (1989:75-76).

TABLE 2.5: Emotional needs of children aged seven, eight and nine years (Humphrey & Humphrey, 1989:75-76).

SEVEN-YEAR-OLD CHILDREN	EIGHT-YEAR-OLD CHILDREN	NINE-YEAR-OLD CHILDREN
<ul style="list-style-type: none"> • Curiosity and creative desires may condition responses • May find it difficult to take criticism from adults • They want to be more independent • Reach for new experiences and try to relate themselves to enlarged world • Overanxious to reach goals set by parents and teachers • Critical of themselves and sensitive to failure • Emotional pattern of anger is more controlled • Becoming less impulsive and boisterous in action than at six 	<ul style="list-style-type: none"> • They dislike taking much criticism from adults • Can give and take criticism in their own group • May develop enemies • Do not like to be treated like children • Have a marked sense of humour • Their first impulse is to blame others • They are becoming more realistic and want to find out for themselves 	<ul style="list-style-type: none"> • May sometimes be outspoken and critical of the adults they know, although these children have a genuine fondness for the adults • Respond best to adults who treat them as individuals and approach them in an adult way • Like getting recognition for what they have done and respond well to merited praise. • Likely to be backward about public recognition, but enjoy private praise • Developing sympathy for and loyalty to others • Do not mind criticism or punishment if they think it is fair, but are indignant if they think it is unfair • Disdainful of danger to them and of their safety, which may be a result of increasing interest in activities involving challenges

Kitson and Merry (1997: 53) state that the search for meaning implies certain attitudes and emotions to solving problems, such as willingness to admit that one does not yet know the answer or that there may be a better solution than the solution one has just thought of. Successful learners are not afraid of failing, and do not feel threatened by it. On the contrary, they may relish finding apparently pointless problems to solve. They may insist that they do not want to be told the answer even when it is readily available (Kitson & Merry, 1997:53). Successful learners have an internal locus of control, and attribute success largely to their own efforts. They prefer tasks that are moderately difficult in line with the previous idea of comfortable challenge. They see themselves as good learners and have a high self-esteem (Kitson & Merry, 1997:60).

Unsuccessful learners may latch impulsively onto the first answer that seems reasonable and persist with it in the face of evidence that it is wrong. They attribute success to external factors, including pure luck, and see their learning as the teacher's responsibility, often acting in passive and helpless ways. They may develop strategies for avoiding tasks on the grounds that if they do not try they cannot fail; and they prefer tasks which are

either very easy (pretending no challenge) or impossibly difficult (so that no one can blame them for failing). They see themselves as poor learners and have a low self-esteem (Kitson & Merry, 1997:60).

2.4.4 Social development and learning

Decker (1990:347) argues that during the period when learners are in the foundation phase, these children begin to show much greater social awareness. They develop a sense of industry as they learn some of the skills needed in the adult world of work. They also deepen their social relationships with adults and peers. The proper attitude to work is learned at this time. Children with a sense of industry see work as the way to learn new ideas and skills and to achieve in worthwhile ways. These children also see work as a way to win approval from others. Parents, teachers and friends encourage them to learn skills. The skills learned in this stage help the child become ready for adult life. Each community has its skills that are important in adult life.

Once children begin to spend a significant amount of time with their friends, they have to learn to create a satisfying place for themselves in the social group. Their greater appreciation of social rules, along with their increased ability to consider other people's points of view, are essential resources for this developmental task. However, no matter how sophisticated or sensitive they are, there is no guarantee that their peers will accept them. Children still have to seek out friends, come to terms with the possibility that they may not be liked, learn to compete for social status and deal with the conflicts that inevitably arise (Cole & Cole, 2001:571).

In the pre-school years the child's social world primarily consists of the family, relatives and friends. On entering school a much wider social reality unfolds. In contrast with the egocentrism of the younger child, the foundation phase learner already shows a sensitivity to other people's feelings, attitudes and needs. He/she is also more willing to venture to establish social relationships. Although the child begins increasingly to venture outside the safe family circle, his/her parents remain his/her primary supporters. Parental encouragement, support, love and guidance are therefore crucial for unfolding the child's personality. In spite of the parents' powerful influence on the child's life, the relationship with his/her parents is characterised by a clear process of emancipation (du Toit & Kruger, 1991:121).

Du Toit and Kruger (1991:123) note that the child's egocentric individual play is replaced by group play. The circle of friends broadens accordingly and time spent together in the company of friends becomes increasingly important. The child does everything to be accepted and increasingly identifies with the group's ideas and values. Children in the junior primary phase usually form groups of four and five. This grouping of friends takes place in an unstructured and informal way. Children join a group voluntarily and leave it as soon as they become dissatisfied with interaction or play. They prefer to have a leader when playing group games.

Du Toit and Kruger (1991:123) state that the peer group performs important functions in the child's total development and describe this as follows:

- The peer group provides a bridge for the child's gradual emancipation from his/her parents
- The group offers the child the security that he/she previously felt in the safe haven of the parental home

- The peer group is a group of equals. Any child can give an opinion in the group and hold his/her own, in contrast to the subordinate role the child has in the parent-child relationship
- In the group the child can gain knowledge and insight about himself/herself and learn to evaluate himself/herself
- If the child is accepted by the peer group, a positive self-concept is formed which leads to self-acceptance
- Demands made on the child by the peer group are at his/her level of competence because he/she is in the company of equals
- The group enables the child to achieve in all the developmental domains in general, and benefits his/her personality development in particular
- The peer group fulfils his/her need for camaraderie and friendship
- The peer group gives the child the opportunity to practise social skills and to experiment with new ideas, behaviour and attitudes
- The peer group is an informal source of knowledge and helps the child to adapt to social rules and regulations (du Toit & Kruger, 1991:123).

Participation in peer groups is important to later development because it fosters the ability to communicate, to understand other people's point of view, and to get along with others (Cole & Cole, 1989:511).

As children begin to participate in peer groups, their relationship with their parents undergoes significant changes:

- Parents become more demanding, with respect to both their children's domestic duties and their achievement in school
- At this time, parental control shifts from direct to indirect methods, which include reasoning, humour, appeals to self-esteem and eliciting feelings of guilt in the child (Cole & Cole, 1989:512).

Decker (1990:352) notes that certain qualities seem to make children likeable by peer standards. These qualities change somewhat during the school years. For instance, first-graders say they like tough children but in later grades, children see nice and smart children as popular. Skills that are desirable in a culture, such as athletic ability, also affect popularity.

Table 2.6 lists the special needs identified by Humphrey and Humphrey (1989:52-53), that are reflected in the developmental traits and characteristics of growing children.

TABLE 2.6: Social characteristics of children aged seven, eight and nine years
(Humphrey & Humphrey, 1989:52-53)

SEVEN-YEAR-OLD CHILDREN	EIGHT-YEAR-OLD CHILDREN	NINE-YEAR-OLD CHILDREN
<ul style="list-style-type: none"> • Want recognition for their individual achievements • Sex differences are not of great importance • Not always good losers • Conversation often centres on family • Are learning to stand up for their own rights • Interested in friends and not influenced by their friends' social or economic status • May have nervous habits such as nail biting, tongue sucking, scratching or pulling at their ears • Attaining orientation in time • Get greater enjoyment from group play • Show greater signs of co-operative efforts 	<ul style="list-style-type: none"> • Girls are careful of their clothes, but boys are not • Leave many things uncompleted • Have special friends • Have longer periods of peaceful play • Do not like playing alone • Enjoy dramatising • Start collections • Enjoy school and dislike staying home • Like variety • Recognition of property rights is well established • Respond well to group activity • Interest will focus on friends of own sex • Beginning of the desire to become a member of the club 	<ul style="list-style-type: none"> • Want to be like others, talk like others and look like them • Girls are becoming more interested in their clothes • Are generally conformists and may be afraid of anything that is different • Able to be on their own • Able to be fairly responsible and dependable • Some loyal friendships may develop • Increasing development of qualities of leaders and followers • Increasing interest in activities involving challenges and adventure • Increasing participation in varied and organised group activities

Green (2001:87) states: "the social self-concept develops from experiences of social acceptance or rejections by peers and adults."

Vygotsky (cited in Papalia & Wendkos Olds, 1996) mentions that social interaction is a key factor in cognitive development. All higher planning and organisation functions in cognitive development appear twice: first as the result of interaction with other people, usually adults; and then after the child has internalised what the adults have taught. He extends these beliefs about the way children learn, to their performance on intelligence tests and to their growing skills in thinking, reading and writing. This influenced the metaphor of scaffolding in teaching. Scaffolding is the temporary support that friends, family, teachers and the school give a child to do a task. There is an inverse relation between the child's current ability and the amount of support needed. The more difficulty a child has with doing a task, the more direction the caregiver should provide. As the child becomes able to do more, the adult helps less. Scaffolding seems to come so naturally that teachers often do not recognise the method itself or even that they are teaching (Papalia & Wendkos Olds, 1996:466).

Social awareness is vital in children's learning between the ages of seven and eleven years. Vygotsky and Bruner were interested in the social factors and the role of the adult in facilitating children's development. They emphasise not only the immediate social

situations in which learning takes place, but also the wider cultural context which shapes all thinking (Kitson & Merry, 1997:53).

From seven years of age, social and cultural factors are beginning to interact with the child's metacognition skills. According to Gardner (cited in Kitson & Merry, 1997), two sorts of intelligence are therefore involved: intrapersonal and interpersonal. The former refers to the emerging sense of self and the attachment to the here and now which are needed in order to reflect on one's own thinking, and the latter to the growing awareness of and sensitivity to other people needed to develop as a successful and valued social being (Kitson & Merry, 1997:54).

Goleman (cited in Stern, 1999) teaches that children's emotional and social skills can be cultivated, so that the child will gain both short-term and long-term advantages with regard to well-being, performance and success in life. He outlines five crucial emotional competencies that are basic to social and emotional learning:

- Self and other awareness: understanding and identifying feelings; knowing when one's feelings shift; understanding the difference between thinking, feeling and acting; and understanding that one's actions have consequences in terms of others' feelings
- Mood management: handling and managing difficult feelings; controlling impulses; and handling anger constructively
- Self-motivation: being able to set goals and persevere towards them with optimism and hope, even in the face of setbacks
- Empathy: being able to put oneself "in someone else's shoes" both cognitively and affectively; being able to see someone's perspective; being able to show that one cares
- Management of relationships: making friends, handling friendships; resolving conflicts; co-operating; collaborative learning and other social skills.

The mastery of these five competencies results in enhanced emotional intelligence (Stern, 1999:2).

Maurice Elias (cited in Stern, 1999) states: "Many of the problems in our schools are the result of social and emotional malfunction and debilitation from which too many children have suffered and continue to bear the consequences. Children in class who are beset by an array of confused or hurtful feelings cannot and will not learn effectively. In the process of civilizing and humanizing our children, the missing piece is, without doubt, social and emotional learning. Emotional well-being is dramatically and positively predictive not only of academic achievement, but also of satisfactory and productive experiences in the world of work and marriage, even of better physical health" (Stern, 1999:2).

Green (2001:97) notes the following strategies for promoting learning and social development:

The school and teachers should try to do the following:

- Create a classroom climate of respect, and ought to behave respectfully themselves towards colleagues and learners
- Teach learners to show respect by acknowledging and listening to one another
- Use stories and role-play activities to teach social skills and acceptable behaviour

- Use behaviour modification techniques to establish habits of respect and appropriate social behaviour
- Create a sense of belonging in the classroom by involving everyone
- Acknowledge the diverse cultural context to which learners already belong
- Help all learners in the class to understand, speak about and respect differences, including the differences created by disability
- Help learners to identify and value the ways in which each of them is unique
- Speak openly about feelings and provide learners with a language for doing so (Green, 2001:98).

2.4.5 Moral development

Papalia and Wendkos Olds (1996:463) state that moral development is an outgrowth of personality, emotional attitudes and cultural influences. It is important to note that moral judgement develops along with cognitive growth.

Piaget's approach to moral development is divided into two major stages:

- The morality of constraint

In this stage the young child thinks rigidly about moral concepts. Children in this stage are quite egocentric; they cannot imagine more than one way of looking at a moral issue. They believe that rules cannot be changed, that behaviour is right or wrong and that any offence deserves punishment (unless they themselves are the offenders)

- The morality of co-operation

This stage is characterised by moral flexibility. As children mature they interact more with other people and come into contact with an increasingly wide range of viewpoints; some of which contradict what they have learned at home. Experience and maturation interact to help them develop their own moral standards. These children conclude that there is not one unchangeable absolute determining what is right and wrong. Children can now make more subtle judgements about behaviour, consider the intent behind it and use punishment judiciously. They are now formulating their own moral codes.

Selman examined the ability to take roles. This is the ability to assume another person's point of view. Selman divides the development of role taking into five stages, numbered 0 to 4. For the purpose of this research, only stage 1 and stage 2 are discussed below.

- Stage 1 (about age 6 to 8 years)

Children realise that other people may interpret a situation differently from them.

- Stage 2 (8 to 10 years)

Children develop reciprocal awareness (Papalia & Wendkos Olds, 1996:463).

Damon (cited in Cole & Cole, 2001) found that in children's reasoning about rules and fairness, children between the ages of 5 and 7 years begin to believe that all participants have an equal claim to rewards. Their argument recognises that now there are mitigating circumstances, and the only fair treatment is equal treatment. From the age of 8 years onwards, children begin to take particular circumstances into consideration, believing that some individuals in the group or class may have a legitimate claim to more than an equal share of the group's or class's rewards if they contributed a greater share to the group's or class's work or if they are handicapped in some way, such as by poverty or ill health.

Changes after the age of 8 years reflect children's increased sophistication in the way they logically weigh multiple relevant factors.

According to Cole and Cole (2001:571), in studies done on moral issues related to actions in real-life situations it was found that moral judgement was important for moral action. When conditions require one to resist temptation, some elements of social control and a threat of punishment appear to be necessary for younger children to behave morally, despite the consequences. This is unlikely to be uniformly achieved at any age.

2.4.6 Developmental tasks

Du Toit and Kruger (1991:133-134) assert that the community, of which the child is a member, expects him/her to meet certain requirements. These requirements or developmental tasks act as milestones or signs that the child is becoming an adult. The mastery of developmental tasks is the responsibility of the parents as well as of the child's teachers and peer group. To be accepted by the peer group the child has to prove that he/she has mastered these tasks. If the child fails to master them, his/her behaviour appears childish and differs from that of his/her friends.

The following developmental tasks are regarded as of cardinal importance during the primary school years:

- **Mastery of the physical skills necessary for play**

To be accepted by the peer group, the child should manifest the required physical skills necessary for participation in play. This means the child should be able to run, jump, climb, kick well, etc. The mastery of physical skills enables the child to tackle more difficult developmental tasks (du Toit & Kruger, 1991:133-134). The peer group rewards with acceptance and admiration, the child who masters these skills. The group also uses aloofness and contempt to punish a child who fails. A girl may keep her status in the peer group even if she fails to learn these skills, but boys invariably lose their status (Ferreira, Pretorius & Bender, 1994:97).

- **Forming a positive attitude to the body**

A positive attitude to healthy eating habits and personal hygiene should be inculcated in children. During these foundation phase years, children should begin to wash their hands before meals, brush their teeth and be neat and tidy. Children should fulfil the requirements for good manners expected by the community and school (du Toit & Kruger, 1991:133-134). This is also the stage when sexual curiosity and experimentation start. Havighurst (cited in Ferreira, *et al.* 1994) states: "Success in this task leads to a well-balanced personality, with a reasonable degree of physical neatness and orderliness and a set of attitudes about sex which permits sex to become a source of pleasure in later life without causing either guilt feelings on the one hand or complete servitude to the sex impulse on the other."

- **The acquisition of social skills**

Ferreira, *et al.* (1994) state that in this period the child leaves the safe relationship with the family and has to find his/her place in the peer group. One of the independence tasks of the primary school child is to play with friends and no longer merely alongside them, as was the case during the pre-school years. Therefore children in this stage should already

have the social skills necessary for getting along with friends and adults. These children should be able to play according to the rules of the game, be generous and tolerant. Also, they should sometimes be prepared to subordinate their wishes or will to that of others (du Toit & Kruger, 991:133-134).

- **Development of an appropriate gender role**

The child increasingly identifies with the parent, teacher or peer group of the same gender. Gender-appropriate play is increasingly manifested and by the end of the primary school years, there is usually no longer room for the other gender in the peer group (du Toit & Kruger, 991:133-134). This developmental task begins at home where boys are taught to behave like boys and girls to behave like girls. The gender role is strengthened by the child's positive identification with the parent of the same gender (Ferreira, *et al.* 1994:98).

- **The mastery of basic skills**

The basic skills (reading, writing and arithmetic) comprise the most important independence tasks of the primary school child. The quality of these skills improves very little during the secondary school years. By the end of the primary school years, these skills should already function as automatisms (du Toit & Kruger, 991:133-134).

- **The acquisition of basic concepts**

The child should have a wide range of general knowledge. His/her vocabulary and linguistic powers are increased by direct instruction, as well as by communicating with friends and adults (du Toit & Kruger, 991:133-134). During the child's development he/she forms new concepts from vicarious experiences such as reading and television. During this period the child forms concepts such as time, space, quantity, temperature, height and speed (Ferreira, *et al.* 1994:99).

- **The forming of conscience, morality, a scale of values and a normative structure**

The child gradually internalises moral values and norms. He/she can already distinguish reasonably well between right and wrong, good and bad and uses moral values in his/her everyday behaviour (du Toit & Kruger, 991:133-134). A child's conscience is generally formed by being brought up with love. Good behaviour is rewarded and bad behaviour punished, in conjunction with the child's dependence on and identification with the parents. The parents are the first people who inculcate respect as a rule of conduct. Conscience and morality are influenced by the following:

- Education and upbringing
- Love, rewards and punishment
- Example of the educator
- The child's experience with his/her peer group
(Ferreira, *et al.* 1994:99).

- **The development of definite attitudes to social groups, institutions and ideas**

Du Toit and Kruger (991:133-134) mention that the foundation phase learner still primarily bases his/her attitude on the parents' attitude. However, by the end of the senior primary phase the child begins to form his/her own attitude to, for instance, the church, school, racial groups and social status. This development of the child's own attitude is linked to a

heightened sense of personal independence. Ferreira, *et al.* (1994:100) state that the child's attitude to social groups may be influenced by the following:

- Imitating people who are important.
- Acceptable and unacceptable experiences.
- A single intense emotional experience (pleasant or unpleasant).

- **Stabilisation of personal independence**

The child progressively assumes greater responsibility for his/her actions and establishes autonomy and independence in various fields during these years. His/her cognitive abilities and enlarged body of knowledge enable the child to make independent decisions. Physical independence and geographical freedom increase and the child shows signs of psychological independence (du Toit & Kruger, 991:133-134). Children discover during childhood that their parents are not infallible. The child starts to make independent decisions. The peer group will give support and the opportunity to plan and make decisions without the child's parents. This is also the stage where a child tends to focus on a role model (Ferreira, *et al.* 1994:100).

These developmental tasks are characterised by the forming of concepts, gender roles, friends and peer groups in the child's ecology, where interdependence and relationships play an important role in the child's environment.

2.5 DEVELOPMENTAL ASSETS

The foundation phase learner shares his/her ecology with positive experiences and wisdom from family, friends, teachers, the school and community members. These influences protect the learner from problem behaviour and promote positive attitudes and good behaviour. The power of these experiences and wisdom is evident across all the cultural and socio-economic groups in a community. These powerful shapers of young people's lives and choices are their internal and external assets, which are indispensable for healthy development (Search Institute, 1997).

The Search Institute (1997) has developed a framework of developmental assets. These assets show the important role that families, the school, teachers and the community play in shaping children's lives. The forty critical factors are subdivided into external and internal assets.

External assets are the positive experiences that young people receive from the people and institutions in their lives. Table 2.7 lists the four categories of external assets identified by the Search Institute (1997).

TABLE 2.7: External assets (Search Institute, 1997)

SUPPORT	Young children need to experience support, care and love from their families, friends, neighbours and many others in the community. They need organisations and institutions that provide positive, supportive environments
EMPOWERMENT	Young children need to be valued by their community and need to be given opportunities to contribute to others. For this to occur, they have to be safe and feel secure
BOUNDARIES AND EXPECTATIONS	Young children need to know what is expected of them and whether activities and behaviours are “in bounds” and “out of bounds”.
CONSTRUCTIVE USE OF TIME	Young children need constructive, enriching opportunities for growth through creative activities, youth programmes, congregational involvement and quality time at home

The community’s responsibility does not end with the provision of external assets. There is a need for a similar commitment to the internal qualities that guide choices and create a sense of centredness, purpose and focus. This encourages the wise and responsible judgement of the individual within a community (Search Institute, 1997). Table 2.8 lists the four categories of internal assets identified by the Search Institute (1997).

TABLE 2.8: Internal assets (Search Institute, 1997)

COMMITMENT TO LEARNING	Young children need to develop a lifelong commitment to education and learning
POSITIVE VALUES	Young children need to develop strong values that guide their choices
SOCIAL COMPETENCIES	Young children need skills and competencies that equip them to make positive choices, to build relationships and to succeed in life
POSITIVE IDENTITY	Young children need a strong sense of their own power, purpose, worth and promise

These are all-powerful influences on an individual within a community. These powers are essential for guiding and caring for the learner with diabetes in the foundation phase within his/her ecology.

2.6 CONCLUSION

The diagnosis of diabetes influences human behaviour. Feelings such as anxiety, fear and distress are overwhelming. A child is human and therefore a person and individual with all the traits and emotions common to human beings. The child is a person in a world of other humans, objects, norms and ideas. Therefore while the child matures, he/she has to orient himself/herself to his/her life-world. Experiences of success and efficiency boost the child's self-respect and self-esteem, which in turn helps to develop a positive self-concept (du Toit & Kruger, 1991:27).

The diagnosis of diabetes has an impact on the interacting relationships in the child's ecological system. It affects the child's friends, family, school and community. This ecology may either intensify or eliminate the child's problems. The ecological environment should be regarded as an opportunity for interaction because it is relationship-driven, and should be based on strengths, not weaknesses. The individuals in the collaborative environment of the diabetic ought to take responsibility for mobilising various resources to assist the diabetic learner.

The diabetic child may feel guilty about the stress he/she causes the family. As it is sometimes difficult for parents to see and cope with their child's anguish, communication and relationships are extremely important. The emotional status of the learner with diabetes affects his/her physical health and in turn his/her emotional health reflects the family's emotional health.

Through children's development they will become increasingly aware of their bodily appearance and what their bodies can do. Emotional, social and moral competencies will increase and self-awareness and self-motivation will become evident. Children's acceptance by their peers as well as their academic achievement became important issues. Through children's development they need to identify and use varying appropriate strategies and skills, which will reflect their thinking and actions. Although children will also become increasingly responsible for their own learning, ill health may compromise these concerns and responsibilities.

All individuals as well as their environment are endowed with multiple assets. These assets can be identified and mobilised with the help of caring people (Ebersöhn & Eloff, 2003:ix). These wise and responsible people can help to build relationships and capacities that will reassure the learner with diabetes that other people are interested in him/her as an individual, not only in the illness or problems it causes.

CHAPTER 3

RESEARCH DESIGN, METHODOLOGY AND FINDINGS

3.1 INTRODUCTION

This chapter contains a discussion on the development and conducting of the research. The first section of the chapter provides an explanation of the research design and methodology, and the second part contains the research findings.

Silverman (2000:8) states that qualitative research exemplifies a general belief that it can provide a deeper understanding of social phenomena than can be obtained from purely quantitative data. The researcher supports this and believes that qualitative research will provide knowledge and deeper understanding to identify the developmental and learning needs and the assets of the learner with type I diabetes in the foundation phase.

It is important to understand the learner with diabetes from the participant's perspective (Schumacher, 1993:373). Understanding the learner with diabetes requires analysing the many contexts of each participant and narrating the meanings that participants assign to these situations and events. Participants' meanings include their feelings, beliefs, ideals, thoughts and actions.

In the present study, the assumption was made that the actions of the learner with diabetes are bound to a particular historical, social, temporal and cultural context. Therefore human actions, institutions and events are interpreted from a qualitative perspective in order to construct a reading, or portrayal of what is being studied (Ary, *et al.* 2002: 422-423).

The intrinsic purpose of this study was to gain a better understanding of the learner with type I diabetes in the foundation phase in the context of South African education. To this end, it was necessary to identify these learners' developmental and learning needs as well as their assets. It is hoped that the knowledge gained will help learners with type I diabetes in the foundation phase and enable their families, friends, school, teachers and the community to participate as external and internal asset builders in the development of these learners.

3.2 RESEARCH QUESTION

As stated in Chapter 1 this study is based on the following research question:

What are the developmental and learning needs and the assets of the learner with type I diabetes in the foundation phase?

3.3 RESEARCH DESIGN

The research design used for this study is of a qualitative nature: it is an ethnographic study, using case studies. The interpretative paradigm was used in analysing the case studies.

Qualitative case studies are characterised by “researchers spending extended time on site, personally in contact with activities and operations of each case, reflecting, revising the meaning of what is going on” (Stake, 2000:445). The researcher spent a great deal of time at the diabetic clinic in close interaction with the learners, their parents and teachers.

The emphasis of this study was on understanding learners with type I diabetes in the foundation phase within their environment, where they respond to family, friends, school, teachers and the community.

3.3.1 Qualitative ethnographic study

The task of the ethnographer in research is to balance a commitment to capturing the diversity, creativity, individuality, uniqueness and spontaneity of social interactions with the requirements of scientific research (Cohen, *et al.* 2002:139).

As an ethnographer, the researcher has attempted to place specific encounters, events and understanding in a meaningful context. Research design and methods have been combined to produce personally situated accounts, descriptions, interpretations and representations of these learners’ lives. Since ethnography is both a process and a product, experience is meaningful. The actions of the learner with diabetes are generated from and informed by this meaningfulness (Tedlock, 2000:455).

This ethnographic study using case studies is based on the interpretative paradigm that is characterised by a concern for the learner with diabetes as an individual. The researcher supports the argument by Cohen, *et al.* (2002:22-23) that the aim is to understand the subjective world of human experience. The paradigm is a framework for understanding the interpretation that learners with diabetes give to the ecological environment around them. This gives rise to multi-faceted images of individual development, actions and assets as varied as the situations and contexts in which they take place.

The basic assumption guiding the interpretative paradigm is that the learners who are active in the research process construct their knowledge socially. The researcher has attempted to understand the complex world of lived experience from the point of view of the learners who live it. This paradigm also emphasises that research is influenced by the value systems of researchers and can never be independent of these systems or completely objective (Mertens, 1998: 11).

By entering into close and relatively prolonged interaction with learners with diabetes in their everyday lives, the researcher can better understand the beliefs, motivations and behaviour of these learners (Tedlock, 2000:456).

The following qualitative ethnographic research was employed in this study.

- The study was conducted at the Ferncrest Diabetic Clinic situated in the centre of the town of Rustenburg in the North West Province. This clinic is well known for its expertise and proficiency in work with children with diabetes. This clinic has contact with most of the diabetic learners in the vicinity. The specialist diabetic nurse at the clinic has daily experience of the concern, complications and uncertainties of diabetic learners and their families. As the participants and their parents visit the clinic frequently, they are familiar with the research location.
- Learners, parents and teachers of different cultures were included in the study.
- Questionnaires and semi-structured interviews were the research instruments.

- The data obtained from the first phase of the research were inductively analysed to reflect the meaning of what was stated and written.
- Case studies were the natural mode of reporting.
- An ideographic interpretation was also made to gain an understanding of individual learners with diabetes from different cultures in the foundation phase.
- The boundaries of the study were set by its purpose, namely to identify the developmental and learning needs and the assets of the learner with type I diabetes in the foundation phase.

This qualitative ethnographic study could contribute to identifying the developmental and learning needs as well as the assets of the learner with type I diabetes in the foundation phase. The learner with diabetes has interdependent and interpersonal relationships within a particular historical, social and cultural context. From a historical perspective the research examined the past through the narrative of the learner. Furthermore the learner's understanding and interpretation of the world around him/her were taken into account from a social perspective. From a cultural perspective the study endeavoured to be sensitive to the circumstances being studied and was committed to capturing the diversity of each participant. These had an influence on the creativity, individuality, uniqueness and spontaneity of the interactions that the diabetic learner had with his/her family, friends, school and community.

3.3.2 Case studies

According to Cohen, *et al.* (2002:181) case studies are an approach to seeking an understanding and interpreting the world in terms of its participants, and may be described as interpretative and subjective. Case studies provide a unique example of real people in real situations. A distinguishing feature of case studies is that "human systems have a wholeness or integrity to them rather than being loose connections of loose traits, necessitating in-depth investigation" (Cohen, *et al.* 2002:181).

The participants were selected for this study on the basis of non-probability or purposive sampling. This technique produced a sample of the target group, comprising three learners aged between seven and nine years, with type I diabetes in the foundation phase. These participants were learners who visited the Ferncrest Diabetic Clinic at Rustenburg in the North West Province. Non-probability samples are frequently used in ethnographic research using case studies (Cohen, *et al.* 2002: 102).

In purposive sampling the samples are composed of elements that contain the highest number of attributes representative or typical of the population being studied (De Vos, *et al.* 2002:207). With the aid of the specialist diabetic nurse at the clinic, the researcher used the description given in Cohen, *et al.* (2002:103) to select for their typicality the cases to be included in the sample. These cases had the greatest number of characteristics that would enable insight to be gained into identifying the developmental and learning needs and the assets of the learner with type I diabetes in the foundation phase.

The following participants were included in the study:

- Participant A
 - Diagnosed with type I diabetes
 - Boy
 - Eight years old
 - White

- Participant B
 - Diagnosed with type I diabetes
 - Boy
 - Nine years old
 - White
- Participant C
 - Diagnosed with type I diabetes
 - Girl
 - Eight years old
 - Black

The power of purposive sampling is that a few in-depth case studies yield many insights about the learner with diabetes in the foundation phase (McMillan & Schumacher, 1993:378-379).

Well-constructed case studies are holistic and context-sensitive (Patton, 2002:447). As described in Child (1997: 8-9) the three participants were examined in detail as individuals. According to Geertz (cited in Cohen, *et al.* 2002): “Case studies strive to portray what it is like to be in a particular situation to catch the close-up reality and thick description of participants” (Cohen, *et al.* 2002:182).

The advantage of case studies for this research as described by Ary, *et al.* (2002: 441) is the possibility of depth because they seek to understand the whole learner with diabetes in the totality of his or her environment. The present actions of the learner, his or her past, environment, emotions and thoughts can be probed. Case studies also provide an opportunity to develop insight into aspects of human actions. Stake (2000:448) mentions that the purpose of a case study is not to represent the world, but to present the case. Consequently the aim of this research was to present the case of the selected learners with type I diabetes in the foundation phase.

Descriptive data provide narrative accounts of the learner with diabetes and were obtained from questionnaires and semi-structured interviews, as described by Ary, *et al.* (2002:425). These data illustrated the experiences and perspectives of the participants (parents, learners and teachers).

3.4 RESEARCH METHODOLOGY

Research methodology comprises the methods and techniques used in studying a sample, and includes specific research techniques (Silverman, 2000:86). Silverman (2000:100) emphasises that the methodology determines which methods are used and how each method is used.

The research methodology for this study included data collection and analysis. It is important that the findings derived from the research should provide valid, reliable and objective information in order to identify the developmental and learning needs and the assets of learners with diabetes in the foundation phase.

3.4.1 Data collection

The literature survey discussed in Chapter 2 was a preparatory stage before collecting the data, and served to acquaint the researcher with previous research on the topic being

studied. The knowledge gained from earlier endeavours helped to place this study in context (Cohen, *et al.* 2002: 161).

Data are defined as “information obtained through research” (Papalia & Wendkos Olds, 1996:23). As this was an interpretative study, the researcher wished to make sense of the feelings, experiences and social situations as they occurred in the real world, and consequently to study the participants in their natural setting. The central axiom of the research was therefore to work with data in context (Terre Blanche & Durrheim, 2002:127). The Ferncrest Diabetic Clinic was selected as a natural setting for the research, where the participants could be studied as real people in their real world which included the participants’ family, friends, school, teachers and the community, in order to portray their life-worlds.

Papalia and Wendkos Olds (1996:47) define a questionnaire as “a research technique in which people complete a form that explores their attitudes, opinion, or behaviors” (Papalia & Wendkos Olds, 1997:47). Haslam and McGarty (1998:97) describe a questionnaire as a set of questions to be answered by a research participant. These questions could be printed or given to the participant or asked by the researcher in an interview. For the purpose of the present study, printed questionnaires were used as the foundation for the semi-structured interviews.

The data were collected by means of three questionnaires: one for the parents of the learner with diabetes in the foundation phase, a second questionnaire for the learner with diabetes in the foundation phase and a third questionnaire for their teachers. The information derived from the three questionnaires formed the basis for the semi-structured interviews that were conducted with the parents, learners and teachers of the selected sample of learners.

The researcher used the description given in Cohen, *et al.* (2002:255) to compile the questionnaires. The questionnaire for the parents and teachers contains several open-ended questions to encourage honest and personal comments from the participants. For the sake of simplicity, the questionnaire for the learners with type I diabetes has briefer questions to accommodate the age and developmental stage of these learners. These questionnaires became the foundation for a semi-structured interview to capture the authenticity, richness and depth of response, which are the hallmarks of qualitative data.

Collecting the data in a manner that would enabled one to learn to know the participant in the context of his/her reality was an important aspect of the study. Terre Blanche and Durrheim (2002:128) state that triangulation makes it possible to collect material in many different ways and from many diverse sources. In the present study, triangulation was applied to understand the learner with diabetes from different angles. In addition, the research setting was approached with the necessary care and empathy so that the researcher would become a natural part of the learner’s environmental context.

Triangulation helps to reduce the likelihood of misinterpretation and to clarify meaning by identifying the different ways in which the participant is seen (Stake, 2000:443). The questionnaires and the semi-structured interviews used in the narrative study extended the idea of text to include in-depth interview transcripts. As Patton (2002:115) states, the emphasis is on the lived experience and perceptions of experience as described by the participants.

Narratives are based on the assumption that all people construct and live a narrative for their lives, and that this narrative is often dramatically challenged by the onset of major health changes accompanying illness. The research was aimed at discovering the unique personal narratives of the learner with diabetes. The narrative approach seeks to understand and reveal the subjective meanings of health and illness and to make sense of health-related experiences. The World Health Organisation has recommended the use of narrative methods in studies of health. They argue that in comparison with traditional epidemiological research methods, narrative research can realistically describe patterns of behaviour (Terre Blanche & Durrheim, 2002: 359-260). Learners with diabetes each live a unique narrative. Using this approach, the developmental and learning needs and the assets of learners with diabetes could be revealed, identified and realistically described to family, friends, school, teachers and the community. Their narratives revealed the meaning and experience of diabetes as a chronic illness among the foundation phase learners in this sample.

Data were collected in four phases. The parents, learners and teachers were participants in the collection of the data and are referred to as such in the four phases described below.

3.4.1.1 Phase 1: Exploratory interview, compiling of letter, and questionnaires

TABLE 3.1: Phase 1 of data collection: description and activities.

DESCRIPTION	ACTIVITY
<ul style="list-style-type: none"> • Exploratory interview at the Ferncrest Diabetic Clinic • Letter to parents (see Appendix 1A/B) • Compiling of questionnaires 	<ul style="list-style-type: none"> • Exploratory interview with a diabetes specialist nurse at the Clinic • Compiling of letter to parents to obtain informed consent for the learner to participate in study • After an in-depth literature survey, three questionnaires were designed for parents, learners and teachers respectively

The exploratory interview with the diabetes specialist nurse had the following purpose:

- To introduce the study to her
- To formulate a clear and focused research problem
- To gather general information on learners with diabetes
- To determine which learners would be available to participate in the study
- To arrange to use the clinic as a research setting.

A letter to the parents was compiled (see Appendix 1A/B) to inform them that their child had been selected to participate in the study. They were informed of the purpose of the study and the methods of data collection. They were requested to give their informed consent for their child to participate in the study.

The questionnaires were compiled after an in-depth literature survey. The description given by Cohen, *et al.* (255-256) was used for compiling the questionnaires, which feature open-ended questions from an ecological perspective and an asset-based approach to the learners with diabetes. The divisions of the questionnaires were based on the purpose of

the study, and also indicate the interdependence and relationships within the ecological perspective. Each division consists of different themes which emerged from the literature survey. These themes were integrated into the developmental assets.

3.4.1.2 Phase 2: Questionnaires as foundation for semi-structured interviews

TABLE 3.2: Phase 2 of data collection: description and activities.

DESCRIPTION	ACTIVITY
<ul style="list-style-type: none"> Questionnaires as a guideline for the semi-structured interviews to be completed by each learner's parents (see Appendix 2A/B) and by the learners (see Appendix 3A/B) in collaboration with the researcher 	<ul style="list-style-type: none"> At the first meeting the researcher met the parents and the learner in order to build a relationship with these participants and to introduce them to the procedure that would be followed. A letter was given to the parents, requesting their permission for the learner to participate in the study. The parents completed the questionnaire in the research setting and the researcher remained nearby to answer any questions During phase 2 at the second meeting with each learner, the researcher requested the learner to draw pictures of him-/herself and his/her family to help in establishing a relationship of trust. The learner in collaboration with the researcher completed the questionnaire

- Questionnaire: Parents of learners with diabetes in the foundation phase.**

Each questionnaire (see Appendices 2A and 2B) comprises the following divisions, integrated with the developmental assets. The divisions and contents of the questionnaire were compiled after an in-depth literature survey as described in Chapter 2. These were also the divisions and themes used for analysing the data.

TABLE 3.3: Divisions and contents of the questionnaire for parents of learners with type I diabetes in the foundation phase.

Development	Learning	Family	Friends	School	Teacher	Community
Physical	Individual differences	Emotional reactions	Interpersonal relationships	Interpersonal relationships	Interpersonal relationships	Interpersonal relationships
Cognitive	Interests	Interaction with family members	Interactions with individuals and groups	Interactions with individuals and groups		Interaction
Emotional	Evaluation					
Social	Reasoning	Development of self-concept		Development of self-concept		
Moral				Emotional reactions		

				Emotional stress		
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• **Questionnaire: Learners with diabetes in the foundation phase.**

Each questionnaire (see Appendices 3A and 3B) comprises the following divisions, integrated with the developmental assets. The divisions and contents of the questionnaire were compiled after an in-depth literature survey as described in Chapter 2. These were also the divisions and themes used for analysing the data.

TABLE 3.4: Divisions and contents of the questionnaire for the learners with type I diabetes in the foundation phase.

Development	Learning	Friends	Family	School	Teacher	Community
Physical	Interests	Inter-personal relationships	Emotional reactions	Interpersonal relationships	Interpersonal relationships	Interpersonal relationships
Cognitive	Self-evaluation	Interactions with individuals and groups	Interaction with family members	Interactions with individuals and groups.	Interaction	Interaction
Emotional			Developing of self-concept	Development of self-concept		
Social				Emotional reactions		
Moral						

3.4.1.3 Phase 3: Semi-structured interviews with parents and learners

TABLE 3.5: Phase 3 of data collection: description and activities.

DESCRIPTION	ACTIVITY
<ul style="list-style-type: none"> • Semi-structured interviews with the parents as well as the learners • The interviews were semi-structured as the completed questionnaire formed the basis of the discussion 	<ul style="list-style-type: none"> • The researcher analysed both questionnaires and added questions regarding each of the participants where more information was needed. These questionnaires were used as guidelines for the semi-structured interviews • The first interview was with the parents and the second with the learners. The interviews were conducted separately except where the parent asked to attend the interview with the learner

The researcher decided on semi-structured interviews as a follow-up method after the questionnaires had been completed, because an interview has the advantage of supplying in-depth information. Ary, *et al.* (2002:434) state that semi-structured interviews provide insight into the participant's perspectives, the meaning of events for the people involved and information about unanticipated issues. In this study, semi-structured interviews were used for obtaining in-depth information so as to identify the developmental and learning needs and the assets of the learner with diabetes in the foundation phase.

The questionnaires for the parents and the learners were the basis for the interview schedule. These semi-structured interviews enabled the researcher to clarify questions, to ask participants to extend, elaborate on, add to, provide details and clarify their responses. Cohen, *et al.* (2002:278) state that this kind of interview addresses the depth of responses, comprehensiveness and honesty that are the hallmark of successful interviewing.

The semi-structured interviews contributed to the narrative approach to the interpretation of the data. This approach describes the relationship between knowledge, interests and intentions, within interlocking webs of evidence. Silverman (2000:34) states that structuring the participant's accounts as narratives gives a lively theoretically informed grip on the data. This made it possible to tell the story as a major textual strategy for representing the life-worlds and lives of these learners with diabetes, as described by Schostak (2002:164). The semi-structured interviews were recorded on audiotape.

3.4.1.4 Phase 4: Semi-structured interviews with teachers

TABLE 3.6: Phase 4 of data collection: description and activities.

DESCRIPTION	ACTIVITY
<ul style="list-style-type: none"> Questionnaire (see Appendix 4A/B) as guideline to gain specific information in the semi-structured interviews with the teachers of the learners with diabetes 	<ul style="list-style-type: none"> This activity was completed after the interviews had been conducted with the parents and the learners

The teacher is an individual in the community and is recognised as an important asset-builder and identifier of development and learning needs. With a knowledge and understanding of diabetes, the teacher of the learner with diabetes could improve and maintain relationships between these learners and the school, parents and community.

As described by McEvilly (1995:472-473) the parents of learners with diabetes often need the support of the teacher, not only to allow their child independence but also to encourage good diabetic control to prevent complications. The ultimate aim for the teacher should be to see the child grow into a healthy, fit, stable and emotionally secure young adult.

The questionnaire (see Appendices 4A and 4B) used as a method to obtain information from the teachers of the learners with diabetes, consisted of open-ended questions regarding learning, friends, family, school, teacher and the community. It was also used as guideline for the semi-structured interviews. This included the developmental and learning

needs and the assets of learners with diabetes. These were also the divisions and themes used for analysing the data.

TABLE 3.7: Divisions and foundation of the semi-structured interviews with the teachers of the learners with diabetes.

Learning	Family	Friends	School	Teacher	Community
Interest in learning	Interaction with parents	Interpersonal relationships	Interpersonal relationships	Interpersonal relationships	Interpersonal relationships
Individual differences		Interactions with individuals and group	Interactions with individuals and groups	Interactions with individuals and groups	Interactions with members of the community
Reasoning			Development of self-concept		
			Emotional reactions		

3.4.2 Data analysis

According to Terre Blanche and Durrheim (2002:140) data analysis seen in context involves reading through the data repeatedly and engaging in breaking down and rebuilding the data in order to elaborate and interpret the information.

As described by Ary, *et al.* (2002:426) and used by the researcher, the data were analysed inductively in the application of the qualitative ethnographic research. From the outset of the first phase of the present study, the researcher reflected on the meaning of what had been written. The researcher developed hypotheses of what the data meant and sought to confirm or reject these hypotheses using the data obtained in the subsequent phase of interviews. By means of a process of coding, clustering and determining the themes, a summary was compiled for each participant being studied.

Ryan and Bernard (2000:769) mention that the literature review is a rich source of knowledge. This knowledge was exploited by starting with some general themes derived from the literature survey discussed in Chapter 2 and adding more themes and subthemes as the research progressed. Through inductive coding the themes were refined to a point where they could be applied to an entire corpus of text in which a great deal of interpretative analysis had already been done.

A narrative approach was taken to the interpretation of the data. Erben (1996:171) states that “by narratives one mean the types, varieties and patterns of the accounts or stories that compose life-course experience”. Through this approach the learners describe their world. Narratives challenge stereotypical cultural stories and tell alternative stories. Glassner and Loughlin (cited in Silverman, 2000) state that this is also a methodology for listening (Silverman, 2000:125). Erben (1996:66) asserts that when participants use the narrative approach they give new meaning to their past, but always in terms of the present.

The researcher used this approach to give meaning and provide knowledge and understanding regarding learners with diabetes in the foundation phase.

Hardy (cited in Erben, 1996) states that we dream in narrative, remember, anticipate, hope, despair, believe, doubt, plan, revise, criticise, construct, gossip, learn and love by narrative (Erben, 1996: 164). MacIntyre (cited in Erben) emphasises that as individuals we enter upon a stage we did not design and we find ourselves part of an action not of our making. The guidelines given by the above-mentioned authors were used in analysing the data to capture the diversity, creativity, individuality and uniqueness of the learner with diabetes.

In addition the researcher used Cohen *et al.* (2002:284-286) as a framework, practical guideline and directive as illustrated in Table 3.8 to analyse the data. The work of these authors on research methodology is relevant to the study and contributes to the scientific value of the study.

Table 3.8 gives a summary of the procedure followed in analysing the data collected by means of the questionnaires and the semi-structured interviews, which were recorded on audiotape.

TABLE 3.8: Procedures used in analysing the data

QUESTIONNAIRES	
<ul style="list-style-type: none"> • The responses to each question in the questionnaires for the parent, learner and teacher were typed • After analysing the responses given in the questionnaires, the researcher added some questions to obtain more information and greater clarity. These questions were used as guidelines for the semi-structured interviews • Each questionnaire consists of divisions with specific themes. The same structure was used for the semi-structured interviews 	
SEMI-STRUCTURED INTERVIEWS	
TRANSCRIPTION	After the semi-structured interviews with the parents, learner and teacher, the audio tapes of each semi-structured interview were transcribed and combined with the responses given in the questionnaires
CREATE A SENSE OF THE WHOLE	The researcher read the typescript several times in order to provide a context for the emergence of specific units of meaning and themes
CODING	<p>Then two columns were placed next to the data, one for the descriptive code and the other for identifying the assets</p> <p>In coding the information, the researcher systematically went through the data line by line and wrote a descriptive code at the side of each item. This enabled the researcher to understand the issue described by the parent, learner and teacher and in this way to identify the developmental and learning needs of the learner with diabetes. The assets that were identified were also entered on the coding document</p>
CLUSTERING	<p>After grouping the codes into more general clusters, an attempt was made to determine whether there was a common theme for a relevant meaning</p> <div style="text-align: center;"> <p>Example</p> <p>Participant A was asked the following question (see Appendix 3B):</p> <p>Do other children want to be your friend? Explain.</p> <p>Response</p> <p>No, they are afraid that I will become ill or get hurt .</p> <p>General clusters</p> <p>Rejection and reasoning</p> </div>

DETERMINING THEMES FROM CLUSTERS OF MEANINGS	The researcher examined the clusters of meaning and determined the central themes
	Example Interpersonal relationships and interaction with friends
SUMMARIES	
INDIVIDUAL SUMMARY	The researcher summarised the combined information from the questionnaire and interview with each individual
SUMMARIES	Then for each learner a summary was compiled of the data obtained from the parent, the learner and the teacher. The divisions in the questionnaires were also used as the divisions in the summaries, capturing the essence of the participants being studied and describing the experiential world of the learner with diabetes

The information obtained from the questionnaires and the semi-structured interviews with the parents, learners and teachers was integrated to produce an easily readable narrative that could be used for gaining more knowledge and better understanding of the learner with type I diabetes in the foundation phase.

3.5 FINDINGS AND DISCUSSION

After completing the procedure illustrated in Table 3.8, the findings and discussion were compiled from the data obtained from the parents, the learners and their teachers. These learners construct and live their own narrative. Their narratives are challenged by the chronic disease of diabetes and realistically describe the needs and assets of the learner with diabetes in the foundation phase.

3.5.1 Participant A

GENDER: Male

AGE: 8 years

BACKGROUND: The participant was diagnosed with type I diabetes mellitus when he was 7 months old. The participant is one of three children. He and his twin sister are the first-born children. When he was diagnosed, the parents had only a limited knowledge of diabetes. At the age of two, he had to undergo a serious bladder operation, which affected him for the next year. After the diagnosis his parents noticed a change in his social behaviour. He was not the same friendly baby he had previously been. Over the next few years he had to be hospitalised several times. His mother worked full-time. After the age of eighteen months he attended nursery school. Since Grade 2, he and his twin sister have been placed in different classes at school.

GRADE: Two

FINDINGS AND DISCUSSION:

- **DEVELOPMENT**

Physical and motor development

During his physical and motor development in the foundation phase, it was not possible for him to run as fast, skip with a skipping rope or play ball games in the same way as the other children. Although he kept getting stronger, faster and better each day it was sometimes easier just to give up the activity. He feels self-conscious about his body since a remark about the swelling on his stomach where he injects himself each day. His parents have realistic expectations about his development. They know his strengths and know where he needs more support and understanding in his developmental progress, for example with participation in a sport such as cricket.

He values healthy living habits and thinks that it is important to rest every day. Sometimes at night when his blood sugar is low he has to eat something and wait before going back to sleep, or when his blood sugar is high his parents have to inject him and he has to wait before he can go back to sleep. He worries about his health when he eats something wrong. It also bothers him that his teacher would not know what to do if he falls asleep in class. When he is playing and running around, he forgets that he has diabetes.

Cognitive development

He has mastered the basic skills of reading, writing and arithmetic. He shows ability for self-evaluation. He experiences success at school and get positive feedback from his teacher. He is aware of the adult world and his place in it because he understands that his father has to work away from home and accepts the responsibility of being the man of the house when his father is not at home.

Emotional development

Emotionally he feels discouraged by his diabetes and sometimes acts rebelliously. He is sensitive to other people's feelings. It bothers him when his sister fights with him. When he is sad or unhappy he prefers to go and sleep in his room.

He knows the difference between acceptable and unacceptable behaviour, for example he knows he should not react angrily when other learners make remarks about his diabetes. His emotions are influenced by factors such as fatigue and his health status.

As a type I (insulin-dependent) diabetic who requires insulin treatment, he has injected himself since the age of four. This contributes to the development of his self-concept. Being able to help himself to control his diabetes and the fact that he does not depend on his father or mother to test his blood sugar or inject the correct dose of insulin have helped to gain a sense of personal power. He uses planning and decision-making skills in controlling his diabetes. In so doing, he manages the challenge in a way that has a positive result on him and his family. He has accepted and taken personal responsibility for his health.

Social development

In a social context, the participant finds that the other learners do not want to play with him. He may have friends on one day and the next he may have none. He is not invited to the other learners' birthday parties because they do not want to run the risk that something might happen to him.

His regular absences from school prevent him from spending significant time in the social group. It is difficult for him to create a satisfying place for himself in the group. As a result he does not find that the peer group offers him the sense of security that he previously experienced in the safe haven of his parents' home.

The parents describe him as a caring child who does not have to be encouraged to help other people. He is a child with integrity who will if necessary stand up for his beliefs. He describes himself as being special because he has diabetes.

Moral development

Morally he asks the question, "Why me?" If it were possible for him to change anything, he would like to change his illness. He can appreciate another person's point of view. He is able to distinguish between right and wrong, good and bad. He applies this in his everyday behaviour, for example if he and his older friend cause damage such as breaking a window while playing, they will repair it without being reminded to do so. He loves and respects his parents. His morality is also influenced by the example his teacher sets.

- **FAMILY**

Emotional reactions

His mother states that she felt depressed and despondent when her son was diagnosed with diabetes. At present she says she has accepted it to some extent. She mentions that she lives from day to day. One implication of his diabetes is that his mother has had to resign from her full-time job to care for him when he is ill, as her employer did not always understand the consequences of diabetes.

The father works away from home in Botswana. He is deeply concerned about his son's health. His son considers his father a very special person and is also concerned about his father's health.

Interaction with family members

The family does not always receive the support they need in their interaction with members of the extended family, but one grandmother does give support outside the home. His diabetes has caused negative emotional reactions from his twin sister. She becomes jealous of the attention he gets when he is ill.

In his relationship with his sisters, he is caring, avoids conflict with them and he does his best to keep them content. He finds it much easier to show his family when he is angry and sad, than it is to express these feelings at school. There is seldom interaction between the family and the school.

Development of a self-concept

When his father works away from home, he undertakes the responsibility of the man of the house. He manages various tasks in and around the house. He helps to care for the animals and helps his mother with different tasks. He sees these tasks as a way to learn new skills. This creates a sense of purpose. The family appreciates his value and attitude towards his health and his ability to accept his diabetes.

- **FRIENDS**

Interpersonal relationships

When he talks about his interpersonal relationships, he expresses a need to play with friends at school but they keep him at a distance. This makes him feel rejected and rebellious, and he reacts to these feelings by telling his classmates to leave him alone. He reasons that the learners at school do not want to play with him as they are afraid he will fall ill and something will happen to him.

It is difficult for him to play when he is not feeling well. Instead of playing, he just wants to sit and watch the others play.

He has one special friend, a boy four years older than he is. He can express and articulate his feelings to this friend. This friendship has helped to improve his self-esteem. They do exciting and stimulating things together, such as building electronic devices, which create a sense of purpose as they can engage in different skills. As a friend, he is caring, responsible and will always try to resolve conflict peacefully. The participant has empathy

for his friend's home circumstances, such as insufficient money and not having a father, and shows an interest in making his friend's life better.

The learners in the class know about his diabetes. They understand the implications of diabetes. He also tells other learners about his diabetes so that if he falls ill, they will be able to help him. The learners in the class do not joke about his diabetes. They appreciate his integrity. He is not a tattletale about his fellow learners.

- **LEARNING, SCHOOL AND THE TEACHER**

Interpersonal relationships

When he attended nursery school with his twin sister, his mother explained the situation and gave the necessary information to the people in charge. They were very attentive and would phone immediately when there was a problem.

He loved his nursery teacher. Emotionally and cognitively he relied on his twin sister throughout nursery school. She had to help him to pack the books and complete some of the activities. This affected his self-esteem. He sometimes used the excuse that he did not feel well and often hid behind his sister. He developed strategies for avoiding tasks, and saw his learning as someone else's responsibility by behaving passively and helplessly.

His Grade 2 teacher accommodates and interacts with him in the same way as she does with any other learner. She expects him to show the same level of acceptable behaviour as the other learners. Her knowledge of diabetes is limited. Her information concerning diabetes was obtained from written notes she received from the mother at the beginning of the year. It is obvious to her when he is not feeling well, as his behaviour in class changes radically. He just sits in his chair, and will only react to questions which need very limited answers.

He cares about his present school and feels proud of the school's achievements. He has a positive interpersonal relationship with his teacher. This interaction has a beneficial influence on his self-concept. He loves to clean the classroom for his teacher.

The participant's illness has placed a great deal of responsibility on his twin sister, causing her to suffer emotional stress. She has to tell the teacher when he felt ill. This situation has affected her interactions with her friends. She also has to play with her brother because he has no friends.

He avoids conflict with other learners. He will not show when he is angry at school, and merely withdraws from the other learners. His teacher describes him as a well-mannered boy who stands up for his beliefs. She appreciates his friendliness. He hates any injustice. After school, he will talk to his mother about what upset him at school because he feels that his family supports him.

Interests, evaluation and reasoning

With regard to self-evaluation, when he is asked by his parents or teacher he gives reasons for being more interested in some subjects than in others. He is engaged in learning, he does his homework when it is assigned. He prefers to work at home where he can ask his mother to help him. He does well in mathematics but has problems with

languages. His academic performance is precarious. His homework is always done, but it may not always comply with the minimum requirements.

He enjoys activities such as cricket and hockey. His parents also encourage him to explore different activities. Sometimes these activities are acceptable to him, but other times they are not. He never complains or shows unacceptable emotional reactions. He enjoys the caring, encouraging climate at school.

Emotional reactions, emotional stress and the development of a self-concept

His absences from school are emotionally stressful because he has to catch up the work he missed. This causes emotional reactions such as impatience and anger. His mother finds that when she helps him with homework he reasons that she should finish it for him. However, he will always ask the teacher to explain when he does not understand something in class. He takes an active part in class discussions and class activities.

In his present school, the lack of interpersonal relationships and interactions with friends has an adverse effect on his self-concept. He is happy when he has friends; otherwise he is quiet and miserable. He does not want to go to school alone when his twin sister is ill. Her absence causes emotional stress as he has no friends he can play with at school to take her place. When someone in class remarked about his diabetes, he reacted by saying: "You can be glad it is not one of you."

It disturbs him that there is a new principal at the school every year. He does not like change. He performs tasks at school, which include paying in money at school. Being valued for his honesty gives him a definite sense of purpose. He also had the privilege of being recognised by the school as one of the learners of the week. This added to the development of his positive self-esteem. He is given useful tasks appropriate to his age.

• **COMMUNITY**

Interpersonal relationships

He talks about his diabetes, which contributes to good interpersonal relationships. His knowledge of diabetes helps to empower his classmates and other people with whom he comes into contact, such as neighbours and friends of the family. This knowledge includes the use of insulin, a special diet and eliminating misconceptions about diabetes. This contributes to his useful role in the community. It is also important for him that people know he is not feigning illness.

It is important for him to be valued in the community by doing something to help other people. As part of his interaction with his community he regularly visits the diabetic clinic. His mother's friends pray for his healing and the prevention of the complications of diabetes.

His teacher made other people in the community aware of the circumstances children have to endure while staying in state hospitals when they are ill.

Based on the responses in the questionnaires, the information obtained in the semi-structured interviews and from the in-depth literature survey, the following developmental and learning needs as well as assets could be identified, as illustrated in Table 3.9.

TABLE 3.9: Developmental and learning needs and the assets of participant A

ASSETS											
LEARNER	<ul style="list-style-type: none"> • Enjoys stimulating activities, for example building electronic devices • Enjoys activities such as cricket and hockey • Has planning and decision-making skills • Is honest • Has integrity • Is given responsibility appropriate for his age • Believes in and lives a healthy lifestyle • Resolves conflict peacefully • Has a sense of purpose because he manages different skills in and around the house 										
NEEDS											
ASSETS											
FAMILY	<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="background-color: #cccccc; text-align: center; vertical-align: middle;">NEEDS</td> <td style="background-color: #cccccc; text-align: center; vertical-align: middle;">ASSETS</td> </tr> <tr> <td> <ul style="list-style-type: none"> • Needs his family to know he has a sense of incapacitation • Needs his family to help keep his emotional balance by managing his feelings of frustration, fear and isolation • Needs his family to help prepare him for a certain future • Needs all family members to understand that having to take insulin makes him more dependent • Needs the other siblings in the household to know about diabetes </td> <td> <ul style="list-style-type: none"> • Receives love and support from his parents • Parents provide adult role models • Receives other adult support e.g. from a grandmother • Parents have appropriate expectations for their child • Is motivated to do well in school and other activities • Parents provide clear boundaries because they monitor his activities and whereabouts </td> </tr> <tr> <td style="background-color: #cccccc; text-align: center; vertical-align: middle;">FRIENDS</td> <td> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="background-color: #cccccc; text-align: center; vertical-align: middle;">NEEDS</td> <td style="background-color: #cccccc; text-align: center; vertical-align: middle;">ASSETS</td> </tr> <tr> <td> <ul style="list-style-type: none"> • Needs friendships • Needs to learn better interpersonal skills to make friends in class and at school • Needs friends to have knowledge of diabetes so that they can understand his situation and condition • Needs to learn skills to resist negative reactions from other learners • Needs friends and classmates to visit him in hospital to help to deal with the hospital environment </td> <td> <ul style="list-style-type: none"> • Older friend provides empathy • Together they do stimulating and exciting things such as building electronic devices </td> </tr> </tbody> </table> </td> </tr> </tbody> </table>	NEEDS	ASSETS	<ul style="list-style-type: none"> • Needs his family to know he has a sense of incapacitation • Needs his family to help keep his emotional balance by managing his feelings of frustration, fear and isolation • Needs his family to help prepare him for a certain future • Needs all family members to understand that having to take insulin makes him more dependent • Needs the other siblings in the household to know about diabetes 	<ul style="list-style-type: none"> • Receives love and support from his parents • Parents provide adult role models • Receives other adult support e.g. from a grandmother • Parents have appropriate expectations for their child • Is motivated to do well in school and other activities • Parents provide clear boundaries because they monitor his activities and whereabouts 	FRIENDS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="background-color: #cccccc; text-align: center; vertical-align: middle;">NEEDS</td> <td style="background-color: #cccccc; text-align: center; vertical-align: middle;">ASSETS</td> </tr> <tr> <td> <ul style="list-style-type: none"> • Needs friendships • Needs to learn better interpersonal skills to make friends in class and at school • Needs friends to have knowledge of diabetes so that they can understand his situation and condition • Needs to learn skills to resist negative reactions from other learners • Needs friends and classmates to visit him in hospital to help to deal with the hospital environment </td> <td> <ul style="list-style-type: none"> • Older friend provides empathy • Together they do stimulating and exciting things such as building electronic devices </td> </tr> </tbody> </table>	NEEDS	ASSETS	<ul style="list-style-type: none"> • Needs friendships • Needs to learn better interpersonal skills to make friends in class and at school • Needs friends to have knowledge of diabetes so that they can understand his situation and condition • Needs to learn skills to resist negative reactions from other learners • Needs friends and classmates to visit him in hospital to help to deal with the hospital environment 	<ul style="list-style-type: none"> • Older friend provides empathy • Together they do stimulating and exciting things such as building electronic devices
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LEARNING, SCHOOL, TEACHER	<ul style="list-style-type: none"> • Needs self-identity and self-respect • Needs success, achievement and recognition • Needs a caring away-from-home environment in class • Needs to feel safe at school • Needs an opportunity to develop useful interpersonal skills in relating to other learners in class • Needs the class to have knowledge of diabetes and to show understanding • Needs to eat lunch and snacks at a specific time, sometimes also during classes • Needs to test his blood sugar before doing any physical activity • Needs teacher to understand that learning may be affected on specific days. When his blood sugar is low, he may think about how hungry he is or that he is dizzy and shaky and wants to go home • Needs the teacher to understand that occasionally he might have problems with reading and writing clearly because of blurred vision. • Needs the teacher to know his behaviour may sometimes be affected by diabetes • Needs help to manage difficult feelings • Needs the school to know attendance may be a problem because high and low blood sugar affects all learners differently • Needs the school and teacher to help him keep a positive self-image • Needs the teacher to make an efforts to gain knowledge of what to do in an emergency 	<ul style="list-style-type: none"> • Actively engages in learning • Enhances activities such as sport • Generates expectations of academic achievement and by enabling learners to be recognised as learner of the week
COMMUNITY	<ul style="list-style-type: none"> • Needs the community to have appropriate knowledge and understanding of diabetes as a chronic illness • Needs to feel of service to others in the community • Needs community members to help him deal with the hospital environment • Participant and his family need to develop relationships with hospital staff • Needs collaboration between the school and the community, for example community members such as health workers and psychologists, and in some cases social workers could play a role at schools to help build knowledge and understanding of diabetes mellitus. The school could also provide information essential for the learners development and needs 	<ul style="list-style-type: none"> • Provides the diabetic clinic • Religious caring friends

3.5.2 Participant B

GENDER: Male

AGE: 9 years

BACKGROUND: The participant was diagnosed with diabetes at the age of nine. He is one of four children. His parents had no knowledge of diabetes. His mother feels concerned that something may happen to him. His blood sugar has not yet been stabilised. He did not attend nursery school. He is an extremely motivated child. He does well at school and enjoys participating in sport.

GRADE: Four (participant were diagnosed with type I diabetes in the foundation phase)

FINDINGS AND DISCUSSION

- **DEVELOPMENT**

Physical and motor development

He met the requirements for normal physical and motor development. He manifests the required physical skills for participation in play. He likes to participate in sport. He is able to run, jump, climb and kick. His gross and fine motor skills are sufficiently developed to enable him to use his body confidently. His parents have realistic expectations about his development. They know his strengths; they provide support and are positive about his progress. He values a healthy lifestyle and has a positive attitude towards his body, in terms of how it looks and what it can do. He has a good physical self-concept influenced by positive feedback from others about his competence in sport and physical activities.

He accepts responsibility for controlling his blood sugar. He does not go to sleep easily. If he feels sick at night he will test his blood sugar and if necessary eat something. He does not wake his mother. He does not normally worry about his diabetes, only when he experiences the physical symptoms of illness.

Cognitive development

He has mastered the basic skills of reading, writing and arithmetic. He has a strong academic self-concept formed by experiences of success in school and positive feedback from his teachers. He has a real interest in school and enjoys learning and reading. He is able to make up his own mind and make decisions.

Emotional development

He has positive self-esteem. He does not want to change anything about himself, except for the emotional reaction of behaving nastily when he becomes angry. It makes him sad when people argue with him, especially at school. He never shows his anger at school, he prefers to hide his emotions. At home, he will withdraw from a negative situation and lie down on his bed.

He feels it is important for his parents to acknowledge and appreciate that he does well at school. Their recognition is significant for him. He describes himself as special because he has diabetes. He thinks of himself as a unique person.

He injects himself, which contributes to his positive sense of identity, as he believes he has control over his diabetes. He has accepted personal responsibility for his health. His parents describe him as a quiet child. He avoids conflict and will always try to do his best. He will also try to help wherever he can.

Social development

Socially he holds his own in the peer group. He is responsible and dependable, for example he will help wherever he can and will complete the tasks given to him. He takes an interest in various activities at school and at home, such as sport, reading and computer games. He is sensitive to other people's feelings and needs, and responds well to group activities. He focuses on friends of his own sex.

Moral development

He distinguishes between right and wrong, good and bad and lives his moral values in his everyday life, for example his older brother's behaviour is unacceptable to him and he tries not to react in the same manner. Instead he focuses on other aspects of his life such as sport.

He is a deeply religious child. He believes that if he keeps on praying, God will heal his diabetes. He always uses his pocket money to buy presents for his mother and father. He likes to have responsibilities at home such as feeding the dog or assisting with household tasks.

• FAMILY

Emotional reactions

When he was diagnosed with diabetes at the age of nine, his family knew nothing about the disease. His mother did not anticipate that it would be necessary for him to inject himself. She found the diagnosis a shock and is deeply concerned about his health.

His father has similar emotions but prefers not to be involved. The father treats all four of his children in the same way. He does not want to gain any knowledge about diabetes. He thinks it is unfair that only the participant and not the other children should have snacks at certain times, as prescribed by the diabetic clinic. If there were an emergency, he would not be able to help the participant. He prefers to avoid giving attention to matters relating to diabetic information. He becomes angry with the participant when his blood sugar is high. The participant tells his mother, not his father, when he does not feel well and tells her in confidence to prevent his father from knowing.

Interaction with family members

The influence of his diagnosis on the family is clear at mealtimes. It is not possible to buy the same diabetic food for the other three children. This has a negative effect on the other siblings. They feel neglected and angry, causing conflict in the family. His relationship with his older brother is described as bad. His brother and sister tease him and make jokes

about his diabetes. His brother has a knowledge of diabetes but might only use it in an emergency. His older brother refuses to consider the participant's special circumstances, or to believe that the participant may have a legitimate claim to different food and special attention.

The participant describes his grandfather as a very special person who cares about him and supports him with his diabetes.

When the participant was diagnosed with insulin-dependent (type I) diabetes it brought him and his mother closer together and strengthened the bond between them. The mastery of his special diet, blood sugar tests and daily insulin injections contributed to positive experiences in the family, promoting the participant's self-confidence and self-esteem.

- **FRIENDS**

Interpersonal relationships

He appreciates his best friend's care and empathy. His friend shows concern about the participant's health. His friend always helps him catch up with work in class when he feels ill or was absent from school. When he feels ill at school, he sits down at the playground near his friends and watches them play. He does not want to tell them he is feeling ill. His friends never joke about his illness.

He interacts positively with his friends. He has visited a friend's home only once since the diagnosis of his diabetes. His mother is afraid something may happen to him if he visits a friend's house. Positive characteristics that other children can relate to are his friendliness, good humour and co-operativeness. He is a caring person and will always try to find a peaceful solution to conflict.

- **LEARNING, SCHOOL AND THE TEACHER**

Interpersonal relationships

He did not attend nursery school. He is well motivated in his present school and has a good relationship with his teacher. He has good interpersonal relationships with his classmates and friends, although he cannot always go out with them. They know he has diabetes and will always try to be helpful. He never talks to them about his diabetes.

The factors that have a positive influence on him at school are his good interpersonal relations and interaction with his classmates and friends. He avoids conflict. The teacher has a good knowledge of diabetes. She appreciates his sense of humour. She expects the same level of acceptable behaviour from him as from the other learners, but will always keep his illness in mind.

Interests, evaluation and reasoning

He cares about his school. He is keenly interested in sport such as rugby and cricket. He is not only a spectator but also takes part in these sports.

He enjoys doing his homework. His work at school is always very neat and his homework is always done. When he has been absent from school, he tends to complete the work on

the day he returns to school. He works very hard, and loves to read for pleasure and play computer games.

Emotional reaction, emotional stress and the development of a self-concept

He appreciates recognition for good work at school. He responds well to merited praise. He has formed a good academic self-concept from his experience of success at school. This was determined by class activities and assessment criteria. He does not give any indication of his emotions in the classroom, especially when he is angry.

His strengths at school are described as his love of taking part in rugby and his good academic achievements. He participates in class discussions and class activities, and will help with tasks in class when requested to do so.

- **COMMUNITY**

Interpersonal relationships

His family would appreciate it if more people in the community had some knowledge of diabetes. They want people to think of their child as normal.

He visits the diabetic clinic regularly. He would like to interact with other learners with diabetes. He likes to help other people.

Because his teacher has empowered the learners in his class with a knowledge of diabetes, she has enabled them to share their knowledge of diabetes when they interact with members of the community.

Based on the responses given in the questionnaires, the semi-structured interviews and in-depth literature survey, the following developmental and learning needs as well as assets could be identified, as shown below in Table 3.10.

TABLE 3.10: Developmental and learning needs and the assets of participant B

		ASSETS	
LEARNER	<ul style="list-style-type: none"> • Enjoys stimulating activities, for example reading and computer games • Greatly enjoys activities such as sport • Has planning and decision-making skills • Is honest • Has integrity • Has responsibility appropriate for his age • Believes in and lives a healthy lifestyle • Resolves conflict peacefully • Has a sense of purpose created by his experience of success at school 		
	NEEDS		ASSETS
FAMILY	<ul style="list-style-type: none"> • Needs the love and support of both parents and rest of family • Needs the family to create a sense of security and trust at home • Needs the support of other adult relationships with for example grandparents or other family members • Needs the family to know he has a sense of incapacitation • Needs the family to help keep his emotional balance by managing feelings of frustration, fear and isolation • Needs the family to help him prepare for a certain future • Needs all family members to understand that having to take insulin makes him more dependent • Needs the other siblings in the household to have knowledge of diabetes • Needs the family to participate in therapy sessions after diagnosis to empower the whole family to neutralise potential conflict 		<ul style="list-style-type: none"> • Family members have other adult support, for example from the grandfather • Parents have appropriate expectations for his development • Parents motivate him to do well at school
	FRIENDS	<ul style="list-style-type: none"> • Needs his friends to have knowledge of diabetes so that they can understand his condition • Needs to learn skills to help him resist negative reactions from other learners • Needs friends and classmates to visit him in hospital to help him deal with the hospital environment. 	

LEARNING, SCHOOL, TEACHER	<ul style="list-style-type: none"> • Needs success, achievement and recognition • Needs to be given useful roles and tasks in the classroom • Needs to eat lunch and snacks at specific times, sometimes also during classes • Needs to test his blood sugar before any physical activity • Needs teacher to understand that learning may be affected on specific days. When his blood sugar is low, he may think about how hungry he is or that he is dizzy and shaky and wants to go home • Needs the teacher to understand that occasionally he might have problems with reading and writing clearly because of blurred vision • Needs the teacher to know his behaviour may sometimes be affected by diabetes • Needs help to manage difficult feelings • Needs the school to know attendance may be a problem because high and low blood sugar affects all learners differently • Needs the school and teacher to help him keep a positive self-image. 	<ul style="list-style-type: none"> • Learner is actively engaged in learning • School enhances activities such as sport • Teacher generates expectations of academic and personal achievement • Teacher and school create enjoyment of learning
COMMUNITY	<ul style="list-style-type: none"> • Needs to be valued by the community • Needs the community to have appropriate knowledge and understanding of diabetes as a chronic illness • Needs support from and interaction with neighbours • Needs to feel of service to others in the community • Needs to develop relationships with hospital staff • Needs collaboration between the school and the community, for example community members such as health workers and psychologists, and in some cases social workers could play a role at schools to help build knowledge and understanding of diabetes mellitus. The school could also provide information essential for the learners development and needs • Needs contact with other learners with diabetes 	<ul style="list-style-type: none"> • Diabetic clinic

3.5.3 Participant C

GENDER: Female

AGE: 8 Years

BACKGROUND: The participant is the elder of two children. There is an age difference of 7 years between the two sisters. Both her parents have diabetes mellitus. She was diagnosed with diabetes at the age of five. There are several examples of the complications of diabetes among the family members.

Participant C attended a nursery school from the age of three. She had to change primary schools. English was the language of instruction at the first primary school she attended but at her present school the language of instruction is Tswana. The language adjustment was difficult for her and diminished her enthusiasm for school. Her father is the only breadwinner in the family.

GRADE: Two

FINDINGS AND DISCUSSION:

- **DEVELOPMENT**

Physical and motor development

The participant has acquired the physical, gross and fine motor skills to participate in play and physical activities of her age group. Her blood sugar is not always well controlled. She agrees that good health is important. She worries about her health and feels that it is bad to be a diabetic. When she is sick, she does not tell her friends as she is afraid they will laugh at her. She enjoys physical activities but does not participate in sport at school.

Cognitive development

She has mastered the basic skills of reading, writing and arithmetic. She has a sense of right and wrong. She shows a capacity for self-evaluation since she is able to describe what she is doing wrong in the management of her diabetes. She is aware of the adult world and her place in it because she recognises the responsibility her diabetic parents have for managing their own diabetes and realises it is her duty to learn to manage her own diabetes. She has to help take care of her baby sister and helps to clean the house. She is also aware of the complications of diabetes as exemplified by her father and mother, for example the weakening of her mother's vision.

Emotional development

The daily injections of insulin distress her emotionally. She does not want to test her blood sugar. This stressor causes negative emotional reactions such as anger and frustration. She dislikes criticism of her diabetic care and these feelings are projected onto her mother and father. She does not like being treated like a sick child.

She is fully aware of her responsibility to inject herself. It is difficult for her to resist the temptation to eat what other children and her friends eat. She becomes angry when she is denied sweets. She is frequently told about the complications of diabetes, and given the example of family members she knows well.

Social development

Socially she is popular with her friends. She is described as a happy child with good interpersonal skills. She has made a satisfying place for herself in the social group and the members accept her as a friend. She enjoys dramatising. She can forget her illness when she is involved in playing. She describes as her strength the fact that her parents give her anything she wants because they love her. However, it is inaccurate to describe a strength as the ability to get what she wants from her parents.

Moral development

She is beginning to consider other circumstances, believing that her father and mother have a legitimate claim to expect her to manage her diabetes personally. Her morality is influenced by her parents' love, rewards and examples.

• **FAMILY**

Emotional reactions

When she was diagnosed with diabetes, her father accepted it. He felt that with the support of doctors and the medical staff at the clinic, he and her mother would be able to manage. The father is deeply concerned that she does not value her health enough to take responsibility for her diabetes. He is worried about her future.

The mother said her emotional reaction to the diagnosis was depression. She is deeply concerned that her daughter does not inject her insulin herself. Both parents feel it is important for their child to have a positive view of the future. They feel that this is possible if she realises the importance of good management of her illness.

Interaction with family members

She loves her baby sister and acts very responsibly in taking care of the baby. It is easier to show her family when she is sad and angry than it is to show her feelings at school. The parents have support from their extended family, especially from the mother's sister outside the home. She describes her mother as a special person.

Development of self-concept

Her family appreciates the happy and cheerful atmosphere she creates at home. She is responsible for tasks at home, and this responsibility develops her self-concept and creates a sense of purpose.

- **FRIENDS**

Interpersonal relationships

She has good interpersonal relationships with her friends. The peer group accepts her. Her friends interact with her daily and like to visit her at home. She sometimes sleeps over at the home of her mother's sister, who grew up with a diabetic (her mother) in the family.

She does not talk about her diabetes, neither to adults nor other children. Her friends describe her as talkative and happy. She enjoys engaging in stimulating activities with her friends; they play with dolls and discuss and dramatise the programmes they have seen on television. Her friends care about her and are concerned about her health. They will tell her mother when she has eaten anything wrong.

- **LEARNING, SCHOOL AND THE TEACHER**

Interpersonal relationships

She attended nursery school for three years. Her parents describe her nursery school years as happy. She enjoyed going to nursery school. The nursery school was close to the diabetic clinic and when she was sick the staff phoned the clinic and asked one of the nurses to come to the school to attend to her.

She is not happy in her present school. She does her homework when it is assigned. On some days she does not want to go to school. The parents are satisfied with her achievements at school. She had to change primary schools owing to a lack of funds. The language of instruction in her new school is Tswana, not English as was the case in her first school.

The participant enjoys stimulating and creative activities such as drawing and gymnastics. Her relationship with her teacher is described as good. She always talks about her teacher at home. She makes tea for her and is responsible for doing tasks appropriate to her age. She helps to clean the classroom at the end of each day. It is difficult for her to show emotional reactions such as anger at school.

The participant's mother interacted with the teacher once, when she informed her at the beginning of the year of the participant's diabetes. They have not discussed it again since then. The parents are not sure that the teacher has the knowledge to take the right action in an emergency. The parents feel that the teacher is not interested in their daughter's health. When she is absent from school, she is not given the work she missed, to complete at school or at home.

The teacher has no knowledge of diabetes. The information she received from the participant's mother at the beginning of the year is the only information she has about diabetes. She cannot identify the symptoms of low blood sugar and does not know what procedure should be followed when a diabetic's blood sugar is high or low. She is not aware that changes in the blood sugar level may influence the participant's conduct in class.

Her classmates do not know about her diabetes. They do not understand the implications, such as that she may have to eat food during classes, that she has to inject herself with

insulin, that she has to test her blood glucose levels regularly, that she cannot always take part in activities and that she is sometimes absent from school.

Interests, evaluation and reasoning

Her teacher describes her as a learner interested in learning and a hard worker. She accepted the responsibility for doing her homework. Her parents, especially her father, support her with her homework. She is shy and does not take an active part in class discussions and activities. She prefers to work on her own. She always helps to clean the classroom, which creates a sense of purpose as she is actively engaged in a skill she enjoys doing.

She does well in English and Tswana. The recognition she receives for good work has a favourable influence on her at school. She does not participate in extramural activities although she enjoys stimulating activities. She is excluded from these activities by teachers who are afraid she might get hurt.

Emotional reactions, emotional stress and the development of a self-concept

Her behaviour is described as quiet in class. The teacher does not punish her in the same way as the other learners and has never explained to the participant why she is not being punished. When the participant is angry or upset in class she starts to cry and then just keeps quiet. She appreciates positive feedback and responses from her teacher.

- **COMMUNITY**

Interpersonal relationships

She does not mind when other people know she has diabetes. Sometimes she wishes that she were like other children. She likes to help other people and would like to have contact with other learners with diabetes.

The parents expressed a need for support from the community. They expressed this as needing someone who could tell them what they were doing wrong, especially with helping their daughter develop the right attitude towards maintaining a healthy lifestyle.

Her teacher expressed a need to obtain more knowledge about diabetes. If she were better informed she could inform the other learners in the class. These learners could then play a useful role at school and in their own families and communities. They could interact with and inform members of their family, who could share the information with the community.

Based on the responses given in the questionnaires, the semi-structured interviews and in-depth literature survey, the following developmental and learning needs as well as assets could be identified, as explained below in Table 3.11.

TABLE 3.11: Developmental and learning needs and the assets of participant C

ASSETS			
LEARNER	<ul style="list-style-type: none"> • Enjoys stimulating activities such as drawing and gymnastics • Is honest • Has integrity • Recognises the importance of a healthy lifestyle • Has a sense of purpose when she is actively engaged in skills she enjoys doing 		
NEEDS			
ASSETS			
FAMILY	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> • Needs the support of other adult relatives such as grandparents or other family members • Needs her family to know she experiences a sense of incapacitation • Needs the family to help keep her emotional balance by managing feelings of frustration, fear and isolation • Needs the family to help prepare her for a certain future • Needs the family to participate in therapy sessions after diagnosis, to empower the whole family to neutralise potential conflict </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> • Parents give love and support • Parents provide adult role models • Other adults, such as mother's sister, support the family • Parents have appropriate expectations for their child </td> </tr> </table>	<ul style="list-style-type: none"> • Needs the support of other adult relatives such as grandparents or other family members • Needs her family to know she experiences a sense of incapacitation • Needs the family to help keep her emotional balance by managing feelings of frustration, fear and isolation • Needs the family to help prepare her for a certain future • Needs the family to participate in therapy sessions after diagnosis, to empower the whole family to neutralise potential conflict 	<ul style="list-style-type: none"> • Parents give love and support • Parents provide adult role models • Other adults, such as mother's sister, support the family • Parents have appropriate expectations for their child
<ul style="list-style-type: none"> • Needs the support of other adult relatives such as grandparents or other family members • Needs her family to know she experiences a sense of incapacitation • Needs the family to help keep her emotional balance by managing feelings of frustration, fear and isolation • Needs the family to help prepare her for a certain future • Needs the family to participate in therapy sessions after diagnosis, to empower the whole family to neutralise potential conflict 	<ul style="list-style-type: none"> • Parents give love and support • Parents provide adult role models • Other adults, such as mother's sister, support the family • Parents have appropriate expectations for their child 		
FRIENDS	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> • Needs friendships • Needs her friends to have knowledge about diabetes so that they can understand better • Needs her friends to understand that her diet has to be strictly controlled • Needs to learn skills to resist negative reactions from other learners • Needs her friends and classmates to visit her in hospital to help her deal with the hospital environment </td> <td style="width: 50%; vertical-align: top;"> <ul style="list-style-type: none"> • Creates stimulating activities such as playing with dolls and dramatising the programmes they have seen on television • Promotes humour </td> </tr> </table>	<ul style="list-style-type: none"> • Needs friendships • Needs her friends to have knowledge about diabetes so that they can understand better • Needs her friends to understand that her diet has to be strictly controlled • Needs to learn skills to resist negative reactions from other learners • Needs her friends and classmates to visit her in hospital to help her deal with the hospital environment 	<ul style="list-style-type: none"> • Creates stimulating activities such as playing with dolls and dramatising the programmes they have seen on television • Promotes humour
<ul style="list-style-type: none"> • Needs friendships • Needs her friends to have knowledge about diabetes so that they can understand better • Needs her friends to understand that her diet has to be strictly controlled • Needs to learn skills to resist negative reactions from other learners • Needs her friends and classmates to visit her in hospital to help her deal with the hospital environment 	<ul style="list-style-type: none"> • Creates stimulating activities such as playing with dolls and dramatising the programmes they have seen on television • Promotes humour 		

LEARNING, SCHOOL, TEACHER	<ul style="list-style-type: none"> • Needs self-identity and self-respect • Needs success, achievement and recognition • The learner and the parents need a high level of support from the school, especially from the teacher • The learner, parents, and teacher ought to communicate frequently and positively • Needs a caring away-from-home environment in class • Needs to feel safe at school • Needs the class to have knowledge of diabetes to show understanding. • Needs to eat lunch and snacks at a specific time, sometimes during classes • Needs to test her blood sugar before any physical activity • Needs teacher to understand that learning may be affected on specific days. When her blood sugar is low she may think about how hungry she is or that she is dizzy and shaky and wants to go home. She might have problems with reading and writing clearly because of blurred vision • Needs the teacher to know her behaviour may sometimes be affected by diabetes • Needs help to manage difficult feelings • Needs the school to know attendance may be a problem because high and low blood sugar affects all learners differently • Needs the school and teacher to help her keep a positive self-image. • Needs the teacher to make an effort to gain knowledge and empower herself so that the teacher knows what to do in an emergency 	<ul style="list-style-type: none"> • Learner is actively engaged in learning • Enjoys stimulating class activities, for example drawing
COMMUNITY	<ul style="list-style-type: none"> • Needs to be valued by the community • Needs the community to have appropriate knowledge and understanding of diabetes as a chronic illness • Needs the support of and interaction with neighbours • Needs to feel of service to others in the community • Needs community members to help her deal with the hospital environment • Needs to develop relationships with hospital staff • Needs collaboration between the school and the community, for example community members such as health workers and psychologists, and in some cases social workers could play a role at schools to help build knowledge and understanding of diabetes mellitus. The school could also provide information essential for the learners development and needs • Needs the assets in the community that can support learners from poor socio-economic conditions, families with poor learning skills and community language 	<ul style="list-style-type: none"> • Diabetes clinic

3.6 COMMON AND UNIQUE CHARACTERISTICS OF THE PARTICIPANTS

Each participant lives his or her own narrative. The researcher believes that this study has captured the diversity, creativity and individual uniqueness of the participants, their situation, and their social interaction with their family members, school, teachers and the community. Table 3.12 lists the characteristics that the participants have in common and identifies those that distinguish them as unique individuals.

TABLE 3.12: Common and unique characteristics of the participants

COMMON CHARACTERISTICS	UNIQUE CHARACTERISTICS
<ul style="list-style-type: none"> • The participants mastered their development tasks as milestones, each at his/ her own pace • Their parents have realistic expectations of their growth • The participants recognise the importance of a healthy lifestyle • They are actively engaged in learning • They do well at school • Their teachers describe them as responsive, attentive learners • They have good interpersonal relationships with their teachers • They feel it is important to have useful roles and tasks at school and at home • They are caring learners who do not have to be encouraged to help others • Friendships are important to them • It is difficult for them to express their feelings at school • They avoid conflict and will strive for a peaceful resolution to conflict • They have the support and love of their family members. Sometimes there is conflict between them and other siblings in the family • The mother is the main caregiver • They have other adult relationships outside the home, which provide important support. These adults are mainly relatives 	<p style="text-align: center;">Participant A</p> <ul style="list-style-type: none"> • He was diagnosed with diabetes as a baby of 7 months • He is one of a pair of twins • Although he is a friendly, caring and responsible child, he has few friends • His teacher has a knowledge of diabetes • He takes personal responsibility for his diabetes • His academic performance is precarious • He likes to improve the lives of other people
	<p style="text-align: center;">Participant B</p> <ul style="list-style-type: none"> • He was diagnosed with diabetes when he was nine years old • He greatly enjoys learning • He enjoys participating in sport • He never talks about his diabetes • He achieves well academically • Religion is important to him • Recognition is important to him • His teacher has sufficient knowledge of diabetes
	<p style="text-align: center;">Participant C</p> <ul style="list-style-type: none"> • She was diagnosed with diabetes when she was five years old • Her father and mother are both diabetics • Her teacher has no knowledge of diabetes. • Her classmates do not know she has diabetes. • She feels it is bad to be a diabetic.

3.7 CONCLUSION

This chapter contains an explanation of the research design, methodology and findings.

The research question for the study is to determine the developmental and learning needs and the assets of the learner with diabetes in the foundation phase. The qualitative study on each of the three participants who were selected for the non-probability sample, was done as an ethnographic study using well-constructed case studies.

The case studies were examined in depth in a natural setting to portray and capture the diversity, individuality and uniqueness of each participant. This was also done by including learners from both genders and two different cultures. The interpretative paradigm was used in analysing the case studies. The case studies describe the narrative of each participant in the ecological environment for family, friends, school, teacher and the community, so that the narrative can be viewed as a close-up portrayal of reality.

The final chapter of the study contains the major conclusions drawn from the study and the recommendations made. The limitations of the research and implications for future research are also included.

CHAPTER 4

MAJOR CONCLUSIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

This chapter contains a summary of the investigation into the developmental and learning needs and the assets of the learner with diabetes in the foundation phase. Firstly the literature survey is assessed and conclusions are drawn. Secondly, major conclusions are drawn from the study. Thirdly, recommendations based on needs and assets are made regarding this investigation. Finally the limitations of the study and implications for future research are noted.

4.2 CONCLUSIONS DRAWN FROM THE LITERATURE SURVEY

The foundation phase learner with type I diabetes does not exist in isolation. The ecological perspective shows that the learner with diabetes is involved at different levels of the social context and therefore the researcher refers to the ecosystemic approach. There are interdependent and interacting relationships between the learner, his/her family, friends, school, teachers and the community.

From an ecosystemic perspective, taking a need-based and asset-based approach, this approach helped to contribute to an understanding of the needs and complex problems that learners with type I diabetes encounter in the foundation phase (Ebersöhn & Eloff, 2003:4). Once their needs have been established their families, friends, school, teachers and the community can deal with and help to meet these needs. Using the asset-based approach, which is relationship-driven, the researcher focused on the strengths and talents of these learners. Both approaches were valuable in identifying the developmental and learning needs and the assets of the learner with type I diabetes in the foundation phase.

Diabetes mellitus is caused by the body's inability to produce or use insulin. Because little or no insulin is secreted from the pancreas, the glucose that passes into the bloodstream from digested food cannot penetrate the body's cells and the body cannot perform normal functions. The rising levels of unutilised glucose (blood sugar) in the bloodstream can damage sensitive organs such as the retina of the eyes, the coronary arteries of the heart, other blood vessels, the nerves, kidneys and brain. Because the body needs energy it converts stored fat cells into energy. As this continues, the waste products from fat metabolism accumulate in the bloodstream and are eliminated through the kidneys. In uncontrolled diabetes, the concentration of ketones becomes very high and leads to ketoacidosis which is a life-threatening condition (Petray, *et al.* 1997:58).

As mentioned in Chapter 1, people with type I diabetes depend on insulin injections to maintain their health. Insulin-dependent diabetes usually starts in childhood and is generally more severe than the other two types of diabetes (American Diabetic Association, 2001:1). Wilson (1998:1) points out that learners with diabetes need to take shots of insulin every day so that their bodies can use the glucose (blood sugar) that feeds their body cells and gives them the energy to act and think. It is important to keep the blood sugar levels of diabetics at about the same range as people without diabetes in order to maintain good health and avoid the complications of diabetes. However, most of these complications can be avoided when friends, family, school, teachers and the

community know and understand how important it is for diabetics to control their blood sugar carefully.

4.2.1 Development

Learners in the foundation phase undergo several physical changes. They acquire new skills and concepts. They need to create a satisfying place for themselves in the social group. During this phase, learners develop moral judgement and form positive values.

4.2.2 Learner

The learner with diabetes should be encouraged to lead as normal life as possible. A normal life for such learners means good control of their blood sugar. It also means having realistic expectations of the learners' development at their individual age, a commitment to learning, positive values and the forming of a positive identity and self-concept.

4.2.3 Family

Diabetes is an emotional challenge for the members of the learner's family as they have to cope with differing emotional reactions. The family provides love and support for the child and a diabetic child will seek help from his/her parents to control his/her diabetes. The family also often has support from grandparents and other members of the extended family. The mother tends to make better contact with the child, as mothers are probably calmer, more reassuring and absolutely devoted to their children. However, parents of diabetic children may also become over-protective.

4.2.4 Friends

Diabetes influences relationships. The illness may isolate the diabetic learner from other learners and friends. When learners with diabetes are absent from school they lose their status in the group. Then the realisation often dawns that other children can replace them as friends, losing them their place in the circle of friendships and relationships with classmates.

4.2.5 Learning, school and teacher

If a teacher is uninformed, the diabetic learner tends to go unnoticed. Most teachers do not believe they have sufficient information about diabetes. In order to meet the needs of the diabetic learner effectively, the teacher and school ought to be well informed about diabetes and the correct diet, as well as the danger signs and symptoms of possible complications.

The knowledgeable teacher will help the learner with diabetes to maintain good metabolic control and will support the parents of such a learner. When they understand the illness properly, misconceptions will be eliminated. The teacher should not focus on the learner and ignore the illness.

Danger signals that teachers should be aware of are the signs of impending diabetic (hyperglycaemic) coma:

- The smell of acetone on the diabetic child's breath warns that the child may be developing ketoacidosis, a life-threatening condition which begins with drowsiness and great thirst with excessive urination, followed by deep, sighing breathing with the breath smelling of acetone (sweet apples). Due to dehydration the child has cold hands and feet, sunken eyeballs, dry skin and a shrivelled tongue
- If the child does not obtain emergency medical help, diabetic coma and death may occur.

Equally as dangerous is low blood sugar (hypoglycaemia) which is liable to occur when meals are delayed or irregular, when the diabetic child does unusual exercise or when the insulin dose is excessive.

- The earliest symptoms are sweating, mental confusion, a feeling of hunger or weakness, palpitations and trembling, particularly just before it is time for a meal or snack. The child may have a vacant look, and is pale and sweating with a rapid pulse. The child should be given a glucose drink or glucose tablets immediately to prevent him/her from going into hypoglycaemic or insulin coma.
- If the child does go into a high-insulin coma, medical help should be obtained immediately to prevent brain damage from the lack of blood sugar.

4.2.6 Community

The diagnosis of diabetes has socio-economic implications for the family. Medical bills, the maintenance of a healthy diet and often the lack of transport place pressure on the family. They may have to travel long distances, especially in smaller towns and rural areas, to access and receive appropriate health care.

Parents living under poor socio-economic conditions have limited opportunities in the community to learn more about diabetes, or become part of a diabetic support group. Parents with poor learning skills in such communities have difficulty with mastering the proper control of diabetes.

Learners with diabetes who have parents with poor learning skills may take longer to master the task of diabetic control. Even when the implications and complications of diabetes and the guidelines for controlling the disease are simplified, the parents and their diabetic child may find them difficult to understand.

4.3 MAJOR CONCLUSIONS

In this section the major findings of the study are synthesised and presented within the framework of the research question generated during the conceptual phase of the study.

The study was aimed at answering the following research question: What are the developmental and learning needs and the assets of the learner with diabetes in the foundation phase?

After identifying the needs and assets of the learner with type I diabetes in the foundation phase, the main aim of the study was achieved. The secondary aim was to provide knowledge and understanding of learners with type I diabetes in the foundation phase and to rally their friends, family, school, teachers and the community to become external and internal asset builders in developing the potential of the learner with type I diabetes in the foundation phase.

When studying the three participants' lives, it is clear that they do not live in isolation. The family provides the learner with love, support and guidance. Children interact with one another and make friends who give one another support. At school, children interact with teachers and other learners. All learners have to acquire social skills and need to be accepted by other learners. It is important for them to have a commitment to learning, to be motivated and responsive to learning.

- **Development**

Participant A who had been diagnosed as diabetic when he was a baby, developed more slowly than the norm. The peer group rewarded the learner who had mastered the skills necessary for play. All the participant learners with diabetes in the foundation phase valued their health and recognised the importance of healthy choices about eating and necessary rest. When their blood sugar was low at night they had to eat something and wait, or when their blood sugar was high they had to inject insulin and wait before they could go back to sleep. They fulfilled their responsibility for testing their blood sugar and injecting themselves with insulin and understood the consequences of behaving irresponsibly and not controlling their illness. However one of the participants feared her daily injections of insulin, which sometimes compromised good metabolic control.

These participants showed a capacity for self-evaluation and became more aware of the adult world. They developed a range of interests in class activities, reading, games and sport, although they did not always participate. They knew right from wrong and were able to make up their own minds. A good academic self-concept had been formed when they experienced success in school and received positive feedback from their teachers and parents. They responded well to merited praise.

They left the safe haven of the family to find their place in the peer group at school. Two of the participants had good interpersonal relationships with their friends. The third participant diagnosed as a baby stated that the other learners did not want to play with him. This had also been a problem for him during his pre-school years and he tended to rely on his twin sister for companionship.

The participants had formed moral values and norms. They avoided conflict and always tried to find a peaceful solution to a problem. They found it difficult to express their feelings at school. Their management of their diabetes, such as testing their blood sugar, injecting

their insulin and maintaining good eating habits had a positive effect on them as well as on their families.

- **Family**

When the participant learners were diagnosed with diabetes the parents had experienced feelings of grief, depression and sadness. Members of the extended family did not always give the support the mother or father needed. The parents of the three participants in this study were supported by at least one other adult in the extended family, such as a grandparent or sister outside the home.

Other siblings in the family were jealous of the extra attention given to the participants with diabetes, as well as of their special meals and the diabetic foods bought for the participants. There were serious financial implications for some of the families. One participant's mother had to resign her full-time job to take care of her diabetic child. It was not always possible for every family to belong to a medical aid scheme.

The mothers were the primary caregivers, and in one of the three cases, the mother was the only caregiver. In the case of the participant whose parents were both diabetics, the father was also as closely involved in his daughter's health care as her mother was.

The parents stated that their children were caring and willing to help with tasks at home. They believed it was important for their children to be hopeful and have a positive view of the future. Despite diabetes, children can live a virtually normal life and their future can be favourable.

All the parents in the study provided clear boundaries for activities and visits outside the home. They monitored the diabetic child's activities and whereabouts. Good metabolic control of the child's blood sugar was always a priority. As this monitoring could interfere with the child's development of relationships with peers, the parents believed it was important for the participants to take personal responsibility for controlling their diabetes.

- **Friends**

All the participants valued friendship. Two of the participants had good interpersonal relationships with their classmates and friends, but it was more difficult for the third participant to make and keep friends.

All the participants enjoyed doing stimulating and creative activities with friends and classmates. Their friends showed empathy for their diabetes and appreciated their friendliness, good humour and caring attitude. Friends accepted these diabetic learners, but absence could isolate them from their classmates and friends.

- **Learning, school and teacher**

Participant A had attended nursery school and said he had loved his nursery school teacher. He relied on his twin sister to help him with tasks. He cared about his present school and was engaged in learning. He had achieved most of the outcomes in the different learning areas with outstanding success. When he was absent from school due to his illness he completed the work as homework but did feel angry and impatient. He avoided conflict with other learners. He enjoyed stimulating activities although he did not

always complete the activity. He performed tasks at school as explained elsewhere in the study. He had a good interpersonal relationship with his teacher as he could express his feelings to her. She was caring and showed concern for his health as she had a knowledge of diabetes. The learners in class understood diabetes.

Participant B had not attended nursery school. He enjoyed school greatly. His work was always neat and he had achieved all the outcomes in the different learning areas with outstanding success. When he had been absent from school he completed the work he had missed as soon as he returned to school. He enjoyed stimulating activities greatly and sport was important to him. He avoided conflict. He would have liked to perform tasks at school. He had good interpersonal skills with his classmates and his teacher as he interacted with other learners and could express and articulate his feelings appropriately. He knew how much fun it was to be part of a team. His teacher had a good knowledge of diabetes. The learners in class understood diabetes

Participant C had attended nursery school and the staff there had contacted the diabetic clinic whenever she felt ill. At her present school she was engaged in learning and was responsive and attentive in class. Her parents felt satisfied with her performance at school and she had achieved the outcomes in the different learning areas. She felt unhappy at her present school, which she compared unfavourably with her previous school. She enjoyed stimulating and creative activities at school, such as drawing and gymnastics. She was not permitted to participate in extramural activities. She avoided conflict. Her teacher knew nothing about diabetes. The learners in class did not know about her diabetes.

• **Community**

The parents of the three participants expressed a need for support from the community. The support they needed included awareness by community members of the socio-economic implications of diabetes and the effects of poor learning skills on the management of diabetes.

The learners would like to have contact and interaction with other learners with diabetes. It was important for these learners to help other people, and in this way they showed an interest in making the community a better place. They visited the diabetic clinic regularly. Parents wanted people in the community to think of their diabetic child as normal.

The teachers involved in the study expressed a need to obtain more information and knowledge about diabetes. If they were better informed they could in turn inform the learners in their classrooms. If the learners in class were empowered with knowledge of diabetes they could share their knowledge with their parents and extended families. Eventually this could help to empower the community to understand diabetes as a chronic illness and to support these learners as valued members of the community.

4.3.1 Developmental and learning needs of learners with diabetes in the foundation phase

The major findings on the developmental and learning needs of the learner with type I diabetes are presented within the framework of the research question.

The learner with diabetes in the foundation phase is generally between seven and nine years old and has a lifelong, incurable illness requiring insulin treatment and a special diet. Throughout these learners' physical, emotional, social, moral and cognitive development they have to live with their chronic illness and try to prevent complications such as hyperglycaemia, hypoglycaemia and diabetic ketoacidosis.

Throughout this study the importance of understanding the learner with type I diabetes in the foundation phase holistically and in a social context has been emphasised. The ecosystemic perspective in addition to the needs-based and asset-based approach helped to provide knowledge and understanding of learners with diabetes. The needs assessment was important because it focuses on the needs of the learner with type I diabetes in the foundation phase in the broader social context in which the needs are manifested. The needs assessment also contributed to an understanding of the interrelatedness of these needs. The learner with type I diabetes mellitus in the foundation phase tends to meet the requirements for the milestones of developmental tasks. Achieving these milestones is possible with the aid of the people involved in the life of each learner.

Like other foundation phase learners, the learner with type I diabetes has interacting relationships with friends, family and teachers. All foundation phase learners leave their home and family for the first time, but in addition the foundation phase learner with type I diabetes has to have the development and emotional competence to control their diet and insulin treatment. These learners have several needs to which their family, friends, school, teachers and community should be sensitive.

Table 4.1 shows the relationship between the participants and their ecosystems, which was taken in account when identifying the following developmental and learning needs of the learner with diabetes in the foundation phase.

TABLE 4.1: Developmental and learning needs of the learner with diabetes in the foundation phase

DEVELOPMENTAL AND LEARNING NEEDS OF THE LEARNER WITH DIABETES IN THE FOUNDATION PHASE.	
FAMILY	<ul style="list-style-type: none"> • Needs love and support from both parents and family • Needs the family to create a sense of security and trust at home • Needs the support of other adult relatives such as grandparents or other members of the extended family • Needs the family to know he/she feels a sense of incapacitation due to this chronic illness • Needs the family to help keep his/her emotional balance by managing feelings of frustration, fear and isolation • Needs the family to help prepare him/her for a certain future • Needs all family members to understand that taking insulin makes him/her more dependent • Needs the other siblings in the household to have knowledge of diabetes • Needs the family to participate in therapy sessions after diagnosis, to empower the whole family to neutralise potential conflict
FRIENDS	<ul style="list-style-type: none"> • Needs friendships • Needs to learn interpersonal skills to make friends in class and at school • Needs his/her friends to know about diabetes so they can understand better • Needs friends to understand that his/her diet has to be strictly controlled • Needs to learn skills to resist negative reactions from other learners • Needs his/her friends and classmates to visit in hospital to help him/her deal with the hospital environment

- Needs self-identity and self-respect
- Needs success, achievement and recognition
- The learner and the parents need a high level of support from the school, especially from the teacher
- The learner, parents and teacher ought to communicate frequently and positively
- Needs a caring away-from-home environment in class
- Needs to feel safe at school
- Needs to be given useful roles and tasks in the class
- Needs the opportunity to develop useful interpersonal skills for interacting with other learners in class
- Needs the class to have knowledge of diabetes to show understanding
- Needs to eat lunch and snacks at a specific time, sometimes during classes
- Needs to test his/her blood sugar before any physical activity
- Needs teacher to understand that learning may be affected on specific days. When these learners' blood sugar is low they may think about how hungry they are or that they are dizzy and shaky and want to go home
- Needs the teacher to understand that occasionally he/she might have problems with reading and writing clearly because of blurred vision. This is a temporary condition caused either by high or low blood sugar levels
- Needs the teacher to know that the learner's behaviour may sometimes be affected by diabetes
- Needs help to manage difficult feelings
- Needs the school to know attendance may be a problem because high and low blood sugar affects all learners differently
- Low blood sugar levels may have an effect during the night while sleeping. If the learner is lucky he/she wakes up when blood sugar falls to a low level. If not the learner may go into insulin shock, which is extremely dangerous. Sometimes a learner may be awake for a half an hour to an hour in the middle of the night waiting until the blood sugar level is safe enough to go back to bed. By the time the clock alarm goes off in the morning the learner's blood sugar may be high because of the rebound effect of eating too much. On these days the learner may come late for school either because he/she does not feel well from the unstable sugar during the night or from the headaches and fatigue resulting from low blood sugar. Sometimes those extra minutes of sleep are essential so that the rest of the day will go smoothly (Rosenthal-Malek & Greenspan, 1999:41)
- Needs the school and teacher to help him/her keep a positive self-image
- Needs the teacher to make an effort to gain knowledge and empower herself so that the teacher knows what to do in an emergency

COMMUNITY	<ul style="list-style-type: none"> • Needs to be valued by the community • Needs the community to have appropriate knowledge and understanding of diabetes as a chronic illness • Needs the support of and interaction with neighbours • Needs to feel of service to others in the community • Needs community members to help the learner deal with the hospital environment • Needs to develop relationships with hospital staff • Needs collaboration between the school and the community, for example community members such as health workers and psychologists, and in some cases social workers could play a role at schools to help build knowledge and understanding of diabetes mellitus. The school could also provide community members with information essential for the diabetic learner’s developmental and learning needs, for example by holding individual or parental meetings. • Needs contact with other learners with diabetes • Needs the assets in the community that can support learners from poor socio-economic circumstances, families with poor learning skills and community language
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4.3.2 Assets of the learner with diabetes in the foundation phase

The major findings on the assets of the learner with diabetes in the foundation phase are also presented within the framework of the research question.

The asset-based approach focused on what was currently present in the environment. It set out to identify the capacities inherent in each participant in his/her environment. This approach is relationship-driven and based on the strengths and talents of the participants involved.

Every one of these participants was unique. They had developmental assets in their lives and people who were helping them build and strengthen these assets.

The relationship between the participants and their ecosystems was taken into account to identify their assets. The participants’ environment was relationship-driven and included people such as family, friends, the school, teachers and the community.

Figure 4.1 is based on both the internal and external assets of the learner with diabetes in the foundation phase, as identified in the study.

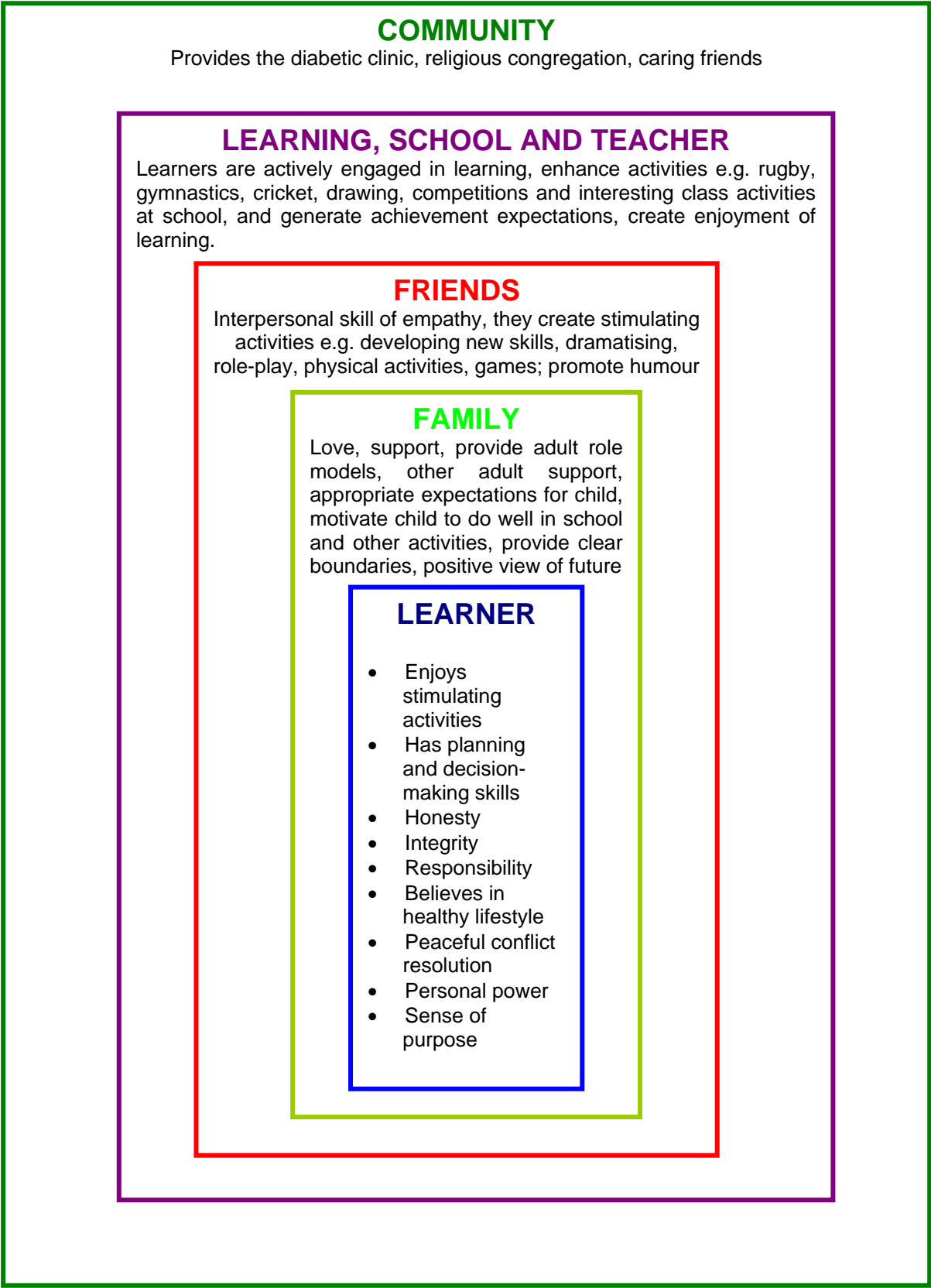


Figure 4.1 Assets of the learner with type I diabetes in the foundation phase

4.4 RECOMMENDATIONS

Emanating from the major conclusions drawn from this study, the following recommendations are made.

4.4.1 Recommendations based on needs

The learner with type I diabetes is in a relationship with his/her total ecological system. The environment within the ecological system includes family, friends, teachers, the school and the community. Based on the learner's needs, it is proposed that these people should consider the following recommendations, as well as the additional recommendations made regarding learners with other chronic illnesses:

- When a child is diagnosed with diabetes, the child and the family should have access to a multi-disciplinary and professional team, including health workers, psychologists and social workers, to explain the implications and complications of diabetes. This should include follow-up sessions to establish a firm support network.
- Age-appropriate diabetic information about diabetes should be given, for example by the diabetes specialist nurse from the local clinic, to all family members, especially younger siblings.
- Family therapy should be arranged for the family and individual counselling for the mother as primary caregiver, adopting an approach of empowerment, capacity building and team building.
- It should be compulsory for both parents to attend diabetic education sessions.
- The life skills of the learner with diabetes should be purposefully developed, preferably by a team whose members could include health workers, educators and a specialist diabetic nurse.
- Reliable statistics on children with diabetes should be obtainable from the South African Diabetes Association, as no reliable statistics are currently available for this group.
- Statistics should be compiled and made available at schools, concerning data on learners with chronic illnesses, as there are currently no statistics available in schools or from the Department of Education concerning the number of learners with diabetes in South African schools.
- In-service training programmes at a school and between schools should be presented collaboratively to share information and knowledge of diabetes. The programmes could also include parents of learners with diabetes and a specialist diabetic nurse from the diabetic clinic in the community.
- Special arrangements should be made at schools for parents with poor learning skills to ensure effective communication between the parents and the teacher. This could include a standardised form which the school could photocopy and distribute to the parents' homes, requiring the parents to complete only limited and essential information to enable the school to take the appropriate steps to help these learners.

- Community members such as the family, friends and church members should accept responsibility for informing schools and teachers about the socio-economic circumstances and language barriers in families which have a diabetic child.
- Questionnaires similar to those administered to the parents, learners and teachers in the present study should be used by other researchers to identify the needs and the assets of learners with chronic illnesses other than diabetes mellitus.
- Communities should value and appreciate their children, possibly through collaboration between the school, teachers and members of the community as this could be an opportunity to exchange expertise. Such collaborative efforts might for example be aimed at improving the hospital environment in state hospitals where sick children have to spend time under unacceptable conditions.
- The community should play a role in building networks to support parents and families with chronically ill children. Community members could share their skills and resources, whether physical, emotional and financial.

4.4.2 Recommendations based on assets

All of the participants in the present study had developmental assets in their lives and people who were helping them build and strengthen these assets. Assets indicate the important role that families, friends, teachers, the school and the community play in shaping each learner's life.

External assets include the positive experiences children had with people and institutions in their lives. Internal assets guide children's choices and create a sense of being centred, as well as a purpose and focus.

Although external and internal assets were identified regarding what was currently present in the participants' environment, these assets could be further developed and strengthened. Since assets are relationship-driven, the family, friends, school, teachers and the community could be part of a joint effort to build new assets and capacities to enhance the healthier and more effective development of learners with diabetes.

A learner who has difficulty in making and keeping friends is an example of the need to build assets.

- This example refers to the internal asset of interpersonal skills. To build this asset, the learner should be given an explanation that interpersonal skills mean making friends, as well as expressing and articulating feelings in appropriate ways and being able to empathise with others. The following ideas could help parents, teachers, the school and the community to develop and strengthen this asset:
 - Help the learner to understand how much fun it is to be part of a team
 - Find out why other children do not want to play with the learner
 - Help the excluded child to deal with his/her feelings
 - Teach the learner the words for describing his/her feelings
 - Allow children to handle their relationships themselves, but always in an appropriate way.

The following building blocks or assets of healthy development as listed in Tables 4.2 and 4.3 could help these and other foundation phase learners to grow into healthy, caring and

responsible citizens. Parents, friends, schools, teachers and members of the community could use these building blocks to identify, develop and strengthen these learners' assets. These building blocks could also give foundation phase learners an opportunity to build positive relationships, to develop age-appropriate behaviour and to accomplish age-appropriate developmental tasks.

- **External assets**

Table 4.2 shows the external assets identified by the Search Institute (1997). Roehlkepartain and Leffert (2000) identify several ideas for building on these external assets.

TABLE 4.2: External assets and ideas for building on these assets

CATEGORY	ASSET NAME AND DEFINITION	IDEAS FOR BUILDING THESE ASSETS
EXTERNAL ASSETS		
SUPPORT	Family support Family life normally provides high levels of love and support	<ul style="list-style-type: none"> • Follow your child's passions and interests. • Answer your child's questions. If you do not know the answer, admit it. Find out the answer • When you and your child disagree, respect the child's opinion and let him/her know you still care • Ask you child about his/her collections. Talk about the things you collect too • Spend time with your child, doing things that are fun (Roehlkepartain & Leffert, 2000:31).
	Positive family communication Parents and children communicate positively. Children seek out their parents for help with difficult tasks or situations	<ul style="list-style-type: none"> • Do not always ask your child, "How was your day?". Instead say, "Hello, it's great to see you", or "I'm glad you're here" • Be sensitive to the type of physical contact your child prefers • Engage your child in conversation • Make mealtime a time for talking • Ask questions that help your child get in touch with his/her feelings • Find out what your child is interested in (Roehlkepartain & Leffert, 2000:36)
	Other adult relationships Children have support from at least one adult other than their parents. Their parents have support from people outside the home	<ul style="list-style-type: none"> • Make a strong connection with children you know. Intentionally build an ongoing relationship with a child you like • Send postcards to children when you are travelling • Find out about a child's interests • Attend a child's sport event, play or concert. Afterwards, go out of your way to congratulate the child and let him/her know you were there (Roehlkepartain & Leffert, 2000:40)
	Caring neighbourhood Children have support from caring neighbours	<ul style="list-style-type: none"> • Find out what the neighbourhood children like doing. Let children play in your yard when you are around to supervise them • Ask children in your neighbourhood about their pets • Join neighbourhood children's football or games (Roehlkepartain & Leffert, 2000:44)

	<p>Caring away-from-home climate School and other activities provide a caring, encouraging environment for children</p>	<ul style="list-style-type: none"> • Find out how your child feels about his/her school Do they think it's a caring place? Why or why not? Ask your child to use specific examples to explain his/her feelings • Recognise the work that teachers do • Learn the names of the children in your child's class • Let your child plan ways to improve his/her school (Roehlkepartain & Leffert, 2000:50)
	<p>Parental involvement In away-from-home situations Parents are actively involved in helping children succeed in school and other situations outside the home</p>	<ul style="list-style-type: none"> • Attend school meetings. Think of ways your skills can help the school • Ask your child about his/her homework each day and check to make sure it has been done. Set aside time to help when it is needed • Ask your employer to support children and education • If you can, donate supplies for the classroom (Roehlkepartain & Leffert, 2000:54)
EMPOWERMENT	<p>The community values children Children feel that the family and community value and appreciate them</p>	<ul style="list-style-type: none"> • Give your child some control over a part of his/her day. Set aside time for him/her to do an activity he/she chooses to do • Ask for your child's opinion and suggestions. Use some of his/her ideas • When you see a family you know, talk to each person – including the children • Tell your child when you see him/her doing something you appreciate or value (Roehlkepartain & Leffert, 2000:66)
	<p>Children are given useful roles Children are included in age-appropriate family tasks and decisions and are given useful roles at home and in the community</p>	<ul style="list-style-type: none"> • Find ways to put your child in charge, for example he/she can plan his/her birthday party • Have your child help you with projects such as painting the bedroom or planting bulbs in the garden • Ask your child to teach you new things, for example he/she can show you a new swimming stroke or a magic trick • Let your child make choices, such as occasionally deciding what the family will have for dinner or setting a time for a visit to the library (Roehlkepartain & Leffert, 2000:70)
	<p>Service to others Children serve others in the community with their family or in other settings</p>	<ul style="list-style-type: none"> • Ask your child to list some ways he/she can serve others. Help to act on the idea • Your child and family could help a relative or neighbour by running an errand, raking leaves or taking out the garbage • Encourage your child to keep a journal of stories and pictures about his/her experiences as a volunteer. Let your child draw a picture of what he/she did. Let your child tell you or show you what he/she has written or drawn (Roehlkepartain & Leffert, 2000:74)

	<p>Safety Children are safe at home, at school and in the neighbourhood.</p>	<ul style="list-style-type: none"> • Talk to your child about strangers • Help your child to feel comfortable when he/she is away from home – at school, during after-school activities or at a friend's home • Make sure your child has the appropriate protective gear for the sport he/she plays • Tell your child how much you appreciate it when he/she buckles the safety belt in the car • Teach your child the correct spelling of his/her first and last name as well as your phone number • Have your child play or go to places in pairs or groups (Roehlkepartain & Leffert, 2000:80)
BOUNDARIES & EXPECTATIONS	<p>Family boundaries The family has clear rules and consequences for disobeying these rules, and monitors children's activities and whereabouts</p>	<ul style="list-style-type: none"> • Help your child develop a daily routine • When your child exaggerates and acts dramatically, acknowledge his/her feelings. Listen to what the child is trying to say instead of correcting him/her • Pay attention to the messages you are sending. Your child can sense when you are stressed or distracted. Children often act inappropriately when they do not get enough attention or when they think you are concerned about something else • Talk to the child about the behaviour shown on television. Ask the child whether he/she thinks it is appropriate or inappropriate, and why. • Teach children to listen to their bodies. Help children to take care of themselves. Teach the child to make a simple snack or meal • Anticipate an increase in inappropriate behaviour during stressful family times and when family members are ill. By understanding you can help the child find healthy ways to cope (Roehlkepartain & Leffert, 2000:95)
	<p>Away-from-home boundaries Schools and other away-from-home environments provide clear rules and consequences.</p>	<ul style="list-style-type: none"> • Learn about school rules and boundaries • Give children opportunities for role-playing situations and discuss appropriate and inappropriate ways to respond to actions and anger (Roehlkepartain & Leffert, 2000:100)
	<p>Neighbourhood boundaries Neighbours take responsibility for monitoring children's behaviour</p>	<ul style="list-style-type: none"> • Let children know you have noticed when they act inappropriately. Tell them you expect more from them • Have children accept some consequences for their behaviour. Do not always step in and rescue them, but do not abandon them either (Roehlkepartain & Leffert, 2000:105)
	<p>Adult role models Parents and other adults model positive, responsible behaviour</p>	<ul style="list-style-type: none"> • Talk about the adult role models you had as a child and what you liked about them • Give children access to many kinds of role models – young, old, rich, poor, single, married, silly or serious • Send for pictures and information about your child's favourite role models. Talk about what they have in common and how they differ. Let children see that these role models are ordinary people • Help children to meet adults who are good role models, and who behave like a role model worth following (Roehlkepartain & Leffert, 2000:109)

	<p>Positive peer observation Children interact with other children who model responsible behaviour and have opportunities to play and interact in safe well-supervised settings</p>	<ul style="list-style-type: none"> • Allow children some independence when they are playing. but make sure they are safe • When children argue and disagree let them find their own solutions. Step in to help only when you feel concerned about the child's safety • Talk to children after they have played with friends. Ask questions, such as "Did you have fun with your friends? What did you like best? What didn't you like?" Talk about some of the behaviour you saw • Get to know your child's friends • Talk about the friendships you had as a child. For example if you had trouble with a bully, tell the child about it. Sometimes this helps children to open up • A lot of what children know about rules, beliefs, and attitudes and how to interact with other people comes from their friends. What are children learning? Talk to them and find out. For example you might ask, "What does your friend do when she is angry?" (Roehlkepartain & Leffert, 2000:113).
	<p>Appropriate expectations for growth Adults have realistic expectations for children's development at this age. Parents, caregivers and other adults encourage children to achieve and develop their unique talents</p>	<ul style="list-style-type: none"> • Teach children that sometimes things do not work out as we expected • Talk to a child about things that are difficult for him/her. Help the child work out how to break a big task down into manageable pieces • Involve children in activities that fit their abilities and encourage them to develop new skills • Have children compare themselves with ... themselves. How is the child doing now compared with the past? Is he/she finding new challenges? Is he/she improving? (Roehlkepartain & Leffert, 2000:117).
CONSTRUCTIVE USE OF TIME	<p>Creative activities Adults have realistic expectations for children's development at this age. Parents, caregivers and other adults encourage children to achieve and develop their unique talents</p>	<ul style="list-style-type: none"> • Introduce children to poetry • Talk to children about what instrument they might enjoy to play. • Introduce children to the work of famous artists. • Attend local concerts, art exhibits and plays. • Visits children museums on the Internet. • Experiment with different forms of art. Do several projects using the same method so children can improve their skills (Roehlkepartain & Leffert, 2000:131).
	<p>Away-from-home activities Children spend one hour or more each week in extracurricular school activities or structured community programmes</p>	<ul style="list-style-type: none"> • Let children experiment with different activities they like • Enrol children in activities that teach the children skills while giving them interesting, well-rounded experiences • Keep an eye on children's schedules. There should be more to a child's life than organised activities. Children also need family time, homework time, playtime and quiet time • Help children to make choices about what they like to do. Ask, "What are some good things about this activity? What are some bad things?" • Involve children in team activities (Roehlkepartain & Leffert, 2000:136).

	<p>Religious community The family attends religious programmes or services for at least one hour per week</p>	<ul style="list-style-type: none"> • Help children build relationships outside the religious services. For example, have a child invite a friend from the congregation over for dinner or playtime • Enrol children in the congregation's religious education classes. Help them get to know their classmates. (Roehlkepartain & Leffert, 2000:140).
	<p>Positive, supervised time at home Children spend most evenings and weekends at home with their parents in predictable, enjoyable routines</p>	<ul style="list-style-type: none"> • Take a family vacation from chores • Surprise a child by taking him/her out to enjoy an unexpected breakfast, movie or ice cream • Have reading rituals • Give children some time to themselves each day • Have a family cave day. Unplug the phone. Do not answer the door. Keep all the curtains and blinds closed. Unplug the television. Pretend you live in a cave and focus on the people in your home instead of on things (Roehlkepartain & Leffert, 2000:146).

- **Internal assets**

Table 4.3 shows the internal assets identified by the Search Institute (1997). Roehlkepartain and Leffert (2000) identify several ideas for building on these internal assets.

TABLE 4.3: Internal assets and ideas for building on these assets

CATEGORY	ASSET NAME AND DEFINITION	IDEAS FOR BUILDING ON THESE ASSETS
INTERNAL ASSETS		
COMMITMENT TO LEARNING	<p>ACHIEVEMENT EXPECTATIONS</p> <p>Children are motivated to do well in school and other activities</p>	<ul style="list-style-type: none"> • Keep an eye on children’s study habits. Some children rush through their work and do not develop the skills they need. Others dawdle which also keeps them from learning. Intervene if it becomes a regular problem • When children are frustrated, resist the urge to take over and make everything better. Listen to a child’s feelings. Ask questions to help him/her work through the problem • Help children develop a sense of control over their lives, which will make them more motivated. They will be more interested in learning when they feel they are in charge • Teach children to persevere. Each day, work with them on their reading or maths skills and show them how helpful practice can be • Give spontaneous rewards with no strings attached. If you expect children to work hard and learn new skills, they probably will. Instead of saying “I’ll take you to the park if you finish your assignment”, say, “You have finished your assignment? Great! Let’s go to the park to celebrate”. (Roehlkepartain & Leffert, 2000:160).
	<p>CHILDREN ARE ENGAGED IN LEARNING</p> <p>Children are responsive, attentive, and actively engaged in learning</p>	<ul style="list-style-type: none"> • Do not expect all of children’s learning to take place in school • When you talk about a child’s school, stay positive. Let the child know that you think school is fun and important • When children are bored and look for things to do, let them find their own solutions. Make sure there are plenty of interesting books, games and other materials to spark their interest • Engage children’s imagination (Roehlkepartain & Leffert, 2000:165).

	<p>STIMULATING ACTIVITIES</p> <p>Parents and teachers encourage children to explore and engage in stimulating activities. Children do homework when it is assigned</p>	<ul style="list-style-type: none"> • Set up a special place for children to do homework. • Help children plan and chart long-term assignments • Help children to make homework a part of their routine • Be directly involved with younger children (ages 6 to 8 years) while they do homework. Give them plenty of advice and help, but remember the homework is theirs, not yours • Set an example of learning. While children do their homework, sit quietly nearby and take a few minutes to read a book or to practise skills (Roehlkepartain & Leffert, 2000:169).
	<p>ENJOYMENT OF LEARNING AND BONDING WITH SCHOOL</p> <p>Children enjoy learning and care about their school</p>	<ul style="list-style-type: none"> • Children who feel a bond with their school have connections with their teachers • Wearing the right clothes to school helps children show their pride in their school • Help children to make friends with their schoolmates Let a child invite a special friend for dinner, for a sleepover, or just to play • Find out what children like most about school • Make informal learning experiences fun and exciting so that children realise learning is important and interesting, and so is school (Roehlkepartain & Leffert, 2000:174).
	<p>READING FOR PLEASURE</p> <p>Children and adults read together for at least 30 minutes a day. Children also enjoy reading or looking at books or magazines on their own</p>	<ul style="list-style-type: none"> • Keep reading aloud to children, even when they can read by themselves. Reading together helps strengthen your relationship with your child. Have children read aloud to you too • Find books that get children excited about reading • Challenge children to use the newspaper to answer questions. You might ask, "Which animal was just taken off the endangered species list?" (Roehlkepartain & Leffert, 2000:179).

POSITIVE VALUES

CARING

Children are encouraged to help other people

- Taking care of animals is a good way to teach children about caring
- If children see someone who needs help, talk to them about what they saw
- Find ways for children to work directly with people who need care (Roehlkepartain & Leffert, 2000:194).

EQUALITY AND SOCIAL JUSTICE

Children begin to show an interest in making the community a better place

- Treat children with respect. Ask for children's opinions. Listen to their ideas and respect their suggestions
- Choose a region of the country, or another country for your child to study. Find out how people live together there. Is there poverty?
- Help people show their concern for people who are hungry
- Give children hands-on experience of helping those who do not usually receive equal treatment. What can you do to help people who are physically or mentally challenged?
- Help children donate to organisations (Roehlkepartain & Leffert, 2000:200).

INTEGRITY

Children begin to act on their convictions and stand up for their beliefs

- Teach children about people who are good role models of integrity (such as Helen Keller, Martin Luther King Jr., Marian Wright Edelman and Mahatma Gandhi). Learn about the things these people did and how they made a difference
- Ask children what they support and what they reject (Roehlkepartain & Leffert, 2000:204).

HONESTY

Children begin to value honesty and act accordingly

- Focus on the positive. When children are honest, let them know you approve
- When you realise you have lied or stretched the truth, admit it. Apologise. This shows children that honesty is the best way to set a mistake right
- Understand that children sometimes lie when they feel stressed. When it happens, talk about things the child might do to cope with stress (such as take a walk, play with a ball, write in a journal or talk to an adult about the problem)
- Encourage children to tell the truth even after they have lied
- Talk about stretching the truth and little white lies, and why people do these things. Say, " Have you ever told a lie so that you wouldn't hurt someone's feelings? How could you be honest instead?" Help children find ways to be both honest and caring
- Keep your eye on the newspaper about people who choose to lie or tell the truth (Roehlkepartain & Leffert, 2000:211).

	<p>RESPONSIBILITY</p> <p>Children begin to accept and take personal responsibility for age appropriate tasks</p>	<ul style="list-style-type: none"> • When children do not fulfil their responsibilities, use logical consequences to show them what could happen • Keep track of how well children fulfil their responsibilities • Let children choose what household jobs they will be responsible for • Give children a list of regular, clearly defined tasks to do, such as making the bed, packing their lunch, washing their hair • Let children find out what happens when they do not take care of their responsibilities. For example, if a child forgets to clear away his/her place after dinner, the dirty dishes may be waiting for him/her at breakfast • Talk about how being responsible shows people that you are dependable, hard-working and trustworthy (Roehlkepartain & Leffert, 2000:215).
	<p>HEALTHY LIFESTYLE AND SEXUAL ATTITUDES</p> <p>Children begin to value good health habits and learn healthy sexual attitudes and beliefs as well as respect for others</p>	<ul style="list-style-type: none"> • Keep a strong connection to children. Love and support them in ways they appreciate • Help children make healthy choices about eating, sleeping, bathing and grooming • As children become ready to learn about sex and sexuality, give them accurate, appropriate information • Discuss how characters on television and in movies relate to one another. Talk about who is respectful, loving and empathetic – and who is not • Talk to children about gender roles • When children make inappropriate remarks about sexuality and body parts, stay calm. Let children know what is not acceptable, but do not reward them by giving their comments a lot of attention (Roehlkepartain & Leffert, 2000:221).
<p>SOCIAL COMPETENCIES</p>	<p>PLANNING AND DECISION-MAKING PRACTICE</p> <p>Children begin to learn how to plan ahead and make choices at appropriate developmental levels</p>	<ul style="list-style-type: none"> • Teach children to break down large homework assignments into smaller, more manageable pieces • Children should learn to take care of their responsibilities before doing things they enjoy • Some decisions or plans may have many steps. Help children consider all of these steps and remind them about things they may have overlooked. Set a budget and a timeline. Find several options, and then pick the best one (Roehlkepartain & Leffert, 2000:234).

	<p>INTERPERSONAL SKILLS</p> <p>Children interact with adults and other children and can make friends. Children express and articulate feelings in appropriate ways and empathise with others</p>	<ul style="list-style-type: none"> • Help children learn how much fun it can be to be part of a team • If other children will not play with a child, find out why. Talk to the excluded child about his/her feelings and help him/her find ways to solve the problem. Do not guess – ask • Increase children’s “feeling vocabulary”. Teach children words they can use to describe their feelings more precisely • As they get older, children’s relationships with members of the opposite sex change. Let children handle these relationships in their own way, but make sure they are behaving appropriately (Roehlkepartain & Leffert, 2000:239).
	<p>CULTURAL COMPETENCE</p> <p>Children know about and are comfortable with people of different cultural, racial, and/or ethnic backgrounds</p>	<ul style="list-style-type: none"> • Go with children to visit museum exhibits featuring works by people from many cultures • Help children to feel comfortable with people who are different from them • Do not tell or laugh at jokes that make fun of a person’s race • Learn about faith traditions together • Perceptions and beliefs about other people – both positive and negative – are often passed from parents to children for many generations. Talk to children about their ancestors’ lives (Roehlkepartain & Leffert, 2000:245).
	<p>RESISTANCE SKILLS</p> <p>Children start developing the ability to resist negative peer pressure and dangerous situations</p>	<ul style="list-style-type: none"> • Teach children positive methods to cope with frustration and disappointment • Help children consider all the possible solutions to a problem • Some children cheat, push others around, or use tears to get what they want. Let them know these behaviours are not acceptable. Teach children how to negotiate and make compromises • Talk with children about ways they can resist danger. For example, depending on the circumstances, they might ignore the situation, walk away, tell a caring adult or use humour • When helping children develop resistance skills, focus on the concept they need to learn most. Show a shy child how to be confident and express his/her needs clearly • Give children a round of applause when they use resistance skills in positive ways – especially when they do this without being prompted by adults (Roehlkepartain & Leffert, 2000:249).

	<p>PEACEFUL CONFLICT RESOLUTION</p> <p>Children try to resolve conflicts non-violently and peacefully</p>	<ul style="list-style-type: none"> • Tell children violence is never a good way to solve problems. When they feel angry and frustrated, they need to find a peaceful way to share their feelings • Teach children to identify and cope with feelings that could create problems later • Children sometimes fight because they do not know how to put their feelings into words. Have children look for more creative, constructive ways to settle their differences (Roehlkepartain & Leffert, 2000:254).
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">POSITIVE IDENTITY</p>	<p>PERSONAL POWER</p> <p>Children begin to feel they have control over things that happen to them. They begin to manage frustrations and challenges in ways that have positive results for themselves and others</p>	<ul style="list-style-type: none"> • Respect the decisions a child makes. If you disagree, talk honestly to the child about your concerns. Having their choices respected gives children a sense of control over their lives • Children can control what they say and do, but they cannot control what other people say and do. Help children understand and accept this • Read about adults and children who overcame difficult situations. Say, "People can do wonders when they set their minds to it". Talk together about what you learn • Ask children about their dreams and passions. What are they doing to achieve them? Give children the space they need to follow their dreams, but also take steps to support them (Roehlkepartain & Leffert, 2000:266).
	<p>SELF-ESTEEM</p> <p>Children report having high self-esteem</p>	<ul style="list-style-type: none"> • What do children like to do? Find out. Show you care by asking questions and then sharing their interests • Give children recognition when they do things well • Some children are sensitive about their appearance, especially if they feel they differ from other people around them. Talk to children about their thoughts and feelings on a variety of issues. Let them know that no two people are alike and that this makes the world interesting • When children act inappropriately, focus on the behaviour, not on the child (Roehlkepartain & Leffert, 2000:271).
	<p>SENSE OF PURPOSE</p> <p>Children report that their lives have purpose and actively engage their skills</p>	<ul style="list-style-type: none"> • Create an atmosphere where children feel free to discover • Go out of your way to help children follow their passion • Teach children that pursuing their dreams is not always easy. It is normal to feel discouraged and sometimes want to give up • Ask children to describe the things they enjoy doing. Then have them rank these activities. How can they find more ways to do the things that top their list? (Roehlkepartain & Leffert, 2000:274).

	<p>POSITIVE VIEW OF PERSONAL FUTURE</p> <p>Children are hopeful and positive about their personal future</p>	<ul style="list-style-type: none"> • Practise being positive. When children assume bad things will happen, talk about different ways the situation could work out favourably • When children behave well, reward them and thank them • Teach children how to identify their feelings and use specific words to describe them • Between the ages of 7 and 10 years, many children struggle with their self-image. They may compare themselves unfavourably with others. Do not dismiss children's uncomfortable feelings, rather help them see the big picture. Let them know they are valuable and special (Roehlkepartain & Leffert, 2000:279).
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4.5 LIMITATIONS OF THE RESEARCH

The possible limitations and methodology of this study are discussed below.

• **Sample size**

Non-probability purposive sampling satisfied the researcher's need for this type of sample but the sample does not represent the wider population; it is deliberately selective and biased. It should be noted that the samples were hand-picked on the basis of their typicality in order to obtain in-depth information, and that this goal was adequately achieved in this study.

• **Possible researcher bias**

The researcher consciously maintained an objective stance and presented the data obtained from the participants as accurately as possible. To this end, questionnaires were distributed, which the participants completed in the researcher's presence. The information obtained from the questionnaires formed the basis for the semi-structured interviews that improved the accuracy and validity of the data obtained from each participant.

• **Participants' responses**

The open-ended questions in the questionnaires invited honest, sincere and personal comments from the participants. These responses brought richness and depth to the data that formed the basis for the semi-structured interviews. The participants might have responded in a certain manner, as they knew that they were participating in the study. However, Bender (2002:117) states that it is difficult to overcome such reactive effects in any research because it is unethical to engage in research without obtaining the participants' consent.

• **Reliability and validity of research instruments**

The reliability and validity of the research instruments were important in order to obtain the best possible data. As Silverman (2000:188) describes, the requirements for reliability are that the researcher should document accurately and truthfully the procedures followed during the study, so that the research could be replicated by other researchers. It was also important to have a good fit between what the researcher recorded as accurate and comprehensive data and what actually took place in the natural research setting. The validity of the data obtained was addressed by the participants' honesty, depth and

richness in their responses and also by the participants' attitude to the study. The use of triangulation as explained in Chapter 3 of this study and the researcher's objectivity also contributed to the validity and reliability of the data. As described by Bender (2002:117) the researcher also explained and clarified questions when the participants required this. Some of the terminology in the questionnaires had to be explained to those participants whose literacy was limited. When examples were given, great caution was taken to prevent the participants from using that particular example in the information they gave.

Another factor contributing to the ecological validity of the study was the natural setting in which the research was conducted, as explained in Chapters 1 and 3 of this study. Consistency was also employed when analysing the data.

- **Limitations of the methodology**

The lack of generalisability of the findings could be a limitation of the methodology. However through the use of the triangulation method, data were gathered and analysed using multiple methods as explained in Chapter 3 of this study. The case studies offer a holistic portrayal, presented in a context that is necessary for understanding each case.

- **Limitations of data analysis**

It is possible that there may have been limitations in the method used for data analysis. This in turn may have affected the conclusions drawn in this study. This limitation was kept to a minimum because the researcher returned to the data several times to ensure that the data were accurately reflected.

- **Available statistics**

Another limitation on the research was that no statistics were available in a South African context regarding the number of learners with diabetes in South African schools. It was also not possible to obtain reliable statistics from the South African Diabetic Association regarding children with diabetes in South Africa. The relevance of statistics to the study is that they would enhance an awareness of how many diabetic learners attend school and to call attention to their needs and assets.

4.6 IMPLICATIONS FOR FUTURE RESEARCH

It is recommended that the following should be taken into account for future research.

- Further research could include an investigation into the needs and assets of the adolescent with type I diabetes
- A longitudinal study is recommended, which should include the same participants in future research into the needs and assets of adolescents with type I diabetes. This would give a more holistic view of the development, needs and assets of learners with diabetes
- Age-appropriate education programmes should be presented to learners with diabetes. This could include their developmental and learning needs and their assets
- Further research should be done into the emotional and social implications of type 1 diabetes for the child and family, who have to cope with the challenge of a hospital environment
- Further investigation should be done into the effect that a child in the family, who has a chronic illness such as type I diabetes, has on other siblings.

4.7 CONCLUSION

The conclusion drawn from the study is presented within the framework of the aims of the study, namely to identify the developmental and learning needs and the assets of learners with type 1 diabetes in the foundation phase, to provide knowledge and understanding of these learners and to rally their friends, family, school, teachers and the community to become external and internal asset builders in the development of the learner with type 1 diabetes in the foundation phase.

Adopting a needs-based and asset-based approach within the ecosystemic perspective as theoretical framework, the emphasis was on studying the learner with type 1 diabetes in the foundation phase in an ecosystemic perspective. As individuals, these learners' environment included family, friends, the school, teachers and the community, with opportunities for interaction in a social context. The unique personal narrative of each participant revealed the meaning and experience of type 1 diabetes as a chronic illness. It captured the diversity, creativity, individuality, uniqueness and spontaneity of each participant and the social interaction of the participant with family, friends, the school, teachers and the community. The learner who deals best with his/her diabetes is the learner who shares his/her ecology with positive experiences, understanding and wisdom from family, friends, the school, teachers and the community.

For this reason, the relationship between the participants and their ecosystems should always be taken in account. It is essential to be sensitive to the developmental and learning needs of the learner with type 1 diabetes in the foundation phase. The focus should be on the assets that are currently present in each learner's diverse environment, and on identifying the capacities inherent in each unique participant. In an environment that is relationship-driven, it is important for family, friends, the school, teachers and the community to concentrate on identifying, developing and strengthening the learner's internal and external assets or building blocks, so as to help the learner to develop age-appropriate behaviour and accomplish age-appropriate developmental tasks.

The conclusion drawn in this study is that the learner with type 1 diabetes in the foundation phase should be encouraged to lead as normal a life as possible. Unnecessary restrictions on activities reduce these learners' enjoyment of life and may interfere with friendships, social development and activities. A normal life in this sense implies controlling the diabetes, having realistic expectations, keeping up with schoolwork, forming friendships and participating in the same activities as other learners whenever possible

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Skrap wat nie van toepassing is nie.

Hiermee verleen ek, _____

ouer / voog van _____ my ingeligte
toestemming dat **hy / sy** aan bovermelde navorsingsprojek **mag deelneem / nie mag
deelneem nie.**

Die uwe

OUER / VOOG

DATUM

Adres: _____

Telefoon: Huis _____

Werk _____

Selfoon _____

Delete whatever is not applicable.

I, _____

parent / guardian of _____ hereby give my informed consent that **he / she may / may not** participate in the above-mentioned research project.

Yours faithfully

PARENT/ GUARDIAN

DATE

Address: _____

Telephone: Home _____

Work _____

Cell _____

AANHANGSEL 2A

VRAELYS AAN OUERS: LEERDER MET DIABETES IN GRONDSLAGFASE

Voltooi asseblief die volgende vrae so volledig moontlik. U antwoorde sal van groot waarde wees by die bepaling van behoeftes van en moontlike dienste aan leerders met diabetes.

1. Naam van kind

2. Geboortedatum van kind

d	d	m	m	y	y
---	---	---	---	---	---

3. Kind se volgorde van geboorte vergeleke met ander kinders in die gesin

Oudste	2de oudste	Jongste	Ander.....
--------	------------	---------	------------

Ontwikkeling

4. Op watter ouderdom (hoeveel maande) het u kind die volgende fisiese mylpale bereik?

- Sit

- Kruip

- Loop

- Praat (eerste woorde)

5. Op watter ouderdom is u kind met diabetes mellitus (suikersiekte) gediagnoseer?

6. Beskryf kortliks die verloop van u kind se mediese geskiedenis.

10. Beskryf u kind se persoonlikheid veral met betrekking tot sy / haar positiewe eienskappe.

**Leer
Skool
Onderwysers**

11. Het u kind 'n kleuterskool bygewoon?

JA	NEE
----	-----

12. Op watter ouderdom het u kind die kleuterskool begin bywoon?

13. Tot op watter ouderdom het u kind 'n kleuterskool bygewoon?

14. Hoe sou u die kleuterskoolpersoneel se kennis en gesindheid t.o.v. diabetes beskryf?

15. Hoe sou u u kind se ervarings van die kleuterskooltydperk beskryf?

16. Hoe sou u u kind se huidige belewing van sy / haar huidige skool beskryf?

23. Hoe sou u die onderwyser se gesindheid jeens diabetes beskryf?

24. Neem u kind deel aan buitemuurse aktiwiteite? Gee asseblief die redes daarvoor.

JA	NEE
----	-----

Noem die aktiwiteite

Vriende

25. Beskryf u kind se verhouding met sy / haar maats.

26. Speel u kind by sy / haar maats se huis/e?

JA	NEE
----	-----

Indien ja, hoe dikwels?

27. Slaap u kind oor by maats, ouma, oupa of ander familieledede?

JA	NEE
----	-----

Verduidelik asseblief.

28. Vertel hy / sy ander kinders van sy / haar diabetes?

JA	NEE
----	-----

Verduidelik asseblief.

29. Beskryf aspekte van u kind se verhoudings met ander kinders, wat 'n positiewe invloed

op u kind het.

30. Beskryf eienskappe eie aan u kind wat ander kinders in hom / haar raaksien en waarvan hulle hou.

Familie

31. Beskryf u eie belewenis tydens die diagnose van u kind se diabetes.

32. Hoe sou u u man / vrou se beleving van die diagnosering van u kind se diabetes beskryf?

33. Beskryf die invloed wat die diagnosering van diabetes by u kind op die res van u gesin gehad het. Verduidelik watter invloed dit op die gesin se funksionering het.

34. Beskryf asseblief u kind se verhouding met sy / haar broers en susters.

35. Beskryf u kind se positiewe invloed op u almal as gesin.

36. Beskryf die eienskappe eie aan u kind, wat u waardeer.

Gemeenskap

37. Beskryf die positiewe eienskappe wat u kind toelaat / bemagtig om 'n positiewe bydrae tot die gemeenskap te lewer.

38. Is u bewus van enige diabetiese ondersteuningsgroep?

39. Sou u graag aan so 'n ondersteuningsgroep wou behoort?

JA	NEE
----	-----

40. Hoe gereeld het u kontak met die diabetiese kliniek in u gemeenskap?

41. Beskryf enige behoefte aan hulp en ondersteuning wat u vanuit die gemeenskap sou wou ontvang.

Baie dankie vir u vriendelike samewerking en waardevolle insette

HANDTEKENING VAN OUER

DATUM

APPENDIX 2B

QUESTIONNAIRE TO PARENTS: LEARNER WITH DIABETES IN THE FOUNDATION PHASE

Please complete the following questions as completely as possible. Your answers will be of great value for determining the needs of and possible services to learners with diabetes.

1. Name of child _____

2. Date of birth

d	d	m	m	y	y
---	---	---	---	---	---

3. Child's position compared with other children in the family

Oldest	2nd child	Youngest	Other.....
--------	-----------	----------	------------

Development

4. At what age (in months) did your child reach the following physical milestones of development?

- Sitting

- Crawling

- Walking

- Talking (first words)

5. At what age was your child diagnosed with diabetes mellitus?

6. Briefly describe the course of your child's medical history.

17. Do you think that your child is making satisfactory progress at school?

YES	NO
-----	----

Please explain

18. Does your child have any difficulty with doing his / her schoolwork or homework?

19. How would you describe your child's strengths with regard to school?

20. Describe aspects or experiences at school, which may have a positive influence on your child.

21. How would you describe your child's relationship with the teacher?

22. How would you describe the teacher's knowledge about diabetes?

23. How would you describe the teacher's attitude towards diabetes?

24. Do your child take part in extramural activities? Please give reasons.

YES	NO
-----	----

Name the activities

Friends

25. Describe your child's relationship with his / her friends.

26. Does your child visit the home/s of his / her friends?

YES	NO
-----	----

If yes, how often?

27. Does your child sleep over at the home of a friend, grandfather, grandmother or other relatives?

YES	NO
-----	----

Please explain.

28. Does your child tell other children about his / her diabetes?

YES	NO
-----	----

Please explain.

29. Describe aspects of your child's relationships with other children, which have a positive influence on your child.

30. Describe characteristics unique to your child, which other children see and like in him / her.

Family

31. Describe your feelings at the time when your child was diagnosed with diabetes.

32. How would you describe your wife's / husband's feelings when your child was diagnosed with diabetes?

33. Describe the influence that your child's diagnosis of diabetes had on the rest of your family. Explain what influence it had on the functioning of your family.

34. Please describe your child's relationship with his / her brothers and sisters.

35. Describe your child's positive influence on all of you as a family.

36. Describe the characteristics unique to your child, that you appreciate.

Community

37. Describe the positive characteristics that allow / empower your child to make a positive contribution to the community.

38. Do you know of any support group for diabetes?

39. Would you like to belong to such a diabetes support group?

YES	NO
-----	----

40. How often do you have contact with the diabetes clinic in your community?

41. Describe any need for help and support that you would like to receive from the community.

Thank you very much for your kind co-operation and valuable input

SIGNATURE OF PARENT

DATE

AANHANGSEL 3A

VRAELYS VIR LEERDERS MET DIABETES IN DIE GRONDSLAGFASE

Leerders sal hierdie vraelys in samewerking met die navorser voltooi.

Naam en van _____

Ouderdom (en geboortedatum) _____

Skool: _____ Graad _____

ALGEMEEN

Die volgende algemene inligting word as inleidend beskou om met die opbou van 'n vertrouensverhouding by te dra:

- Waar woon jy? _____
- Waar gaan jy skool? _____
- Waarvan hou jy die meeste om te doen? _____

Leerder word voorsien van papier en potlode / kryt, en versoek om die volgende te teken en te beskryf.

- Teken vir my 'n mens asseblief.
 - Gee 'n naam vir jou tekening.
 - Hoe oud is hierdie mens wat jy geteken het?
 - Vertel 'n storie van die mens wat jy geteken het.
- Teken vir my jou gesin.
 - Wie is elke mens in jou tekening?
 - Wat doen elke mens?

	LEER, SKOOL, ONDERWYSERS	TERUGVOERING
1	Vertel my van jou skool. <ul style="list-style-type: none">• Van watter skoolwerk hou jy die meeste en watter die minste?	
2	Is dit vir jou lekker om huiswerk te doen?	
3	Neem jy deel aan sport / buitemuurse aktiwiteite by die skool?	

14	Word jy kwaad in die klas as ander kinders iets sê oor jou siekte?	
5	Vertel my van jou juffrou. • Hou jy van jou juffrou / onderwyser?	
6	Is dit moeilik om by die skool te wys as jy kwaad is?	
7	Is jy soms afwesig by die skool? • Wat maak jy om die werkies wat jy verloor het weer in te haal?	
8	Wat van die skool geniet jy die meeste? • Wat geniet jy die minste?	
9	Watter take of werkies sal jy graag in die klas wil doen? / Watter take of werkies doen jy reeds in die klas?	
	ONTWIKKELING	TERUGVOERING
110	Dink jy dit is belangrik om elke dag te ontspan en te rus? • Voel jy dat jy elke dag moet gaan lê of iewers stilsit voordat jy weer verder kan gaan?	
111	Slaap jy lekker? • Raak jy maklik aan die slaap, of lê jy in jou bed en sukkel jy om aan die slaap te raak? • Word jy baie in die nag wakker?	
112	Bekommer jy jou oor jou gesondheid? • Is dit vir jou sleg dat jy siek is? • Voel jy bekommerd dat jy siek is?	

113	Dink jy maklik aan ander dinge en vergeet jy soms daarvan dat jy siek is?	
14	As jy iets in jousef (jou liggaam of iets anders) kon verander het, wat sou dit wees?	
115	Vertel my wat maak jou hartseer of ongelukkig. <ul style="list-style-type: none"> • Wat maak jy as jy hartseer of ongelukkig is. 	
16	Noem vir my iets wat vir jou spesiaal is. <ul style="list-style-type: none"> • Noem iets wat jou spesiaal maak. 	
117	Is dit vir jou moeilik om vir ander mense of maats te wys hoe jy in jou hartjie voel? <ul style="list-style-type: none"> • Wys jy vir ander mense wanneer jy hartseer of kwaad is? • Hoe wys jy vir ander mense dat jy hartseer of kwaad is? 	
	VRIENDE	TERUGVOERING
118	Ken jy iemand wat dieselfde siekte as jy het?	
119	Is dit vir jou moeilik om met jou maatjies te speel wanneer jy siek is? <ul style="list-style-type: none"> • Indien nee, hoekom? 	
20	Kuier jy graag by jou maatjies se huis? <ul style="list-style-type: none"> • Wat speel jy graag by die maatjies se huis 	

21	<p>Vertel my van jou beste maatjie en hoekom dit jou beste maatjie is.</p> <ul style="list-style-type: none"> • Vertel my ook van die maatjies waarvan jy nie hou nie en hoekom jy nie van hulle hou nie. 	
22	<p>Wil ander kinders graag met jou maatjies wees?</p> <ul style="list-style-type: none"> • Verduidelik. 	
23	<p>Maak jou maatjies grappies oor jou siekte? Indien wel, hoe voel jy daaroor?</p>	
	FAMILIE	TERUGVOERING
124	<p>As jy nie lekker voel nie wat maak jy?</p> <ul style="list-style-type: none"> • Word jy kwaad vir pappa, mamma of jou gesin? 	
25	<p>Wat maak boetie en sussie wanneer jy siek is?</p>	
26	<p>Is dit moeilik om vir jou gesin te wys dat jy kwaad is?</p>	
27	<p>Het jy spesiale take / werkies by die huis?</p> <ul style="list-style-type: none"> • Vertel my wat jy moet doen. 	
28	<p>Wie van jou gesin is vir jou baie spesiaal? (Pa, ma, broers en susters)</p>	
	GEMEENSKAP	TERUGVOERING
129	<p>Gee jy om as ander mense weet as jy siek is? Vertel my daarvan ...</p>	
130	<p>Wens jy soms dat jy soos ander mense / kinders is wat nie siek is nie</p> <ul style="list-style-type: none"> • Is dit vir jou sleg om siek te wees? 	

31	Hou jy daarvan om ander mense te help? • Vertel my daarvan.	
32	Wil jy graag met maatjies praat wat ook dieselfde siekte as jy het?	

¹ Adapted from Pilowsky, I & Spence, N.D. 1983. *Manual of the Illness Behaviour Questionnaire*. (IBQ). 2nd ed. University of Adelaide: South Australia (cited in Struwig-Scholtz, 1995).

APPENDIX 3B

QUESTIONNAIRE FOR LEARNERS WITH DIABETES IN THE FOUNDATION PHASE

Learners will complete these questionnaires in collaboration with the researcher.

Name and surname _____

Age (and date of birth) _____

School: _____ Grade _____

GENERAL

The following general information is viewed as an introduction to help in establishing a relationship of trust.

- Where do you live? _____
- What school do you go to? _____
- What do you like doing most? _____

The learner will be provided with paper and pencils/crayon and requested to draw and explain the following

- Please draw a picture of a human being.
 - Give your picture a name.
 - How old is this person you have drawn?
 - Tell me a story about the person you have just drawn.
- Draw a picture of your family.
 - Who is each person in your drawing?
 - What is each person doing?

	LEARNING, SCHOOL AND TEACHERS	FEEDBACK
1	Tell me about your school. <ul style="list-style-type: none"> • What schoolwork do you like most and what do you like least? 	
2	Do you like doing homework?	
3	Do you take part in sport or extramural activities at school?	

14	Do you get cross in class if other children say anything about your illness?	
5	Tell me about your teacher. • Do you like your teacher?	
6	Is it difficult to show that you are angry when you are at school?	
7	Are you sometimes absent from school? • What do you do to catch up with the work you missed when you were absent?	
8	What do you enjoy most about school? • What do you enjoy least?	
9	What tasks or work would you like to do in class? / What tasks or work do you already do in class?	
	DEVELOPMENT	FEEDBACK
110	Do you think it is important to relax and rest each day? • Do you feel every day that you have to lie down or sit still somewhere before you can go on again?	
111	Do you sleep well? • Do you fall asleep easily, or do you lie awake and struggle to fall asleep? • Do you wake up often at night?	
112	Do you worry about your health? • Do you feel bad about being sick? • Are you worried about being sick?	

113	Is it easy for you to think about other things and do you sometimes forget you are ill?	
14	If you could change something about yourself (your body or something else) what would it be?	
115	Tell me what makes you feel sad or unhappy. <ul style="list-style-type: none"> • What do you do when you are sad or unhappy? 	
16	Tell me about something that is special for you. <ul style="list-style-type: none"> • Name something that makes you special. 	
117	Is it hard for you to show other people or friends how you really feel? <ul style="list-style-type: none"> • Do you show other people and friends when you are sad or angry? • How do you show other people that you are sad or angry? 	
	FRIENDS	FEEDBACK
118	Do you know anyone with the same illness as yours?	
119	Is it difficult to play with your friends when you are ill? <ul style="list-style-type: none"> • If no, why? 	
20	Do you like to visit your friends at home? <ul style="list-style-type: none"> • What do you like to play at your friends' house? 	

21	<p>Tell me about your best friend and why this is your best friend.</p> <ul style="list-style-type: none"> • Tell me about the friend you do not like and why you don't like them. 	
22	<p>Do other children want to be your friends?</p> <ul style="list-style-type: none"> • Explain. 	
23	<p>Do you friends crack jokes about your illness? If they do, how do you feel about it?</p>	
	FAMILY	FEEDBACK
124	<p>If you do not feel well, what do you do?</p> <ul style="list-style-type: none"> • Do you get cross with your dad, mom or your family? 	
25	<p>What do your brother and sister do when you are ill?</p>	
26	<p>Is it difficult to show your family that you are angry?</p>	
27	<p>Do you have special tasks or chores at home?</p> <ul style="list-style-type: none"> • Tell me what you have to do. 	
28	<p>Who in your family is very special to you? (Father, mother, brothers and sisters)</p>	
	COMMUNITY	FEEDBACK
129	<p>Do you care if other people know that you are sick?</p> <ul style="list-style-type: none"> • Tell me about it ... 	

130	Do you sometimes wish that you were like other people or children who are not sick? <ul style="list-style-type: none"> • Do you feel bad about being sick? 	
31	Do you like to help other people? <ul style="list-style-type: none"> • Tell me about it. 	
32	Would you like to talk to other children who have the same illness as yours?	

¹ Adapted from Pilowsky, I & Spence, N.D. 1983. *Manual of the Illness Behaviour Questionnaire*. (IBQ). 2nd ed. University of Adelaide: South Australia (cited in Struwig-Scholtz, 1995).

AANHANGSEL 4A

SEMI-GESTRUKTUREERDE ONDERHOUD MET ONDERWYSER: LEERDER MET DIABETES IN DIE GRONDSLAGFASE

Leer Skool Onderwyser

1. Hoe beleef _____ skool oor die algemeen? Is daar sekere komponente wat hy meer aangenaam as ander ervaar?
2. Hoe sou u ____ se akademiese vordering beskryf?
3. Beskryf _____ se houding teenoor die voltooiing van huiswerk.
4. Tot watter mate sou u die ondersteuning van huiswerk tuis, beskryf.
5. Hoe sal u _____ se betrokkenheid en deelname in die klas beskryf?
 - Neem hy/sy aktief deel aan klasgesprekke?
 - Neem hy/sy aktief deel aan klasaktiwiteite?
 - Verrig _____ enige take in die klas?
6. Hoe sal u _____ se gedrag in die klas beskryf?
7. Beskryf daardie komponente wat 'n goeie invloed op _____ het.
8. Hoe voel _____ oor die deelname aan buitemuurse aktiwiteite.
 - Neem _____ deel aan enige buitemuurse aktiwiteit?
 - Noem die aktiwiteit indien wel.
 - Indien _____ nie deelneem nie, waaraan sou u dit toeskryf?
9. Wat is dit wat as bates dien van _____
 - In sy/haar persoonlikheid, en
 - Ten opsigte van die skool
10. Noem die aspekte van _____ wat u voor waardering het?
11. Tot watter mate akkommodeer u leerders met diabetes in u klas?
12. Tot watter mate verskil leerders met diabetes van ander leerders in u klas?
13. Sou u sê dat u dieselfde vlak van aanvaarbare gedrag van _____ verwag as van die res van die klas
14. Hoe sal u u kennis ten opsigte van diabetes beskryf?
 - Is die leerder in u klas insulien afhanklik?
 - Hoeveel keer 'n dag is dit vir hierdie leerder nodig om hom/haar te spuit?
 - Kan u simptome van lae bloedsuiker by die leerder identifiseer?
 - Is u bewus van prosedures wat gevolg moet word sodra hoë of lae bloedsuiker by die kind vermoed word?

- Is u bewus daarvan dat die wisseling van bloedglukosevlak _____ se gedrag in die klas kan beïnvloed?

Vriende

15. Hoe sal u _____ se verhouding met sy/haar klasmaats beskryf?
16. Watter aspekte van _____ sou u as bates identifiseer wat maak dat sy / haar maats in die klas hom / haar aanvaar?
17. Is daar enige indikasies wat aandui dat _____ kwaad / gefrustreerd is?
- Gee _____ uiting aan sy / haar emosies soos byvoorbeeld wanneer hy / sy kwaad is?
18. Tot watter mate is _____ se klasmaats ingelig rakende sy / haar siektetoestand?
- Indien hulle wel ingelig is, hoe het hulle die inligting bekom?
19. Hoe reageer die klasmaats t.o.v. _____ se diabetes?
- Vra hulle 'n verduideliking van die siekte?
 - Verstaan hulle van die implikasies van diabetes soos bv;
 - Eetgoed in die klas,
 - Dat hy/sy hom/haar moet inspuit met insulien
 - Dat die bloedglukose gereeld getoets moet word
 - Dat hy/sy nie altyd aan aktiwiteite kan deelneem nie.
 - Somtyds afwesig by die skool is.

Familie

20. Beskryf u kommunikasie en verhouding met die ouers
- Hoe gereeld?
 - Tot watter mate deel die ouers sensitiewe inligting wat 'n invloed op die leersituasie, met u?
21. Sou u sê dat daar 'n behoefte aan ondersteuning vir die ouers van _____ is.
- Maak hulle op u en die skool se ondersteuning staat?
22. Is daar enige iets in verband met hierdie leerder wat u bekommer of wat u graag sal wil deel?
- Bv., sosio-ekonomiese omstandighede van gesin
 - Kulturele aspekte wat gesin raak.

Gemeenskap

23. Beskryf u behoefte aan inligting uit die gemeenskap in verband met diabetes en die hantering van die leerders?
24. Beskryf hoe u die rol van die onderwyser sien as instrument om kennis en begrip vir die leerder met diabetes in die gemeenskap te bevorder.

APPENDIX 4B

SEMI-STRUCTURED INTERVIEW WITH TEACHER: LEARNER WITH DIABETES IN THE FOUNDATION PHASE

Learn School Teacher

1. How does _____ find school in general? Are there certain components which he/she finds more pleasant than others?
2. How would you describe _____ 's academic progress?
3. Please describe _____ 's attitude towards completing his/her homework.
4. To what degree would you describe the support given to homework at home.
5. How would you describe _____ 's involvement and participation in class?
 - Does he/she take an active part in class discussions?
 - Does he/she take an active part in class activities?
 - Does _____ perform any tasks in class?
6. How would you describe _____ 's behaviour in class?
7. Please describe the components that have a good influence on _____.
8. How does _____ feel about participating in extramural activities?
 - Does _____ take part in any extracurricular activity?
 - If so, please name the activity.
 - If _____ does not take part, what do you think the reason is?
9. What serve as assets to _____
 - In his/her personality, and
 - With regard to school.
10. Please name those aspects of _____ that you appreciate.
11. To what extent do you accommodate learners with diabetes in your class?
12. To what extent do learners with diabetes differ from other learners in your class?
13. Would you say that you expect the same level of acceptable conduct from _____ as you do from the rest of the class?
14. How would you describe your knowledge about diabetes?
 - Is the learner in your class insulin dependent?
 - How many times a day does this learner need to inject him/herself?
 - Can you identify the symptoms of low blood-sugar in the learner?
 - Are you aware of procedures that have to be followed as soon as one suspects the child has high or low blood-sugar?
 - Are you aware that changes in the blood glucose level may influence _____ 's conduct in class?

Friends

15. How would you describe _____ 's relationship with his/her classmates?
16. What aspects of _____ would you identify as assets that make his/her friends in class accept him/her?
17. Are there any indications that show that _____ is angry / frustrated?
- Does _____ express his / her emotions, for example when he / she is angry?
18. To what extent are _____ 's classmates informed about his / her illness?
- If they are indeed informed, how did they obtain the information?
19. How do the classmates react with regard to _____ 's diabetes?
- Do they ask for an explanation of the illness?
 - Do they understand the implications of diabetes, such as:
 - Foodstuffs in class
 - That he/she has to inject him/herself with insulin
 - That the blood glucose levels have to be tested regularly
 - That he/she cannot always take part in activities
 - That he/she is sometimes absent from school.

Family

20. Please describe your communication and relationship with the parents
- How regularly?
 - To what extent do the parents share sensitive information with you that could have an influence on the learning situation?
21. Would you say that there is a need for support for the parents of _____ ?
- Do they rely on support from you and the school?
22. Is there anything in relation to this learner that worries you or that you would like to share?
- E.g. socio-economic circumstances of family
 - Cultural aspects affecting the family.

23. Describe your need for information from the community with regard to diabetes and the handling of the learners.
24. Describe how you see the role of the teacher as a tool to promote knowledge and understanding of the learner with diabetes in the community.

Thank you for your kind co-operation in responding to this questionnaire.