CHAPTER 1
IDENTIFYING THE STUDY

1.1   INTRODUCTION

This research explores multiple case studies of nine Grade Nine learners in a high school in the Gauteng Province of South Africa, who are experiencing difficulties in learning and are repeating the grade. The aim of the study is to explore how learning support manifests itself in the lives of these learners. Literature (Lerner, 2003:266 & 267; Tilstone, 2001:320 & 321) on learning support is dominated by learning support for learners in the primary school. However, we know that difficulties in learning often persist into the high school years and even into adulthood. In this study, the researcher will endeavour to explore the manifestations of learning support for *high* school learners.

The sources that will be employed in collecting data are:
- Interviews with learners, family members, educators and the principal
- Observation of learners in the classroom environment
- Analysis of learners' class-work, homework, projects
- Analysis of their scholastic reports
- Site visits and field notes.

This data will be used to explore the barriers to learning experienced by the learners, in order to then determine and explore the manifestations of learning support in the lives of these learners. But first, here is an explanation of how this study originated.

1.2   THE BACKGROUND OF THE STUDY

The idea for this study came from my experience as a teacher in Nigeria, where I had fifteen years of practical teaching in public high schools before coming to South Africa.

The first few years after starting to teach were all right; then things seemed to change. Learners began to exhibit a lack of interest in what was going on in the classroom. I was

alarmed and disappointed in 'me' because I thought I was not doing enough. I changed my teaching methods many times in an effort to get my students on board, but it all failed. I then decided to talk to colleagues in other learning areas and discovered they were also frustrated. This was confirmed at the end of the term when the results of the learners showed failure in almost every learning area. I went around schools asking what was happening and discovered that the problem was not peculiar to the school at which I taught. My colleagues in other schools were equally frustrated and did not know how to handle the situation.

This went on for years, and to my dismay, each year was worse than the previous one. The authorities did not seem to be sensitive to the increasing rate at which learners were failing in the public school system. This lack of sensitivity could have been due to the fact that most of these individuals had their own children in private schools or in schools overseas.

I will admit that some teachers began to take advantage of the situation to make quick money out of parents who often did not care whether their children were learning or not. I found it alarming that parents were prepared to pay to get their children into the next grade, but no one wanted to investigate what support could be given to help them learn better - not even school principals or teachers who began to award undeserved scores.

One year, a mother whom I had not seen throughout the academic year, came to me a few days before the end of the school year and asked what I thought could be done to get her child into the next grade. She had nothing to say when I asked why she had not organised any form of support for her child during the school year, as it was too late to render help at that point.

My last year in Nigeria as a teacher (from May 2002 – April 2003), before coming to South Africa was so disheartening that it got me wondering about learning support and thinking that help has to be sought; and the only way would be to go back to school myself, to do research into learning support and to determine how best to use this to get learners back on track.

Even though I know that South Africa and Nigeria are two different countries, and that the results from a study conducted in South Africa cannot be generalised to cover learning support in Nigeria, it is my hope that some of the results from this proposed study may resonate elsewhere. High school learners often experience difficulty in learning (for various reasons) and an understanding of learning support for them may perhaps increase the efficacy of learning support and/or the knowledge based on learning support for *all* learners.

1.3   RATIONALE BEHIND THE STUDY

South Africa's problems are often related to the policies of *Apartheid*, which adversely affected society by exacerbating problematic issues such as poverty, housing and health. This inevitably affected education, as it led to numerous barriers to learning. The path to *dealing* with these barriers lies in social reconstruction (Donald, Lazarus & Lolwana, 2004:18-19).

In South Africa, the challenge of tackling the state of the education system is still mainly policy work. Quality of education and equality in education are connected. Therefore, while quality education remains the primary task of any democratic government, equality in education is the overall goal of the educational policy (Steyn, 2000/20:47). Recently, however, there has been progress from policy formulation to implementation (Donald *et al*., 2002:19). Yet the challenge is still about transforming the *process* in education and in order to do this, the values, understanding and actions of parents, the community, learners and educators will have to change (Donald *et al*., 2004:20). Nonetheless, the aim of this transformation is to create a balance between *quality of education and equality in education* (Steyn, 1995/15:22 & 2000/20:47).

In the researcher's opinion, much seems to have been done for younger children in terms of learning support more than has been done for high school learners. In recent times, the trend towards inclusive learning environments has been increasing and so more young children experiencing problems are placed in inclusive settings, where they are able to learn with their peers (Lerner, 2003:266 & 267). The inclusion of learners with special needs is already entrenched in the United Kingdom's legislation. A great deal of effort has gone into helping educators to be more positive in teaching learners with varied needs (Tilstone, 2001:320 & 321).

In South Africa, the move towards inclusive education has been substantial. However, it has not included a particular emphasis on those learners who proceed through primary school to high school, but who are still experiencing barriers to learning and particular learning difficulties. This study will cast more light on learning support for high school learners experiencing barriers to learning.

1.4   RESEARCH QUESTION

The research will be guided by the question:

How does learning support manifest itself in the lives of high school learners?

To explain the question above, the following will be asked:

1.   What is the nature of barriers to learning for high school learners?
2.   What is learning support?
3.   What learning support is available for high school learners experiencing barriers to learning?

1.5   PURPOSE OF THE STUDY

The purpose of this study is to determine, explore and explain the manifestations of learning support in the lives of high school learners. After identifying the reasons why high school learners may be experiencing barriers to learning through a literature review, the author will endeavour to look into the available learning support and how this support manifests itself in their lives, in order to inform our theoretical understanding of learning support for high school learners. The findings of the research study may thus increase our knowledge and in-depth understanding of learning support for high school learners experiencing barriers to learning.
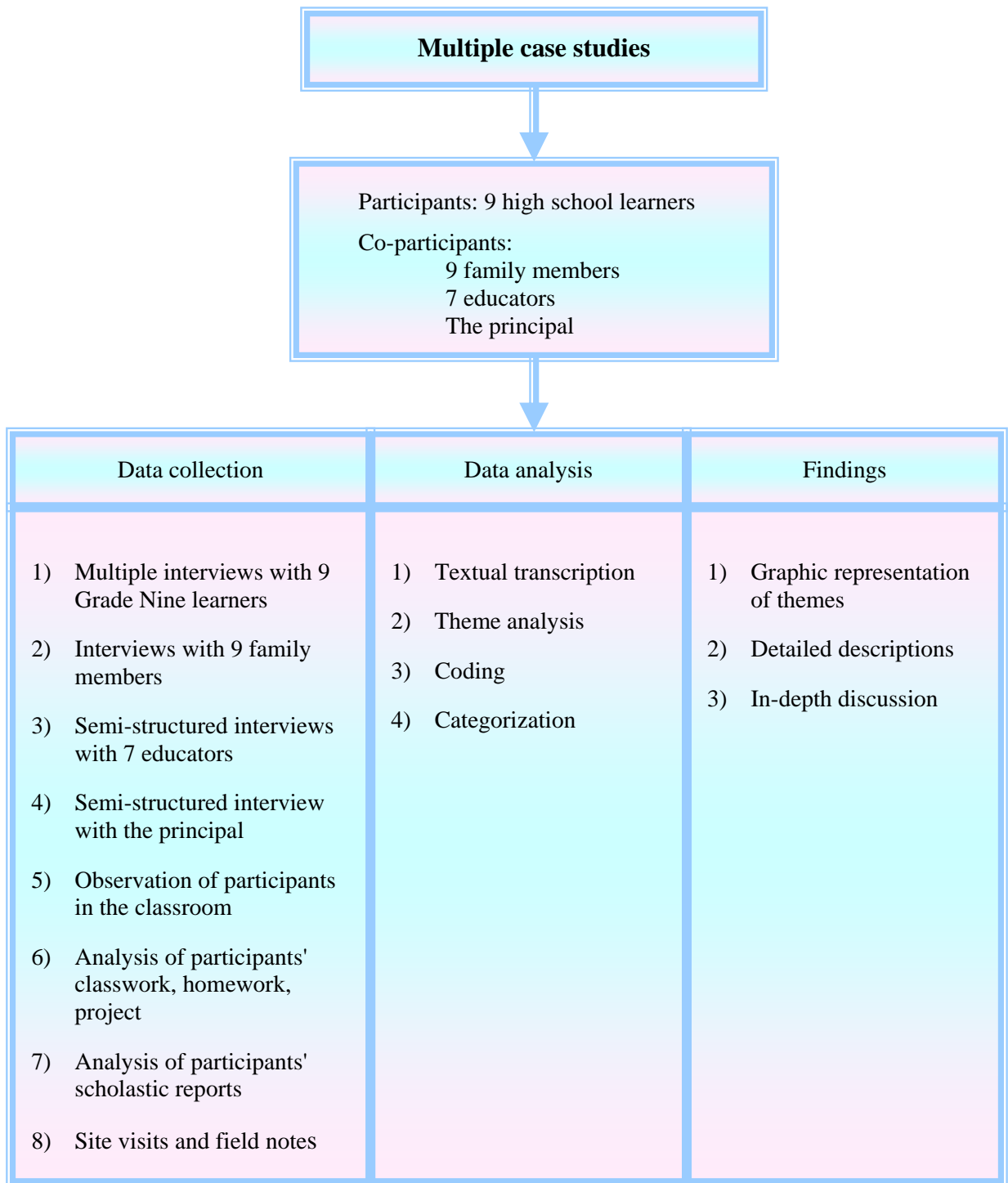
1.6   RESEARCH DESIGN

Multiple case studies

Participants: 9 high school learners Co-participants: 9 family members 7 educators The principal

Data collection	Data analysis	Findings
1) Multiple interviews with 9 Grade Nine learners 2) Interviews with 9 family members 3) Semi-structured interviews with 7 educators 4) Semi-structured interview with the principal 5) Observation of participants in the classroom 6) Analysis of participants' classwork, homework, project 7) Analysis of participants' scholastic reports 8) Site visits and field notes	1) Textual transcription 2) Theme analysis 3) Coding 4) Categorization	1) Graphic representation of themes 2) Detailed descriptions 3) In-depth discussion

FIGURE 1.1:   THE RESEARCH DESIGN

1.6.1   PARADIGM

The interpretive research paradigm, according to Terre Blanche and Kelly (2004:123), is deemed appropriate for the study as this paradigm deals with understanding what participants in the study make of events in particular contexts. This study will rely on first-hand accounts achieved through interviews, observations and the analysis of documents (Bos & Richardson, 1994:182).

1.6.2   SELECTION OF PARTICIPANTS

Judgemental sampling will be used. This implies that the educators in the approved school for the study will be requested to select learners who have been noted to be encountering difficulties in learning. The participants will consist of nine (9) learners, who are between the ages of fifteen (15) and eighteen (18), scoring thirty to thirty-nine per cent in three learning areas or more, and who are repeating Grade Nine.

All the learners identified will be assigned numbers. A random selection of nine learners will then be made from this group of learners. Finally, the inclusion of learners in the selected group will be confirmed through the application of the final selection criteria:

1)   Confirmation by parents that they are experiencing learning difficulties.
2)   An indication from their academic performance records that they may be experiencing learning difficulties.

The ratio of the gender of participants will be five males to four females. The rationale for this is to create a fairly balanced sample in terms of gender.

1.6.3   DATA COLLECTION

To make the findings of this research more convincing and accurate, the use of multiple sources of evidence will be employed in gathering information (Yin, 2003:98). This method is used in order to clarify meaning, as well as to verify repeatability and reduce the likelihood of misinterpretation (Stake, 2000:443). The sources that will be employed in collecting data through the above method include:

1)   Multiple interviews with nine Grade Nine learners

2)   Interviews with nine family members

3)   Semi-structured interviews with seven educators

4)   Semi-structured interview with the principal

5)   Observation of the nine learners in the classroom environment

6)   Analysis of their class-work, homework, projects

7)   Analysis of their scholastic reports
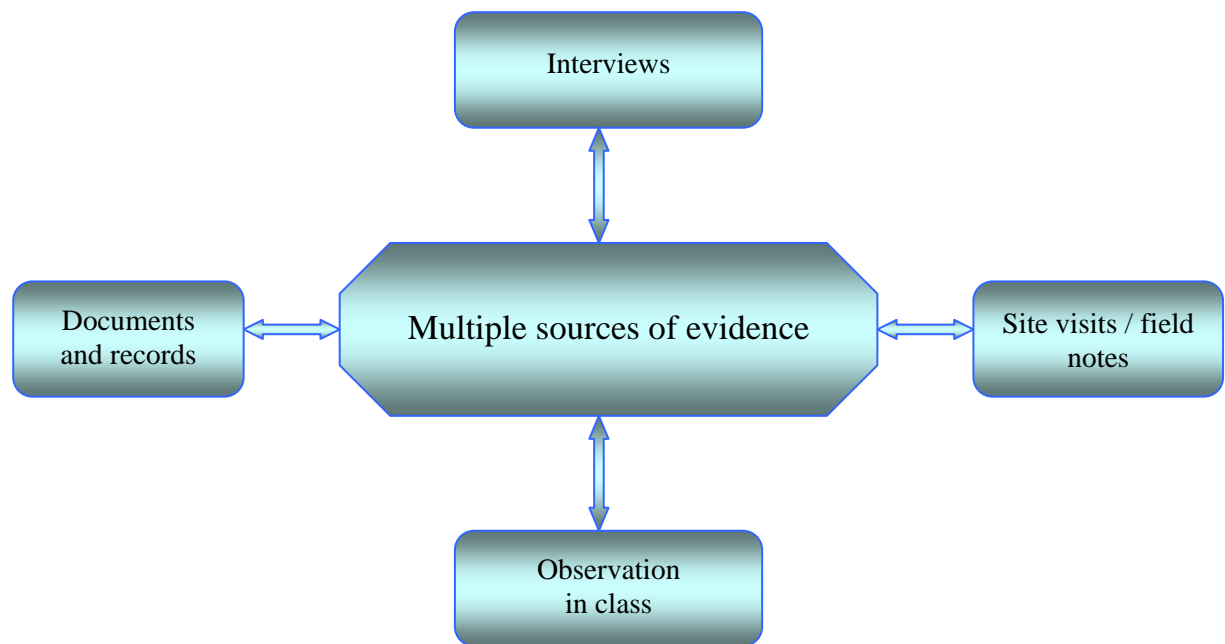
8)   Site visits and field notes.

FIGURE 1.2:   **MULTIPLE SOURCES OF EVIDENCE (idea from Yin, 2003:100)**

1.6.3.1   Interviews

The interview is a valuable and reliable source of evidence, which will be used in the research to obtain the sequence of important events leading to barriers to learning and subsequent learning support. The interview will also be used to provide information concerning the learner's attitude to tasks and settings (Yin, 2003:89; Smith, 1998:308). The use of interviews as a source of evidence fits in with the interpretive research paradigm in this study, since it affords one the opportunity of getting to know the learners and of understanding how they feel, as this involves face-to-face verbal interaction (Terre Blanche & Kelly, 2004:128; Fontana & Fey, 2000:645).

The need for a few central questions for participants and co-participants necessitates the use of semi-structured interviews in this study. However, these will be laced with some unstructured questions, where the questions are not fixed but are allowed to arise from the exchange with the participants and co-participants. This type of interview is favoured because its flexibility makes it more likely to yield evidence not envisaged (Breakwell, 1998:231; Leedy & Ormrod, 2001:159).

Interviews with learners: Nine learners in Grade Nine will be interviewed in the process of collecting data in this study. The interview sessions will be carried out in the school after visits to introduce the study to the participants have been made. The participating learners will be informed of their rights and freedom to withdraw if at any point they feel uncomfortable about continuing. They will also be assured of confidentiality. The sessions will be held at break or at the close of school.

Family members: Nine family members representing each participating learner will be given semi-structured interviews. Consent forms will have been sent to them prior to the interview sessions, which will be conducted in their homes or any other venue.

Educators: Seven educators will be given semi-structured interviews in the school premises during their free periods. The Head of the Department of Life Skills, appointed to give guidance and assistance to the researcher, will conduct the selection of participating educators. Their selection will be based on the learning areas where learners exhibit barriers to learning.

The principal: A semi-structured interview will also be conducted with the principal of the sample school in her office in the school. Prior visits will have been made, during which the study is introduced to the principal and permission sought for the use of the school in the study.

Follow-ups: Follow-up interviews will be conducted in the school for participating learners, educators and the principal. The family members will again be visited at home or any other convenient venue.

The interview sessions will be tape-recorded, in addition to some note-taking. The duration of each session will not exceed half an hour with each participant in order not to tire them, and

so that they do not lose concentration. All the tape-recorded interviews will be transcribed in order to convert the verbal data to textual data.

1.6.3.2   Observations/Site visits

To establish trustworthiness in this research study, observation will be useful in supplying additional information. It will be employed early on during the process as this aids in gathering evidence on how a problem shows itself in the real setting (Yin, 2003:93; Smith, 1998:308). The advantages of observation as a source of evidence are that it affords one the opportunity to get close to the participants to witness the actual happenings, makes accessible behaviours and environmental conditions and also brings to view gestural cues that make the interviewee's words during an interview more meaningful (Terre Blanche & Kelly, 2004:134, Yin, 2003:93; Angrosino & Mays de Perez, 2000:673). The researcher will heed Wilkinson's (1998:227) advice that participants should become accustomed to the observer's presence and be told what is being observed and why. Smith (1998:308) maintains that the conclusions from observations are seen by parents as more relevant than the results of standardized tests, and that the researcher is able to perceive the learner's frustrations in his environment. The conclusion by Smith (1998:308) is one of the reasons for the choice of observation as a source of evidence in this study.

It is important for the researcher to remain focused on the research question, while being open to any information that may be helpful. The learner's interaction with peers, other learners, educators and adults, as well as their reactions to what goes on around them, will be a source of information which will help one determine why there are problems. Participants will also be observed in the classroom environment.

1.6.3.3   Documents and Records

Documents and records, as useful and valuable sources of evidence, are used here mostly to corroborate and substantiate the information from other sources because they provide specific details (Henning, Van Rensburg & Smit, 2004:99; Yin, 2003:87). School records like class-work and scholastic reports may give a hint of when the learner's problem started and also provide an indication of what questions should be asked as well as what needs to be done (Smith, 1998:308).

For the study, an assessment of the participants' grades, progress and scholastic reports, as well as their class-work will be conducted and the results of the findings compared with the evidence from the other sources for corroborative purposes.

1.6.4   DATA ANALYSIS

As data collection is in progress, the researcher continuously reflects on impressions, relationships and connections. The field notes collected during interviews and observations are reflected and elaborated upon by explaining what was observed or discussed during the interview. This is aimed at helping the researcher to identify patterns and themes (Henning *et al*., 2004:127; Bos & Richardson, 1994:190).

Through inductive reasoning, the researcher, in analysing the data collected, will sort the data into manageable forms as themes, patterns, trends and relationships. In this way, there will be a separation of trivia from relevant factors and the identification of a real pattern can emerge (Leedy & Ormrod, 2001:160; Mouton 2001:108; Patton, 2002:432).

In developing themes, the use of codes is employed as this means breaking the data up into labelled pieces, arranged in analytically relevant clusters under code names, for later analysis and comparison with other clusters. The sorting and categorization of data into themes, patterns and codes are useful in the description, interpretation and explanation of the final outcome, as well as in making predictions and/or recommendations if necessary.

1.6.5   FINDINGS

As stated, the researcher will sort the data collected into themes, patterns, trends and relationships through inductive reasoning. These are coded and named, and then followed by putting the evidence in perspective. To do this, the researcher provides a rich, vivid and detailed description of the processes and undertakings with all involved in the course of data collection. Finally, there is an in-depth account of the events and learners studied, structured around the key themes on the available learning support for the participants in this study.

1.6.6   TRUSTWORTHINESS

In this study, the researcher will ensure trustworthiness by applying the following strategies (Greene in Denzin & Lincoln, 2000:991):

1)   The use of multiple data collection strategies such as interviews, observation and documentation/records.
2)   Sampling for diversity.
3)   Follow-up interviews for agreement on final results.
4)   Monitoring the researcher's bias through continuous reflection, literature review and conversations with practitioners and researchers in the field.
5)   Explicitly acknowledging the tensions that may exist in the data.

1.6.7   ASSUMPTIONS OF THE STUDY

Observations made during the researcher's years of teaching inform the assumptions for the study. The first assumption is that learners can experience barriers to learning, which can be intrinsic and extrinsic. It is assumed that there is learning support available in some form to assist these learners. This assumption may change as the research progresses. The need to understand learning support for high school learners who need it, has resulted in methodologically assuming that more knowledge can be obtained about learning support within a case studies design.

1.6.8   ETHICAL CONSIDERATIONS

The researcher will adhere to the code of Ethical Guidelines of the Faculty of Education, University of Pretoria.

The consent of parents or caregivers of participants in the study will be obtained before the commencement of the project. Permission will be sought from the Department of Education to interview and observe learners identified as experiencing learning difficulties in a high school in Pretoria (see Appendix A).

The participants will be fully informed of the objective of the study, which is to explore learning support and its manifestations in the lives of high school learners encountering

learning difficulties. They will be advised of their right to privacy and the right to withdraw if they no longer wish to participate, even after the programme has begun (see Appendix B).

Participants who give any indication that they are uncomfortable about being included in the study will have the opportunity to withdraw from it with immediate effect. Beforehand, they will receive a written orientation towards the study that will explain the purpose and process of the study. During the course of the study, the researcher will also be available telephonically to all the participants, should any further questions arise.

All data provided by participants will be treated as highly confidential. Finally, to ensure anonymity, the identity of the school and names of the principal, educators and learners participating in the research will neither be mentioned nor used in the final write-up.

1.7 CONCEPTUAL FRAMEWORK

The purpose of the conceptual framework is to pinpoint a yardstick that will be a basis for interpreting the information collected in the study.

Learning problems can be caused by different factors, and the cause for one learner may be different from the cause for another. Adelman and Taylor's (1993:14) Types I, II and III causes of learning problems will assist in informing analysis of data collected in this study, which will have been narrowed down to themes and patterns. Also, Donald *et al*'s (2002:31) eco-systemic perspective on barriers to learning arising from 'disadvantaged educational environments', 'inadequate resources' and 'educationally inappropriate policies' will be used to interpret the evidence amassed. The question on how to create a system and process of education that is flexible, sensitive and responsive to the diverse differences of learning needs (Donald *et al*., 2002:29) will be employed as a basis for interpreting the emerging data in the research study. The conceptual framework will also be informed by literature on inclusive education, particularly the work of Dyson and Forlin (2004). Finally, the conceptual framework for this study will include literature that will account for the specific developmental phase of the fifteen (15) to eighteen- (18) year-old adolescent.

1.7.1   SYSTEMS, CAUSES OF LEARNING DIFFICULTIES AND LEARNING SUPPORT

To analyse the development and interaction between the learner and the whole of the social system, Donald *et al*'s (2002:55) 'levels of system related to the education process' will be put to use (see Figure 1.3).
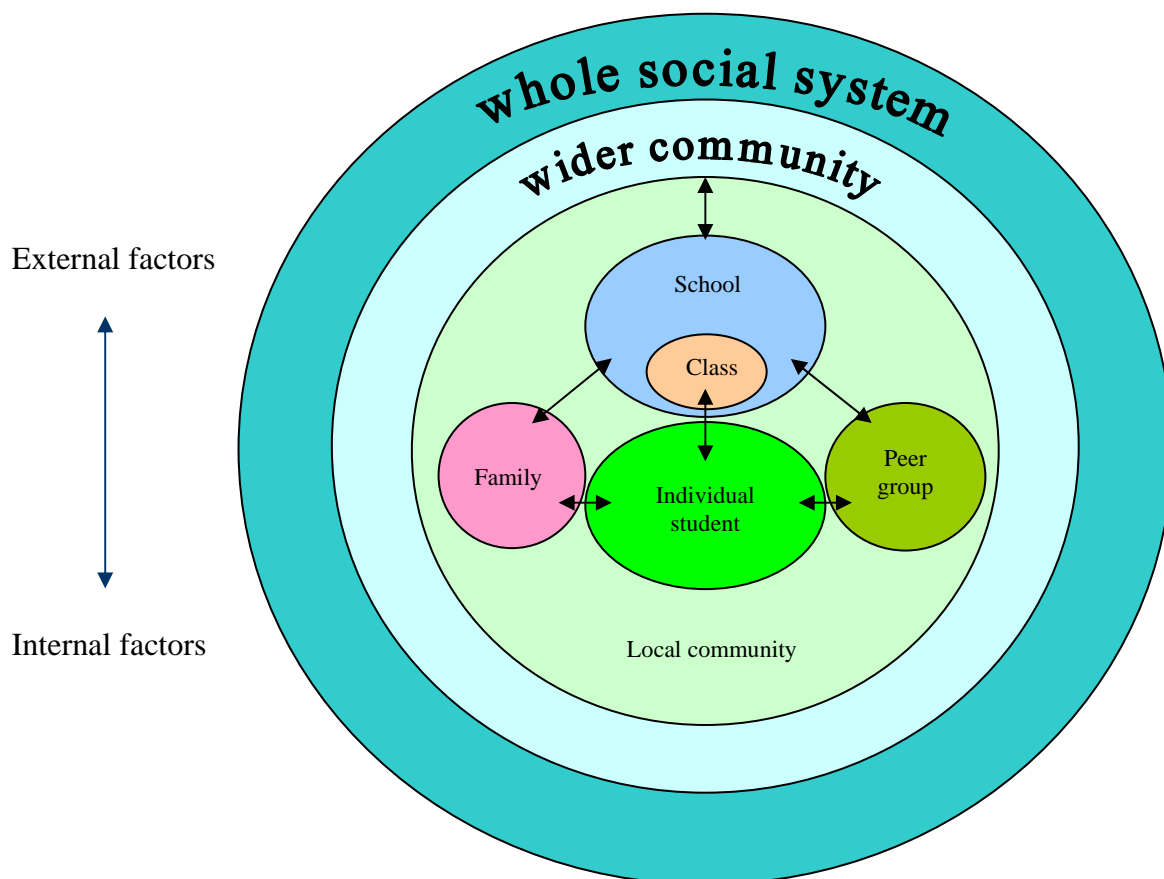
External factors

Internal factors

FIGURE 1.3:   LEVELS OF SYSTEM RELATED TO THE EDUCATION PROCESS (Donald *et al*., 2002:55)

A barrier to learning is any factor that constitutes an obstacle to the learner's ability to successfully benefit from schooling; and this can be internal or external to the learner (Donald *et al*., 2002:4). Donald *et al*. (2002:31) maintain that learning needs are generated as a result of barriers of context connected to the socio-economic and political structure of the society concerned, as well as the influences of the communities, schools, families, peer group and the learner on each other. Influenced by the social system, poverty seems to be a major cause of barriers to learning, along with poor educational environments and the need to learn in a language that is not their mother-tongue (Donald *et al*., 2002:31). Social and interpersonal problems that constitute barriers to learning include alcohol or drug abuse, HIV & AIDS and

violence (Donald *et al*., 2002:31). However, there are barriers that are internal in origin, thereby resulting in learning disability. It is nevertheless important to note that the influence of the social context often affects the cause of learning disability (Donald *et al*., 2002:32).

In this study, barriers to learning will be considered as caused by factors outside the learner (poverty, interpersonal problems, lack of accommodation by the society and poor educational environment – which includes poor teaching methods), as well as factors within the learner. These factors within the learner include neurological factors and developmental influences such as physical, cognitive, social and emotional factors.

Adelman and Taylor's (1993:43) 'focal points of intervention' (Figure 1.4), which indicates the types of intervention required in order for learning to occur, will help to inform interpretation of data on support that can be given. The principle guiding the idea of Education for All, which is that schools will accommodate all marginalized learners in need of overcoming barriers (Dyson & Forlin, 2004:32) will be applied.

The critical question thus is: What makes learning difficult? One may hypothesize that the reasons for the problem may range from the society to the learner, the environment and to real disability. Learners with problems do not necessarily encounter similar difficulties, just as causes of the problem differ for each learner.

Theoretically, learning problems can be caused by different factors and these causes are categorized into three types, according to Adelman and Taylor (1993:14). To describe the three categories or groups of possible causes of learning difficulties, Adelman and Taylor's classification in the form of 'types' will be used (Adelman & Taylor, 1993:14).

The first category of causes, hereafter known as Type I, deals with factors outside the learner: that is, factors in the environment. A learner in a disadvantaged social and educational environment is likely to encounter learning problems due to poverty, language of communication at home and school, and family values regarding school. There may also be issues of drug and alcohol abuse, violence, HIV & AIDS, race and gender (Donald *et al*., 2002:32 & 56). The Type I learning problem signifies that the learning environment is deficient (Adelman & Taylor, 1993:14). Studies in the United States of America show that the Type I group exhibited high rates of school failure and dropping out (Adelman & Taylor, 1993:25).

The Type II category deals with problems caused by the learner and the environment equally. The learner displays some capabilities, which the learning environment does not accommodate because there is no room for developmental differences. The learner becomes susceptible or defenceless. The curriculum does not make allowance for reciprocity or interactive transaction between the learner and the environment, and this can result in learning problems (Adelman & Taylor, 1993:25 & 27).

The Type III group indicates neurological problems caused by minor central nervous system dysfunction, giving rise to learning difficulty even in a conducive learning environment. The Type III learning problem can safely be referred to as learning disability, and is intrinsic to the learner (Lerner, 2003:9 & 11).
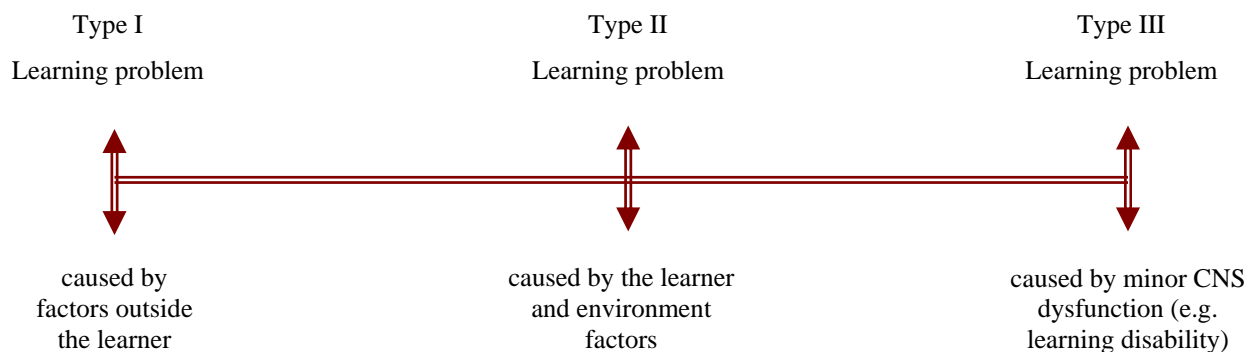
Type I	Type II	Type III
Learning problem	Learning problem	Learning problem
caused by factors outside the learner	caused by the learner and environment factors	caused by minor CNS dysfunction (e.g. learning disability)

FIGURE 1.4:   **THE CATEGORIES OF CAUSES OF LEARNING PROBLEMS (Adelman & Taylor, 1993:14)**

Types I and II were the easily detectable causes of learning difficulties exhibited by learners during the researcher's years of teaching. Many learners from the Type I group either dropped out or persisted but failed the final examination, which is equivalent to the South African 'matric'. For most of these learners, the problem was detected early enough but the authorities and educators were apparently not disturbed by what was fast turning into a crisis, and so no support was rendered to improve learning. Even seminars and workshops that used to be organised for educators were stopped, thereby limiting learning support to learners indirectly.

Whether learning will be achieved or not depends on the learner's interaction with the environment, i.e. home, school and the society as a whole. The learner's experience at home can be regarded as the foundation for what will later unfold as he develops academically. The

school environment in which the learner spends a considerable part of the day, not only deals with academics but teaches other values that guide people in society. Failure to adapt could result in difficulties (Lerner, 2003:115 & 116).

What measures can be taken for learning to occur? To effect changes that will enhance learning, the structure and system of education can be modified so that the focus will not rest on the learner alone but also on the environment and society as a whole.

Structural changes have begun in South Africa since they are needed for the reconstruction of education, especially in the areas of curriculum, support services and the education of teachers. The change has to involve the family (home), the educators (school), other special professionals and the community (Donald *et al*., 2002:19 & 20). Their values, understanding and actions towards learning and its associated difficulties will be altered so that transformation can be appreciated fully.

In terms of learning support, the transformation process should depend on the cause of the learner's barriers to learning. This implies that if the cause is in the environment, the circumstance should be eliminated or adapted in order to accommodate the learner (Adelman & Taylor, 1993:44 & 45).

It would be short-sighted to centre intervention only on the learner. As the continuum of learning problems shows, the cause of learning difficulties does not rest with the learner alone (see Figure 1.4). It is a transactional affair between the learner and other essential forces. The full continuum of barriers should therefore be addressed in the intervention process as shown in Figure 1.5, which indicates the types of intervention required for learning to occur (Adelman and Taylor, 1993:43).
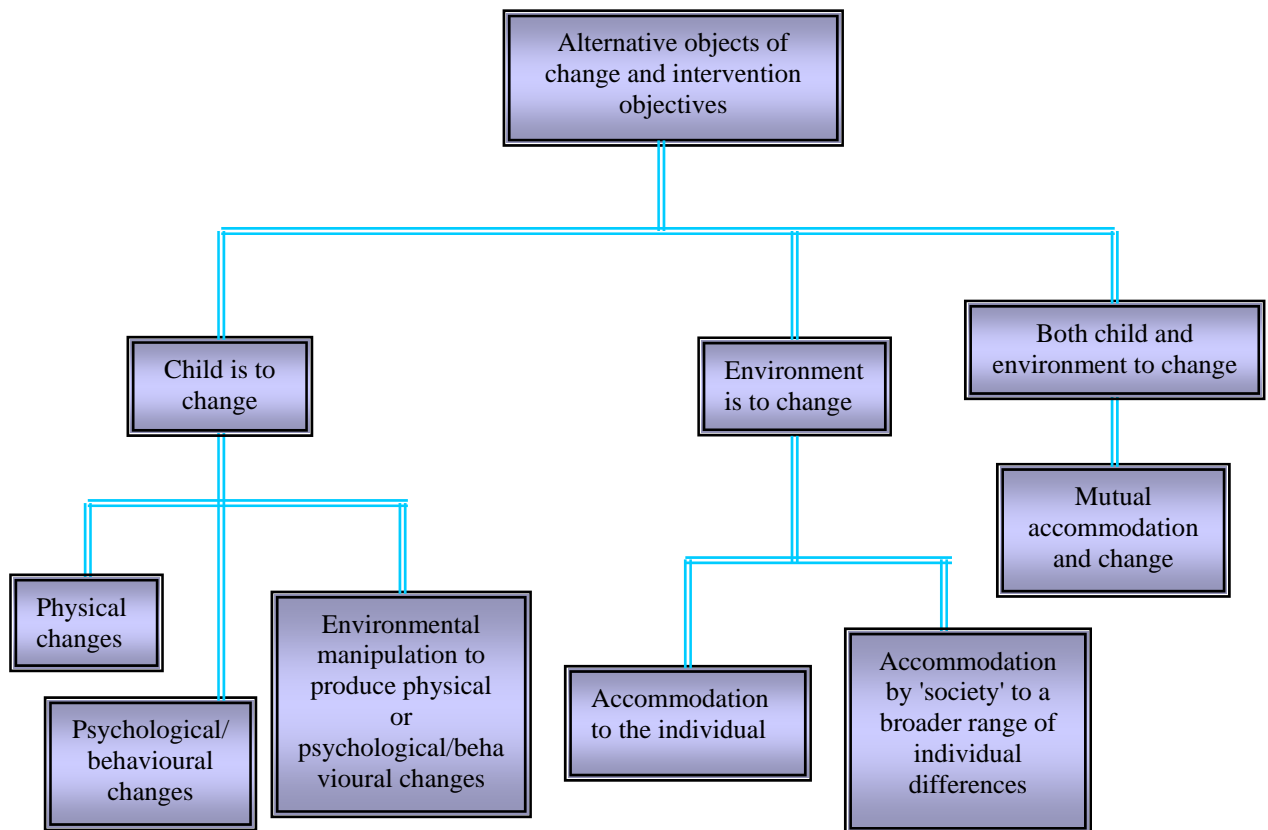
FIGURE 1.5: **FOCAL POINTS OF INTERVENTION (Adelman & Taylor, 1993:43)**

The effort to make education possible for all gave rise to the inclusive educational system, where the learner's right to quality education is regarded highly. Inclusion deals with the education of all learners in a regular classroom, irrespective of their abilities. The right 'focuses on the need to ensure that all learners, regardless of disability, are able to access equitable educational opportunities that will allow them to achieve their potential' (Dyson & Forlin, 2004:30). The principle guiding the idea of education for all, is the fact that schools have to accommodate every learner, their abilities/disabilities notwithstanding. These abilities could be 'physical, intellectual, social, emotional, linguistic'. In other words, inclusion does not only concern those with disabilities but deals with a whole range of marginalized learners who need to overcome barriers (Dyson & Forlin, 2004:32).

In South Africa, two forces are considered in handling barriers to learning. The first deals with transforming the society, schools and curriculum to enhance access to education by all learners, regardless of their needs; and the second is the provision of educational support to all involved such as the learners, school and staff, as well as parents. In the long run, the system is equipped to provide an accommodating and supportive learning environment for all.

Although this is still at the policy level, there is nevertheless an appreciation of the diversity of learners and condemnation of discrimination, while the participation and support of learners at all levels of teaching and learning is encouraged (Donald *et al*., 2002:32 & 33).

To summarise inclusion, the *Education White Paper 6* (DoE, 2001:16) states that inclusive education and training:

- *Are about acknowledging that all children and youth can learn and that all children and youth need support.*
- *Are accepting and respecting the fact that all learners are different in some way and have different learning needs which are equally valued and an ordinary part of our human experience.*
- *Are about enabling education structures, systems and learning methodologies to meet the needs of all learners.*
- *Acknowledge and respect differences in learners, whether due to age, gender, ethnicity, language, class, disability or HIV status.*
- *Are broader than formal schooling and acknowledge that learning also occurs in the home and community, and within formal and informal modes and structures.*
- *Are about changing attitudes, behaviour, teaching methodologies, curricula and the environment to meet the needs of all learners.*
- *Are about maximising the participation of all learners in the culture and the curricula of educational institutions and uncovering and minimising barriers to learning.*
- *Are about empowering learners by developing their individual strengths and enabling them to participate critically in the process of learning.*

The full inclusion of learners with problems in regular classrooms is becoming increasingly recognised and is an accepted educational system (Hunt & Goetz, 1995/31:3; Pijl & Hamstra 2005/9:181), as the last decade has witnessed the materialization of inclusion as a fundamental international educational topic (Frederickson, Dunsmuir, Lang & Monsen, 2004/8:37). In the United States of America, the law demands that all learners, with or without disabilities, be placed in the 'least restrictive environment'. This means that all learners should be educated in a regular classroom environment except where it is absolutely necessary to place a learner separately (Adelman & Taylor, 1993:57). Since many learners experiencing barriers to learning are placed in the least restrictive environment in the

inclusive system, there is a need for the general classroom educator to be assisted by special educators (Noell & Witt, 1999/33:29), as this will enhance learning. In South Africa, the rights discourse stresses equal educational opportunities for all learners (Naicker, 2004:14). Education is therefore being restructured in order to provide an inclusive and supportive environment for all learners, their abilities/disabilities notwithstanding (Engelbrecht, 2004:3).

In this study, learning support is regarded as the intervening help rendered to high school learners experiencing barriers to learning, in order to facilitate their learning capabilities. Support starts when the educator shows an understanding and appreciation of the learner's barriers to learning, as well as a willingness to help. The learner in turn, has to be helped to appreciate and accept learning support if success is to be achieved in the giving of support.

The educator may need to look at the teaching method and consider whether or not a change of method will be necessary to accommodate the learner's level of operation and readiness. Learning environments and materials have to be made conducive to learning and the learner helped to learn at his pace. Optimally, educators are to show understanding of the learner as he changes physically, cognitively, socially and emotionally, and help him to accept these changes as part of development.

The researcher will conceptualise 'learning support' in its broadest sense in this study. For instance, cooperative learning, which is a student-mediated learning process, focuses on cooperation and collaboration amongst learners, while allowing learners to help each other. Learners tend to want to support each other in learning and so they form an understanding and like-mindedness when working together (Sharan & Shaulov in Gillies & Ashman, 2000/34:19). Web and Farivar (in Gillies & Ashman, 2000/34:19) suggest that learners experiencing difficulties profit from this strategy as their peers are often more appreciative of their problems than are their educators and so can tackle the actual problem while making explanations easy to understand and giving these explanations exactly at the time the learner needs the help.

Assistance from the family to the learner will also be included in the researcher's conceptual understanding of learning support. The support of family members, albeit emotional or functional support, may well be a manifestation of 'learning support', and will be considered as such. These (e.g. co-operative learning, the use of illustrations, support by family members) are just some indications of the researcher's inclusive approach to the conceptual

understanding of learning support in the lives of high school learners. Going into the study, the researcher will remain open to all possibilities as to how learning support manifests itself.

1.7.2   DEVELOPMENTAL FACTORS OF ADOLESCENTS (15 TO 18 YEAR-OLDS)

Adolescence is a challenging stage of development during which a variety of transformations takes place in the individual. At this stage in life, the learner is affected by development in different domains. These domains include the physical, the cognitive, the social and emotional types of development, with each developing at different rates, in different ways and at different times for the individual learner. However, it is important to note that the development in one domain is dependent on the other domains as they are completely related (Gouws, Kruger & Burger, 2000:4-5; Louw, 1997:505). This can be a stormy and stressful period during which the adolescent learner goes through emotional confusion and may even become rebellious and defiant (Louw, 1997:505).

1.7.2.1   Physical development

A sudden burst of growth and pubertal changes usually characterise the commencement of adolescence. These changes are both external and internal. The external bodily changes are a visible increase in height and weight, body hair, size of breasts, menstruation and acne. The internal changes are physiological and manifest themselves in 'motor capabilities and skills, their strength and endurance', as well as increased nutritional needs and sexual maturation (Gouws *et al*., 2000:9).

The learner has to be accepting of the changes, fuse these into his self-image and retain the sense of being the same person, if he is to have a sense of identity (Gouws *et al*., 2000:10). The rate at which the learner grows is determined by factors such as genes, hormones, emotions and the environment.

As the rate of growth varies for individual learners, some adolescents may exhibit clumsiness and poor coordination due to uneven growth order, which they may find embarrassing (Gouws *et al*., 2000:13; Louw, 1997:506). A show of understanding of what the learner is experiencing can go a long way towards helping him build a positive self-image. Mussen *et al*. (in Gouws *et al*., 2000:36) state that things can be overwhelming for the learner, who at this stage in life is becoming independent, adjusting sexually, thinking of his education and

vocation, changing associations with adults and peers, and at the same time is experiencing remarkable biological changes.

1.7.2.2   Cognitive development

A connection exists between learning and cognitive abilities. Cognitive development deals with the learner's ability to become knowledgeable, being the domain that comprises of intelligence, the development of thinking skills and creativity. Cognitive changes usually occur alongside the physical changes. Each learner has his own pattern of development and so being the same age does not imply being at the same cognitive level.

At this developmental stage, the learner becomes more logical, tends to reason, to criticise, ask questions about things, argue, make use of his imagination and begin to form his own opinions (Gouws *et al*., 2000:37-38). As the adolescent often loses sight of reality, he may tend to rebel against norms and values that already exist and where the educator, parents and the society fail to empathise with him, problems may surface in the learning process (Gouws *et al*., 2000:44).

Vygotsky (in Gouws *et al*., 2000:47) believes that the higher cognitive process stems from social interaction and then goes inwards, thereby showing the relationship between the learner and the wider society (Stenberg in Gouws *et al*., 2000:47). Educators, parents and peers therefore have roles to play in the learner achieving a certain level of cognitive development. Other factors that affect intelligence include heredity, culture, gender differences, self-concept, language and motivation (Gouws *et al*., 2000:53-54).

1.7.2.3   Social development

Erikson (in Louw, 1997:516) believes that individuals face certain developmental tasks at a certain stage in life, and for the adolescent, the task is that of developing his own identity. Erikson's perspective is that if this does not go well, the learner may develop a negative identity and may then end up with low self-esteem, an unclear sense of values and a lack of clear goals. He may also assume the identity of others, thereby not developing his own values (Erikson in Louw, 1997:517).

Social and cognitive development can be seen as being dependent on each other since the way the adolescent learner thinks and behaves can be traced to cognitive changes (Bergevin, Bukowski & Miners, 2003:390). As Boyes and Chandler (in Shaffer, 1996:485) put it, cognitive development is very important in the achievement of identity, as those who have mastered the formal-operational thought level have better imaginations and may be better able to resolve identity issues than those who are intellectually immature. The social development of an adolescent learner is vital to his total development, and if this phase is found to be stressful, the learner may experience problems. This stage of development often includes changes between the learner and the people around him, such as parents, siblings, educators, adults and peers.

At the social development phase, as the learner struggles to find a place in society, he finds it more important to be accepted by peers, while gradually moving away from parents' guidance. As he begins to hold strong opinions on matters, he begins also to question the values, interests, opinions and attitudes of parents and other adults (Bergevin *et al*., 2003:401; Gouws *et al*., 2000:67). It is important for parents to be careful and understanding at this stage as they can influence the learner's social and emotional development negatively or positively and can even determine the nature of the conflict that will exist between them and the learner.

The adolescent learner regards the relationship with peers as very significant seeing that they share a great deal of experiences. The peer group is usually a different world, where members have their own traditions, language, dress code and conduct (Mwamwenda, 2004:65; Louw, 1997:519). *To belong* means conforming to what exists in their *own world*. Social acceptability by peers is of great value to the adolescent as he sees the group as a socialising agent, as well as providing comradeship and the chance to put into practice his social skills (Gouws *et al*., 2000:76).

Parents and educators need to be accepting of the learner by showing trust and love and helping him to come to terms with this phase of development. Educators also need to appreciate that learners come from a diverse society and so the social development of learners from a minority group will be different from that of learners from a majority group, just as their backgrounds and life conditions differ (Gouws *et al*., 2000:81).

1.7.2.4   Emotional development

The learner as an adolescent has to cope with different developmental tasks such as adapting socially, managing to relate to people, as well as controlling and expressing emotions in a socially acceptable fashion (Mwamwenda, 2004:69). The emotional state of a learner does not only affect him physically, but affects behaviour or actions around people either positively or negatively. The physical, cognitive and social factors may sometimes result in heightened emotionality. However, most important is the heightened emotionality arising from the learner's relationship with and adaptation to the environment and the need for independence. Excessive demands of educators, parents, peers and the general society are equal stress factors that may make the learner emotionally unstable (Gouws *et al*., 2000:96).

Educators and parents need to assist the adolescent learner in achieving emotional stability by fostering constructive relationships with him, being supportive, providing activities that will help in releasing pent-up emotions, and above all, being empathetic, accepting and understanding of the learner's developmental phase.

1.8   KEY CONCEPTS

In this chapter, the definition of the key concepts in the study is presented as conceptualised by the researcher:

▪   **Learning**

Learning is a continuous process of acquiring knowledge, skills and attitudes through experiencing or being informed (Reay, 1995:18 & 19). Learning may also be seen as a permanent change in behaviour due to experiencing education (Louw & Edwards, 1997:225).

▪   **Learner**

One who is in the process of gaining knowledge or skill through being informed or by experiencing education ('Own definition', deduced from above).

▪   **High school learner**

In this study, he is a Grade Nine learner between the ages of fifteen and eighteen, who is taking many subjects at school. He is experiencing dramatic developmental changes physically, cognitively, socially and emotionally (Gouws *et al*., 2000:4).

▪   **Parental involvement**

Parents are a learner's first educator, as the provision of academic inspiration, emotional security, and the advancement of self-esteem and curiosity about learning are dependent on parental support and back-up at home (Lerner, 2003:115). Thus, parents being the primary caregivers, parental involvement or participation in the lives of learners will be considered in this study as a significant factor in achieving successful learning.

▪   **Barriers to learning**

These are factors that cause obstacles to learning. They can be within the learner or in the environment (Donald *et al*., 2002:4).

▪   **Learning difficulty**

This means that the learner has problems meeting certain academic requirements. He may perform well in certain areas and less well in others (Bender, 1998:4 & 5). Learning difficulty may also be perceived as not being internal, as it may be linked to external influence in the learner's educational conditions or experience (Donald *et al*., 2002:340). The concept 'learning problem' here may be used when describing learning difficulty as a demanding experience due to external influences, and learning disability as resulting from internal factors (Adelman & Taylor, 1993:25-28).

▪   **Causes of learning difficulties**

Just like barriers to learning, these are blocks to learning which can be intrinsic and/or extrinsic (Reay, 1995:39). These could also be regarded as factors that prevent the achievement of effective learning.

▪   **Motivation to learn**

This will be considered as a base for the provision of learning support in this study. Adelman and Taylor (1993:163) explain motivation to learn as a requirement if learning is to be achieved, while Johnston (1996:27) describes the determination to gain knowledge as "the heart of the learning process".

▪   **Learning support**

The intervening help given to enhance a learner's capabilities in learning (Adelman & Taylor, 1993:42).

- **One-on-one support**

This support strategy is significant in combating barriers to learning experienced by learners who may be under achieving and may not voluntarily seek academic assistance in the class. One-on-one support may also be referred to as 'individualization'. Sands, Kozleski and French (2000:60) describe this support strategy as a means of caring for the educational demands of a specific learner. Thus, according to Sibaya and Kruger (2002:136), the strategy is such that it matches the exact learning needs of the individual learner, thereby enabling the educator to adjust the teaching method to the learner's capability and individual technique of learning.

1.9 LIMITATIONS AND STRENGTHS OF THE STUDY

The limitations and strengths of the study will be discussed in depth in Chapter Five of this thesis. For now, the researcher will thus content herself with the following synoptic limitations and strengths:

The findings from the study cannot be generalized due to the use of a small sample of nine learners and the fact that the site of the study is a bounded system (one school) that will be clearly delineated in the study. Furthermore, the study will also focus solely on learners from one grade grouping (Grade Nine), which will further limit possibilities for generalization. However, the depth that will be gained through the specified focus in the study will counter these limitations.

The findings of the study will or may increase our knowledge and understanding of learning support for high school learners who experience barriers to learning. On a design level, the strengths of the study are in-depth insights, high construct validity and good rapport with participants (Mouton, 2003:150).

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CHAPTER 2
EXPLORING THE LITERATURE

2.1   INTRODUCTION

In this chapter, the researcher will, through a literature review, identify some reasons why learners may be experiencing barriers to learning. The researcher will also explore the literature on available learning support, in order to scrutinize and explain how this support manifests itself in the lives of high school learners. The views of the *Education White Paper 6* on inclusive education and training will be outlined in this chapter, and a review given of some of the literature on inclusive education.

2.2   LITERATURE REVIEW

Learning is a fundamental developmental process (Shaffer, 1996:302). Reay (1995:17) describes learning as a continuous and natural process, which is closely related to practical experience. Shaffer (1996:302) suggests that learning is a 'fundamental developmental process' because he believes that learning results from the numerous behavioural changes that take place as the individual advances through life. Reay (1995:21) maintains that the duty of the educator is to promote opportunities for learning by exposing learners to experiences that will help them learn. Muthukrishna (2002:149-150) also believes that educators have to regard themselves 'as facilitators of learning'. Ensuring this means creating meaningful classroom environments, inculcating in the learners the responsibility for their own learning and guiding them to use their skills by being fully involved in the learning process. The researcher appreciates Boyer's saying (in Kruger, 2002:107) that *it is our duty as educators to protect a child's potential, not destroy it,* as this complements Kruger's view (2002:109) that the way the educator views teaching and learning will influence the preparation of lessons, the content, the expected outcomes, as well as the assessment of learners. It may also possibly influence learning support. It should be noted that each learner is unique, with different educational needs and suppositions, and so it is expected of educators to identify learners according to their uniqueness in order for their needs to be adequately met by the learning environment (Moletsane, 2002:216).

According to Shaffer (1996:284), some psychologists regard learning as a change in behaviour where the individual thinks and reacts to the environment. This change results from one's experiences and can be attributed to study, observation, repetition and practice, and so is relatively permanent. The concern may be about the level and quality of learning achieved by the learner. Behaviourists (like Watson) are of the opinion that the environment and significant people in the life of a growing child will determine how that child turns out (Eysenck, 2002:97; Shaffer, 1996:54). They are also of the opinion that the individual is conditioned by events in the environment. This implies that the individual is born 'blank' and he develops and matures, thereby acquiring knowledge according to what the environment throws in his path (Slater, Hocking & Loose, 2003:50; Gouws, 2002:47). The researcher believes that being 'born blank' is relative in the sense that the individual is not born completely empty, as there is some degree of inborn *savoir-faire*. Nevertheless, the researcher concurs with Gouws' opinion that the maturity and development of the individual, as well as the acquisition of knowledge are dependent on various factors (such as environment, motivation, and so on).

Radical behaviourists (like Skinner) support the behaviourist idea and believe that individuals develop habits that are the result of their learning experiences. That is, responses given by the individual depend on whether the outcome is favourable or unpleasant and so the direction of development rests largely on 'external stimuli' such as reinforcers and punishers and not really on instincts and drives (Slater *et al*., 2003:50-51; Shaffer, 1996:55 & 56). Cognitive social-learning theorist, Bandura, agrees with Skinner's operant conditioning but stresses that cognitive processing has to play a part in the learning process, hence advocating observational learning as 'a central developmental process', where learning is a result of the observation of other people or *models*. The cognitive process is active, as the observed behaviour has to be digested, recorded and put away as information that will be used later. This type of learning enables the young learner to acquire numerous new responses with different models in different settings, even without an attempt at being taught by these models (Shaffer, 1996:56). In his *environmental determinism theory*, Watson maintains that young learners were regarded as passively becoming what parents, educators and other influential adults in the society wanted them to be. Skinner complements this view, as he believes that individuals have little to say in deciding the environmental influence. Bandura, however, contradicts the views of Watson and Skinner, as he thinks that the individual is an actively thinking creature with a say in how he develops. This is in accordance with observational learning, and as the individual gets to choose his models, he also chooses what to learn. In his *reciprocal*

determinism, Bandura proposed that the relationship between the environment and the individual is a two-way affair since the individual and environment influence one another. In other words, he believes that development entails interaction involving the person, his behaviour and the environment (Shaffer, 1996:57). In this study, it is important to understand the learner and the process of learning, as well as the fact that this process depends on factors like the learner's development, personality and the learner's living environment, and not just on his cognitive development (Kruger, 2002:13).

According to Turkington and Harris (2002:117), learners with difficulties exhibit problems with the way in which the brain processes information, which tends to affect the normal process of learning. Flynn (Flynn & Flynn, 1998:4) who has a learning disability, sees learning disability as indicating learning problems as a result of an inability to do things as fast as others do. Flynn's thought seems to issue from his experience as an individual with a learning disability. The researcher's view is that the disability may possibly lead to slow learning or learning difficulty, which could perhaps be ameliorated or overcome with some form of learning support. The problem may therefore reside more in identifying the cause and manifestation of the learning disability and the appropriate learning support for the individual involved, than in the learning disability itself. Turkington and Harris (2002:124) point out that learning disability indicates a serious gap between the learner's intelligence and the skills achieved at each age. Learners who cannot meet certain academic requirements are seen as experiencing learning difficulties and this may not necessarily be related to any other disability (Bender, 1998:4 & 5). Some learners may perform well in certain academic areas and less so in others. The researcher observed this to be true during years of personal teaching experience, as some learners who were labelled as 'learning disabled' actually achieved good results in some learning areas.

The question that arises from this is:

> *What are the causes of learning difficulties in high school learners*?

2.3   CAUSES OF LEARNING DIFFICULTIES

Hallahan and Kauffman (1991:127), Flynn and Flynn (1998:6), Mastropieri and Scruggs (2004:68), as well as Turkington and Harris (2002:123) argue that the causes of learning disabilities are not exactly known. Nevertheless, various theories exist that indicate that

learning difficulties can be caused by diverse factors and these may differ from learner to learner. It is important at this stage to point out that there is a difference between *learning difficulty* and *learning disability*. While learning difficulty may be perceived as arising from experiences due to external influences, learning disability is seen as resulting from internal factors (Adelman & Taylor, 1993:25-28), and the researcher's opinion is that this may automatically lead to learning difficulty.

In the following section the researcher will explore some of the possible causes of learning difficulties evident from the literature. Factors that cause learning breakdown can be regarded as barriers to learning. These may reside in the learner, the school or learning centre, the system of education, the wider society, and economic and political circumstances. Speece, Molloy and Case (2003:38) are of the view that a variety of factors could be responsible for the manifestation of learning difficulties, and these could reside in the learner, the instructional strategy or in both. Donald *et al*. (2002:29) see poverty as an external factor, which may lead to a series of barriers to productive learning. The *Education White Paper 6* (DoE, 2001:7) also made note of a range of barriers that may lead to a breakdown in learning.

2.3.1   GENETIC OR HEREDITARY FACTORS

Hallahan and Kauffman (1991:128), Smith (1998:71), Gous and Mfazwe (1998:21), as well as Turkington and Harris (2002:123) maintain that there is sufficient evidence showing that learning disabilities tend to run in families. This implies that heredity is a factor here. Flynn and Flynn (1998:7) also share this belief. In this study, the researcher will acknowledge the considerable impact that genetic factors may have on learning difficulties. However, the consequent effects of environmental factors will also be considered, especially in the light of the ways in which learning support manifests itself.

Smith (1998:73) and Mastropieri and Scruggs (2004:69) state that the study of identical twins has revealed a genetic role in learning disabilities- that is, if one twin has a reading problem, the other is very likely to have the same disability (Hallahan & Kauffman, 1991:128). The researcher agrees with Smith where genetic tendency is at play. Smith (1998:74) is also of the opinion that children may be found to perform at the same intellectual level as their parents. The genetic or hereditary factor can be seen as internal or as being intrinsic in the learner and so not easily detected by the educator. Adelman and Taylor (1993:14) regarded genetic factors as Type III learning problems.

2.3.2   FACTORS WITHIN THE LEARNER

According to Lerner (2003:11), it is often implied that learning disability results from neurological factors. A dysfunction of the central nervous system can lead to learning problems, which may, however, be modified positively or negatively by environmental events (Lerner, 2003:11). Worthy of note is the fact that irregular growth pattern of areas of mental ability could lead to learning disability. In other words, where some components mature at the expected rate, others may lag in their development (Lerner, 2003:11 & 12).

A learner can exhibit learning problems that could have arisen as a result of suffering slight brain damage due to trauma at birth, which could not be detected at the time (Eysenck, 2000:617), or as a result of the use of drugs or alcohol during pregnancy, Rh incompatibility and premature or prolonged labour (Turkington & Harris, 2002:123), or even under-functioning in certain areas of the brain that cannot be identified easily (Gous & Mfazwe, 1998:21). Flynn and Flynn (1998:7) hold the view that infection or illness before or after birth and an inadequate amount of oxygen at birth can lead to learning disabilities. Adelman and Taylor (1993:14) referred to this as the Type III learning problem, where a minor internal disorder can be responsible for the disability.

However, Turkington and Harris (2002:123) assume that it could be as a result of a disturbance to the central nervous system triggered by different factors. Flynn and Flynn (1998:6) agree that damage to parts of the central nervous system could be a possible cause of learning disabilities. Hallahan and Kauffman (1991:128) are also of the opinion that the dysfunction of the central nervous system could be seen as a primary cause of learning difficulties. The researcher, however, ponders on whether other causes outside congenital factors could result in learning difficulties. In the researcher's view, unwillingness of the learner to learn, deliberately choosing to be negatively influenced by peers in order to belong, and perhaps sheer laziness on the part of the learner could also count as factors leading to learning difficulties.

2.3.3   FACTORS RELATED TO THE EDUCATION OF THE LEARNER

The learner may experience barriers in his education if a good relationship does not exist between him and the educator (parents or teacher). Occasions may arise (as witnessed by the researcher), where the environment does not accommodate his skills and so may not offer

enough challenges, in that it may demand more than the learner's ability can give or less than he can take, thereby making him feel overwhelmed (Adelman & Taylor, 1993:161). If the learning environment is not motivating and tolerant of the learner's culture, language, gender and general ability, problems can arise in learning. Adelman and Taylor identified this as the Type II learning problem. Taking language and culture as examples, the researcher's impression is that language and cultural differences in a learning environment will inevitably result in unproductive learning. The researcher believes that proficiency in the language of instruction is of the utmost importance in a learning situation. Donald *et al*'s viewpoint (2002:340) complements that of Adelman and Taylor when they state that the learner could be experiencing difficulties due to poor methods of instruction and recurrent change of educators or even schools.

The quality of teaching and the organisation of instructions received by learners can cause problems, according to Van Kraayenoord and Elkins (1998:148). In agreeing with Van Kraayenoord and Elkins' point, the researcher needs to state that where the educator becomes the truant, or is not a trained educator (as was witnessed by the researcher), the learner often bears the brunt, especially if he has to write a unified examination in that learning area. Reay (1995:39) is of the view that lack of motivation on the part of the learner, inappropriate subject matter and inadequate study skills result in learning difficulties. This, in the view of the researcher, could have arisen from a lack of coordination between the learner, the educator and perhaps the parents.

The *Education White Paper* 6 (DoE, 2001:18 & 19) states that the greatest barriers to learning arise from:

- The inflexibility of the curriculum in the areas of the content, which means there is no balance between the educator, the learner and the content of work
- The pace of teaching and the time available for the completion of the curriculum
- Methods of teaching
- Materials used in teaching
- Language of instruction
- Organisation and management of the classroom
- How learning is assessed
- Non-involvement of parents
- The problem of inadequately trained educators and managers.

The researcher concurs with the above listed as barriers to learning. Having been identified by the *Education White Paper 6* as possible barriers to learning, there is a need to address them in order to avert potential learning difficulties, and where these barriers are already manifesting, thereby resulting in learning difficulties, the need for learning support consequently arises.

2.3.4   ENVIRONMENTAL FACTORS

The learning difficulties experienced by some learners are related to their environments or the circumstances in which they are growing and learning. Successful learning therefore depends largely on the interaction between the learner and the environment; that is, home, school and the whole society. Poverty, poor educational environments and poor social conditions are often inter-related as barriers to learning, thus leading to learning difficulties (Donald *et al*., 2002:205). According to Hallahan and Kauffman (1991:129) and Corbett (1998:8), evidence has shown that environmentally disadvantaged learners or those from challenging socio-economic environments tend to exhibit learning difficulties. These learners have to deal with external influences such as poverty, alcohol and drug abuse, and violence in the society, HIV & AIDS, inadequate educational resources and often with poor teaching methods. Donald *et al*. (2002:31) see this factor as arising from barriers to learning that are a result of the social context. This is Adelman and Taylor's (1993:14) Type I learning problem, where the environment surrounding the learner has resulted in learning difficulties. In concurring with the above points of view, Prinsloo (2005a:28-31) outlined the following as barriers to learning:

- Poverty, which he believes shows itself in *ill health, undernourishment, deprivation of privileges, backlogs in education, unsupportive environment, communication and language deficiencies, limited social status and a negative view of the future.* Prinsloo also believes that the above could have resulted from a lack of jobs, low income and too little education.
- Unplanned urbanization and unemployment, ensuing from immigrants flocking into the cities in search of job opportunities.
- Moral decadence resulting from fading value systems. Disharmony exists in families as a result of the probable misinterpretation of the civil liberties of human rights. Moral and sexual freedom has escalated to the farthest limits, thereby resulting in sexual abuse of under-age children, contraction of diseases and teenage pregnancies.

Another debilitating factor is crimes and violence that leave inhabitants with a sense of insecurity.

- The HIV & AIDS pandemic that results in young children acting as heads of families and having to provide for younger siblings and sick parents without income.

Family values in scholastic matters and family motivation all come into play and can be a positive or a negative influence, or a mixture of both. Smit and Hennessy (1995:7) are of the opinion that schools located in poverty-stricken environments are often incapable of responding appropriately to tasks due to a lack of exposure to the world outside. Smit and Hennessy (1995:7) referred to the education provided in this type of environment as 'ghetto education'. The researcher does not agree with this point of view, as the response to tasks may not necessarily depend on the amount of exposure to the outside world but on the severity of the challenges, available resources, adequacy of educators, learners' level of motivation and readiness to learn. The poor environment may possibly result in:

- Limited educational stimulation for the learner (Eysenck, 2000:617)
- Having to learn in an unfamiliar language (Donald *et al*., 2002:31&219)
- Inaccessibility of services (DoE, 2001:18)
- Unsuitable work areas, which may affect the learner's self-image (Reay, 1995:39).

Exceptions abound where learners from disadvantaged environments excel in all learning areas and learners from advantaged environments exhibit learning difficulties despite all that is available to them. It was noticed personally during years of practical teaching, that some learners who grow up in more favourable socio-economic environments did exhibit learning difficulties which could have been due to possible unfavourable influences from the peer group, lack of concentration or short attention span due to hyperactivity, as well as possible problems at home.

2.3.5   THE SOUTH AFRICAN SITUATION

Under *Apartheid* in South Africa, the content of the curriculum and the structure of education may have been biased and limited, and was probably irrelevant to the economy and social values of some communities (Donald *et al*., 2002:210). The nature of the physical and socio-economic segregation of urban areas increased the problem of 'large-scale ghettos' outside cities and towns. The way schools are separately situated in residential areas serves to

reinforce the ghetto factor, so that schools in poverty-stricken neighbourhoods tend to have problems performing the proposed tasks due to the nature of the environment (Smit & Hennessy, 1995:7). The researcher, however, believes that the inability of schools to perform certain tasks may stem from other factors such as limitation of resources due to poverty and inaccessibility of support services due to the location of the school.

Poverty is regarded as a contributor to learning problems, and can lead to inadequate education, inadequate access to health services, undernourishment, unemployment, low social standing, isolation, violence, over-population and psychological degradation (Prinsloo, 2005a:28). When schools in the community are affected because of a lack of classrooms, the learner finds himself in an overcrowded classroom without enough resources, and probably with educators not trained well enough to facilitate learning effectively. Without adequate support or training, educators may get frustrated and some learners' way of coping may sometimes be to drop out of school (Donald *et al*., 2002:206). Inflexibility in the curriculum and the lack of support services in disadvantaged communities have also contributed towards learning difficulties and failure (DoE, 2001:18). Adelman and Taylor (1993: 14) referred to these as Type I learning problems.

Language and cultural diversity in South Africa tend sometimes to constitute barriers to learning, as learners whose culture and language differ from those of the school may experience barriers to learning (Prinsloo, 2005a:37). As language is closely connected to thinking and learning, the researcher's point of view is that when a learner has a good grasp of a language and is able to learn effectively in it, he automatically reasons in that language. Hence, any sudden change of the learning language may, unfortunately, affect those learners who may already be competent in a particular language, and this may constitute a barrier to learning. Evidence (Donald *et al*., 2002:219) shows that because of the link between language, thinking and learning, sudden disturbance in the accustomed language of learning can affect the child's cognitive development and academic performance. Learners often lack confidence when they fail as a result of being forced to learn in an unfamiliar language. The researcher remembers the effect on learners when every learner in Western Nigeria, regardless of whether he spoke the language, had to learn 'Yoruba'. Students were forced to take examinations in the language and this resulted in gross examination malpractice. The teaching and learning process become affected when both the learner and the educator feel incompetent and uncomfortable in the language used in class (Donald *et al*., 2002:219 & 220). Adelman

and Taylor (1193:14) regarded this as the Type II learning problem, where the educational system is not accommodating or tolerant of the learner's first language.

There is always a tendency to situate problems within the learner, when often the opposite may be the case. If the learner's problem is not internal, that is, resulting from damage to the central nervous system, then it may result from the attitude towards the learner of the family members, the school authority and educators, the peer group or the whole social system; and sometimes, from all the levels (see Figure 1.3). If support is not administered the learner may become stuck in the system or may drop out of school. The practice in the state (of Nigeria) where the researcher had taught was often to expel the learner or he would be advised to withdraw. This piece of advice was given without compromise if the learner failed the same grade twice.

While it is feasible for barriers to learning to arise from the various factors that have been discussed, it is also significant to note that the development of the high school learner may be so tumultuous as to form barriers to learning. For this reason, the researcher has deemed it necessary to discuss some aspects of development as experienced by high school learners.

2.4 DEVELOPMENTAL FACTORS OF ADOLESCENTS (15 TO 18-YEAR-OLDS)

Development may be seen as changes in the individual. These changes are usually gradual, sequential and durable, and may arise from experiences, learning and maturation. Nevertheless, each individual is unique in his developmental rate, as this rate may be dependent on factors such as genetic differences, the environment and learning experiences (Kruger, 2002:14). Umansky (1998:192) explains development as an incessant progression, which may take place at varying rates in individuals, but is nevertheless sequential and methodical. Other factors include cultural and social environments, which to a large extent determine the experience and behaviour of adolescents (Louw, 1997:505). Educators, parents, social workers and others involved with adolescent learners need to have an apt knowledge and understanding of these changes and what they bring, as this may help to determine how to support learners in their learning.

Adolescence can be a challenging time for the adolescent, the educators, parents and the people around them, as not all adolescents cope smoothly and easily with the stress and

tension they may be encountering developmentally (Gouws, Kruger & Burger, 2000:6-7). Development in four domains will be identified in this review, and these include the physical, the cognitive, the social and the emotional domains. It may be unwise to assume that each domain is an independent entity, as each influences the other. The adolescence phase may be regarded as a phase of *storm and stress*, during which some adolescents go through emotional confusion and may become revolutionary (Louw, 1997:505). It is imperative to have an understanding of the various aspects of development, as the crisis arising from this could constitute barriers to learning for high school learners, who incidentally fall into the category of adolescents.

2.4.1   PHYSICAL DEVELOPMENT

A period of rapid physical growth and pubertal changes usually characterise the beginning of adolescence. This developmental stage is marked by external and internal changes. The external bodily changes are increases in height and weight, body hair, enlargement of breasts and hips (in girls) and then scrotum and penis (in boys), the growth of pubic and armpit hair, menstruation (in girls), an out break of acne, physical size and increase in body fat (Kruger, 2002:16-17; Louw, 1997:506-507; Gouws *et al.*, 2000:9). Boys tend to grow taller and heavier than girls, and also develop bigger shoulders, facial hair begins to appear, as well as a deepening of the voice (Kruger, 2002:16). The internal changes, which are mostly physiological, may be exhibited in motor capabilities, skills, increase in strength and endurance level, an increase in nutritional needs and finally, sexual maturation manifesting itself in sudden erections and wet dreams (in boys) (Gouws *et al.*, 2000:9).

The rate of growth varies for individuals. Some adolescents have problems adjusting to the sudden spurt of growth, for they may exhibit clumsiness and poor coordination as a result of the bumpy growth order (Louw, 1997:506; Gouws *et al.*, 2000:13). Many adolescent boys especially, find it embarrassing when their voices suddenly deepen (Kruger, 2002:16; Louw, 1997:506). It is important to note that the rate at which the adolescent develops physically is influenced by internal factors such as genes, hormones and emotions, and external factors from the environment such as poverty, illness and malnutrition (Adams, 2002:32; Gouws *et al.*, 2000:13).

An important task for educators (and parents) is to help the adolescent learner to be accepting of the physical changes and problems arising from them, fuse these into his self-image in

order to be independent, and also to have a sense of identity (Kruger, 2002:19; Gouws *et al*., 2000:10). Mussen *et al* (in Gouws *et al*., 2000:36) are of the opinion that the adolescent learner is overwhelmed at this stage in life as he is becoming independent, adjusting sexually, thinking of his education and vocation, changing associations with adults and peers, and at the same time experiencing remarkable biological changes while struggling with emotional development and the formation of a positive self-concept and his own identity. If these changes become unbearable for the adolescent learner and appropriate guidance is not given, they may turn into barriers to learning.

2.4.2   COGNITIVE DEVELOPMENT

There is a close connection between learning and cognitive abilities (Gouws *et al*., 2000:44). The necessity to understand cognitive development arises from its significance to education, as this understanding makes it viable to enhance the educational system in order to benefit all adolescent learners (Eysenck, 2000:409). Cognitive development contracts with the adolescent's ability to become knowledgeable, as this domain comprises of intelligence, the development of thinking skills and creativity. Of importance is the fact that cognitive changes occur alongside physical changes but are obscured by the turmoil caused by the physical changes. Noteworthy also is that each adolescent has his own pattern of development, implying that being the same age does not necessarily mean being at the same cognitive level (Gouws *et al*., 2000:37).

As Adams (2002:32 & 33) puts it, Piaget suggests that cognitive development takes place due to people incessantly attempting to make sense of their world. However, this development can be influenced by maturation arising as a result of genetics and lessons from experiences in life. In his theory, Piaget maintains that people relentlessly face new knowledge and experiences from the environment, which they have to adjust to through constant arrangement and re-arrangement, and thus suggests that this may be achieved by means of three closely related courses (in Donald *et al*., 2002:64):

1.   Assimilation, where new information fits into what already exists in the individual.
2.   Accommodation, where the individual has to make room for new information that conflicts with the existing information.
3.   Equilibration, which deals with creating a balance between assimilation and accommodation as the two processes constantly interact.

At the cognitive developmental stage, the adolescent begins to think in an abstract manner (Eysenck, 2000:416*;* Adams, 2002:39). He tends to be more rational, logical, critical, inquisitive about things, argumentative and tends to form his own opinions about things by reasoning and using his imagination. As he tends to lose sight of reality, he may begin to rebel against norms and values that already exist. Therefore, the adolescent's newfound independence is a source of conflict between him and the parents' thoughts of what is right for him (Gouws *et al*., 2000:37-38 & 44). It is also Donald *et al*'s (2002:68) belief that at this stage, as the adolescent engages in abstract reasoning, he may also begin to think of 'if' and 'then' conditions entailing abstract rapport. It is vital to note that the individual's social standing or circumstance plays an important role in the adolescent reaching this stage.

As Gouws *et al*. (2000:47) pointed out, Vygotsky believes, in his theory, that the higher cognitive process emerges from social interaction and goes inwards, thus showing the relationship between the adolescent and the wider society. Donald *et al*. (2002:68) suggest that development centres on the individual's *active engagement* with and scrutiny of the *physical and social world*. Therefore, the adolescent learner should be afforded the chance to experiment and explore in order to be able to question and learn to handle problems. Cognitive development is uneven across adolescents in the sense that each develops at his own pace, with the progression affected by the social context in which the adolescent finds himself, as well as the challenges of his circumstance (Donald *et al*., 2002:69). Donald *et al*. (2002:70) also maintain that Vygosky's theory is based on social connections in that the individual lives in social contexts, thereby developing knowledge through social interactions. Thus, seen in the social context, cognitive development emerges from social interactions.

In the light of the above, it should be noted that educators, parents, peers and the whole society have roles to play in the cognitive development of adolescents. For Gouws *et al*. (2000:53-54), other factors that may affect intelligence and thus the achievement of a certain level of cognitive development include heredity, culture, gender differences, self-concept, language and motivation. Adams (2000:33) summarises Piaget's four influencing factors as follows: the brain's biological maturation, the adolescent's activity, his social experience and the maintenance of equilibrium between new information and already existing knowledge. The educator should note that all adolescent learners would not be at the same level of cognitive development. The learning experiences therefore have to vary to suit different levels by matching learning tasks to learner's cognitive capacities (Adams, 2002:41).

2.4.3   SOCIAL DEVELOPMENT

Louw (1997:516) believes in Erikson's theory that individuals have to deal with notable developmental tasks. Bergevin, Bukowski and Miners (2003:389) are of the opinion that the adolescent at this stage is faced with the struggle of coming to terms with the changes in himself. The physical maturation and various other changes such as emotions, actions and interactions are all aspects of social development, which could either be exciting and filled with accomplishments and contentment, or be filled with tension, disorientation and dejection. For Shaffer (1996:482 & 483), an identity formation entails struggling with various options such as in *career, religion, morality* and *values*, and these may weigh the adolescent down, and may even end in an identity crisis and/or low self-esteem and may thus probably result in developing negative identity. For the adolescence phase it appears to be a universal requirement to develop personal identity, although this task depends on the individual. The researcher believes (from observation) that some adolescents go through this phase fairly quickly and with ease, while others find the stage difficult to cope with.

Social and cognitive developments are dependent on each other since the adolescent's thinking and behaviour can be traced to cognitive changes (Bergevin *et al*., 2003:390). Shaffer (1996:269) sees cognitive development as being noteworthy in the achievement of identity. This can be seen by the fact that those who have mastered the formal-operational thought level tend to exhibit better imaginations and may therefore be better able to resolve identity issues than their peers who are intellectually immature. In his search for identity, the adolescent has to create a balance between who he is with how he is regarded by people around him and how he is linked to the guiding norms and values of the wider society (Donald *et al*., 2002:78).

The changes in the adolescence phase result in a significant shift in personal evolution. The acquisition of identity involves three important phases, which are as follows (Shaffer, 1996:483):

1.   The adolescent's need or certainty concerning his own standing, thus requiring answers to the question: *Who am I?*
2.   His need for certainty concerning his social standing, and thus the need to answer the question: *To what group do I belong?*

3.   The need for certainty in connection with his personal ideals and values and the answer to the question: *What do I want to achieve?*

At this stage, the adolescent questions everything about his present and previous standing, as well as how people perceive him. This could be regarded as the adolescent's search for identity.

The adolescent's most vital tasks of development are *socialization, finding his place in society, acquiring interpersonal skills, cultivating tolerance for personal and cultural differences and also developing self-confidence* (Gouws *et al*., 2002:67). As he struggles to fulfil the above, he steadily detaches himself from his parents and finds it more important to be accepted by his peers. These authors also point out that as adolescents begin to practise autonomy they may also begin to clash with parents and as they begin to hold strong opinions on matters, they often question the ideals, interests, opinions and attitudes of parents and adults around them. Louw (1997:518) believes also that the social behaviour of the adolescent is marked by an increase in interest and involvement with his peers, thus spending more time with peers than with adults. The adolescent engages in inspirational associations with peers (Mwamwenda, 2004:66) as this helps him to learn and try out new roles, to be purged of emotional anxiety, to be drawn into close friendships, and to build up group identity. In other words, adolescents tend to share many experiences. They regard the group as a different world, with their own traditions, mode of communication, dress code and demeanour; and where *to belong* means conforming to what exists in their *own world* (Louw, 1997:519).

It is very important to the adolescent that he is socially accepted by the peer group, as he sees the group as a socialising instrument, as providing companionship, providing the possibility to exercise newly acquired skills and helping to determine whether he is doing well or badly in life (Gouws *et al*., 2000:76-77). The social development of the adolescent is vital to his total development as it often includes changes between the adolescent and the people around him- parents, siblings, educators, adults and peers. How the adolescent emerges, with certainty or confusion, will be determined by his experiences, his ability to cope with the stress of development, the identity he has carved out for himself and by the support available to him during the developmental crisis. If this stage is found to be stressful, the adolescent may experience difficulty in learning. It is thus most important for educators, and maybe other people that surround the adolescent, to be conscious of the need to help him to feel proficient

and valuable and to be compassionate about his fears without degrading him, but helping him to accept both his weaknesses and strengths (Kruger, 2002:23).

2.4.4   EMOTIONAL DEVELOPMENT

The outcome of development in the other three domains can affect the adolescent's emotional development to a large extent, as they are all inter-related. The adolescent is faced with the stress of having to cope with different developmental tasks such as adapting socially by relating to people, as well as controlling and expressing emotions in a socially acceptable fashion and also having to make moral decisions on which principles are correct or incorrect (Gouws *et al*., 2000:95).

The adolescent's emotional state affects his physical health since the whole body system will respond to emotional experiences. This will also have a positive or negative effect on his relationship with the people around him. The emotionality arising from the adolescent's relationship with and adaptation to the environment, as well as his need for independence may result from physical, cognitive and social factors. Moreover, the demands of educators, parents, peers and the wider society are equally stressful factors that could make the adolescent emotionally unstable (Mwamwenda, 2004:69).

Assisting the adolescent to attain emotional steadiness implies that educators (and parents) have to know when emotions manifest; have to foster a constructive relationship with him, especially where there is a manifestation of negative emotion; have to be supportive and provide activities that will help to release pent-up emotions; and above all, have to be empathetic, tolerant and considerate of the adolescent's developmental phase and its turmoil (Gouws *et al*., 2000:97).

As has been identified by literature and personal observation, the developmental phase may be stormy and stressful for the high school learner. Some are able to overcome the upheaval associated with development, while others may find it too much to handle. There is therefore a need for knowledge and understanding of this stage of development in high school learners, since this may make for easy identification when the crisis of development becomes a barrier to learning. This may also indicate what learning support can be provided in order for effective learning to occur.

2.5   LEARNING SUPPORT

According to Sibaya and Kruger (2002:125), for teaching to be effective, there is a call for an in-depth acquaintance with learners' ways of learning, factors that control the procedure of learning, learners' disposition at the various phases of development, and finally, of the ways to keep learners interested in learning. Ensuring that learners profit from the teachings in the class and using the knowledge acquired thereby, demands careful preparation by the educators (Sibaya & Kruger, 2002:125). In order to ascertain what is learnt, how it is learnt, what the learner feels and the use of the knowledge acquired, it is necessary for planning to include content organization, selecting and sequencing of actions, learners' inspiration and emotion. Planning should, however, be flexible enough to leave room for the unanticipated, as well as taking into consideration the settings and organization of the classroom, the diverse requirements and learning styles of learners and also many other factors that may be connected to the processes of instruction and learning (Sibaya & Kruger, 2002:126, 127 & 129). It should be noted that acknowledging that learners have individual differences, which make each learner unique in *talent* and *limitations* as to how he learns, might help in planning programmes to address the differences (Moletsane, 2002:215). In dealing with the problems of learning, one has to look at the different levels of the system associated with the learner's education, e.g. the whole social system, the community, the local community comprising of the family, school, peer group, and then the learner (see Figure 1.3). The system of interactions between the levels must also be considered.

There may possibly be an imbalance in the whole system due to the disturbances between each of the levels, and so it may be detrimental to view the problem as caused by the learner. This is because the problem is not exclusive to any one level, but lies in the relationship and interaction between them (Donald *et al*., 2002:236 & 237). When there is a problem in one level, it will most probably affect the others. Understanding that one level may have a ripple effect on the others is a step in the direction of a likely change where imbalance is the case, as exceptions may exist where the systems are perfectly balanced. Hence, effecting intervention has to be between and within systems, with the learner fully involved (Donald *et al*., 2002:238).

Robins (2001:120) states that there are two reasons why learners encounter difficulties or cannot learn. The first is that the educator does not know the most effective strategy for teaching a specific task, while the second is that the educator seldom appreciates how

different learners learn. Van Kraayenoord and Elkins (1998:148) agree with Robins' opinion. Although Robins, Van Kraayenoord and Elkins may be right, literature shows that these are not the only reasons why learners experience difficulties in learning. Donald *et al*. (2002:55) and Adelman and Taylor (1993:14) have shown that other factors can cause these difficulties (Figures 1.3 & 1.4). The *Education White Paper 6* (DoE, 2001:7) also outlines some factors that can cause barriers to learning. The researcher thinks that the method of instruction used for a learner with difficulties should depend on what he needs to learn and how best to learn it, and so agrees with Donald *et al.* (2002:301 & 302) who encourage flexibility in the method of instruction to accommodate the strengths and weaknesses of the learner, relevance of materials and content of teaching to the learner's age and interests, flexibility in the learner's learning pace, and also, motivation that will aid in building the learner's confidence. The researcher equally concurs with Jones and Jones (2001:186) who have pointed out that as the learner spends so much time in school, it is imperative that the school creates a confident and supportive learning environment, where the learner feels appreciated, where the curriculum and teaching strategy complement the learner's educational readiness, and where the educator understands the uniqueness of each learner, especially in instructional strategies.

According to Bender (1998:242), learners encountering difficulties have certain instructional needs often not demonstrated by others. These needs have given rise to the problem of appropriate placement for the learners involved. The typical practice of placing learners with similar disabilities in the same classroom in order to enable the school system to plan for resource allocations is educationally doubtful (Sands *et al*., 2000:258), especially with the advent of inclusive education. The consideration of inclusive education (which advocates the placement of all learners in one setting, irrespective of their disabilities), brought about the restructuring and redesigning of education, moving away from the separate setting, and providing an inclusive and supportive learning environment for all learners, irrespective of their disabilities. The inclusive education system will be discussed in the next section.

2.5.1   THE WHITE PAPER ON SPECIAL NEEDS AND INCLUSIVE EDUCATION

In 1996, two bodies, namely the National Commission on Special Needs in Education and Training (NCSNET) and the National Committee on Education Support Services (NCESS), were commissioned by the Ministry of Education to look into the features of special needs and support services in the education system in South Africa. The findings of these bodies opened the doors to inclusive education in South Africa. Their findings indicated that only a

small percentage of learners benefited from specialised education and support so that the majority of the learners in need of support found themselves outside the system or sidelined. As the curriculum and system of education did not meet the varied requirements of learners, the consequence was large numbers of learners failing, dropping out or being pushed out. The bodies thus recommended the *promotion of education for all*, as well as inclusive and supportive learning centres that will support all learners equally in the process of education (DoE, 2001:5).

Some of the guiding principles of this new concept are the idea of *rights and social justice* to be enjoyed by all learners, all learners having equal access to an inclusive education, as well as access to the curriculum (DoE, 2001:5). The bodies suggested in their report that achieving this concept will require the following (DoE, 2001:6):

> *(i) Transforming all aspects of the education system, (ii) developing an integrated system of education, (iii) infusing 'special needs and services' throughout the system, (iv) pursuing the holistic development of centres of learning to ensure a barrier-free physical environment and a supportive and inclusive psycho-social learning environment, developing a flexible curriculum to ensure access to all learners, (v) promoting the rights and responsibilities of parents, educators and learners (vi) providing effective development programmes for educators, support personnel, and other relevant human resources, (vii) fostering holistic and integrated support provision through intersectoral collaboration, (viii) developing a community-based support system which includes a preventative and developmental approach to support, and (ix) developing funding strategies that ensure redress for historically disadvantaged communities and institutions, sustainability, and – ultimately- access to education for all learners.*

Nonetheless, the study by Laauwen (2004:210) exposed elements of *'non-reform', experiments with change, low priority for reform, absence of key leadership, lack of resources, changing structures, and undue 'political symbolism'.* This tends to highlight the lack of execution of the policy on Special Needs Education. Laauwen's (2004:210) study also showed that the delay in carrying out the policy was probably because the Department of Education had possibly not appreciated the full financial implications, as well as the technicalities involved. As most learners with special needs remain where they are because of the possible non-functioning of the projected reforms and shift, Laauwen (2004:211)

concluded, that 'in terms of operational policy, provisioning and changing the education system, the policy remains visionary'. The Ministry, on the other hand, acknowledges the fact that an extensive range of learning needs arising from different factors occur among learners in South Africa (DoE, 2001:17). The curriculum was identified as the greatest barrier to learning and the best way to address this is to ensure that both learning and teaching processes are flexible, compliant and can accommodate divergent learning needs and techniques of learning (DoE, 2001:20).

The *Education White Paper 6* (DoE, 2001:28) views learning support as a major strategy in overcoming barriers to learning. Support is seen as enhancing learning through interaction with appropriate support providers (Implementation of Inclusive Education: Full Services Schools, August 2003:23), hence the need for full-service schools. Full-service schools are learning institutions equipped and supported to cater flexibly for a wide range of learning needs, while addressing barriers to learning (Implementation of Inclusive Education: Full-service schools, August 2003:10). The aim of a full-service school is to increase learning and the involvement of learners and so it embarks on the inclusion process where it judiciously analyses how to increase learning through removing barriers that hinder learning. These could be barriers arising within the learner or the environment. Another aim of the full-service school is ensuring the accessibility of schools so that learners of school-going age will not be left out. A third aim is the creation of a supportive environment where educators can be motivated and supported, where caregivers are fully involved and where learners can feel accepted (Implementation of Inclusive Education: Full-service Schools, August 2003:12). The full-service school has to be linked to the District Support Teams whose aim is to give indirect support to learners by the support of educators and school management, and also to supply direct support to learners if the site-based support teams cannot provide the necessary support. The site-based support teams are responsible for coordinating available services, which provide support for educators and learners. The full-service schools have to develop resource centres to be utilised by the educators and learners.

The resource room or centre was conceived as an answer to training for learners in need of specialised attention. Outlined as follows are diverse kinds of resource rooms (Bender, 1998:246):

- Categorical resource rooms are where learners with a specific disability are placed for specialised instructions.

- Cross-categorical resource rooms are where learners operating at the same academic level but having different kinds of disabilities are placed.
- Non-categorical resource rooms have no differentiations for the disabilities of learners placed there. In other words, learners of diverse needs are found in these rooms.
- Specific-skills resource rooms have educators catering for learners in an essential skill such as mathematics, reading or writing.
- Itinerant resource programmes entail the allocation of one resource educator to several schools in rural areas.

The resource room educator provides resources for not just the learners with disabilities, but also for their parents, the mainstream educators, professionals and others connected to the learners. The resource room educator also provides teaching methods that will enhance learning in the mainstream, and so has to be conversant with the mainstream curriculum and the learner's specific problem areas (Bender, 1998:247 & 249). The *Education White Paper 6* (DoE, 2001:21) suggests that the operation of special schools as resource centres will be elevated qualitatively by getting their workforce schooled in their newest duties of assisting learners and educators through running training workshops and making learning materials available where they are needed.

As stated in the *Education White Paper 6* (DoE, 2001:19), the areas to be addressed in terms of learning support include the:

- Working content
- Language used in the instruction of learners
- Organisation and management of the classroom
- Strategy of instruction
- Time available for completion of the curriculum
- Materials used for learning
- Assessment of learning.

Also to be addressed are the accessibility and safety of the learning environment, as well as the provision of adequate support services. Van Kraayenoord and Elkins (1998:167) state that it is necessary to have an ongoing partnership between support staff and the classroom educators on proposed achievements and instructional methods essential to guarantee that the

needs of the learner with problems are met. According to the *Education White Paper 6* (DoE, 2001:28 & 29), the capacity of the education support service will determine the extent to which barriers to learning will be abridged. The education support service, when strengthened, will comprise of new district-based support teams made up of a workforce from *provincial district, regional and head offices* and also *special schools*. The main purpose or job of these support teams is the appraisal of programmes, determining their efficiency and making suggestions for modifications where necessary.

To help the learner, the educator has to understand how he learns, identify the conditions in the classroom that can make the learner achieve success, and create a supportive environment. Learners with barriers to learning require guidelines that will enable them to feel confident in the environment where learning is taking place. The educator has to ensure that:

- Learners are given lots of encouragement and praise if they are to give their best.
- Peaceful and friendly learning environments are provided.
- Clear instructions are given.
- Parents are involved by checking learners' work.
- Good relationships and trust exist between the learner and himself.
- Learners' self-confidence is built up by showing tolerance and being accommodating.

2.5.2   INCLUSIVE EDUCATION IN SOUTH AFRICA

According to Ainscow (2005/6:109), the inclusive education system has become an international challenge as a strategy to address the diverse educational needs of all learners in a general education classroom. The interest and encouragement in the vision of inclusion basically arose from the fact that learners' difficulties in learning result from the way schools are coordinated, as well as the instruction strategies (Ainscow, Farrell & Tweddle, 2000/4:212).

There have been dramatic changes in South Africa over the past few years, which have affected education. Education in South Africa is being restructured and redesigned to move away from the separate environments for learners with exceptional requirements, to providing an inclusive and supportive instructional setting for all learners. Hunt and Goetz (1997/31:3) recognise the educational system of full inclusion as becoming increasingly popular. Most

attempts at intervention for learners in need of assistance take place in ordinary schools which nevertheless have special education facilities (Lamminmaki, Ahonen, Todd de Barra, Tolvanen, Michelsson & Lyytinen 1997/30:354). Also, Farman and Muthukrishna (2002:234) suggest that the essential nature of inclusive education in South Africa lies in the move to a 'learner-centred' system of education. Also suggested by Farman and Muthukrishna (2002:234) is the evolvement of *curriculum 2005*, which is designed to guarantee that all learners effectively accomplish the vital outcomes, as it originated from the conviction that all learners can attain learning successfully. However, Lamminmaki *et al*. (1997/30:354) maintain that assistance provided will be effective if based on the receiver's strong points and weaknesses. Farman and Muthukrishna's view of learner-centeredness in inclusion is supported by Swart and Pettipher (2005:8), who believe that inclusive education removes attention from learners needing to conform to the educational systems and focus on the remodelling of the school system into accepting and attending to the various needs of learners and ensuring each learner is given suitable learning exposures. There are, nevertheless, some individuals who find it difficult to relate to the new changes of 'restructuring and redesigning education' to provide a supportive learning environment that will cater for the needs of all learners (Engelbrecht, 2004:3). However, Ballard (1995:10) is of the opinion that fears can be conquered only by involvement in the activities that are thought to be too difficult or different. Farman and Muthukrishna (2002:231) complement this thought by saying:

> *To create a classroom where all learners will thrive is a challenging task, but 'there is an island of opportunity in the sea of every difficulty'.*

Advocates of full inclusion such as Mastropieri and Scruggs (2004:20-21) complement the *Education White Paper 6* (DoE, 2001:5) on inclusive education in South Africa as follows:

- It is the learner's civil right to be placed full-time in the general education classroom with their non-disabled peers.
- It will reduce the stigma of being educated in special settings.
- It is more efficient as there will be no pull-out programmes during which learners miss out on valuable activities in the general classroom.
- It promotes equity.

Fisher, Sax and Grove (2000/100:214) maintain that the all-important features in forming an inclusive education system are *resources*, *philosophy* and *leadership* in the internal functioning of a school.

As was mentioned in Chapter One, the last decade, according to Frederickson *et al.* (2004/8:37), saw the emergence of inclusive education as a major international scheme. Researchers and professional groups who promote total integration of all learners into general education have backed this move (Mamlin, 1999/33:36). June 1994 saw the approval of a new structure at the UNESCO world conference in Salamanca, Spain. The guiding code of this framework advocates the placement of all children in regular schools in their neighbourhoods, irrespective of their conditions. Being dedicated to education for all, the following known as the SALAMANCA STATEMENT emerged, saying that (UNESCO, 1994):

- *Every child has a basic right to education.*
- *Every child has unique characteristics, interests, abilities and learning needs.*
- *Education services should take into account these diverse characteristics and needs.*
- *Those with special educational needs must have access to regular schools.*
- *Regular schools with an inclusive ethos are the most effective way to combat discriminatory attitudes, create welcoming and inclusive communities and achieve education for all.*
- *Such schools provide effective education to the majority of children, improve efficiency and cost-effectiveness.*

The Salamanca Statement went on to demand that governments:

- *Give the highest priority to making education systems inclusive.*
- *Adopt the principle of inclusive education as a matter of law or policy.*
- *Develop demonstration projects.*
- *Encourage exchanges with countries which have experience of inclusion.*
- *Set up ways to plan, monitor and evaluate educational provision for children and adults.*
- *Encourage and make easy the participation of parents and organizations of disabled people.*
- *Invest in early identification and intervention strategies.*
- *Invest in the vocational aspects of inclusive education.*
- *Make sure there are adequate teacher education programs.*

Ninety-two governments and twenty-five international NGOs adopted this statement. The plan for action stipulates that 'inclusion and participation are essential to human dignity and to the enjoyment and exercise of human rights'. This is demonstrated in education as 'genuine equalization of opportunity'. Special needs education includes instruction strategies that profit *all* learners, that regard the diversity in learners as customary, and the concept that learning has to be modified to suit the demands of learners. The basic precept of inclusion is the placement of *all* learners collectively in regular schools, where their varied needs are known and responded to, and at the same time the provision of support and services that correspond to the needs of learners (CSIE, UNESCO, 1994).

The children's representatives at the Children's Forum in May 2002 presented their vision in different areas including education. Their vision regarding education is as follows (Bellamy, 2003:67). There should be:

- *Equal opportunities and access to quality education that is free and compulsory.*
- *School environments in which children feel happy about learning.*
- *Education for life that goes beyond the academic and includes lessons in understanding, human rights, peace, acceptance and active citizenship.*

The education revolution during the last decade at international level was inevitable, for it became obvious that changes were required in order for learning to be effective (Bellamy, 1999:21). Guiding this revolution are the rights of all children to education, without bias, as well as admission to quality learning, where the learner is an active participant (Bellamy, 1999:21). The rights discourse, which stresses equal opportunities amongst other things, has influenced the movement in the direction of inclusive education in South Africa (Naicker, 2004:14). The rights issue is also upheld by Donald *et al.* (2002:295), who believe that all learners, whether disabled or not, have the right to be treated normally, have their educational needs met in a customary school system and to live at home while attending the neighbourhood school. The complexity though, is the assumption that appropriate facilities, resources and supportive help will be provided, as well as a curriculum that is flexible enough to cater for those with barriers to learning. Westling and Fox (1995:223), in complementing the above, state that an inclusive education programme does not only revolve around the placement of learners with special needs in the general education classroom, but also on *restructuring* educational centres so that they can cater for a diversity of needs. Obstacles also exist in the provision of programmes for inclusion in high schools. These include curriculum

in the content area, the gap between the learner's already acquired skills and the demands of the classrooms, as well as the regular classroom educator not being adequately trained to handle learners with disabilities in order for inclusion to be effective.

Naicker (2004:19) defines inclusive education as a scheme that is sensitive to the varied needs of learners. This is an integration that develops one system that recognises and responds to the diverse needs of all learners. Dyson and Forlin (2004:32) view inclusion as a means of providing educational opportunities for a previously segregated group of learners who may have had little or no access to schooling. Swart and Pettipher (2005:8) describe inclusion as *a reconceptualisation of values and beliefs that welcomes and celebrates diversity, and not only a set of practices*. Booth (2000:78) sees inclusive education 'as the process of increasing the participation of learners within and reducing their exclusion from the practices, curricula and communities of neighbourhood centres of learning'. This implies 'removing barriers to participation' for all learners. Barriers to learning and involvement can be witnessed at different levels of the educational structure, for instance in the classroom. This may involve both the teaching and learning environment. Supporting inclusion demands that the human resources, such as the educators, learners, parents and people in the community, as well as the material resources be identified (Booth, 2000:92). Idol (1997/30:384) described inclusion as the placement of a learner with 'special learning needs' in a general education classroom ' a hundred percent of the school day'. In addition, UNESCO (2003:2) pointed out that inclusive education does not only benefit learners with disabilities or other marginalized learners but inspires *policy makers* and educational administrators to search for obstacles in the system, to determine how these obstacles came about and how to overcome them.

According to Bender (1998:243), inclusive schools have learners with disabilities at every severity level in the mainstream classes with provision for the required assistance; i.e. they have special education and mainstream educators teaching in the same class as a team. Inclusion provides an unconditional acceptance and incorporation of learners with special needs, irrespective of the severity of the disability, into the regular classroom. However, Mastropieri and Scruggs (2004:7) and Idol (1997/30:384) have distinguished between 'mainstreaming and inclusion' as follows: while mainstreaming refers to the part-time placement into the general setting of learners with special needs, inclusion refers to the placement of these learners in the general education classroom. The learner in mainstreaming is usually in the care of the special educator. The aim of mainstreaming is that the part-time placement of learners in a general education setting will afford the learners concerned more

exposure to the usual classroom schedule. Learners in the inclusive classroom are not solely the responsibility of the general classroom educator, since the educator and other professionals share the responsibility. In Farman and Muthukrishna's view (2002:236), mainstreaming entails the conditional placement of learners with exceptional needs in regular schools, as these learners have to prove that they can cope with the demands of the curriculum in place. These authors see inclusion as implying attending to the barriers that help to segregate learners, thus making the educational syllabus available to all learners in regular schools, irrespective of their ability or disability. Vaughn, Bos and Schumm (2000:32) maintain that while mainstreaming is the accommodation of learners with special needs in the general education classroom to the suitable point of meeting their requirements, inclusion means placing these learners with their non-disabled counterparts in the general education classroom, and making available special support and services to meet their needs. Nevertheless, Fisher, Roach and Frey (2002/6:66) maintain that the moves towards inclusion for learners with special needs notwithstanding, many are still segregated from their peers in the general education classrooms. This may be due to the belief of some that mainstreaming remains the most effective mode of teaching for these learners. Fisher *et al.* (2002/6:66) further pointed out that some writers have criticized mainstreaming as being 'fragmented, overlapping and lacking in the coordination of the content of the curriculum'. The implication therefore is that the problem is blamed on the learner and not on the teaching strategy and circumstances of learning.

Internationally, the wisdom of running two separate education systems has been questioned in a human rights context and from a productivity point of view (Ainscow *et al.,* 2000/40:211). The *Education White Paper 6* (DoE, 2001:5) states that inclusive education should focus on the restructuring of schools where every learner belongs and is supported, whether disabled or able. The rationale behind the placement of learners of various needs in the same setting is that learners will benefit from each other, as those without disabilities will work as interactive associates, as well as models for those with disabilities (Wolery & Schuster, 1997/31:70). However, as a good percentage of learners with special needs are placed in the general education classroom in the inclusive system, it is necessary that the general classroom educators receive assistance from the special educators in order to achieve productive changes in the learners involved (Noell & Witt, 1999/33:29). As Idol (1997/30:384) pointed out, the principal strategy for the implementation of inclusion is the collaboration of a team of professionals. In concurring with Noell and Witt's opinion, the *Education White Paper 6* (DoE, 2001:15 & 19) declares the creation of a broad range of educational support services

that will cater for the needs of learners with special needs, and also that educators will be trained and supported in the facets of teaching and learning with the emphasis on instructional methods that will enhance learning for all learners.

The concept of inclusion is not peculiar to South Africa, as educators worldwide have agreed that *all learners* will profit from this system, their differences and unique characteristics notwithstanding. The suggestion therefore is that schools and learning centres need to have the capacity to handle diverse needs through applying curricula flexibly (Ramphal & Ramphal, 2002:246). Some developed countries tend to appreciate the need for all learners to have appropriate education that meets their needs, for this to be done in the least restrictive environment and for the appropriate support to be provided. Only when absolutely necessary will the learner be placed in a situation separate from the general classroom. Salend (1998:11) maintains that the least restrictive environment implies educating learners with disabilities in the same general education classrooms with their able peers, bearing in mind the learner's educational needs and not the disability. Sands *et al*. (2000:57) also advocate the education of a learner in the least restrictive environment. Gable and Hendrickson (2000:10-11) are of the opinion that the number of learners to be served will be greater if the learning environment is less restrictive. They also believe that a more restrictive setting may be considered for a learner only if he cannot be placed in a general education classroom due to the severity of his disability. As all learners are entitled to participate in the process of education, the focus of attention should be the diverse needs of learners and the provision of equal opportunities for learning in order for learning to be productive (Ramphal & Ramphal, 2002:246).

The researcher has great appreciation for the concept of the inclusive education system but has difficulty in visualising its success at a grassroots level. The researcher understands this idea to entail the placement of all learners together in the same classroom, irrespective of whether they are deaf, blind, gifted, physically challenged or intellectually challenged. The *Education White Paper 6* (DoE, 2001:49 & 50) outlined the revision of teacher education to encompass developing the *competencies to recognise and address barriers to learning and to accommodate the diverse range of learning needs,* as well as *eighty hours annual in-service education and training requirement of the Government in respect of educators…* The researcher can identify with recognising barriers to learning but thinks that accommodating the diverse needs of learners will probably give rise to practical problems. These problems include the demands this structure could place on educators, the poverty level in certain communities and schools, which might manifest itself in a lack of the necessary facilities, the

possible negative attitude of educators towards learners with special needs, and also probably over-population in the classroom.

In the 90s, Hunt and Goetz (1997/31:16 & 17) were of the opinion that little research had been done to check the effectiveness of inclusion. They felt that this was because the concept was based on human rights and not learning theories or productive tutoring. Hunt and Goetz (1997/31:17) also argue that the results of two studies conducted did not show noteworthy differences in either the academic or behavioural performance of learners of different categories. Mastropieri and Scruggs (2004:21 & 22) point out that opponents of full inclusion believe that general educators may probably be in the system without the right disposition to handle learners with special needs, that inclusive classrooms may lack the resources necessary to fully integrate learners with needs, and that classes may possibly be overcrowded, especially if there is a need to provide adaptive tools such as *Braillers* and *speech synthesizers* for some of these learners. Nevertheless, the views of Hunt and Goetz have been contradicted by Vaughn *et al.* (2000:30 & 107), who gave a vivid description of the effectiveness of cooperative teaching in inclusive education. Vaughn *et al* (2000:30) argue that collaboration among professionals in education is the trend in the implementation of inclusive education. Agreeing with this view is Mamlin (1999/33:37), who believes that teamwork is important for the inclusive system to succeed, as all work together towards achieving the same goal. Collaboration is aimed at ensuring a discourse among the professionals that will give the support necessary to fulfil the educational and social needs of *all* learners concerned. Vaughn *et al.* (2000:30) therefore promote cooperative teaching, where the general and special educators work hand-in-hand in the coordination of programmes for *all* learners. Both educators indulge in co-planning the 'goals and desired outcomes' for the class members and specific learners, as well as assigning themselves explicit roles during lessons. In co-teaching, both educators are in the classroom, each carrying out their assigned responsibility, which varies according to the set goals and the demands of learners (Vaughn *et al.*, 2000:30 & 107). Kochhar, West and Taymans (2000:90) also share this point of view. Planning the goals enables the educators to pinpoint learners for individual attention to outline the support required to assist learners and to also improve learning for *all* learners. The advantage of cooperative teaching is that learners, irrespective of their conditions, profit from both professionals who are required to work with *all* learners (Vaughn *et al.*, 2000:30 & 107). Further support for the ideas of Vaughn *et al* is to be found in the work of Kochhar *et al.* (2000:37 & 38) who are convinced that the gains and outcomes of inclusive education system outweigh the problems that could be encountered by all learners and stakeholders. These

authors maintain that the gains for learners include the promotion of agreeable social behaviours, enhancing self-esteem, enhancing the adaptation of different instructional strategies, providing a broad range of support for *all* learners, as well as making available *specialised support in the general education environment.* For educators and the school, the benefits include improvement in accepting diversity in learners; enhancing educator application of 'specialised educational strategies' to non-disabled learners in need of support; educator consciousness of the needs of learners with disabilities; making educators aware of the available support services in the community; inspiring educators to demonstrate strategies that encourage cooperative learning amongst *all* learners; and assisting educators in the execution of instructional strategies that could benefit *all* learners. Inclusion also creates a sense of belonging, which positively influences the learner's *self-image* and *self-esteem*, while enhancing their *motivation to achieve* (Kochhar *et al*., 2000:88). Kochhar *et al.* (2000:67) argue that with conscious planning and dedication, any barriers to inclusive education can be surmounted. Educators are required to identify the strengths that learners possess so that the curriculum and method of instruction are complementary to their strengths and skills.

According to Ballard (1995:2 & 3), in order to make the inclusive education system work, inclusion has to be based on the mainstream curriculum and teaching methods, with educators giving support to one another. Westling and Fox (1995:229) suggest that learners with special needs be accepted as associates of the 'school community' and thus quartered in *grade-level* rooms along with their peers, as contrary placement will only indicate segregation. Bailey (1995:15) believes that an inclusive curriculum and inclusive approaches to schooling imply providing quality inclusive education programmes, while the *Education White Paper 6* recognises that all these things involve a great deal of time and planning and very difficult work, and therefore outlines the long-term goals as follows (DoE, 2001:45): The long-term goal of this system indicates a twenty-year plan of development. The vision is that in twenty years, a system would have been developed to identify and manage barriers to learning, and to acknowledge and attend to the varied needs of all learners. Also envisioned is that the system will include institutions such as special schools, resource centres and full-service schools and other schools that may be deemed necessary. Finally, included in the twenty-year plan is the provision of *life-long and high-quality education*. The short-term goal of this vision includes assessing the *weaknesses and deficiencies* of the present system of education and making schools accessible to those not accommodated in it. The Department will focus on and revise policies and structures vital to the process of transformation, carrying out a campaign to make the public aware, developing the facilities and expertise necessary at all levels, rationing and

combining limited resources and developing mechanisms that are already central in the system in order to boost access to diversity, as well as attend to barriers to learning. The short-term span will also ensure the development of a district-based support system, as well as assessment and follow-up procedures. In inclusive education, it is helpful to spread the learning content, the learning outcome, and also the teaching and learning process to fit the uniqueness of individual learners. As Gous and Mfazwe (1998:1) put it, 'every learner is unique'. There are teaching strategies that yield productive results for all kinds of learners and these can be effective for inclusive settings, as they can be used to teach learners with different needs (Choate, 2000:36 & 37). To achieve an effective out come with inclusion, some of the basic principles include:

- Teaching to fit the learners' learning profiles, accommodating their unique needs and learning styles.
- Using productive teaching strategies and methodology to reach learners.
- Teaching and giving tasks that are relevant to academic achievement, as well as to social development.
- Getting learners to be actively involved and engaged in the teaching and learning process (Choate, 2000:36-42).

Lombana (1992:6) states that mainstreaming requires the availability of support services because most learners with difficulties require supportive services or individualised instructional strategies if they are to be fully integrated into regular classrooms. Put differently by Farman and Muthukrishna (2002:236), the victory of a learner in a learning situation relies upon a setting that inspires the whole range of learners. Consequently, the educator is required to fully understand each learner so as to answer the demands of a variety of learners adequately by applying different teaching strategies and making available a variety of learning experiences. This calls for flexibility in the management of both the school and classrooms, bearing in mind the fact that these learners present different emotions and may come from different social backgrounds. Educators are therefore required to be mindful, as Keefe (1996:108) suggests, of the diversity of learners in meeting their diverse demands, and to cater for this in supplying equitable support. According to Ramphal and Ramphal (2002:251), the inclusive classroom gives learners a feeling of being part of a community, as they are also socially integrated.

Salend's (1998:5) opinion of inclusion is that it is an educational system designed to accommodate and answer the needs of *all* learners regardless of whether they are disabled or not. Salend (1998:6-7) advocates four principles of effective inclusion as follows:

(i)   Diversity is embraced when all learners are placed together in a general education classroom, irrespective of '*their learning ability, race, linguistic ability, economic status, gender, learning style, ethnicity, cultural background, religion, family structure and sexual orientation*'.

(ii)   Educators and all concerned should be susceptible to the individual needs and differences of learners and appreciate that all of them are valued as individuals.

(iii)   The educator in the inclusive classroom has to be flexible, sensitive and familiar with the learners' needs and should regularly examine himself for self-improvement.

(iv)   In order for inclusion to be effective, there has to be collaboration between educators, other professionals, learners and families. All involved must work cooperatively and responsibly, sharing resources for the good of learners.

In his work, Ainscow (2005/6:118 & 119) identified the following four elements of inclusion as being worthy of recommendation to any education system:

1.   *Inclusion is a process*, and this implies the continuous seeking of a better means of reacting to diversity, where differences serve as a positive incentive that can enhance learning.

2.   Inclusion deals with the recognition and elimination of barriers.

3.   Inclusion deals with the *presence*, *participation* and *achievement* of all learners concerned.

4.   Inclusion places emphasis on marginalized learners, as well as the underachiever.

The following could be regarded as a summary of inclusive education and training in South Africa, according to the *Education White Paper 6* (DoE, 2001:16), which states that inclusive education and training:

▪   *Are about acknowledging that all children and youth can learn and that all children and youth need support.*

- *Are accepting and respecting the fact that all learners are different in some way and have different learning needs which are equally valued and an ordinary part of our human experience.*

- *Are about enabling education structures, systems and learning methodologies to meet the needs of all learners.*

- *Acknowledge and respect differences in learners, whether due to age, gender, ethnicity, language, class, disability or HIV status.*

- *Are broader than formal schooling and acknowledge that learning also occurs in the home and community, and within formal and informal modes and structures.*

- *Are about changing attitudes, behaviour, teaching methodologies, curricula and the environment to meet the needs of all learners.*

- *Are about maximising the participation of all learners in the culture and the curricula of educational institutions and uncovering and minimising barriers to learning.*

- *Are about empowering learners by developing their individual strengths and enabling them to participate critically in the process of learning.*

The participants in this study will not be selected because of a particular disability or 'special need'. However, in this literature review, 'learning support' is discussed in its broadest sense, because the researcher believes that most learners are in need of 'learning support' at some point in their school career. Inclusive education embraces the idea of support to <u>all</u> learners and therefore forms an essential part of this literature review.

In this section, the researcher will look at literature on the following aspects as learning support strategies: the curriculum, individualised curriculum, cooperative tutoring, peer tutoring, motivation, as well as instructional strategies such as the use of pictures, visual aids, animation as multimedia learning, knowledge maps, and maps and texts. The researcher intends for these to inform the learning support strategies that may be considered as possibly feasible for the high school learners participating in this study.

2.5.3   THE CURRICULUM

In Davis, Kilgo and Gamel-McCormick's view (1998:144), the curriculum helps educators to *know where they are going and how to get there*, while according to Mastropieri and Scruggs (2004:157), it not only deals with the teaching materials necessary for learning but also

involves the span and order of study, and so could buttress and boost teaching goals if correctly applied. The *Education White Paper 6* (DoE, 2001:19 & 20) has identified the curriculum as the greatest barrier to learning. To address this barrier is to ensure that the process of learning is flexible enough to serve different needs. As has been stated by Donald *et al.* (2002:302), it is important for both the materials and content to be relevant to the age and interests of the learner. Another important aspect is flexibility in the learner's learning pace, as he has to be given adequate time to master the material being worked on.

Since every learner cannot necessarily achieve what has traditionally been seen as the appropriate competencies, the school authority has to look into what changes are required in both the curriculum and the learning environment in order for learners to experience successful learning (MacIntyre & Deponio, 2003:88 & 89). The need for a flexible curriculum cannot be over-emphasised. The researcher personally thinks that educators mostly know and understand learners in their care and so should, with the support of the principal, be able to make changes that can make learning more productive. The learning tasks will have to be matched with the learning needs and not to the pre-existing expectations (MacIntyre & Deponio, 2003:89).

It is the opinion of Davis *et al.* (1998:145) that an appropriate learning environment is such that the learner's interests and experiences determine the activities. Hence the need to address areas of development, accentuate interaction with peers, as well as adults. Also, the physical environment should be concrete, real and relevant to the learner's life and should have meaningful educational goals. The need for additional learning support may arise in some instances.

2.5.4   INDIVIDUALISED CURRICULUM

An individualised curriculum can be an important strategy in supporting learners with specific difficulties. According to Sands *et al.* (2000:60), the individualised education programme takes care of the educational needs of a learner and not the group or the disability. There may be a need to bring in support assistants to help the regular classroom educators with learners who need additional support (MacIntyre & Deponio, 2003:92; Van Kraayenoord & Elkins, 1998:167). The educator needs to understand the preferred learning style of the individual learner (MacIntyre & Deponio, 2003:89) and then plan activities to take care of the overall requirements of the learner. He also has to observe, evaluate, as well as communicate and

collaborate with the family (Davis *et al*., 1998:146 & 147). Larkin and Ellis (1998:557) feel that the supreme goal of those working with learners experiencing learning difficulties is to get them to be autonomous, confident, proficient and productive. Ideally, this should be the ultimate goal of every educator.

According to Smith (1998:337), the learner may not learn what is expected for his age and intelligence levels if the content is not matched to his readiness to learn. The educator using materials and methods that will facilitate his progress tailors the individualised instruction programme to the learner's needs. Heron and Harris (1993:129), as well as Hammill and Bartel (1995:452) also advocate individualised tutoring, while Hammill and Bartel (1995:456) believe that parents should be involved by being made to feel welcome at the school, being informed about the programmes and the progress of their children. Parents can be partners with the school in helping learners to learn. Smith (1998:340) concludes that the curricular content has to be modified *to teach the right objective at the right time* having in mind the readiness and learning style of the learner.

Although the individualised educational programme is an important learning support strategy, it may be problematic in South Africa because of the dire needs in many classrooms and schools, high educator-learner ratios, extra stress on educators and a lack of resources and capacity.

2.5.5   COOPERATIVE TUTORING

This is a student-mediated learning process focusing on cooperation and collaboration and allowing for individual accountability, where the learner is responsible for his own learning, as well as helping other learners (Van Kraayenoord & Elkins, 1998:161; Meese, 2001:221 & 222). The researcher, having witnessed how effective it could be while observing learners at work often implemented this support strategy as an educator. The learners were actually seen to enjoy giving help and support to one another, as well as bonding and creating friendships. Hence the researcher advocates the use of cooperative learning as an effective strategy to support learning for high school learners experiencing learning difficulties. It is the opinion of Gillies and Ashman (2000/34:19) that learners working cooperatively in groups are very helpful as they make use of a language that is inclusive and helpful in understanding the explanations being given. The researcher did observe the point made by Gillies and Ashman and saw how productive learning became.

Learners are usually more conscious and understanding of their fellow learner's problems than their educators. Also observed is that they are able to dwell on the exact problem and give help with eagerness and sincerity in a language that the learner encountering difficulty can easily understand. However, Webb's argument (in Gillies & Ashman 2000/34:19) is that the cooperative assistance has to be related to the need of the learner, has to be given precisely at the time the learner wants it and at the level he will appreciate. Learners understand each other better possibly because they are on the same developmental or age level. They therefore tend to comply with Webb's argument of giving help when most needed. Giving assistance when not required may not produce the desired effect, as readiness to learn has to be considered if productive learning is to be achieved. Hunt and Goetz (1997/31:18) agree with the effectiveness of cooperative tutoring by outlining the success of getting some learners to acquire targeted skills through this strategy. Cooperative tutoring may probably work well in South Africa as a support strategy, due to the system of Outcomes-based Education, which stresses collaboration and cooperation, that is, learners working as a team (Le Grange & Reddy, 1998:8).

A dimension to cooperative tutoring is cooperative learning, which involves group arrangements, where learners are given group activities to complete. Bryant and Bryant (1998/31:41) describe cooperative learning as a 'peer-mediated' teaching strategy that enhances academic accomplishment, as well as socially recognizing learners irrespective of their ability. This strategy gives those with difficulties in learning the chance to receive additional assistance from peers, as well as to contribute to the group effort (Mastropieri & Scruggs, 2004:236 & 240), and work to attain a common result (Putnam, 1998:18). Johnson *et al.* (1994:9-11) maintain that the success of cooperative learning depends on *positive interdependence*, where the efforts of each member of the group benefit the others; *group accountability*, where the group accounts for the achievement of set goals, with each member making reasonable input; *promotive interaction,* where distributing resources among members, giving support and encouragement, as well as applauding each other's input promotes success and where this system ensures both academic and personal support; *interpersonal and small-group skills,* where learners acquire the art of effectual headship, judgment making, confidence building, communication and conflict management; and finally, *group processing*, where members discuss their achievements while maintaining successful working rapport. Putnam (1998:19-22) also agrees with the above points of view by Johnson *et al.* by outlining the importance of 'positive interdependence, individual accountability, co-operative skills, face-to-face interaction, student reflection and goal setting, heterogeneous

groups and equal opportunity for success'. According to Winebrenner (1996:16), this is different from the traditional group work and learners with learning difficulties involved in this type of strategy do better as it becomes permissible for learners to assist each other. Learners participating in cooperative learning have to differ in ability, gender, race and background and should share materials while working towards a common goal (Van Kraayenoord & Elkins, 1998:161; Meese, 2001:222). As a large group in cooperative learning ensures an ample stretch of knowledge, proficiency, skills, varied thoughts in handling tasks and a multiplicity of opinions (Johnson, Johnson & Holubec, 1994:24), diversity in ability, gender, race and background of group members may probably bring about the same effect (Bryant & Bryant, 1998/31:43). Nevertheless, learning has to be under the observation and supervision of the educator (Meese, 2001:222). All members of the group are responsible for the achievement of their common goal, and until this is attained, the member should not feel successful, since the success of each member of the group will determine the success of the whole group. It is possible that some members may need to tutor others in order to bring them up to the level where they can effectively contribute in the group. This process demands that each member of the group learns the commonly acceptable social skills required in group pursuits, and this can result in improved self-esteem, enhanced peer acceptance and active learning (Putnam, 1998:19, 25 & 26).

Nevin (1998:49) is of the view that the success of an individual in the present century depends on his ability to mix with a diversity of people. Cooperative learning can assist the individual in acquiring this ability, as it not only assists the individual learner in attaining a personal educational goal, but also helps others simultaneously. However, cooperative learning can only be effective if the educator is involved in planning and outlining the aim of the exercise and the materials to be used (Nevin, 1998:49 & 50), as there is a need to carefully decide the consistency of the group. According to Johnson *et al.* (1994:24), the size of the group is dependent on the outcomes of the lesson, the age of learners, available materials, time duration of the lesson and the experiences of squad members. A large group implies a wide diversity of abilities and resources. For efficacy, the class structure should ensure easy access amongst learners in each group, the educator and working materials (Johnson *et al.*, 1994:31).

2.5.6   PEER TUTORING

The researcher's personal observation reveals that learners tend to learn better from each other than from their educators. Peer tutoring is a form of co-operative learning where learners are

allowed to work and help each other, and it can take different forms (Van Kraayenoord & Elkins, 1998:162). As described by Heron and Harris (1993:130), peer tutoring implies a student giving help to another in a subject or with a problem. Winebrenner (1996:71) describes this type of tutoring as a system where learners who understand an issue or question explain it to those who do not. However, this should be limited to tutors who volunteer to assist their peers, as forced tutoring may result in erroneous and unsatisfactory imparting of information to learners who are already experiencing learning difficulties.

According to Van Kraayenoord and Elkins (1998:162) and Meese (2001:232), normally achieving learners could be used to tutor their counterparts experiencing difficulties. Learners with mild difficulties can also be made tutors for their younger peers (Meese, 2001:235). Then again, a group consisting of learners with difficulties can work together as tutors and tutees (Van Kraayenoord & Elkins, 1998:162). For Eysenck (2000:427), the ideal tutors in peer tutoring should be somewhat older than the tutees because they may still remember what they felt at a younger age with constraints of comprehending, and so would be better able to impart worthwhile knowledge to tutees. The above descriptions could be regarded as the distinction between cooperative learning and peer tutoring. Bender (1998:262) is of the view that peer tutoring yields positive results both for the tutor and the tutee. Westling and Fox (1995:233) view peer tutoring as a successful means of enforcing inclusive education and of promoting peer interaction. Van Kraayenoord & Elkins (1998:162) indicate that studies have shown that this system has resulted in academic improvement. Nevertheless, success can only be achieved if the educator is actively involved by planning structured lessons for the tutors and monitoring the performances of both the tutors and tutees (Meese, 2001:236).

2.5.7   MOTIVATION

Motivation is a fundamental and essential aspect of the teaching and learning process, as its absence can constitute a barrier to learning (Adelman & Taylor, 1993:163). There is a tendency for educators to blame factors outside the school environment for the learner's lack of attention and participation in the class. However, research on motivation suggests that the learner's motivation to learn depends on whether his learning needs are being met, whether the learning material is relevant to the needs and whether the learner is actively involved in the process (Jones & Jones, 2001:187).

The will to learn is the very heart of the learning process (Johnston, 1996:27). The learner has to exhibit the will to learn if the learning process is to be effective. Some learners may regard school as an anxiety-producing and frustrating environment. The understanding of a learner's academic needs and the relationship thereof to motivation will help educators in providing motivating instruction (Jones & Jones, 2001:187). That educators need to develop in the learner the motivation and will to learn cannot be overemphasized, as this is needed for the learner's independence. The educator therefore has to explore how to encourage motivation to learn by the use of different teaching methods and different types of learning environments. In Muthukrishna's opinion (2002:145-146), this is achieved by ensuring that:

1.   The learner's curiousity is awakened and maintained through giving tasks that are challenging enough to stimulate the learner's interest in learning.
2.   The learner is given activities in which he is encouraged to make meaningful sense of the learning material.
3.   The learning environment is such that the learner is able to interact with educators and peers, as learning can be seen as a social activity.
4.   The learner has an in-depth understanding of the material being learnt.
5.   The materials learnt are meaningful, relevant and related to the world outside school.

Ensuring motivation also necessitates presenting materials at suitable difficulty levels, presenting tasks that are clear, interesting and meaningful, and creating a learning environment where the emphasis is on successful learning and achievement of goals and not on the best performance (Mastropieri & Scruggs, 2004:250-252). An unfriendly school environment with dull and uninspired teaching may result in a lack of motivation, thereby raising barriers to learning.

There are various necessary components that have to be achieved in order for learning to be successful and these include the learner's ability, motivation, affect (mood or emotion), social circumstance and the general climate in which learning is taking place. The absence of any of these components may affect positive learning (Mastropieri & Scruggs, 2004:247). Motivation and affect usually overlap in the learning process. While motivation is the extent to which the learner wishes to succeed, affect is the learner's emotional mood as well as his personal mood. These two components are complementary, as one depends on the other for useful learning. So also are the social circumstance of the learner and the climate, which may be regarded as components within the learner and can adversely affect the process of learning.

Other factors that could give rise to barriers to learning, according to the *Education White Paper 6* (DoE, 2001:18), include inflexible curriculum, language in use, communication breakdown, faulty policies, inaccessible environment, sketchy support services, negative disposition, untrained educators and lack of parental involvement.

Reay (1995:56) is of the view that people learn better when motivated, while Wolery and Schuster (1997/31:64) state that motivation increases performance and learning when variables such as learner's preferences and reinforcers are used. In other words, values attached to the learning process, as in rewards or punishments, are the motivational incentives (Adelman & Taylor, 1993:165). The competence of the teaching personnel and the physical surroundings where learning occurs, play an essential role in motivating learners to learn (Adelman & Taylor, 1993:204).

The learner's motivation may be intrinsic, where he participates either out of inquisitiveness, the inclination to be successful or to have a say; or it may be extrinsic, where his participation is actually in expectation of external reward (Mastropieri & Scruggs, 2004:247; Adelman & Taylor, 1993:165). When the learning environment is poor, the transaction between the learner and the environment will often yield undesirable results (Adelman & Taylor, 1993:160). The learning environment has to offer challenges but should not be over-demanding or overwhelming if the learner is already exhibiting difficulties.

As it is important for the learner to be motivated both intrinsically and extrinsically, a match has to exist between the learner and the environment, to enable the learner to achieve what is expected of him (Adelman & Taylor, 1993:163) by the educational system and the wider society. It is therefore important for the educator to create a supportive classroom environment where all learners feel accepted and peer support is encouraged, where instructional materials and curriculum content are at the right level of difficulty and where the learning tasks are seen by learners as relevant and worth learning. This can improve the learner's motivation and at the same time create positive affect (Mastropieri & Scruggs, 2004:249-251). As put by Adelman & Taylor (1993:163 & 166), the creation of an environment that matches the learner's motivation and level of development will make for proper learning, as well as boost the likelihood of success by the provision of support and guidance. The point therefore is that as motivation is essential for learning to occur, its absence may create barriers to learning, thus leading to learning difficulty.

Finally, Choate (2000:20) suggests that learners who struggle to keep up with their peers, the educator and the curriculum could be helped if educators were to abide by the following guidelines:

> *Slow the pace of instruction to match the student's learning rate, review and re-teach before each lesson, provide extended readiness and practice activities for each lesson, emphasize relevance and real life skills, provide ample talking and listening activities to expand language skills and concepts, shorten assignments to manageable units,* and *directly teach word meanings for all subjects.*

According to Jones and Jones (2001:183), educators need to study the curriculum and method of teaching to ensure that the learner's difficulty level is addressed, especially when the learner starts to play truant or fail in class-work.

2.5.8   PLAY ACTIVITIES

The researcher believes that play, if properly organized and supervised, and with the appropriate facilities, can serve as a learning support strategy for learners who are experiencing barriers to learning. A promoter of children's play is the Association for Childhood Education International (ACEI). This association, as stated by Isenberg and Quisenberry (2002), is aware of and asserts the importance of and call for play in the lives of children, as play is seen as *a serious behaviour that has a powerful influence on learning.* Some of the positions upheld by the association in relation to the importance of play are as follows (Isenberg & Quisenberry, 2002):

1.   *ACEI believes that play- a dynamic, active, and constructive behavior- is an essential and integral part of all children's healthy growth, development and learning across all ages, domains and cultures.* Consequently, the view is that *non-attendance* at play activities may imply a barrier to the healthy growth of resourceful learners.

2.   *ACEI believes that play enhances learning and development for children of all ages, cultures and domains,* for play performs a significant role in the learner's physical development (as in the enhancement of motor skills and body consciousness). Play is important for social and emotional development (as in belonging to an assemblage

and learning to exist and work with groups. In other words, social skills and the sensitivity necessary to appreciate others' desires and ideals, as well as managing emotions and self control could be achieved through play). Play is also important in cognitive development.

3.   *ACEI believes that play is a powerful, natural behavior contributing to children's learning and development and that no program of adult instruction can substitute for children's own observations, activities, and direct knowledge,* for playing with newly acquired information makes it the player's.

As Bjorklund and Brown (1998/69:604) point out, the advantage of play activity is *in the form* of *a break from demanding tasks.* Bjorklund and Brown (1998/69:604) believe that younger learners have need of physical play, which provides breaks and changes from scholarly responsibilities. The researcher thinks that what functions for the younger learners could apply equally well to adolescent learners, especially in attempting to generate opportunities to unwind after experiencing academically challenging tasks.

In conclusion, the researcher's analysis is that play, as a recreational activity, could boost the learning process, as this form of exercise keeps the learner on top form and alert. The researcher also believes that play could serve as a learning support in that through play, a range of skills and ideas can be acquired, as Isenberg and Quisenberry agree (2002). For this reason too, the researcher supports the provision of organized and supervised play activities for learners in high school.

2.5.9   INSTRUCTIONAL LEARNING SUPPORT

2.5.9.1   Use of pictures

Although it has been found that the memory of a learner for pictures is often superior to that for words, most texts are dominated by words, and where pictures do appear, they are often merely decorative and so do not necessarily enhance the understanding of the text. It would be ideal if pictures could supply extra non-verbal memory on which the learner could rely should his verbal memory fail him. The use of adjuncts is regarded as vital in learning, as they are of immense assistance to learners in identifying what might possibly be in the text but is hidden from them (Robinson, 2002/14:1 & 2).

The use of pictures in learning has been seen to be valuable as they complement the text. With pictures the learner may be better able to perceive, understand and remember the information contained in the text. There are five main functions of pictures: they are decorative, representational, organizational, interpretational and transformational. Decorative pictures bear no relation to the text and consequently are not helpful in understanding it better. Representational pictures are used quite often as they are employed to illustrate the descriptions in the text. Organizational pictures are used to portray the structural plan of the text. Interpretational pictures are most useful where learning difficulty is exhibited, for these are very helpful in illuminating complex texts. Finally there are transformational pictures that are aimed at enhancing memory, as these help the learner to call to mind facts in the text (Carney & Levin, 2002/14:7). It should be noted that the pictures used have to conform to the text in order to improve content learning, as conflicting pictures can only hinder the learning process (Carney & Levin, 2002/14:8 & 9). Peeck's review (in Carney & Levin, 2002/14:10) indicates that apart from pictures promoting learning, they also boost motivation, learner's focus and profundity in processing, as well as shedding light on the text. The use of pictures may be better if precise directives are provided.

2.5.9.2   Visual displays

According to Schnotz (2002/14:101), visual displays are becoming increasingly vital in teaching and learning as these now make use of pictures, diagrams and graphs as text adjuncts. Such visual aids as 'static and animated illustration, geographic, thematic and knowledge maps, and graphs' are different, and are used effectively for divergent reasons that deal with correspondence, learning and reasoning. Regarded as icons are static and animated illustrations, as well as geographic maps. Graphs and knowledge maps are more acceptable as icons than as symbols, where icons are considered to be emblems indicating specific phenomena with similar structural qualities and are connected to the represented content on concrete or abstract grounds (Schnotz, 2002/14:102 & 103). While texts are in the class of 'descriptive representation', visual displays are seen to be in the class of 'depictive representation' which is made up of iconic marks. It is nevertheless worth noting that both descriptive and depictive representations serve different purposes and that the descriptive representation is regarded as being more effective. That is, while the descriptive representation gives a clear message (such as 'no pets allowed'), the depictive representation will give the same message in the form of a picture of a pet with the prohibitive symbol across it (Schnotz, 2002/14:103 & 104).

All types of visual displays employed in support of learning should be determined by the individual learner's cognitive processing. In other words, the success of visual displays as text adjuncts depends largely on the learner's pre-existent knowledge, intellectual abilities, as well as his learning skills and age (Schnotz, 2002/14:113). The use of visual displays will undoubtedly advance understanding, especially where the learner has little prior knowledge and has to deal with a difficult subject. However, the effectiveness of learning through these displays depends on the connection between the display and the requirements of the task, as well as the learner's previous acquisition and cognitive capability. Shah and Hoeffner (2002/14:56 & 57) have outlined the use of colour as beneficial in graphical displays, as this is employed in grouping the basics and in reducing difficulties that may be experienced by the learner as he deals with the graphic references. Thus the working memory is not overloaded by the use of legends instead of labels. It has been noted that it is easier for a graph to be read when the features are labelled with the referents.

2.5.9.3   The use of animation as multimedia learning

In the multimedia process of education, the learner is exposed to both the narrative (text) and pictorial (animation) form of illustration. Animation is a stimulating type of presentation that can be used as an instructive tool. This is presented as a pictorial illustration manifesting movement and involving objects brought about by drawing or through simulation (Mayer & Moreno, 2002/14:87 & 88). Whether animation will promote further learning depends on its use. The learner is assumed to engage in more meaningful learning in multimedia presentations than in the single medium. That is, the learner usually learns better if both verbal and pictorial are presented simultaneously (Mayer & Moreno, 2002/14:91; Schnotz, 2002/14:107). The researcher thinks this strategy could be true for learners with learning disability if the verbal presentation is at the intellectual level of the learners involved.

Mayer and Moreno (2002/14:93, 95-97) outline seven principles involving animation. These are as follows:

1.   The multimedia principle indicates that learning is more effective when both animation and narration are applied than when narration alone is used. This use of multimedia enables the learner to make a mental link between related words and pictures.

2.   The spatial contiguity principle implies that learning is more productive when words are presented next to the action (animation) being described, as it is easier to make connections than having to find the links. Mayer, Moreno, Boire and Vagge (1999/91:638 & 639) advocate constructivist learning, where the learner is capable of maintaining pictorial and narrative representations in both visual and verbal working memories concurrently. The result of the experiments by Mayer *et al.* (1999/91:639 & 642) shows contiguity effect, as learners could effectively build mental replicas when both visual and verbal representations were concurrently presented. As Moreno and Mayer (1999/91:358) put it, learning is enhanced when the printed text is substantially combined or merged with the pictures instead of being detached. Mayer, Steinhoff, Bower and Mars (1995/43:33) substantiate this view in proposing that the learner be presented with the text (verbal) and images (visual) simultaneously to enable him to carry out the selection, organization and integration of complementary portions of the verbal and visual information in his working memory.

3.   Temporal contiguity indicates that learning can be deep when related portions of words and pictures are presented simultaneously, as these work together in the learner's memory. This is consistent with the opinion of Moreno and Mayer (1999/91:358).

4.   The coherence principle implies that multimedia learning is deeper when irrelevant sounds, words or music are kept out since these may influence or affect the learner's attention, thus impeding his cognitive ability to make mental links between the important portions of the multimedia. Moreno and Mayer (2000a/92:118 & 124) maintain that the addition of extraneous materials overloads the auditory channel, thereby making it difficult to learn, as the learner has to distinguish between the relevant and irrelevant and may end up losing some important materials. He is left with a limited capacity to build a consistent verbal link with the auditory presentation. The experiments by Moreno and Mayer confirmed that the addition of unnecessary auditory material could be detrimental to learning, for this overload will hamper the learner's cognitive ability.

5.   The modality principle implies that the learner learns better when both animation and narration are presented than when animation and on-screen text are presented.

This is because the learner's vision may become overloaded when words are presented visually along with animation. Learners are better able to build links between narrations and animations than between visual words and related pictures. In their studies, Mayer and Moreno (1998/90:312) found that learning is effective when pictorial and verbal presentations are concurrently given. This, according to Mayer and Moreno (1998/90:313 & 314), is more effective than the use of pictorial and on-line text, as this could cause overloading for the visual channel, thereby resulting in the learner possibly missing out on points in the pictures or the on line texts. In other words, this may result in split attention. Moreno and Mayer (1999/91:359) agree with the above point of view, as they also maintain that on-screen text presented simultaneously with pictures diminishes the effect of learning, and so should be presented auditorily instead. Mousavi, Low and Sweller (1995/87:319) also share the opinion of Mayer and Moreno/Moreno and Mayer through suggesting that divided attention ultimately results in 'split attention effect', and also propose the dual presentation of information in order to increase the capacity of the learner's working memory, as well as enhance effective learning (Mousavi *et al*., 1995/87:321).

6.   The redundancy principle states that learning is more productive when animation and narration are presented than when narration, animation and on-screen words are presented, for the latter puts stress on the learner's cognitive ability to make connections between animation, narration and on-screen words.

7.   The personalization principle indicates that it is easier and more effective to learn from animation and narration when the presentation is conversational with the use of the first and second persons. Moreno and Mayer (2000b/92:731) in their experiment found that learners learned better when the presentation was personalised and they could resolve newly emerging problems using what was learnt.

These principles basically deal with the 'cognitive theory of multimedia learning' and not the 'information theory of multimedia learning'. Although multimedia learning potentially enhances learning and boosts profound understanding, the principles cannot strictly apply in all circumstances. Nevertheless, multimedia presentations need to be such as to foster the cognitive process needed to achieve productive learning (Mayer & Moreno, 2002/14:97).

The researcher sees the coherence principle as being prevalent in our lives and thus thinks that it is worthy of attention, as a lack of attention to this principle can be detrimental to effective learning. It is important to note the damaging effect of extraneous material to a text. Harp and Mayer (1998/90:414) referred to this as the use of 'seductive details', which implies the addition of irrelevant information or illustrations in order to make a text more appealing and entertaining to the learner. The result of the use of seductive details may be negative because it tends to reduce comprehension and remembering of the relevant idea, since the learner's attention is diverted away from the main idea to the irrelevant entertainment (Harp & Mayer, 1997/89:93; Harp & Mayer 1998/90:414).

Harp and Mayer (1998/90:414 & 415) outline three hypotheses on the damaging effect of seductive details. These authors believe that the use of seductive details affects the cognitive processes that enhance efficient management of the understanding of a text in the areas of selection, organization and integration. Selection deals with being attentive to the relevant ideas of the text, while organization deals with making internal links amid the selected ideas, and integration deals with making external links between the new ideas and the already stored information. Furthermore, the three hypotheses involve *distraction, disruption* and *diversion.* The distraction hypothesis states that seductive detail is detrimental, as the learner's selective mind is lured away from the vital message. It is, however, suggested that this damage could be minimized by assisting learners through verbally guiding their 'selection processes' in the direction of the main points. The disruption hypothesis affirms that applying seductive details is harmful to learning in that these interfere with the change from one essential point to another, thereby making it difficult for the learner to note connections that will enhance the organization of the textual information. Finally, the diversion hypothesis suggests that the learner may construct a representation around the seductive details and not around the main points of the text, thus bringing up an unrelated previous knowledge, which may not be consistent with the new knowledge. Harp and Mayer (1998/90:428) suggest that applying seductive details at the end of the text may not be too damaging to the learner's sense of recall and transfer, for the influence is on the already read portion of the text. The researcher, in concurring with the above hypotheses, believes that these are practical as they tend to manifest daily in our lives. The situation may be more taxing for a learner encountering learning difficulties, as he may get so carried away by the appealing and enjoyable presentation that he forgets to search for the main idea in the lesson.

The emphasis on the use of seductive details is thus based on the possibility that this use could turn into a barrier to learning, especially where the three hypotheses of distraction, disruption and diversion are involved. It may be easy for an educator to apply the use of seductive details in an attempt either to make his teaching more interesting and understandable or as providing learning support, without realizing that this may have a detrimental effect on effective teaching.

Adding a different dimension to the coherence principle is Harp and Mayer's view (1997/89:93) on *emotional interest and cognitive interest theories.* The emotional interest theory suggests the inclusion of irrelevant but engaging information to the text so as to galvanise the learner into being attentive and probably achieving more learning. The addition, while not connected to the description, is relevant to the topic and aimed at increasing the learner's inquisitiveness and boosting his enjoyment of the text, and perhaps having a positive effect on the learner's cognition, possibly leading to the learner being more attentive. However, the researcher thinks that caution should be exercised in the use of the emotional interest theory, especially where learning difficulty is exhibited, as the 'engaging and irrelevant' information may distract the learner. The use of seductive texts and illustrations, which serve as emotional interest adjuncts, is not advised in science, for this may cause distraction that may possibly result in the learner's ability to pinpoint the cause-and-effect sequence being disrupted. It is the researcher's view, nonetheless, that this could also have positive effects (such as prolonged engagement in the work in progress) if caution is exercised in its implementation.

The cognitive interest theory maintains that such cognitive interest as *explanatory summary* affects the learner's cognition by advancing his comprehension of descriptions given. This is also effective, as the learner is able to centre his selective ability on significant pieces of data. However, Harp and Mayer (1997/89:93) advise against the use of seductive texts and illustrations in science texts since the learner's ability to select, organize and integrate relevant details may be disturbed. In other words, the use of emotional interest adjuncts in texts will affect the cognitive interest theory, for learners are most likely to focus on the irrelevant instead of the relevant.
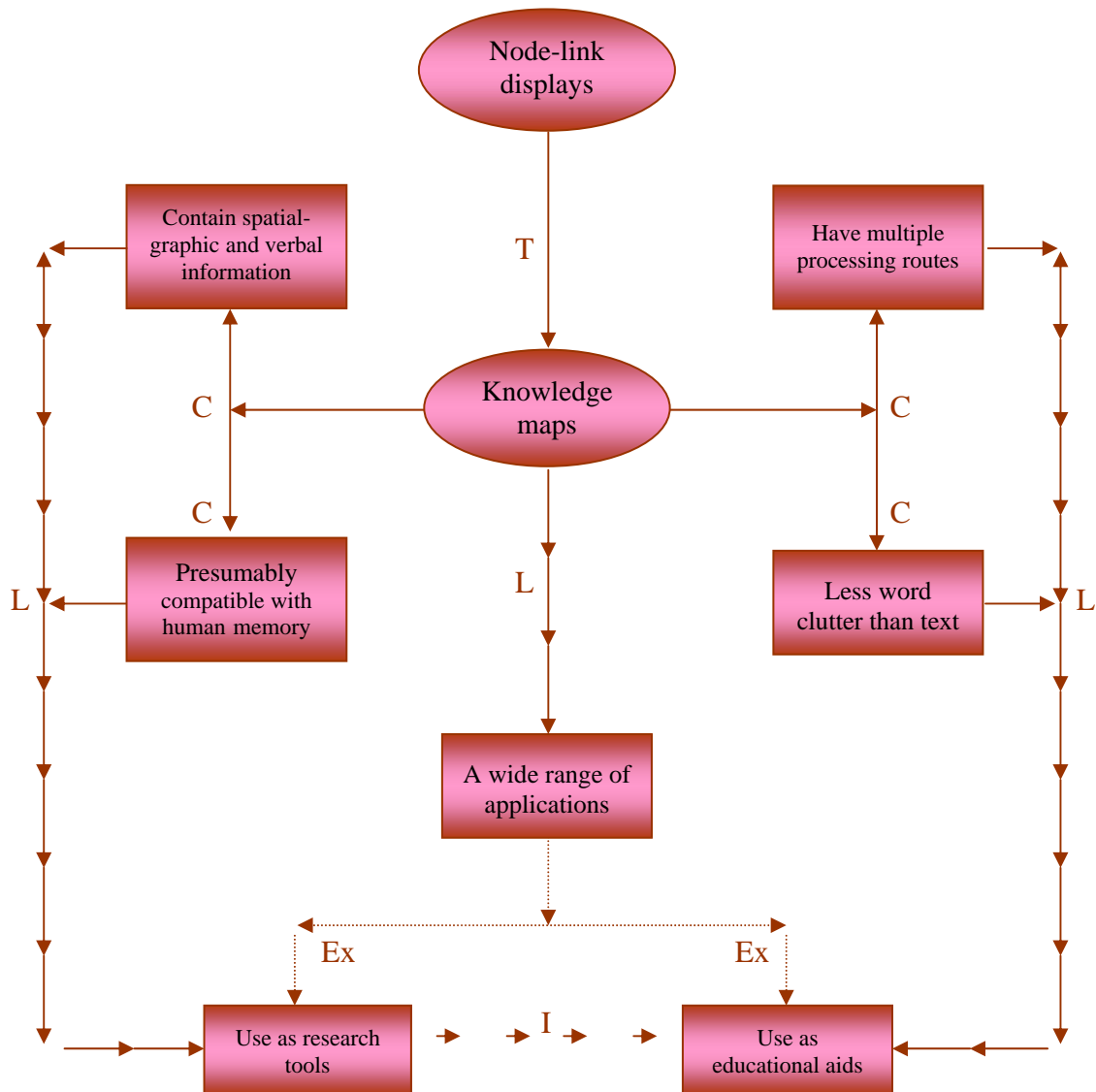
Mayer, Bove, Bryman, Mars and Tapangeo (1996/88:65) outline the significance of 'multimedia summary' in science and suggest that this should be *concise, coherent* and *coordinated*. These are terms explained as follows:

- ▪ 'Concise' implies the use of a few clear illustrations in the visual presentation and a few words in the verbal presentation, thereby enabling the learner to single out words that relate to the illustrations.
- ▪ 'Coherence' involves giving visual and verbal descriptions that are sequential (as in cause-and-effect).
- ▪ 'Coordination' entails presenting visual and verbal forms that conform to the illustrations and words.

The results of the experiments by Mayer *et al.* (1996/88:72) suggest that multimedia summaries make for worthwhile learning outcomes, as they decrease the load that may weigh on the learner's cognition.

2.5.9.4   The use of knowledge maps

The use of knowledge maps as a learning strategy is especially effective for learners who have low verbal ability or learners with limited verbal exposure. Knowledge maps, according to O'Donnell, Dansereau and Hall (2002/14:72), are 'node-link representations' where concepts are placed at points and linked to other connected impressions by means of a string of marked connections. Hall and O'Donnell (1996/21:94) describe knowledge maps as a system of learning where text information is demonstrated 'in a two-dimension, spatial, node-link network'. Moreland, Dansereau and Chmielewski (1997/22:521) assume that the application of knowledge maps will promote recollection through equipping the learner with an easy layout of reading materials, as well as inspiring and furthering the formation of commentary such as questioning, as studies have shown that the generation of the learner's own questions while studying could result in useful learning (Moreland *et al*., 1997/22:523). These links often serve various functions with the use of arrowheads that signify the way ideas are connected. Chmielewski and Dansereau (1998/90:407) also view knowledge maps as presentation in a node-link chart (as in Figure 2.1), while believing that one of its virtues is the presentation of a diversity of connections and arrangements in one exhibition.

Node-link
displays

Contain spatial-
graphic and verbal
information

Have multiple
processing routes

T

C

Knowledge
maps

C

C

C

Presumably
compatible with
human memory

Less word
clutter than text

L

L

L

L

A wide range of
applications

Ex

Ex

Use as research
tools

I

Use as
educational aids

[C = characteristic; Ex = example; I = influence; L = leads to; T = type]

FIGURE 2.1:   **AN EXAMPLE OF A KNOWLEDGE MAP (Chmielewski & Dansereau, 1998/
90:408)**

Knowledge maps are known to be effective in acquiring knowledge, supplying help to
learners with low verbal skills. They serve as additional help in processing texts and supply
retrieval avenues for already acquired learning. Knowledge maps are also known to make
long build-ups of information more noticeable, as learners who use this strategy tend to recall
more of the main ideas and are able to positively transfer knowledge. The strategy also
promotes cooperative learning, which is achieved by training learners in the use of knowledge
maps (O'Donnell *et al.,* 2002/14:74, 75 & 76).

As stated, the use of knowledge maps as a support strategy is notably beneficial for a particular level of learners – those with low verbal capability. The aim of the strategy is the reduction of cognitive load, since this system considerably reduces the amount of words to be processed, thus facilitating visual availability of the textual information (O'Donnell *et al.,* 2002/14:78). Hall and O'Donnell (1996/21:99), in their findings, established that the use of knowledge maps does not only rest on cognition, but also enhances elevation of motivation and absorption of materials in learning. The researcher thinks that the use of knowledge maps as an instructional strategy may work well in an inclusive situation. This complements O'Donnell *et al*'s view (2002/14:82) that knowledge maps are effective for learners with low verbal ability, the hearing-impaired, and learners for whom English is a second language, as these maps use limited words and abridged grammar.

2.5.9.5   The use of maps and texts

Maps are used by educators to indicate distant places, areas of historical features, and to supply facts that will upgrade learning if used with connected text (Verdi & Kulhavy, 2002/14:27). Using maps together with texts enhances cross-code association, as the learner is able to use the stored data in a code as a signal for getting back that stored in another code, and subsequently using this association or link to advance the knowledge gained from the use of map and text. This concurs with Novak's view (1998:31) on meaningful learning, which according to him, is built upon the alliance of the learner's feats, emotions and calculated thinking, and is not acquired by rote.

However, the learner's previous knowledge is important, for it determines the processing of a map and the linking of what is being learned with what is already learned. Also important is the use of feature information (Johnson, Verdi, Kealy, Stock & Haygood, 1995/20:457) such as 'icons' or 'words' on maps, the aim of which is to trigger the previous knowledge, thus making connections with the new learning (Verdi & Kulhavy, 2002/14:28, 29 & 30). According to Verdi and Kulhavy (2001/14:43), studies have shown that presenting the map to learners before presenting the text promotes effective learning because viewing the map first produces pictures that will engender a better appreciation of the text. The rationale (Johnson *et al*., 1995/20:458) is that the map is recorded in the learner's memory, while leaving room for the ability to recall the text information connected to the map. Johnson *et al.* (1995/20:458) conclude that the use of extra information in maps could be effective in calling to mind and recapturing the link with the texts.

The researcher believes that some of this instructional learning support could constitute productive support strategies for participants in this study and could be recommended if not already being exploited in the sample school. However, it would be necessary to identify which strategy best suits the individual participants, since the decision to employ a specific scheme depends on the nature of the barriers each exhibits. In any case, this falls outside the scope of this study.

2.5.10 THE ROLES OF PROFESSIONALS IN LEARNING SUPPORT

The promotion of effective learning may require the involvement of professionals in different fields in the provision of learning support for learners experiencing barriers to learning. The present situation of general education demands ' a more knowledgeable and skilled' team of educators (York-Barr, Sommerness, Duke & Ghere, 2005/9:193), which in the researcher's view should comprise of various professionals. This will inevitably provide a varied and rich collection of people to tackle the diverse range of needs in the classroom. To be considered as important support providers in this study are the general education teacher, the special education teacher, the educational psychologist/school psychologist, the guidance counsellor, the family, the social worker, the occupational therapist and paraprofessionals.

2.5.10.1 The general education teacher

This educator is the most important of all professionals in providing learning support for learners in need of it. Learners may sometimes require more support than can be received in the regular classroom. Therefore, for support intervention to be productive, there may be a need for collaboration between the general education teacher and other specialists or professionals. He is primarily burdened with the responsibility of catering for all learners in his care and he is in possession of detailed knowledge of the learners' daily needs in the classroom. For that reason, he becomes the first professional whose responsibility may be to bring in other professionals based on his suspicion as regards a learner's learning ability or disability (Friend & Bursuck, 1999:30; Smith, 1998:355).

2.5.10.2 The special education teacher

He may sometimes be referred to as the 'learning disabilities teacher' or 'learning support educator', with a diverse range of responsibilities. Apart from specialised teaching, screening,

assessing and evaluating learners with barriers to learning, he collaborates with the regular teacher in the design and implementation of instructions (Lerner, 2003:166; Smith, 1998:355). He also controls and coordinates the assistance provided for learners in need of it (Friend & Bursuck, 1999:31).

2.5.10.3 The educational psychologist/school psychologist

As stated by Mwamwenda (2004:5), educational psychology deals with 'the study of psychology as applied to teaching and learning in a classroom and school setting'. This field deals with the identification of conducive learning situations that will enable effective teaching and learning to take place, as educators are equipped to plan instructions according to the needs, age and interests of learners. Educational psychology involves 'human learning, teaching and instruction', hence the educational psychologist is traditionally seen as an authority in handling individual learners with difficulties, which include barriers to learning (Goedeke & Schoemann, 2002:281 & 282).

A thin line separates the educational psychologist from the school psychologist. The latter is knowledgeable in child development and drawbacks, as well as the structural and human elements in a school setting that can impede learning (Smith, 1998:357). A school psychologist carries out a significant task in the education of learners with barriers to learning, as he can identify the learner's 'cognitive, social, emotional and/or behavioural functioning', thereby giving an analysis of the learner's strong points and weaknesses (Friend & Bursuck, 1999:33). To provide support for the affected learner, collaboration should exist between the educational psychologist and the classroom educators. They should both work 'in a negotiated, mutual and ongoing problem-solving relationship' (Goedeke & Schoemann, 2002:282), as it is the educator's responsibility to supply the necessary resources.

2.5.10.4 Guidance counsellor

Guidance and counselling plays a crucial supportive role in the life of a learner encountering barriers to learning and may also provide assistance to a learner exhibiting 'personal, social or psycho-emotional problems' (Akhurst & Ntshangase, 2002:278). As Mwamwenda (2004:360) pointed out, 'counselling can assist learners and teachers to adjust themselves to their environment'. This view is supported by Friend and Bursuck (1999:33). Whether the learner receives individual or group counselling depends on the nature and/or cause of the difficulty.

Both types of counselling have their merits and demerits; hence the expected outcome should determine the type that will achieve most.

2.5.10.5 The family

The family network helps to build the learner's dispositions and propensities; have the necessity for the involvement of the family in resolving the learner's problem (Smith, 1998:359) through family-school collaboration (Lerner, 2003:169). Family counselling could be explored, as this involves members collectively working to bring about positive changes, not only for the learner with barriers to learning, but for the entire family set-up (Mwamwenda, 2004:371).

2.5.10.6 The social worker

The social worker is somewhat similar to a counsellor, as he assists the educator in dealing with social and emotional matters that affect learners who exhibit barriers to learning. However, he has the added responsibility of keeping the family and the school in contact (Friend & Bursuck, 1999:34).

2.5.10.7 The occupational therapist

The occupational therapist is called in where the learner exhibits problems with his motor skills. The therapist has the responsibility of evaluating the adequacy of the learner's use of his hands and fingers, and giving recommendations and plans for ameliorating the learner's motor skill disability (Friend & Bursuck, 1999:34).

2.5.10.8 The paraprofessional

The paraprofessional may be a certified teacher, who is a specialised aide to an educator and assists in delivering help to learners in need of support (Mastropieri & Scrugg, 2004:54). He may be needed to work with learners who require individual help in carrying out physical activities or otherwise, or to work in inclusive and special education classrooms, as well as the playground and other places where he is in demand. These paraprofessionals can serve as 'instructional assistant, teaching assistant or aide' (Friend & Bursuck, 1999:35).

2.6   CONCLUSION

This chapter presented a review of literature that is related to the theme of this study. While it is by no means exhaustive, it does provide some conceptual parameters within which the data in this study will be analysed.

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