

**READING BETWEEN THE LINES**

***The Conceptual Basis of Reading in Knowledge Construction***

By

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## **ABSTRACT**

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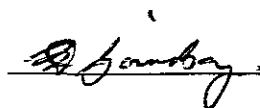
In this dissertation the researcher examines the primary and contributing factors which can be identified that affect the reading capabilities of learners in grades 3, 6, 9, and 12. This research focuses on an investigation to determine whether the inter-related factors co-determine problems that South African learners are experiencing with spelling and the reading of written texts of non-technical to technical levels of complexity.

The researcher reviews academic literature that identifies a theoretical framework that serves as a backdrop to the interpretation of the empirical results, by providing insight into the conceptual, cognitive and neurophysiological basis that make the process of reading possible in humans, by examining the phonological perspective of reading and, by investigating the common reading problems. An empirical survey examining the learners reading habits in correlation with factors from the home and school environment that influence the reading skills of the learners is presented. To this effect the factors affecting the reading skills of learners in grades 3, 6, 9, and 12 are correlated with factors such as the existence of a reading culture in homes, and the learners' entertainment and extracurricular activities. The researcher reports, analyzes, and interprets the results of the data that were obtained via the

questionnaires and that were captured using the statistical computer program SPSS 11.5. The empirical results and the analysis of the fieldwork reveal that the learners' entertainment and extracurricular activities are affecting their reading skills, and that the role of their parents and the school involvement in promoting the culture of reading has contributed to the poor reading results in our learners.

## DECLARATION

I, the undersigned researcher, declare that the content in this dissertation is my own original work, which has not previously been presented to any other institution, for the purposes of obtaining a degree.

\_\_\_\_\_

NALINI DEVI GOVINDSAMY

2006/12/04

DATE



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## ABBREVIATIONS AND ACRONYMS

**OBE:** Outcomes-based Education

**STM:** Short term memory

**LTM:** Long term memory

**IPA:** International Phonetic Alphabets

**fMRI:** Functional Magnetic Resonance Imaging

**LGN:** Lateral Geniculation Nucleus

**MRI:** Magnetic Resonance Imaging

**AI:** Artificial Intelligence

**CVC:** consonant- vowel-consonant

**AAVE:** Afro-American Vernacular English

**UMRP:** Urban Minorities Reading Project

**IRM:** Individualized Reading Manual

**KZN:** KwaZulu -Natal

**SA:** South Africa

**FP:** Foundation Phase

**IP:** Intermediate Phase

**SP:** Senior Phase

**FET:** Further Education and Training

**MBD:** Minimal brain damage

**IPA:** International Phonetic Alphabet

## *Chapter 1*

### STATEMENT OF PROBLEMS AND RESEARCH DESIGN

#### **Introduction**

In this chapter the researcher will state the problems regarding reading among learners in South African schools. The researcher will also provide insight with regard to the research design, objectives and methodology that will be implemented. Information relating to the actual fieldwork and the protocols to follow will be stated. The questionnaire design will also be briefly outlined.

#### **Statement of problems**

Outcomes-Based Education (OBE) was launched with high expectations in 1996 as panacea to Apartheid education. Eight years later OBE is encountering heavy weather. A systemic evaluation of the reading skills of grade 3 learners in a selected number of districts of KwaZulu-Natal (KZN) reveals that there is a worrying lack of reading skills among learners of this phase. This leads to the critical question of whether OBE methodologies are implicated in poor reading, or whether other primary or contributing factors can be identified. To this effect the reading values and skills of learners in grades 3, 6, 9, and 12 will be examined and correlated with factors such as the existence of a reading culture in homes, learners entertainment and extracurricular activities, and finally the impact that cross-cultural teaching and inclusive education have on educators' capacity to give the requisite attention to individual learners that OBE requires. Identification of the specific reading problems and their causes is a complex problem in itself that can further be decomposed into several sub problems within the framework of the communication process since this is part of the written cycle. This includes active and passive communication. The active communicator produces the message, while the passive communicator constructs the meaning of the message. Although OBE is accused for the serious reading problems that exist today, it must be noted that the complex reading problems go way beyond the introduction of OBE into South Africa. Large class sizes, lack of proper updated training and resources for educators, and the drastic changes in family structures, social and economic status, could be contributing factors that will be considered when examining the complexities and problems that engulf reading.

Given the above background, the general problem to be solved with this research is to determine:

*The interrelated factors that co-determine problems that South African learners are experiencing with spelling and the reading of written texts of non-technical to technical levels of complexity.*

This research project is first of all assessing the validity of the standard answers against the background of empirical research that will enable one to detect the reading problems South Africans are experiencing. This research will also determine whether other primary or contributing factors such as the existence of a reading culture in homes, learners entertainment and extracurricular activities can be identified that affect the reading skills

## **Research objectives**

The research objectives of this study are as follows:

1. To determine why learners at the various levels are showing a lower level of reading skills than is expected.
2. To examine whether present strategies employed in OBE to teach reading skills are contributing to the incidence of low reading skills among learners.
3. To determine whether cross-cultural learning correlates with learners' reading skills.
4. To determine by means of test subjects self-report responses from among a representative group of grade 3, 6, 9 and 12 learners what the culture of reading is in their homes, and to correlate their responses with their levels of reading skills.
5. To examine by the same means the choice of learners' extracurricular activities and entertainment activities, and how they impact on their reading skills.
6. To determine by means of a literature survey, including an analysis of documentation from the Department of Education, what the impact is of OBE practice on learners' reading skills.

7. To determine by means of a literature survey, the intrapersonal and interpersonal communication skills required within the human body to conceptualize and construct knowledge during the reading process.

## **Research design**

### **Exploratory literature survey**

NEXUS: A completed and ongoing research in SA

A NEXUS search was conducted to inform the research design and to assist the researcher in identifying which dissertations in South Africa are completed or in progress. The search revealed that no research was currently in progress regarding reading among learners in South African schools. There were also no completed dissertations found regarding the subject of reading.

Sabinet: Books available for interlending between higher education institutions.

A Sabinet search was done to identify books in print for interlending from the libraries of other South African institutions of higher education. Unfortunately the University of Zululand was unable to provide the necessary assistance with regard to this process due to the high financial costs involved in the interlending from the other libraries. Despite this setback, the researcher will employ other creative means in conducting the literature survey required for this study to be successful.

A Google's search facilities: Electronic search engines Google's search facilities such as Google Alerts, Google Suggest, and Scholar Google will be utilized to inform the research design and obtain completed and ongoing research relating to this research project, at both National and International levels.

As a result of a lack of availability of literature on this study the researcher will closely consider the works of Labov who examined reading from a phonological perspective, as recommended by her supervisor in her investigation of reading.

## **Research methodology**

The research will consist of a literature survey that will be followed by an empirical survey of respondents' reading skills by means of a questionnaire. Each respondent will be asked to *report on matters such as their personal reading habits, the culture of reading in their homes, and their extracurricular and entertainment habits*. Individual results will be quantified in the Statistical program SPSS 11.

## **Fieldwork protocols**

The following protocol procedures will need to be executed in order for the fieldwork to be conducted successfully:

1. The researcher will formulate questionnaires for each grade of learners to be tested and for their parents appropriately.
2. The correspondence letter from the supervisor seeking permission to conduct the research in schools in the eThekweni region will be sent to the KZN Department of Education.
3. The sample questionnaires for the different groups of respondents will also be submitted to the KZN Department of Education for approval.
4. When a positive response is received from the KZN Department of Education, the researcher will approach the principals of the various schools of selected respondents with the necessary documentation to conduct the research. Specific days, times and proper procedures to conduct the research will be negotiated with the principal so that normal instruction times of learners will not be disrupted.

## **Questionnaire design**

Questionnaires will be prepared for learners in each specific grade and their parents according to their own level of understanding. The same line of thought and reasoning will be visible for each question asked in all the grades. Where specific responses pertaining to only a particular grade are required to be investigated, those questions will appear at the end of the questionnaire of that particular grade only. The parent questionnaires will be corre-



lated with the learners' questionnaires with a similar pattern of questions, and a few added questions relating specifically to parents. All questionnaires will have a note to the respondents, explaining how the questionnaire should be filled in, with the emphasis that their participation is voluntary.

### **Permissions to conduct research**

The researcher will seek the assistance of her supervisor to facilitate correspondence with the KZN Department of Education to obtain permission to conduct research among learners at the exit levels of each phase in a number of different schools in the eThekweni region.

### **Selection of respondents**

Firstly, respondents will include learners in grades 3, 6, 9, and 12, since these are the exit grades of each phase. Secondly the parents of these learners will also be given the opportunity to give their responses regarding factors that impact on the reading skills of their children. Respondents selected to participate in this research will include respondents from the many different ethnic groups, diverse cultures, and the various socio-economic status that presently exist.

### **Fieldwork**

After obtaining written permission from the KZN Department of Education to conduct research in the selected schools, the researcher will contact the principals of these schools to make an appointment with them to discuss the research purpose and procedure. A set of the questionnaires will also be presented to the principals. Specific dates and times will be arranged for learners to complete the questionnaires. The parent questionnaires will be handed to learners to take home so that they can be completed and brought back timeously. The researcher will then arrange to collect all completed questionnaires from the various schools by prior facilitated appointments.

### **Quantitative analysis**

Quantitative analysis will be done by the researcher. The quantitative analysis will be done after the extraction of the tables and graphs using SPSS 11.5.

## **Database construction**

The SPSS 11.5 program will be utilized by the researcher to construct a database with all the questions, and set up a coding system of the possible responses in order to capture and analyze the data received.

## **Data processing**

Each respondent will be allocated a specific respondent code, which will be used by the researcher to capture and process the data collected from the responses to each question in the questionnaire.

## **Significance testing**

The SPSS 11.5 program will be used to extract the tables and graphs from the database that will be constructed to process the data captured by the researcher from each response. Various sets of responses will be compared and analyzed by means of the tables and graphs.

## **Summary**

In this chapter the researcher stated the problems regarding reading among learners in South African schools. The researcher also provided insight with regard to the research design, objectives and methodology. Information relating to the actual fieldwork and the protocols to be followed were briefly outlined. The questionnaire design was also outlined. In the next chapter the key concepts of the study will be briefly discussed.

## *Chapter 2*

### KEY CONCEPTS

#### **Introduction**

In the previous chapter the researcher stated the hypothesis to be tested and the statement of the problem regarding her dissertation. The researcher highlighted the research methodology that will be utilized. In this chapter the researcher will discuss the key concepts relating to her research regarding the conceptual basis of reading in knowledge construction. The purpose of this chapter is to introduce the main concepts with which the researcher will be working, and which the researcher will analyze in greater detail in subsequent chapters.

#### **Reading and knowledge construction**

According to Wellman (1992), the construct of thinking, in its generic sense, is an everyday description for cognition. He also refers to the mind as a central information processor. The mind actively engages in the thinking process. Some of the cognitive activities the mind is responsible for are, to remember, to recall, to infer, to interpret perceptions, and to store information. The same cognitive activities are required for the reading process. The mind is able to form a knowledge base from these very cognitive activities. It further goes on to formulate a set of understandings about oneself and the world. According to De Bono at <http://www.bookzone.com/10000569.html> "Good thinking is not a matter of intelligence, not a gift- it is a skill that can be practiced and developed like any other. And whether you're a student, business executive or a homemaker, the quality of the way you think is your greatest asset." The future of individuals, society, and the whole world depends on thinking, the construction of knowledge, and how such knowledge is utilized. Knowledge is actively constructed in each individual brain. The brain categorizes the information received. According to Ungerer and Schmid (1999:60), there are different levels of categorization, and "all these cognitive categories are connected with each other in a kind of hierarchical relationship." The first category involves hierarchical relationship, for example if we look at food, it will include vegetable, grains, fruit, etc. The second category involves what is abstract, and includes for example dreams, such as daydreams, night dreams

etc. Information received by the various senses reach the brain. The brain then stores this information. These two categories apply to the reading process.

## **Conceptual blending**

According to Klopfer (2000), conceptual blending accounts for a person's capacity to interrelate and blend concepts extracted from his vast network of conceptual knowledge, and, it is a momentary process of symbolization that selectively interrelates concepts from two separate cognitive domains, a target space and a source space to conceptualize a new perceived relationship known as a blended space. In order for an individual to be able to read, s/he has to recall stored information, relating to letter-sound and word recognition, blend this with the written symbols s/he receives via his/her visual perception abilities. Language is an integral component of the reading process. Fauconnier & Turner (2002:189), state that "Capacities for conceptual integration are internal processes. Language, like art, science, and religion, is an external social process that depends on communication." Language becomes an external projection from humans due to the intrapersonal communication that takes place within each individual. Reading is possible because of intra and interpersonal communication that requires language.

## **The neurophysiology of reading**

The brain is the control centre of the body and the pinnacle of all organs that exist in any human being. All activities, including the reading process accomplished by the human body are directed from the brain. According to Reed (1998:47), "One of the most demanding cognitive skills that face the young child is learning how to read. Learning to read requires many component skills,...The child must analyze the features of letters, combine features to identify letters, convert letters to sounds for pronouncing the words, understand the meaning of individual words, and combine the meaning of words to comprehend the text." The brain receives auditory and visual information through the senses, analyzes it, and then sends out instructions to the appropriate body parts to implement the specific actions. Messages are transferred via the network of neurons. Nerve impulses are transmitted from one neuron to the other in the brain. The brain consists of two hemispheres and three regions. The left hemisphere controls the right hand side of the body, and the right hemisphere controls the left hand side of the body. Each region of the brain is responsible for specific control functions. The researcher will in a subsequent chapter examine in more de-

tail the specific functions of the different parts of the brain that enable the process of reading to take place, and the role of auditory and visual inputs to reading.

## **Phonics and reading**

According to Damon (2004), "Phonics is back as key component in teaching reading. A recent study sponsored by the National Institute of Child Health & Human Development at the University of Houston in 2004 concludes that phonics is the best way to teach reading. It turns out that Johnny does best when he comprehends and when he is drilled in sounds –diphthongs and the like." [http:// www.EbscoDocs Dec 2004\Back to basics again.html](http://www.EbscoDocs Dec 2004\Back to basics again.html)

The ability to sound out letters and words, to decode and encode influences all other basic required skills, such as listening, speaking, reading and writing. The trend noticed in the education systems in many countries have excluded the teaching of phonics as a compulsory strategy in teaching reading. Many are now bringing the teaching of phonic back as an integral part of the education system. According to Stein (2004) "California's back-to-basics swing - including a return to phonics -mirrors a nationwide trend. One way or another, the state legislature has sounded a wake-up call to top education officials. Children must be taught the core skills of spelling, reading, and math in the state's public schools." <G:\EbscoDocs Dec 2004\Rdng writing phonics back to calif schls.html>. There is a close link between phonics that is speech sounds of the alphabets and reading. The ability to read depends on the ability to encode and decode. The relationship between speech sounds and the alphabets will be examined comprehensively later on in the chapter discussing speech sounds and the alphabets.

## **Reading problems**

According to Labov, of the University of Pennsylvania, research regarding reading problems in South Harlem schools revealed that "In the 1960's, efforts to explain reading failure concentrated upon the concept of cultural and verbal disadvantage which was the result of an impoverished home environment and lack of motivation from the family." <http://www.Ling.uperm.edu /phono atlas/RFR.html>. It is possible that our South African learners today experience the same lack of motivation from their families to read. The culture of reading in the home of our learners can be a contributing factor to the reading problems being experienced today. The language used in the learning and teaching process

may differ from the mother tongue of the learners, and thus the culture of speaking in the home can affect the pronunciation of words in the classroom. This leads to learners experiencing differences in pronunciation or grammar from errors in decoding the meaning of the printed text. There are various reading problems that can be identified. There are also many different factors that can lead to the existence of these various reading problems. Specific reading problems and the role of scaffolding in identifying such problems will be discussed in greater detail in a subsequent chapter.

## **Summary**

In this chapter the researcher stated the key concepts relating to the conceptual basis of reading. Reading problems and the relationship between phonics and reading were briefly discussed. Knowledge construction and the role of conceptual blending were briefly outlined. The researcher also stated that short and long term memory were part of the reading process. The neurophysiology of reading, where the brain is the key to all kinds of processing and action control of the body was outlined. In the next chapter the cognitive basis of reading will be examined.

## *Chapter 3*

### THE COGNITIVE BASIS OF READING

#### **Introduction**

In the previous chapter the key concepts were outlined. In this chapter the researcher will discuss the cognitive basis of reading. This will include an explanation of the process of knowledge construction, and conceptual blending. The researcher will show how these form an integral part of the reading process.

#### **Reading and knowledge construction**

According to Reed (1998:3), "Cognition is usually defined simply as the acquisition of knowledge." Reading and knowledge acquisition are inseparable partners. Reading is one method by which the brain receives vast amounts of information that is processed by the brain so that learning can take place. Klopper (2000) states that, "Humans use basic elements of knowledge known as image schemas to construct knowledge in the form of mental models." Humans continually learn by adjusting their mental models to accommodate new experiences. As humans we use these basic elements of knowledge to construct knowledge in the form of mental models that represent our understanding of the things in the world, how things interrelate, and what interactions they are involved in.

According to Lackney (undated) at <http://www.designshare.com/Research/Brain-BasedLearn98.htm> "Interaction of the brain with its environment suggests that the more enriched environment, the more enriched brain." Interaction with the environment is important because each individual constructs his/her own mental models of the environment. When learning takes place learners give meaning to their experiences. This requires understanding the relationship between parts and wholes. Values and beliefs also influence the mental models formed by individuals. So an individual has to communicate with his environment for knowledge to be constructed in his mind. According to Reed (1998:3), "the acquisition and use of knowledge involve many mental skills." The following steps are involved in the process of knowledge construction in the brain:

Sensory Input: Auditive, Visual, Olfactory, Gustatory, and Kinesthetic

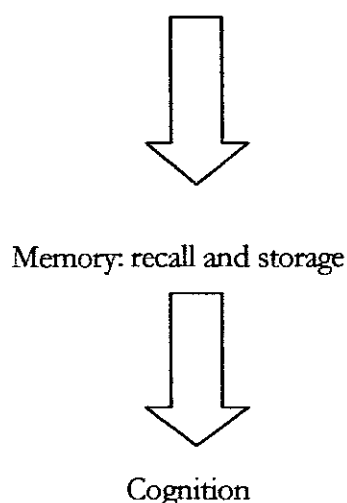


Figure 1: An illustration of the process of knowledge construction

Mental models are stored in the long- term memory of the brain. When we perceive or think about things, then information in the long- term memory is activated and extracted to the working or short -term memory. Concept development and understanding are focal points to knowledge construction. The building of conceptual structures is required. Learning is a process of constructing meaningful representations and the making of sense or understanding our world and our experiences. The brain stores knowledge and categorizes it. Learning is always linked to information. Individuals have feelings, experiences, attitudes, goals, and behaviors, which together with other factors influence the learning process and knowledge construction. According to Shuell and Lee (1976:3) "Learning is one of those things we often take for granted. When thinking about learning, the focus is frequently on some aspect of formal education. However we are continually learning, outside as well as inside the classroom." Cognitive strategies are used when we learn. Learning is possible because of various processes that include one's ability to remember, to interpret, and to solve problems. Learning involves metacognition. Reading is an important tool in the learning process that promotes knowledge construction. Reading is also considered the basis of all learning. Individuals select specific aspects of their environment through their senses which they conceptualize. By interaction with the environment image schemas are developed in the brain, and language is used as a form of communication.



“A general abstract characterization of all the meanings of a morpheme, or any other unit is called a schema.” states Dirven and Verspoor (1998:73). Morphemes are the smallest meaningful elements in a language, such as words or affixes. There are different kinds of image schemas. This will include, The Being schema, The Happen Schema, The Do Schema, The Agents Dominates Patient schema, The Co-Agents Cooperate Schema, The Counteragents Compete Schema, The Stimulus Stimulates Experiencer Schema as stated by Kloppe (2003). Schemas are considered to be a series of actions that are performed together in a situation to achieve an agent's goal or to take some action. Schemas are thought to be learned through repeated experience. Schemas thus allow agents to make predictions based on past experiences about what should be done next. Once learned, schemas can be applied to new situations. The action can be followed without re-thinking the behavior. MaineSAIL (1994, the Maine Software Agent and Artificial Intelligence Laboratory of the University of Maine) at [http://bronte.umcs.maine.edu/Papers/1991/oceans/subsectionstar3\\_1\\_1.html](http://bronte.umcs.maine.edu/Papers/1991/oceans/subsectionstar3_1_1.html) states with regard to the concept “schema”, “Two familiar kinds of schemas in neuroscience and psychology are the motor schema and the script, the former postulated to occur at the level of motor skills and the latter at a more cognitive level.” Such schemas are developed when a person repeats an action several times. For example, a person learning to ride a bicycle builds a schema for pedaling. Once built, the person can rely on using this schema and does not need to reason about how to pedal each time he or she begins to cycle. Although this schema consists of many simpler actions, the agent riding a bicycle usually can perform the entire schema automatically. The agent can also take this as one action that can succeed. When a schema does fail, the agent has to reason about what went wrong and how to correct the problem. All schemas are not carried out in the same way all the time. Schemas can be adapted according to a specific situation and the information available at that time. Research suggests that schemas have been beneficial in two areas of artificial intelligence (AI). They include problem solving and natural language processing. Problem solving is able to benefit by adapting, previous successful solutions to problems instead of creating completely new solutions in similar situations. In natural language processing, schemas are shared between the language users and reflect the rules of the language. Therefore, the schemas must guide language if it is to be understood by others. Language is part of the reading process, and the reader has to build image schemas when reading. Ross (2004) reports that the linguist Paul Kay has researched language vocabulary used to express the different colors in several languages, and states that, linguists

tic relativists may be correct that the languages people speak mould their thoughts. But it is unlikely that the various languages of the world are so different from one another, in underlying of conceptual structure, that the ways their speakers think are incommensurable. <http://www.sciam.com>. So regardless of the language spoken the processes of the brain when it comes to the formation of schemas and conceptualization is consistent. Language does not affect the brain processes of input, recall, and cognition. All individuals experience the same processes no matter what language they speak.

“A motor schema is a long term memory structure capable of being retrieved as a whole, and then executed in parts” Smith (2003). This schema represents what will happen or take place in the immediate future. This is similar to the *Happen and Do Schemas* mentioned by Klopper, where some form of process or action is the outcome. According to Klopper (2003), “Image schemas are considered cognitive structures that arise from universal aspects of human morphology. Image schemas arise from how the human body interacts with our three-dimensional environment.” So there is some form of interaction by the human body in order for these schemas to be formulated. The visual, auditory, olfactory and kinetic senses of the human body make it possible for the human body to interact with our environment. Such interaction provides the brain with inputs that are interpreted so that mental images are formulated in the mind. Image schemas are thus basic elements of knowledge that humans use to construct knowledge in mental models. These mental models represent our understanding of the things in the world, how they interrelate and the interactions that they are involved in. Mental models are stored in the long-term memory of the brain that is activated and information is then extracted to the short-term memory when we perceive and think about things. Each individual constructs his own mental model of the environment, depending on mental rules of how we think those particular aspects of reality works. We use such models and rules to make sense of our experiences. Individuals continually adjust their mental models to accommodate new experiences. The mental modeling system automatically engages in certain basic strategies that are vital to its operation. According to Lamb, (undated) these basic modeling strategies result in the unconscious formation of four kinds of assumptions about the world. These assumptions will include the existence of boundaries, the existence of enduring objects, a basic difference between objects and processes, and the existence of categories of objects and processes and relationships. The mental system makes these assumptions by nature, because these assumptions

are consequences of the built-in properties of our perceptual and conceptual systems. They are essential in all our efforts to understand anything.

Understanding and the conception of learning is a central point of knowledge construction. Learning requires the building of conceptual structures. Concept development and understanding are focal points to knowledge construction. So it is not just the product, but also rather the process that is of utmost importance to acquiring knowledge. Constructing knowledge is a process of constructing meaningful representations in the mind and the making of sense or understanding of it so that our world and our experiences are a reality.

Learning facilitates the process of collecting information. This is done by the brain and is called perception. Federmeier (1997) defines perception as the extraction of the perceptual features of a stimulus. Perception precedes categorization to provide the input for the actual process of categorization. Categorization occurs at every level of the cognitive processing. The neurons group together, to respond to specific inputs from the sensory system to create perceptual categories which form the basis of human experiences. We categorize to make all human activities possible. Some of these activities include speech, understanding, and remembering. The brain then stores the information. It integrates the information and language is developed, and knowledge is accumulated. The brain stores knowledge and categorizes it. Knowledge construction is always linked to information. Learners have feelings, experiences, attitudes, goals, and behaviors, which they bring into the classroom with them. These and other factors influence the learning process and knowledge construction.

### **Conceptualization and conceptual categories**

According to Fauconnier and Turner, (2002:18) “conceptual blending, is another basic mental operation, highly imaginative but crucial even to the simplest kinds of thought.” They also refer to conceptual blending as, “conceptual integration” and state that “blending is an invisible, unconscious activity involved in every aspect of human life.” During this mental process of conceptualization, two or more separate ideas, thoughts or actions are merged to form new mental images or structures. Every reader must therefore experience the process of conceptual blending when engaged in reading. Categorization of the objects, processes, and relationships is essential for conceptualization to occur.

“Conceptual categories are concepts of a set as a whole. Whenever we perceive something, we automatically tend to categorize it,” states Dirven and Verspoor (1998:14). They also state that conceptual categories are ultimately based on a human conceptualizer and his experience of the world. We process the information that we have received from our world through our senses, namely, vision, smell, hearing, touch and taste. The ideal learner processes the information that s/he has received from all the senses. Cognitive learners use all their senses to learn. Visual learners learn by looking at things. Auditory learners learn by listening and hearing things. Tactile learners learn by handling and touching things. When the brain engages in the process of collecting information via the senses, perception takes place. The brain integrates and blends this new information with the information that has already been stored in the long term memory, and thus further knowledge is constructed or developed.

According to Lamb, (undated) “In general, whether it is within space or time or in more abstract conceptual dimensions, our mental systems impose boundaries on a world which does not itself have boundaries. Why? If they did not do so, it would not be possible to talk to one another about the world or to think about the things of the world. Although everything is connected in various ways to other things, hence ultimately to everything else, we can't talk or think about the whole world at once. Thus we have to cut up the kaleidoscopic flux, to segment it by imposing boundaries; and since those boundaries are imposed by our minds and are not really there, they can be regarded as illusory.” He then goes on to use words as an example to show that, in ordinary speech they do not occur in isolation; rather, we get phonological phrases with no gaps corresponding to word boundaries. Yet our perceptual systems, seemingly without effort, extract words as units and treat them as separate units in the process of comprehension, just as if there were boundaries there. The boundaries are supplied by our mental systems. The mental boundaries that we formulate assist in the communication process. It allows us as individuals to experience intrapersonal communication, and interpersonal communication. Through intrapersonal communication one is able to perform actions, speak and listen. Interpersonal communication can be achieved because these mental boundaries allow us to convey and receive messages that have meaning to us and to those with whom we communicate. We can make sense of a message because we unconsciously select the appropriate words mentally due to the invisible boundaries to associate with the object, action, or relationship concerned.

Lamb further states that categorization goes hand-in-hand with segmentation. We live in an infinitely complex world where there are no natural boundaries and no two things are completely identical or alike. Segmentation is achieved by mentally imposing boundaries in the mind. These segments are then classified into categories on the basis of shared properties. The shared properties do not include all the properties of the items, objects or actions being categorized, only some of them are included. It would be impossible to use all of the shared properties because everything in the world is indefinitely complex, and by recognizing all or even too many of them would not make categorization possible. Classification takes place by selecting the most common similarities to categorize the object, action or relationship, and placing the differences in the background. Fauconnier and Turner speak of mental spaces that are small conceptual packets that are constructed as we speak and think. Mental spaces are connected to the long term memory. In order to categorize the input received through the senses, the long term memory is activated. Klopper refers to the first input space as the target space, which is the poorly understood information, and the second input space as the source space, which is the well understood information. The source space is superimposed onto the target space to form a blended space of new insights. In figure 2 below the central features of conceptual integration are illustrated in the diagram by Klopper (2003:294).

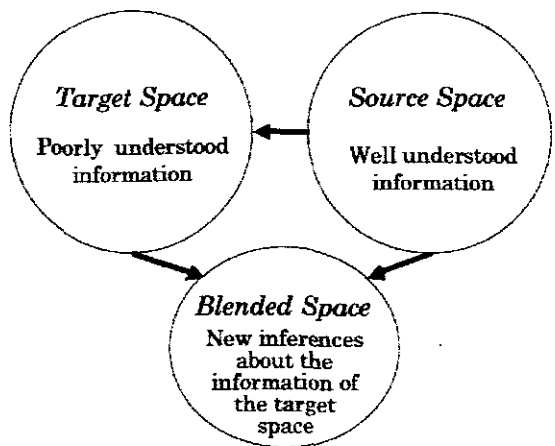


Figure 2: Diagram illustration the foregrounding of target space insights by superimposing source space knowledge and arriving at new insights during analogical reasoning, from Klopper 2003: 294.

Fauconnier and Turner on the other hand when explaining the process of blending mentions two input spaces, and a generic space. The generic mental space contains what is

common or similar to both inputs. Conceptual integration takes place between the two inputs to form a fourth mental space which is known as the blend, and thus new concepts or knowledge is conceived. Klopfer on the other hand refers to the first input space as the target space, which is the poorly understood information, and the second input space as the source space, which is the well understood information. The target space is superimposed onto the target space to form a blended space of new insights. In figure 3 below the central features of conceptual integration are depicted in the basic diagram by Fauconnier and Turner (2002:46).

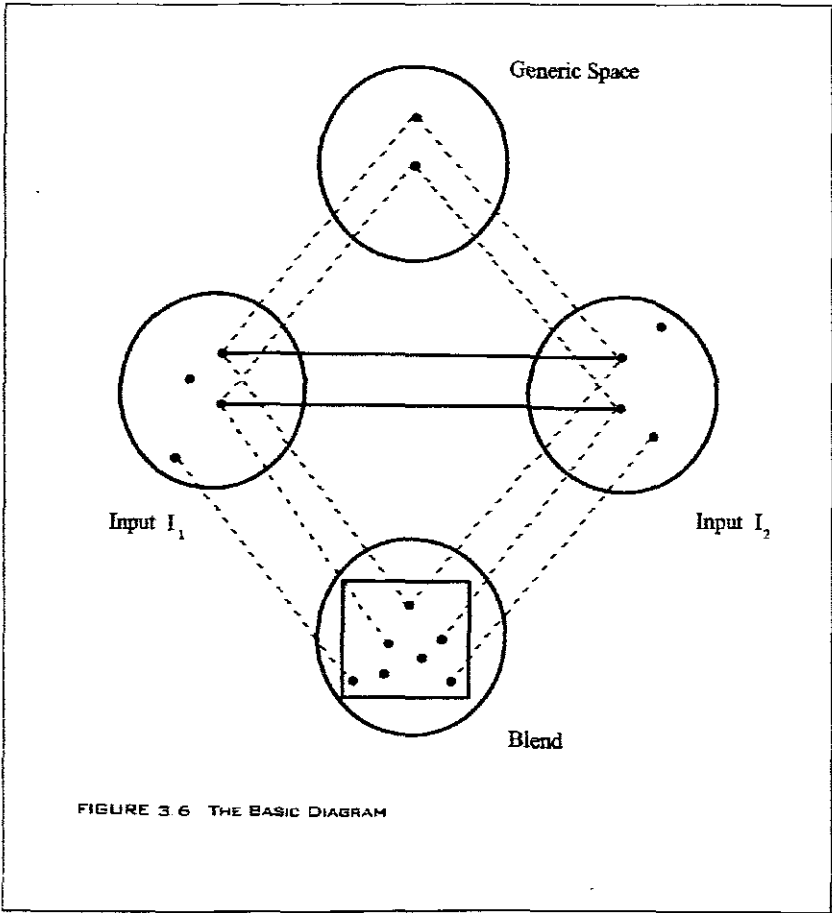


Figure 3: Diagram reflecting central features of conceptual integration by Fauconnier and Turner 2002:46

The circles in the diagram above represent mental spaces, while the dotted lines indicate the connections between the inputs and the generic or the blended spaces. The square in the blended space represents the newly formulated concepts that have emerged. There are four mental spaces illustrated above, namely, the generic space, two input spaces,

and the blended space. This is a very complex process that involves both the activation and deactivating of several connections in the brain. The diagram indicates a basic or minimal network. Conceptual integration networks can have multiple inputs and many blended spaces that develop as a result.

The illustration in figure 4 below has been developed to show how the above principles of blending can be applied to the reading process.

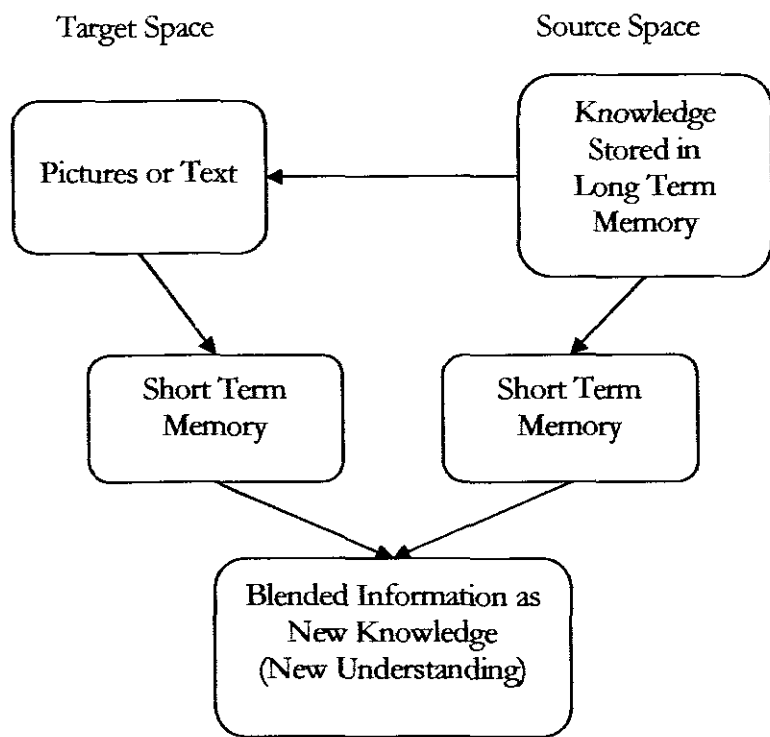


Figure 4: Diagram illustrating conceptual blending in the reading process

The pictures or texts that individuals read form the target space, and is the information received by the senses. The source space is the well understood information that is stored in the long term memory. The information from the pictures or text read goes into the short term or working memory. Information or knowledge from the long term memory is also activated to the short term memory temporarily. Integration of the two mental spaces occurs to form a blended space where new insights are gained. Cognitive strategies are used when we read. Reading is possible because of various processes. They include one's ability to perceive, to remember, to recognize, to interpret, and to solve problems.

Reading involves metacognition. Metacognition is a higher order of cognition, where an individual is able to use the constructed knowledge in the mind to evaluate and categorize the new information, because information enters the mind in a random order. For the act of reading to be accomplished the brain must recall stored information from the long term memory and correlate or blend it to the new information received via the various senses from the individual's environment or even the printed text.

Conceptual structures are constructed by adjusting mental models to accommodate new information. Reading takes place when an individual recalls or recognizes letters, sounds and words. Mental skills are required to blend different letters of the alphabets and their unique sounds to form words which in turn assist to provide meaning to what we read and our experiences. Fauconnier and Turner (2002) states that "blending imaginatively forms our most fundamental human realities, the parts of our lives most deeply felt and most clearly consequential. Meaning goes far beyond word play. Meaning matters, in ways that have relevance for the individual, the social group, and the descent of the species." The reading process activates and evokes both the human senses and human emotions. When reading, mental pictures are formulated in the mind from the target space and blended with the source space to construct further knowledge that is categorized and stored. In a subsequent chapter, the researcher will discuss phonological categories, and show how the letters of the alphabet can also be categorized, indicating that there is a difference between the spoken and written language as part of the reading process.

## **Summary**

In this chapter the researcher discussed the cognitive basis of reading. The process of reading in relation to knowledge construction and conceptualization was explained. Cognition is prevalent during the reading process. Concept formation and conceptual blending opens the door to the construction of knowledge in the minds of all humans. Knowledge construction and conceptualization cannot be eliminated from the reading process. In the next chapter the researcher will examine the neurophysiology of reading.



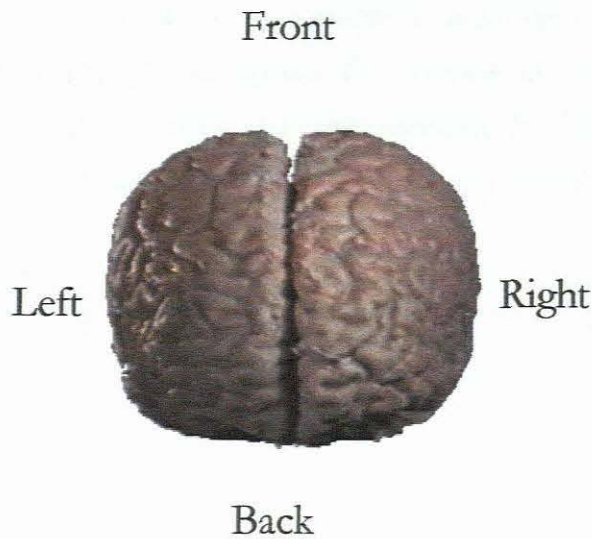


Figure 5: Diagram of the left and right hemispheres from Kloppe 1999

Each hemisphere is responsible for specific activities as indicated in figure 6 below.

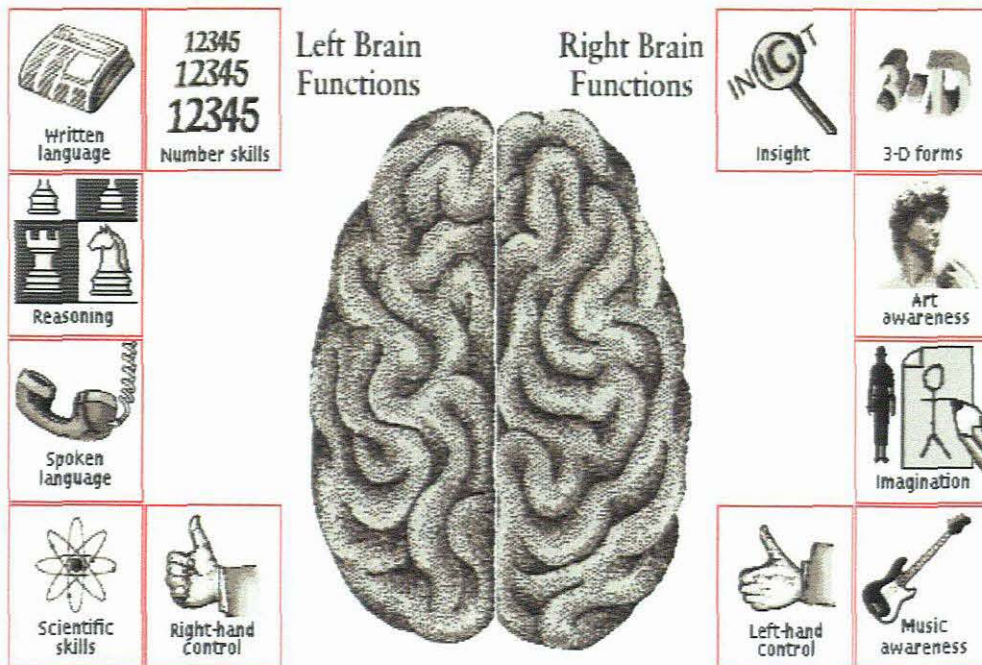


Figure 6: Diagram of the functions of left and right hemispheres, from Kloppe 1999

Some of the functions that are related to the reading process mentioned in the above figure will include written language, number skills, logical reasoning, spoken lan-

guage, right hand control, in the left hemisphere, and insight, 3-D forms, imagination and left hand control in the right hemisphere. The language function of the left hemisphere will include speaking, reading, writing and comprehension. The right hemisphere is considered more adept at visual-spatial relations and processing of metaphors and the emotional qualities of speech.

The brain can be divided into three main regions, namely the forebrain, the midbrain and the hindbrain. Figure 7 below shows the main structures of the brain as illustrated by instructor Bly (2005).

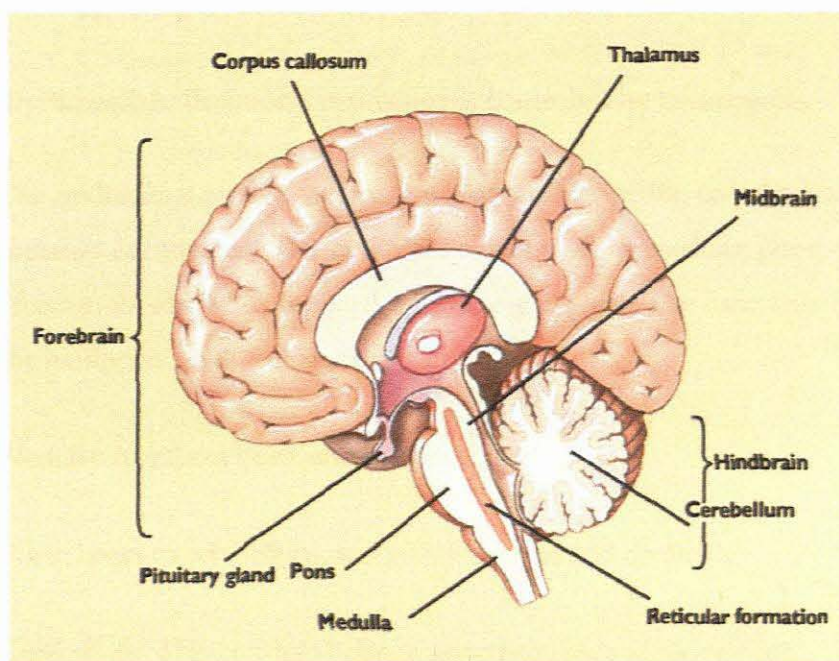


Figure 7: Diagram of the structures of the brain, from Bly, (2005)

The forebrain is made up of the cerebral cortex, thalamus, hypothalamus, pituitary gland, optic nerve, corpus callosum, and the limbic system. The functions of each component of the forebrain are as follows:

- Thalamus: This is the critical relay station to the higher brain centers where information from the sensory pathways is transmitted to the cerebral cortex
- Hypothalamus: Controls appetites and homeostasis

- Pituitary gland: This is part of the endocrine system which connects to the hypothalamus, and is responsible for the release of critical hormones
- Optic Nerve: Extends the brain into the retina in each eye
- Corpus Callosum: Connects hemispheres of the cortex
- Limbic System: Controls movement
- The hippocampus: This is responsible for memory
- The amygdala: Emotional expression is controlled by the amygdala

The midbrain is a relay station. It is responsible for the coordination of signals between hindbrain & forebrain. The hindbrain consists of the medulla, pons, cerebellum, and reticular formation which are found deep inside the brain. The functions of each component of the hindbrain are as follows:

- Medulla: Regulates heart rate and breathing
- Pons: Links to cerebellum, and affects arousal and dreaming
- Cerebellum: This controls balance, coordination, and movement
- Reticular Formation: Controls arousal, waking and sleeping

The brain further consists of four different lobes. Figure 8 below illustrates the different lobes as depicted by Bly (2005).

- Pituitary gland: This is part of the endocrine system which connects to the hypothalamus, and is responsible for the release of critical hormones
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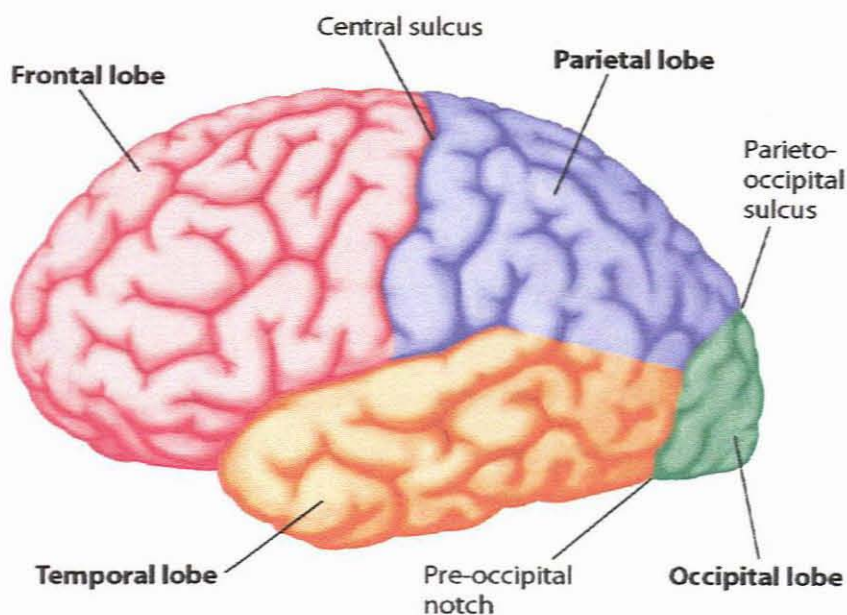


Figure 8: Diagram of the lobes of the brain, from Bly (2005)

In the above figure the four lobes of the brain are clearly identified. They are the frontal, parietal, temporal, and occipital lobes. The functions of the different lobes are as follows:

- **Frontal Lobes:** This lobes controls speech production, thinking, planning, reasoning, impulse control, and motivation
- **Parietal Lobes:** This part contains the somatosensory cortex, the associations related to spatial orientation
- **Temporal Lobes:** This section has the auditory cortex, Wernicke's area, which controls the auditory stimuli
- **Occipital Lobes:** the visual cortex is found here and all the associations related to visual stimuli are controlled from this section

According to Hole, (1993) the brain "is composed of about one hundred billion multipolar neurons and innumerable nerve fibers, by which these neurons communicate with one another and with neurons in other parts of the system." Neurons are key brain cells that are the basic working unit of the nervous system which are separated by synapses. A synapse is the site of communication between nerve cells. When a neuron fires,

neurotransmitter molecules are released from its axon terminal and diffuses across the small gap between cells, which is the synaptic cleft. The binding of the neurotransmitter to the appropriate receptor molecules on the surface of the post-synaptic cell causes that cell either to be excited or to be inhibited.

The neuron consists of dendrites, cell body, myelin, a nucleus axon, and axon terminals. An axon is the main, fiber like extension of a neuron by which it sends information to target cells. Axon terminals release neurotransmitters. This is a chemical released by a neuron at a synapse to relay information to an adjacent cell. These chemical signals are received at one end of the neuron by tiny filaments called dendrites. The signals are then transmitted at the other end of the neuron by a nerve fiber called axon. The signals in the neurons are electrical, while the signals across the gaps are chemical. So the transmission of the signals is electrochemical in nature. Each impulse is of the same strength, but the intensity of the signal depends on the frequency of the impulse. Myelin insulates neurons from each other, and assists in the speed and efficiency of neurotransmission.

The synapse is the tiny gap between an axon terminal & another neuron or cell. Synapses are the link between neurons, glial (glia) cells and other specialized cells. Firing neurons release neurotransmitters that cross the synapse. Synaptic Vesicles hold the neurotransmitter, and when neural firing occurs, it drives them to the synapse, where they release their chemicals. The neurotransmitter binds to the receptor site on the target cell, and ion channels open. When more of the chemicals bridging the gaps between the neurons are released, more pathways that are a set of nerve connections through which information can travel from one brain region to another are formed or activated, thus linking inputs from the various senses to the existing stored information and promoting further knowledge construction.

According to Fields (2004) one of the scientists who posthumously examined sections of the brain of Albert Einstein, namely Marian C. Diamond of the University of California at Berkeley, found nothing unusual about the number or size of its neurons or nerve cells. But in the association cortex, responsible for high-level cognition, she discovered a surprisingly large number of nonneuronal cells known as glia. Field states that a growing body of evidence suggests that glial cells play a far more important role than historically presumed. For years physiologists focused on neurons as the brain's prime communicators.

Research shows that glial cells outnumber nerve cells nine to one, and were thought to have only a maintenance role of bringing nutrients from blood vessels to neurons, thus maintaining a healthy balance of ions in the brain, and warding off pathogens that evaded the immune system. Propped up by glial cells, neurons are free to communicate across tiny contact points called synapses and establish a web of connections that allow humans to think, remember and react.

Growing evidence such as the unusually high number of glial cells found in the brain regions responsible for higher thought in Einstein's brain suggests that glial cells which have been overlooked for years may be just as important as or even more important to the thinking and learning process than neurons are. Field also explains that in the past several years, sensitive imaging tests have shown that neurons and glia engage in a two-way communication process from the embryonic development through to old age. Glia influences the formation of synapses and help to determine which neural connections get stronger or weaker over time; such changes are essential to learning and to storing long-term memories. And the most recent work shows that glia also communicate among themselves, in a separate but parallel network to the neural network, influencing how well the brain performs. According to the *Scientific American Mind* volume 14, Number 5, Kebs *et al.* (2004), "glia directly influences information transfer in the brain. Astrocytes affect the signaling between adjacent neurons along a chain and, using their own network also affect how neurons are triggered in distant parts of the brain. Researchers now think astrocytes coordinate the activity of nerve cells in various brain regions at the same time, through the propagation of calcium ion waves." [www.sciam.com](http://www.sciam.com) Neuroscientists have a lot more learn about the brain, and how the mind works. New explorations can change present understanding of the brain and the various functions of its many components.

## **Visual inputs to reading**

Auditory and visual inputs are essential for the reading process. It is easier to recognize pictures than to recognize words, according to Reed., According to Werblin (2001) "new research from scientists at the University of California at Berkeley has revealed that the eyes transmit only sketches of the scenes before them to the brain—making it all the more remarkable that we perceive our surroundings in such rich detail." So what we see is just pieces of the whole which is transmitted along different paths to the brain," What we

see is hardly what the brain gets in terms of information from your eyes. Werblin explains that “The brain then interprets the 12 sketches and probably merges them with images from memory.” [www.scientificamerican.com](http://www.scientificamerican.com) He also states that the 12 pictures of the world constitute all the information we will ever have about what's out there in the world, and thus we reconstruct the richness of the visual world from these 12 pictures. The question that needs to be answered is ‘What visual input is perceived by the brain for the reading process to be possible?’ The neurological activity where letters, words and symbols perceived by the eye are vocalized to create meaningful sound that is interpreted and heard by our auditory system that leads to reading.

Different parts of the brain are activated in order for an individual to read. The motor, somatosensory, auditory, and visual sections are all activated simultaneously to make the process of reading possible. Let's see what takes place when the human brain processes information that has to be read. The written text is held in front of the individual. This is possible because of the activation of the motor sensory and somatosensory abilities of the individual. The eyes focus on the letters or words and sends these images to the brain where neurotransmitters are activated. The visual area of the brain processes light signals received by viewing the text to be read. The brain then identifies the letters and words of the text by means of classification and categorization. The frontal lobe then processes your thoughts and the motor speech area in the frontal lobe of the left hemisphere of the brain is activated and speech is initiated. The letters and words are vocalized with the appropriate speech sounds of the vowels and consonants identified. Cochlea is a snail-shaped, fluid-filled organ of the inner ear that contains the basilar membrane. The Basilar membrane in the cochlea, an organ of the inner ear, contains hair cells that respond to the vibrations produced by sound. It is responsible for translating the motion of the basilar membrane into nerve signals that lead to the perception of sound. The auditory area in the temporal lobe processes the signals from the sound receptors, and thus the reader is able to hear him or herself read.

According to Meadows (1993), “connections run into the cerebral cortex from the sensory receptors and the lower parts of the brain, and between two hemispheres, and between different areas of each hemisphere, and to the midbrain, cerebellum and the brain stem.” The brain receives a large amount of stimulation from the world, and it selects the inputs it wants to emphasize by linking it to prior experiences. The stimulation that becomes conscious goes to the thalamus in the midbrain, and then to the appropriate area in



the cortex, where each sense has its own sensory area. The different areas are interconnected and connected to the thalamus and other parts of the cerebral cortex. Different areas in the cortex are specialized for different senses such as hearing, vision, smell, taste and touch. The Lateral Geniculate Nucleus (LGN), a part of the thalamus relays signals from the eye to the visual cortex. It also receives signals back from the cortex. So visual inputs, and the auditory system work hand in hand to make the reading process possible.

According to Milner and Goodale (1998) to when the level of visual processing occurs, the visuomotor modules in the primate parietal lobe function quite independently from the occipitotemporal mechanisms generating perception-based knowledge of the world. Thus only this latter perceptual system can provide suitable raw materials for our thought processes to act upon. The following diagram shows the different parts of the brain that are activated when the visual senses are stimulated, as pictured by Bly (2005).

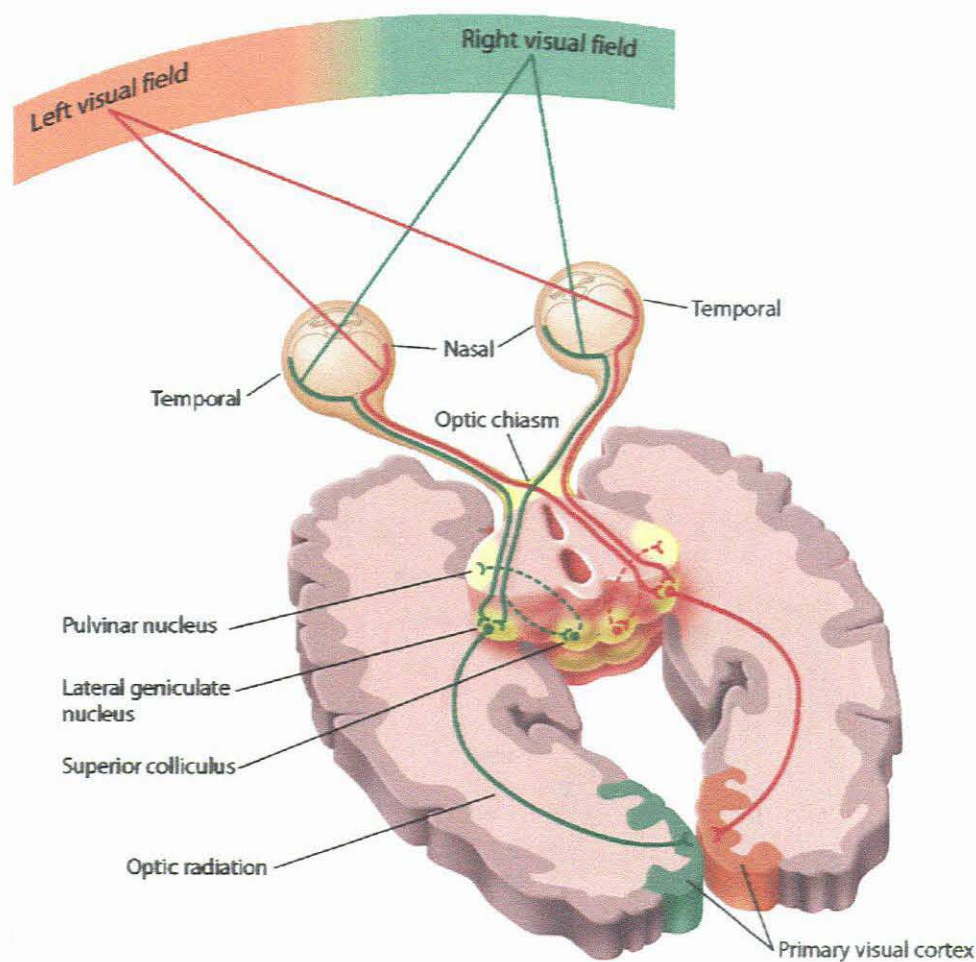


Figure 9: Diagram reflecting visual activation, from Bly 2005

In the diagram above, the optic chiasm can be identified. This is the site on the base of the brain where roughly half the nerve fibers from each eye cross over to the opposite side of the brain and the other half remain on the same side. The right visual field stems from the left hemisphere of the primary visual cortex and is indicated in red, while the left visual field is indicated in green stems from the right hemisphere of the primary visual cortex. Lateral Geniculation Nucleus, is a part of the thalamus that relays signals from the eye to the visual cortex. It also receives signals back from the cortex. At the level of visual processing, the visuomotor modules in the primate parietal lobe function quite independently from the occipitotemporal mechanisms generating perception-based knowledge of the world. Only this latter, perceptual, system can provide suitable raw materials for our thought processes to act upon. Many different parts of the body work together so that an individual can read. As mentioned earlier, the motor and somatosensory senses are also activated. The diagram below indicates the specific parts of the brain that are activated when the different organs of the human body are stimulated. Bly (2005).

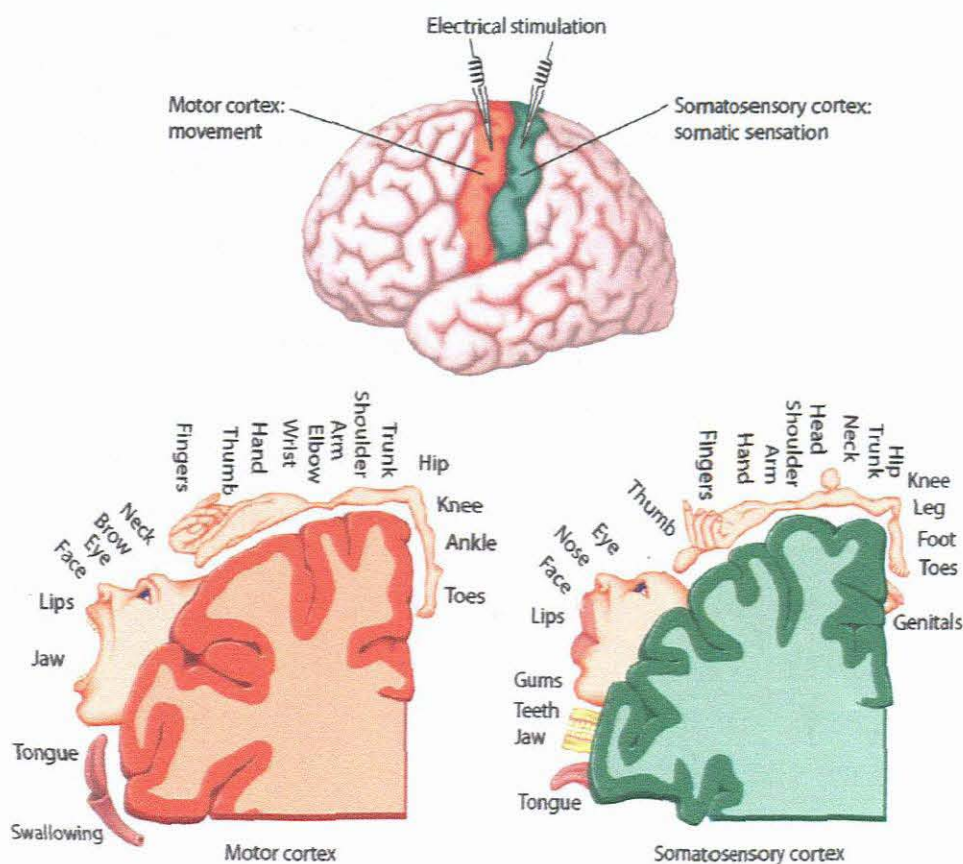


Figure 10: Diagram reflecting stimulation of the motor and somatosensory cortices, from Bly 2005

The motor cortex and somatosensory cortex are responsible for the activation of many different parts of the body upon stimulation caused by the transmission of electrical activity as seen in figure 10 above. The brain retains its plasticity throughout life. This means that the brain is flexible. It adapts and adjusts to compensate for obstacles and the loss of any particular function at any time. Research provides evidence that the brain can adapt in order to overcome a number of barriers and aid in language processing and reading. Brain networks reroute to overcome and help those with reading, speech or hearing disabilities. In this way second-language learners can also be assisted to recognize new language sounds and to eliminate accents. This is evident when an individual becomes blind and thus learns to read Braille. The brain naturally reorganizes to overcome language and reading obstacles revealing its ability to retain its plasticity.

Initially the learner has to listen to the different speech sounds iterated by the teacher, so that s/he can get to know the accurate pronunciation of the specific vowels and consonants. When the written text of the alphabets is presented to the learner, s/he is able to recall the speech sounds learnt, and apply them appropriately when reading. This involves activation of both the short and long term memory. The brain stores information and then retrieves it. When information is stored during verbal working tasks, the Broca's area which is involved with speech production is activated together with the premotor areas in the frontal lobe which is concerned with movement.

### **Auditory inputs to reading**

The temporal lobes in the brain contain the auditory cortex and Wernicke's area which are related to auditory stimuli. The auditory cortex consists of the primary auditory cortex and the secondary auditory cortex, which are seen in the figure below.



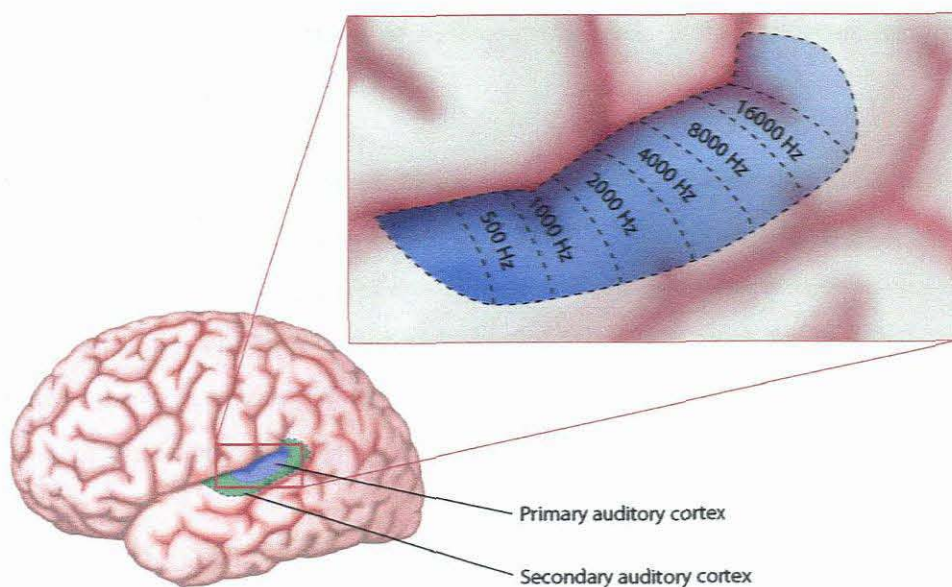


Figure 11: Diagram reflecting the primary and secondary auditory cortices, from Bly 2005

Sound is produced when vibrations are transmitted in the form of sound waves. The auricle of the ear aids in collecting the sound waves traveling through air and directs it to the auditory meatus, where the sound waves pass to the end of the tube and cause pressure changes on the eardrum. The eardrum moves back and forth in response and produces the vibrations of the sound wave source. In the middle ear the vibrations move along the three auditory ossicles, namely, the malleus, the incus, and the stapes. When the vibrations reach the stapes which are held by ligaments to an opening in the wall of the oval window, it causes motion of the fluid within the inner ear. These vibrations of the fluid are responsible for stimulating the hearing receptors. The auditory ossicles assist in the increasing or amplification of the force of the vibrations as they pass from the eardrum to the oval window. The auditory tube connects each middle ear to the throat, and the sounds of voice are caused by vibrating vocal folds in the larynx. The cochlea is part of the inner ear and is shaped like the coiled shell of a snail. The vibrations from the oval window pass through the cochlear duct where they cause movement in the basilar membrane. The receptor cell has a neurotransmitter that contains vesicles near its base that releases neurotransmitters in the presence of calcium ions. The neurotransmitter stimulates the sensory nerve fibers which transmit the nerve impulses along the cochlear branch to the vestibulocochlear nerve to the brain. The cochlear branches of the vestibulocochlear nerves enter the auditory nerve pathways that extend into the medulla oblongata and go to the midbrain to the thalamic

region and to the auditory cortices of the temporal lobes of the cerebrum where the impulses are interpreted.

Listening to the sounds of letters and the pronunciation of words is an integral part of learning to read correctly. By sounding out the letters or words of a written text learners can engage in the process of encoding and decoding to assist them in both pronunciation and spelling. When presented with the written text to read, the learner has to recall stored information in relation to the sounds of the letters and words which are in his or her short or long term memory which will be discussed next.

### **Short term memory (STM) and long term memory (LTM)**

According to Reed (1998:55) “STM can hold only a limited number of items, having a profound effect on many tasks that require to use STM.” Short term memory is the working memory which gathers information from the environment for processing for immediate use. Short term memory is where information is stored only temporarily, and this takes place everyday of our lives, forming a fundamental part of our experiences of the real world. Long term memory is where information is transferred from a temporary status to be stored permanently. All the skills just mentioned by Reed involve various cognitive processes that require both short and long term memory. Short and long term memory is possible because of specific neural activity in the brain, and these processes play an active role in the reading process.

The input of information by the senses immediately activates the short term memory. This information is processed by the brain. The electrochemical signals are released by the neurons. This creates more pathways by conceptualizing these inputs with stored information. Thus the long term memory is activated. Many physiological changes take place in the brain when we learn and thus construct knowledge. Research shows that the brain is strengthened by use just like a muscle. The cerebral cortex of the brain is where all the higher mental processes take place. The brain has the capacity to store endless amounts of information received by the various senses. Notess (2004) in a summary of de Bono's 1991 book, “I am Right-You are wrong” refers to “our brain as a self-organizing system” at <http://www.greecyenet.com/~cnotess/bono.htm>. The brain organizes itself in such a way, that when information is stored, the brain allows one to recall and remember the information as if it is an automatic process. Notess (2000) uses the example of playing ball,

dancing or playing a musical instrument, and states that “we develop the connections in our brain and strengthen their connectivity so that we perform many of the movements automatically by depending on what we have practiced until we could do them so well without having to think about each movement ahead of time.” The same will apply to the reading process. Once the learner has learned to recognize the alphabets and words with their speech sounds s/he will always be able to recall them for the purpose of reading. This process eventually becomes automatic.

## **Summary**

In this chapter the researcher examined the neurophysiology aspect of reading. The different components of the reading brain and their functions that make the process of reading possible were explained. The importance and the role of the visionary and auditory systems were discussed in detail. Finally short and long term memory was discussed in relation to the process of reading. At this stage it is now clear that the intrapersonal communication skills displayed within the various organs such as the brain, eyes, and ears, of the human body contribute to and make the process of reading a reality.

SPEECH SOUNDS AND THE ALPHABETS

**Introduction**

The previous chapter provided an in depth insight into the neurophysiology of reading, where the role of the human brain together with the various other parts of the body was explained in relation to the reading process. In this chapter the researcher will discuss the relationship between speech sounds and the alphabets as they are perceived by the brain and how they impact on reading. Both the spoken and the written language are integral components of the reading process.

**Reading and writing**

The manner or the specific positioning of the alphabets in the written form has a direct influence on word formation, its sound and the meaning. Although reading and writing are neurologically two completely different processes, they are dependant on one another, and they reinforce each other. Learning to read is the focus, but writing cannot be left out. Writing forms the background when an individual reads. Unlike reading, where more mental and cognitive skills are required, writing also requires a series of fine motor skills. To be able to read an individual must develop successful decoding and vocabulary skills, and one must understand the many different properties of a written word. This requires understanding of the following with regard to the written word:

- Conceptual relationships that is how the specific letter or word relate to another letter or word
- Semantics, which involve knowing the meaning of the word
- Syntax, which is concerned with the grammatical function, which is to understand the part of speech of the word
- Phonological aspects which involve the knowing the different sounds within the word

- Morphological aspects which involve knowing the word elements that combine to form words, and that which can change the meaning of words such as the root word, the suffix, and the prefix.

Reading is a complex process. It demands the ability to recognize shapes, and the ability to blend these shapes together. Written language consists of alphabets that are made up of shapes and lines. When blending at a phonological level, a particular letter or alphabet in a specific phonological context can represent a number of speech sounds. Once the blending of the phonological representations with the letter shapes is complete, then a number of meanings have to be associated with the different sequence of letters. When taking into account the physical shape of the alphabet, or when also including its sound representation in order for them to be considered as symbols, the individual letter must be identified with all the other letters in the sequence. Let's take the sound of the letter *f* as an example. It can be represented in the beginning of a word as, *f* as in *fast*, or as *ph* in *phone*, or as *gh* as in *rough*, and as *fe* as in *safe* at the end of a word. So an individual, who is learning to read, must initially know all the representations of the letter *f* at the beginning and end of the words before attempting to read. Thus the process of reading requires that the area in the brain that interprets visual representations must be activated, and at the same time the area in the brain that processes speech sounds must be co-activated. At the beginning the phonological representations act as scaffolding for activating the other mental representations of the sound. The area of the brain that is responsible for semantic representations are also activated, so that different meanings can be contemplated. As the reader's ability to read improves, phonological scaffolding is processed sub-consciously in the mind. While the reader concentrates on the semantic aspects, s/he has to simultaneously consider several other aspects associated with the letters. It can be likened to the individual learning to ride a bicycle mentioned in a previous chapter. He has to focus on how to pedal in or to ride, but at the same time s/he needs to take into consideration several other aspects, such as balancing, steering, and the road ahead that require motor skills. All of this can be summed up as one action of riding or cycling. Similarly reading can be viewed as one activity, but it requires many different stages and actions performed by different parts of the body in order to materialize. Reading too is an act that involves an agent, who applies learned experiences to new information to read. Problems arise when the letter shapes are not associated with the sound sequences.



## The speech organs

According to Lamb (1998) "Language may be viewed as a system which relates meanings to sounds." Lamb also refers to the basis of language as a mental system or cognitive system. The mind can be observed by what it produces, and by the way humans react when they perceive things from the world via different organs in our bodies. Speech organs are the means by which the linguistic system becomes alive, by various movements of such organs which produces sound waves that we today call speech. Thus it is the mental system, with its ability to process information, think, reason and comprehend that makes it possible for the individual to use language. Sounds are produced by speech organs when they receive specific signals from the brain. Sounds or the speech productions that are understood supply meaning to what is being spoken or heard. Sound production begins when the air expelled from the lungs pass through the glottis and the larynx which consists of two folds or flaps of flesh, also called vocal cords that can be held apart or brought together. When air passes through these membranes, it causes a vibration, and thus sound is produced. According to Peccei (2005) the membranes "are controlled by a set of muscles and cartilage which allows them to change their shape, and consequently the quality of sound they produce, including changes in pitch. The vocal folds can also be kept from vibrating by keeping them completely open or completely shut." The air stream is modulated in the glottis. The vocal folds and the opening between them are called the glottis. Figure 12 below shows the larynx seen from above with the vocal cords or folds and their associated cartilages, namely the thyroarytenoid, arytenoid and cricoid and muscles.

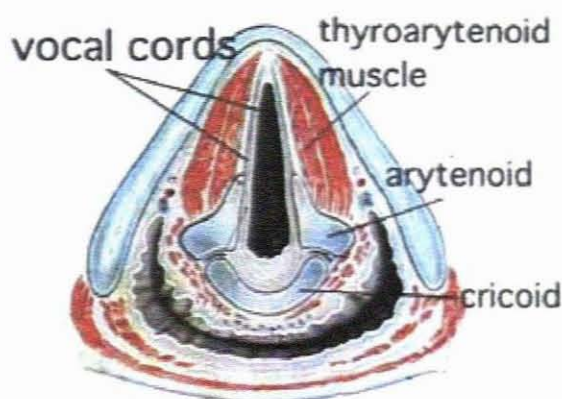


Figure 12: Diagram of the larynx featuring the vocal cords, from Peccei 2005

Once the vibrating air flow passes through the larynx, its shape can be molded into different sounds as it passes through the vocal tract. The manner in which the vocal tract is shaped influences the numerous speech sounds that humans make. Below is an illustration of the vocal tract airflow as depicted by Peccei (2005).

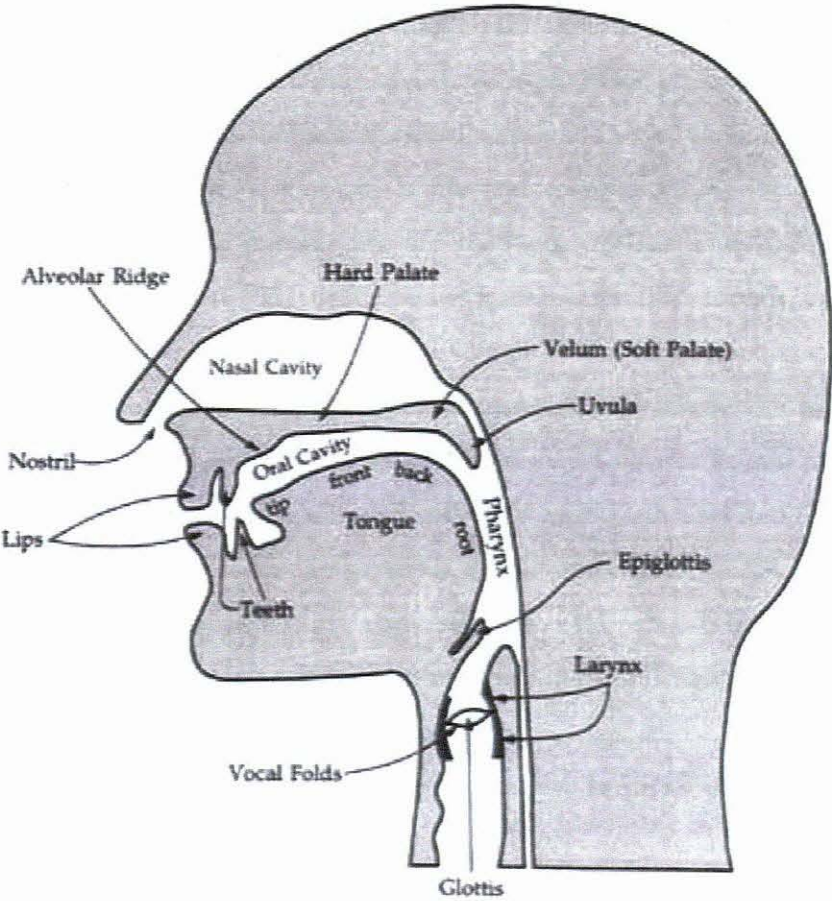


Figure 13: Diagram of the vocal tract , from Peccei 2005

When air flows freely through the glottis, the air stream has minimal restriction, so that voiceless stops are articulated. When the two folds in the glottis are brought together, they vibrate to produce voiced stops. If the air stream flows with relatively little pediment or interference the vowel sounds of the alphabets *a*, *e*, *i*, *o* and *u* are produced. When the air stream is constricted slightly, then the sounds for the alphabets *r* and *l* which are oral sounds are produced, and the sounds of the alphabets *n* and *ng* which are nasal sounds are also produced. Stops can be divided into voiced and voiceless stops. This occurs when the air stream is stopped in the oral cavity. The sounds of the alphabets *b*, *d*, *g*, and *v* are examples of voiced stops, and *p*, *t*, *k* and *f* are voiceless stops. Some examples of semi- vowels are *w*, *j*, and *h*. The post vocalic *r* is often not pronounced in certain words such as far and

sharp. All the letters at the beginning of the clusters are pronounced. To account for the absence of the post vocalic r educators often talk of the silent r in the classroom.

## Phonology, phonetics and speech

According to Lass, (1991) “phonology proper is concerned with the function, behavior, and organization of sounds as LINGUISTIC items; as opposed to phonetics, which is a rather more neutral study of the sounds themselves as phenomena in the physical world, and the physiological, anatomical, neurological, and psychological properties of human beings that make them.” Phonology is thus concerned with the sounds of a given language, and every aspect that is related to the production of the sounds. Dirven and Verspoor, (1998:108) states that, “Phonetics studies speech sounds as sounds, in all their complexity and diversity, independent of their role in a given language.” In order to process the identity and the speech sounds of the alphabets three stages or levels of processing must occur. These levels begin at the structural and then to the phonemic and to the semantic. The depth of the processing intensifies as it moves from the one level to the next. The main types of speech sounds are consonants, vowels and diphthongs. A speech sound on its own does not have meaning, but when it is combined with other speech sounds meaning is derived. When sounds are grouped together, they form a syllable. Syllables are combined together to formulate words. Grammatical morphemes are used to link words together in a grammatical unit. When words are grouped together in specified patterns they form sentences.

Phonemes are human speech sounds that distinguish words from one another. Every time you change a phoneme in a particular word position, you get a new word with its own individual meaning. For example, in the words *bat*, *cat*, *fat*, *hat*, *mat*, *rat* and *sat* the marked letters represent consonant phonemes because one changes the meaning of a word by substituting such an onset sound. The same principle holds true for final consonants such as *bad*, *bag*, *ban* and *bat*, or the vowels *bat*, *bet* and *bit*.

Phonemes that distinguish speech sounds are divided into three categories, namely consonants, vowels and semi vowels. Consonants can be further sub divided into fricatives, stops and sonorants. Sonnorants are further divided into oral and nasal sonnorants. Vowels are divided into monophthongs and diphthongs. A monophthong has one vowel, and a

diphthong is a sequence of two vowels in one syllable. All the sub categories can be categorized by the air released by the lung to produce the variety of sounds.

Each language has its own unique set of distinctive phonemes that are used to distinguish its words. The languages vary by the number of distinct phonemes they use. According to Peccei (2005) the English language has about 44 phonemes, depending on the accent. When linguists analyze and describe sound systems of a language, they use the International Phonetic Alphabet or IPA, where each sound is given a unique symbol which allows us to capture similarities and differences that are obscured by the written form.

**English Consonants**

The IPA symbols for the consonants of the standard British English accent are listed below.

| Consonants |               |    |                  |
|------------|---------------|----|------------------|
| p          | <u>p</u> ip   | ʒ  | mea <u>s</u> ure |
| b          | <u>b</u> ib   | h  | <u>h</u> en      |
| t          | <u>t</u> en   | tʃ | <u>ch</u> urch   |
| d          | <u>d</u> en   | dʒ | j <u>u</u> dge   |
| k          | <u>c</u> at   | m  | <u>m</u> an      |
| g          | <u>g</u> et   | n  | <u>n</u> ow      |
| f          | <u>f</u> ish  | ŋ  | <u>s</u> ing     |
| θ          | <u>th</u> igh | l  | <u>l</u> et      |
| ð          | <u>th</u> is  | r  | <u>r</u> ide     |
| s          | <u>s</u> et   | w  | <u>w</u> et      |
| z          | <u>z</u> oo   | j  | <u>y</u> et      |
| ʃ          | <u>sh</u> ip  |    |                  |

Figure 14: Consonants chart, from Peccei 2005

**English Vowels**

The IPA symbols for the vowels of the standard British English accent are listed below.

| <b>Vowels</b> |                 |    |                |
|---------------|-----------------|----|----------------|
| ɪ             | p <u>it</u>     | ɔ: | b <u>or</u> n  |
| e             | p <u>e</u> t    | u: | b <u>oo</u> n  |
| æ             | p <u>a</u> t    | aɪ | b <u>i</u> te  |
| ʊ             | p <u>o</u> t    | eɪ | b <u>a</u> it  |
| ʌ             | b <u>u</u> t    | ɔɪ | b <u>o</u> y   |
| ʊ             | b <u>oo</u> k   | əʊ | t <u>o</u> e   |
| ə             | m <u>o</u> ther | aʊ | h <u>ou</u> se |
| i:            | b <u>ea</u> n   | ʊə | p <u>oo</u> r  |
| ɜ:            | b <u>ur</u> n   | ɪə | <u>e</u> ar    |
| ɑ:            | b <u>a</u> rn   | eə | <u>a</u> ir    |

Figure 15: Chart of vowel sounds, from Peccei 2005

Vowel sounds are produced when there is no obstruction to the air flowing from the lungs. Vowels take on their different sound qualities by subtle changes of the shape in the vocal tract as they are being produced. Below is the IPA vowel chart as illustrated by Peccei (2005) from the International Phonetic Association, Department of Linguistics, University of Victoria, Victoria, British Columbia, Canada.

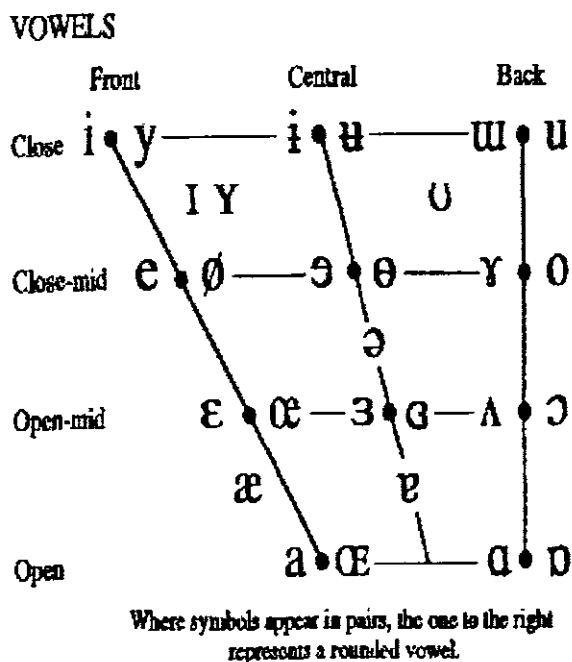


Figure 16: IPA vowel chart reflecting how vowel sounds are affected by the air flow in the front, middle and back of the oral cavity, from Peccei 2005

In the above chart, the vowels are shown in a quadrant. As you move down vertically, the vowels have a greater degree of jaw opening. As you move horizontally from left to right, the part of the tongue which is raised moves from the front of the tongue to the back.

Complex processes have to be performed in the brain for such systems of phonemes to be vocalized and decoded by a human. The visual process involved in the symbolic representation of consonants and vowels, as shown in the last 3 figures ( 14 to 16), is even more complex, because the brain has to neurologically associate auditory symbols (phonemes) and their written equivalents (IPA symbols). Once the visual representations are received, the brain must first sort or categorize these representations. Then the brain has to provide visual representations for the speech sounds that could be represented by the written letters in the specific contexts. Finally, visual representation by means of an ordinary alphabet is even more complex because alphabetic symbols do not have one-on-one

equivalent representations with speech sounds like phonetic symbols have, but in practice can use multiple written representations for the same sound, like in **f** and **ph** in **fish** and **phantom**, or a combination of alphabetical symbols like **th** that can represent two different single sounds like the voiceless fricative in **thing** [θɪŋ], or the voiced fricative **this** in [ðəs].

According to Reed (1988), each letter of the alphabet “is one kind of pattern.” Pattern recognition assists people to identify objects in the environment. Patterns are analyzed into features. Reed further states that structural theories show how features of a pattern are joined together, thus providing a more complete description of a pattern, especially patterns consisting of intersecting lines. When the brain processes the alphabets, it categorizes the letters by distinguishing letters with straight lines only, letters with straight lines and rounded shapes, and those with curves or rounded shapes only. Specific compilation of shapes and lines produce specific letters. Upper case letters consists mainly of straight lines such as H, L, M, and N. Lower case letters possesses more curves or rounded shapes. Some examples of this are, a, e, b, c and g. certain receptors in the human eye are activated only when the letters perceived are at a specific slant or form a diagonal line. Independent pathways are created to carry specific sections or patterns of a letter in the brain. Eventually all these different pathways come together to constitute a single whole letter of the alphabet. So a whole range of eye receptors are activated to send information to the visual cortex in the brain so that an individual can recognize, identify or read a letter or word. The eye registers the shapes by means of the rods and cones of the eye. The activation of the specific components of the eye also depends on the features, such as the slant of the image or the letter structure.

The purpose of reading is to extract meaning from the actual text. Pattern recognition assists in the extraction of meaning, and the attainment of meaning in turn plays an important role in pattern recognition. Initially the brain processes the physical features of the letters, such as lines and angles. This is followed by pattern recognition and the identification of meaning. The structural stage forms the basis for how the specifications of how the features fit together. For example the upper case for the letter **T** consists of two lines, one being vertical, and the other horizontal. The vertical and horizontal lines could be joined together in many different ways to form several kinds of patterns. To derive at the letter **T** accurate specifications are required. The letter **T** consists of a horizontal line that is joined at its midpoint by a little longer vertical line. Furthermore by adding a similar feature



to a pair of patterns it is easier to distinguish between the two patterns because of the differing relation between the patterns. Reed (1988), states that all these different stages of processing and analyzing results in a different memory trace. Each memory trace varies in length and its decay rate. The memory code and its persistence are by-products of perceptual processing. The memory trace decays only after the physical features of the stimulus are analyzed. The memory trace becomes stronger when the stimulus has been identified and named. This slows the decay rate of the memory trace. When an individual understands and elaborates the meaning of the stimulus, then the memory trace is at its best level. From this we can deduce that after letters and words are analyzed, identified, named and their meaning understood, and elaborated on then they will be remembered without difficulty.

**Sound, meaning and visual representation**

Phonemes are distinct sounds. For example **b** in the word **bat** is a phoneme. The sound and the meaning of the word change when the phoneme is changed. Some phonemes that are included in the formation of a word produce sounds, but provide meaning-less words. An example of this is the word '**dat**'. The word can be phonetically sounded out, but has no meaning. Letters with both voiced and voiceless stops can be included to form words. Stops can be identified by the termination of the outgoing air flow from the vocal tract. Thus the speech sounds are terminated immediately, and the air flow is restricted at specific points in the oral cavity as indicated below.

|                 | Labial (Front) | Dental (Middle) | Alveolar (Back) |
|-----------------|----------------|-----------------|-----------------|
| Voiced Stops    | b              | d               | g               |
| Voiceless Stops | p              | t               | k               |

Figure 17: Table indicating sound termination in oral cavity

Fricatives can be identified when the air stream is compressed, but not terminated. It will include alphabets such as **v**, **f**, **z** and **s**. The air stream passes through a very narrow gap in the oral cavity, causing friction as the air is released because of the high pressure. Affricatives are complex sounds where the air stream is severely compressed, but not terminated, such as **dz** and **tf**. As stated earlier, a sonorant is divided into oral and nasal sound



productions. They include the consonants **m, n, ng, l, r, j** and **w**. The consonants **r** and **l** have an oral dental sound production, while the letters **m, n** and **ng** are nasal where the air stream is blocked by lowering the velum by allowing air to escape through the nasal cavity. The letters **w** and **j** are semi- vowels. In the words **write** and **wrong**, the **w** is silent. When pronouncing the vowels, the air stream flows freely out of the oral cavity. All vowels are continuous. They are voiced and articulated with an ongoing air flow. Vowels can appear at the beginning, in the middle, or at the end of a word, while phonemes appear as consonants at the beginning or end of words only.

When reading is taught, the primary vowel sounds are taught simultaneously so that the phonological information to the letters of the alphabet is attached. Reading cannot be taught without grammar and syntax. According to Dirven and Verspoor (1998) "Morphology is the study of building elements used to form composite words or grammatical units. The smallest meaningful elements in a language, whether they are words or affixes, are called morphemes." So morphology involves the process of word formation. Dirven and Verspoor, (1998) also state that "From a cognitive point of view, the sentence is also understood to combine conceptual and linguistic completeness. Conceptually, a sentence expresses a complete event as seen by a speaker. Linguistically, a typical sentence names at least one participant and the action or the state it is involved in. By means of verb morphemes, it indicates how this action or state is related to the speaker's here and now in time and space." From this we can conclude that word formation and word grouping or sentence construction as it is more commonly known in the classroom requires both cognitive and linguistic skills at the same time. The elements of a sentence are arranged together by syntax which involves regular patterns. So simply put a sentence consists of words put together by means of regular patterns. Every natural language has a limited set of basic sentence patterns, and sentence patterns are the structural frames of the basic types of sentence in a language. Sentences contain a communicative function. When reading a sentence the reader acquires information or knowledge about the writer, and the message conveyed in the text, and beyond the text. The role of understanding the context is important to understanding speech and the reading of the written text. The phonological information supplied by the morphological and syntactic information is essential to the teaching of reading. Attention must therefore be given to all the different aspects when teaching reading.

Initially the learner will have to learn the sound of each alphabet. Then words are developed by bringing together vowels and consonants. Figures 18 to 22 below have been developed by the researcher to illustrate how the vowel sounds can be blended with the various consonants to formulate meaningful words.

Words formulated with the vowel **e**.

| Blends with e [e] ending on a final consonant |        |      |                 |        |                                                                                           |                        |        |                                                                                           |
|-----------------------------------------------|--------|------|-----------------|--------|-------------------------------------------------------------------------------------------|------------------------|--------|-------------------------------------------------------------------------------------------|
| Final stop consonants                         |        |      |                 |        |                                                                                           | Final sonorants        |        |                                                                                           |
| Voiced stops                                  |        |      | Voiceless stops |        |                                                                                           | Sonorants (all voiced) |        |                                                                                           |
| Front                                         | Middle | Back | Front           | Middle | Back                                                                                      | Front                  | Middle | Back                                                                                      |
| b                                             | d      | g    | p               | t      | k                                                                                         | m                      | n      | ng                                                                                        |
| [eb]                                          | [ed]   | [eg] |                 | [et]   | [ek]                                                                                      | [em]                   | [en]   | [ɛŋ]                                                                                      |
| ebb                                           | bed    | beg  |                 | bet    | Words ending on [k] are written as <b>sk</b> and are dealt with as double written blends. | hem                    | Ben    | Words ending on [ŋ] are written as <b>ng</b> and are dealt with as double written blends. |
| Deb                                           | fed    | egg  |                 | get    |                                                                                           | Kem                    | den    |                                                                                           |
| web                                           | led    | keg  |                 | jet    |                                                                                           |                        | hen    |                                                                                           |
|                                               | Ned    | leg  |                 | let    |                                                                                           |                        | Ken    |                                                                                           |
|                                               | red    | Meg  |                 | met    |                                                                                           |                        | men    |                                                                                           |
|                                               | Ted    | peg  |                 | net    |                                                                                           |                        | pen    |                                                                                           |
|                                               | wed    |      |                 | pet    |                                                                                           |                        | ten    |                                                                                           |
|                                               |        |      |                 | set    |                                                                                           |                        |        |                                                                                           |
|                                               |        |      |                 | vet    |                                                                                           |                        |        |                                                                                           |
|                                               |        |      |                 | wet    |                                                                                           |                        |        |                                                                                           |
|                                               |        |      |                 | yet    |                                                                                           |                        |        |                                                                                           |

Figure 18: Table of words with 'e' [e] blends

Words formulated with the vowel **a**.

| Blends with a [æ] ending on a final consonant |        |      |                 |        |      |                        |        |      |
|-----------------------------------------------|--------|------|-----------------|--------|------|------------------------|--------|------|
| Final stop consonants                         |        |      |                 |        |      | Final sonorants        |        |      |
| Voiced stops                                  |        |      | Voiceless stops |        |      | Sonorants (all voiced) |        |      |
| Front                                         | Middle | Back | Front           | Middle | Back | Front                  | Middle | Back |
| b                                             | d      | g    | m               | n      | p    | t                      | x      |      |
| [ab]                                          | [ad]   | [ag] | [am]            | [an]   | [ap] | [at]                   | [ax]   |      |
| cab                                           | add    | bag  | am              | an     | cap  | bat                    | ax     |      |
| dab                                           | bad    | hag  | dam             | ban    | gap  | cat                    | tax    |      |
| nab                                           | dad    | nag  | ham             | can    | lap  | fat                    | wax    |      |
| tab                                           | fad    | rag  | jam             | Dan    | map  | hat                    |        |      |
|                                               | had    | sag  | ram             | fan    | nap  | mat                    |        |      |
|                                               | lad    | tag  | Sarn            | man    | tap  | pat                    |        |      |
|                                               | mad    | wag  | yarn            | pan    | rap  | rat                    |        |      |
|                                               | pad    |      |                 | ran    | sap  | sat                    |        |      |
|                                               | sad    |      |                 | tan    |      | tat                    |        |      |
|                                               |        |      |                 | van    |      | vat                    |        |      |

Figure 19: Table of words with a [æ] blends

Words formulated with the vowel **i**.

| Blends with i [ ' ] ending on a final consonant |        |      |                 |        |       |                        |        |  |
|-------------------------------------------------|--------|------|-----------------|--------|-------|------------------------|--------|--|
| Final stop consonants                           |        |      |                 |        |       | Final sonorants        |        |  |
| Voiced stops                                    |        |      | Voiceless stops |        |       | Sonorants (all voiced) |        |  |
| Front                                           | Middle | Back | Front           | Middle | Front | Front                  | Middle |  |
| b                                               | d      | g    | m               | n      | p     | t                      | x      |  |
| [ib]                                            | [id]   | [ig] | [im]            | [in]   | [ip]  | [it]                   | [ix]   |  |
| bib                                             | bid    | big  | dim             | bin    | dip   | bit                    | fix    |  |
| rib                                             | did    | dig  | Jim             | fin    | hip   | fit                    | mix    |  |
| fib                                             | hid    | fig  | Kim             | gin    | lip   | hit                    | six    |  |
| rib                                             | kid    | gig  | rim             | pin    | rip   | kit                    |        |  |
|                                                 | lid    | jig  | Tim             | sin    | pip   | lit                    |        |  |
|                                                 | rid    | pig  |                 | tin    | rip   | pit                    |        |  |
|                                                 |        | rig  |                 | win    | sip   | sit                    |        |  |
|                                                 |        | wig  |                 |        | tip   |                        |        |  |

Figure 20: Table of words with a [æ] blends

Words formed with the vowel **o**.

| Blends with o [ɒ] ending on a final consonant |        |      |                 |        |       |                        |        |  |
|-----------------------------------------------|--------|------|-----------------|--------|-------|------------------------|--------|--|
| Final stop consonants                         |        |      |                 |        |       | Final sonorants        |        |  |
| Voiced stops                                  |        |      | Voiceless stops |        |       | Sonorants (all voiced) |        |  |
| Front                                         | Middle | Back | Front           | Middle | Front | Front                  | Middle |  |
| b                                             | d      | g    | m               | n      | p     | t                      | x      |  |
| [ob]                                          | [od]   | [og] | [om]            | [on]   | [op]  | [ot]                   | [ox]   |  |
| Bob                                           | cod    | dog  | Tom             | ton    | cop   | cot                    | box    |  |
| cob                                           | God    | fog  |                 | won    | hop   | dot                    | fox    |  |
| rob                                           | nod    | hog  |                 |        | mop   | got                    |        |  |
|                                               | pod    | jog  |                 |        | pop   | hot                    |        |  |
|                                               | rod    | log  |                 |        | top   | jot                    |        |  |
|                                               | Tod    | tog  |                 |        |       | lot                    |        |  |
|                                               |        |      |                 |        |       | not                    |        |  |
|                                               |        |      |                 |        |       | pot                    |        |  |
|                                               |        |      |                 |        |       | rot                    |        |  |

Figure 21: Table of words with o [ɒ] blends

Words formulated with the vowel **u**.

| Blends with u [ʌ] ending on a final consonant |        |      |                 |        |       |                        |        |  |
|-----------------------------------------------|--------|------|-----------------|--------|-------|------------------------|--------|--|
| Final stop consonants                         |        |      |                 |        |       | Final sonorants        |        |  |
| Voiced stops                                  |        |      | Voiceless stops |        |       | Sonorants (all voiced) |        |  |
| Front                                         | Middle | Back | Front           | Middle | Front | Front                  | Middle |  |
| b                                             | d      | g    | m               | n      | p     | t                      | x      |  |
| [ub]                                          | [ud]   | [ug] | [um]            | [un]   | [up]  | [ut]                   | [ux]   |  |
| cub                                           | bud    | bug  | gum             | bun    | cup   | but                    |        |  |
| pub                                           | cud    | dug  | hum             | fun    | pup   | cut                    |        |  |
| rub                                           | mud    | hug  | sum             | gun    |       | gut                    |        |  |
| tub                                           |        | jug  | rum             | run    |       | hut                    |        |  |
|                                               |        | mug  |                 | sun    |       | nut                    |        |  |
|                                               |        | rug  |                 |        |       |                        |        |  |

Figure 22: Table of words with u [ʌ] blends

In figures 18 to 22 above the final stop consonants and the final sonorants are indicated. The voiced and voiceless stops are also identified. The sonorants are all voiced sounds. In the next line the position of articulation of the consonant in the oral cavity is indicated. This method of word building develops the learners reading vocabulary. By adding the basic core words to the above words that are phonetically pronounced, simple, and then complex sentences can be developed. This will provide meaningful reading material in the classroom. Learners can also construct sentences that relate to the environment and experiences that involve them personally. The reading of such stories will have greater meaning to the learners, and make reading a pleasurable activity. Once this basic reading process is mastered, then educators can assist learners to the next levels of working with double blended sounds such as the *ng* and *ck*.

Sounds are a part of a symbiotic system that allows individuals to distinguish one meaningful word from another. For example '*am*' is a word on its own. It has a specific meaning, and is used in a specific way to convey a message in language. When a preceding consonant is grouped with *am*, then a different word is formulated with a completely different meaning. An example of this is *jam*. Each time the preceding consonant is replaced with another consonant the word and its meaning changes. As a result words such as ham, *dam*, *ram*, *bam* and *lam* can be formed. All sound sequences will allow one to formulate words in syntax or phonetically, but not all formulated words will have meaning. The words bam and lam are words, but they are meaningless. So the written letters of the alphabet stand in for the sound sequences. By reading or vocalizing the sounds and words individuals can engage in intrapersonal and interpersonal communication to convey messages and interpret meaning.

## **The Contribution of William Labov to Reading Reform**

### **Background**

As mentioned earlier in this dissertation the works of Labov will be closely examined so that further insight and knowledge in assisting learners develop skills in phonic awareness which in turn will address the development and improvement of reading skills. Labov and Baker developed the Individualized Reading Manual: A Textbook for Tutors and Children as part of the Urban Minorities Reading Project (UMRP), which is a continuous program to assist the children in inner city schools in developing their reading skill lev-

els. It is important to firstly gain some knowledge of the background and cultural influences that impacted on the African American language that was spoken by these children which led to the research and development of such a reading manual to address the reading failure that existed.

Labov (1992), at <http://www.ling.upenn.edu/phono> states that for decades linguists have carried out extensive studies of the dialect that is now known as Afro-American Vernacular English (AAVE) where the failure to teach reading in inner city schools was investigated. The original reason for the research on AAVE was to find out whether differences between this dialect and classroom English could be partly responsible for the reading problems of the inner city. In the 1960s the Black children of South Harlem were found to be on the average 2 years behind grade in reading, and it was discovered that the majority of Harlem youth were part of a cultural system that opposed the values of the school system, because they saw the school system as an expression of the dominant white society. According to Labov, the majority of the inner city youth would remain at a flat level of functional illiteracy, in spite of various efforts to reinforce or reform the curriculum. Then 10 years later in 1976 he said that the situation in District 7 of North Philadelphia was considerably worse than it was in South Harlem when it came to teaching of reading. The national average in both reading and mathematics were declining indicating educational failure. In the next the 10 years, in the 1980's, the same pattern was apparent where a decline was seen in the reading performance of African-American students throughout the school process.

In order to explain the reading failure the researchers concentrated upon the concept of a cultural and verbal disadvantage which was the result of an impoverished home environment and lack of motivation from the family. It was also found that learners came to school at kindergarten filled with enthusiasm to learn with total motivation and support from their parents to succeed. The pattern of reading and educational failure that follows was as a result of events and interactions that took place during the subsequent years at school. Linguists studied AAVE, and their analysis showed repeatedly that AAVE was or had become closely aligned to other dialects of English. No matter how poor their reading levels were, all of the AAVE speakers that were studied in South Harlem had mastered the alphabet, as far as the beginnings of words was concerned. There were hardly any mistakes in the identifying the first letter of the words. Mistakes became apparent and rose from the

first letter to the next letter and to the last letter. Effort was applied to identifying the first letter and then that effort seems to have disappeared from the second letter onward. Labov in the article 'Can reading failure be reversed' says that a "loss of confidence in the alphabet" resulted. This loss of confidence in the alphabet was a direct result of the very abstract relationship between the alphabet and the surface realizations of words in AAVE.

The conclusions of these studies showed that the semantic and structural differences between AAVE and other dialects were not great enough to be the primary causes of reading failure. The dialect was used to attack education because of social conflicts that existed. As a result learners used the dialect to affect the teachers' attitudes towards the child negatively. The reading failure was associated with membership in groups that opposed the school culture, rather than with verbal skills. Teachers were given in-service training on the nature and history of AAVE, in order to correct these negative attitudes, but there were no changes in the actual reading curriculum to improve the teaching of reading. Later surveys show that the teachers who had undergone such training did display more positive attitudes towards the African-American language and culture, but there was no evidence that reading scores of the AAVE Black learners had improved in any way.

### **The Bridge reading program**

The Bridge reading program for teaching reading in the inner city schools was introduced. This was a curriculum written by two Black psychologists, Gary and Charlesetta Simpkins, and Grace Holt an educator from the Chicago Black community. This program consisted of series of graded readings and cassette recordings that made use of the traditional folklore of African-American culture in three stages from the vernacular to Standard English. The Bridge reading program was tested in five areas of the United States and implemented in the classrooms. The problems that were addressed to develop reading skills by means of the Bridge reading program became worse. The cognitive problems created by linguistic divergence made it more difficult to acquire the necessary reading skills, and the gap between the cultures increased. Thus the parents and teachers objected to the use of AAVE in the classroom so the use of Bridge as a curriculum ceased in the inner city schools.

Then the development of language arts in the integrated classroom was implemented. The only way to achieve the reduction of the basic causes of linguistic divergence

was d by a re-organization of the residential patterns of the large cities, or a re-organization of the school system that brings speakers of AAVE into contact with speakers of other dialects. This would mean an integration of Black lower class youth with Black middle class youth as well as integration of Black and white youth.

### **Suggested principles to reverse reading failure**

Labov's findings show that almost all reading and phonics programs utilized were based on the assumption that all students have the same underlying forms for words and the same grammar. The reading programs were designed for the functioning on the expected grade level or above, and who needed the least assistance in reading development. A reading program that would give assistance to those who displayed the greatest need for help in developing reading skills was required. Such a reading program will also assist those who are not suffering reading failure. The following principles are suggested by Labov for application to linguistic knowledge within the reading program that will give the maximum assistance to AAVE as well as other learners. Labov suggests that the application of these principles can reverse reading failure. The principles are summarized as follows:

- Principle 1: Teachers should distinguish between mistakes in reading and differences in pronunciation. For this principle to be successful teachers must know the patterns of AAVE and the pronunciations of the dialect.
- Principle 2: Give more attention to the ends of words. The great majority of the phonics programs concentrate on the initial consonants and not on the final consonants in words.
- Principle 3: Words must be presented to students in those phonological contexts that preserve underlying forms. To help AAVE learners grasp the correct relationship between words and their spellings, they should be presented in the most favorable environment when they are first introduced into the reading process.
  - Words with final clusters like *test* should be presented as *test of or testing* rather than *This is a test*. Words like *old* should not be presented in the context *He is old* but rather in phrases like *old eggs*.

The same principle can also be applied to words like **bad** with single final consonants: it is heard more clearly in **bad idea** than **He is bad**.

- The past tense **ed** is best introduced in reading after words ending in **t** or **d**. It is far easier for speakers of AAVE to recognize the past tense in **started**, **ended**, and **expected** than in **passed** or **rolled**.
- The third singular **s**, one of the most difficult concepts for AAVE speakers to grasp, is best introduced after verbs that end in a vowel, where it is realized most clearly as **z**. Thus **John goes home** is to be preferred to **John walks home**. The application of this principle will reduce the number of cases where the AAVE speaking student perceives "silent letters" while the teacher does not.
- Principle 4: Use the full forms of words and avoid contractions. Young AAVE speakers have great difficulty in recognizing the relationship between contracted and full forms, though both may be present in their speech. Full forms like **I will have gone** and **He is my brother** are quite natural, and indeed the most common form used by AAVE speakers, but contracted forms of will and is in **I'll be there** and **He's here** are often not perceived in speech or recognized in writing.
- Principle 5: Grammar should be taught explicitly. Though AAVE and SCE share most rules of grammar, there are a number of areas where young speakers of AAVE find no support in their underlying grammar that will help them interpret elements that appear in printed texts. Subject-verb agreement through third singular -s is the most striking example: it not only affects the regular verb, but affects the irregular verbs **have**, **do** and **be**. The possessive -s in **John's idea** must be introduced with equal explicitness. Even the plural, which is securely in place for most AAVE noun phrases, must be taught explicitly with nouns of measure like **ten cents** and **five miles**. Direct instruction on such elements of grammar cannot harm speakers of other dialects, and may serve many useful purposes in their later education. It is however essential



if we are to reduce the mismatch between the printed page and the underlying knowledge of the AAVE speaker.

Although the above principles have not yet been implemented in any fully -fledged reading curriculum, they should form an important element in any reading program. These principles can also be implemented in the design of a reading program especially for South African learners to cater for the diverse cultures and dialects in our South African classrooms. Majority of the learners who are in the schooling system today are second language learners, and it is therefore important to take into consideration the structure of, and the impact of the mother tongue in teaching reading in South African classrooms .

### **The individualized reading program**

According to Labov and Baker at [www.ling.upenn.edu](http://www.ling.upenn.edu) a research program was designed to discover whether knowledge of the home dialect of African American Vernacular English would assist in improving the reading levels of African American learners who were struggling to read. The Urban Minorities Reading Project (UMRP), a continuing program from 1998 to 2000 for raising reading levels of minority children in inner city schools was implemented where the students from the University of Pennsylvania participated in developing educational programmes. Thus the 'Individualized Reading Manual: A Textbook for Tutors and Children' by Labov and Baker became the main instrument of instruction that was used in the Urban Minorities Reading Project to raise the reading levels of minority children in inner city schools. The Individualized Reading Manual (IRM) consisted of the following features which are included with examples of the actual RX program below:

**Diagnostic readings for analysis by the RX computer program**

|               |                       |
|---------------|-----------------------|
| Student _____ | Date _____            |
| Tutor _____   | Grade _____ Age _____ |
| Teacher _____ | School _____          |

**Ray and His Cat Come Back - Diagnostic**

I told you all about Ray and his bad cat. I didn't know that they were going to come back. On Friday, I was in Aunt Brenda's store, and Ray was with the same old cat that I saw before. Ray and his cat were a pain in the rear. Ray sneaked up on Matt and put the cat in his ear. Matt flew about a mile in the air. Then Ray said, "Matt, my cat wants a treat!" Ray grabbed Matt's chips and let his cat eat. The cat took a small bite of the chips, and that was it. Ray said, "Those chips are stale! I see that you bought them on sale. Those chips taste like food that's served in a jail." The cat spit out the

1-9

Figure 23: An example of a page of the diagnostic reading for analysis of the RX Program, from Labov

## The RX Program Individual Diagnostic Stories Instructions for Use With Children

This section of the manual is designed to help you learn about your students' individual reading abilities. To do this, you must follow these steps:

{1} Read *Ray and His Bad Cat* aloud to the child, pointing to each line with your finger so that he or she can follow it with you.

{2} Have the child read the diagnostic story, *Ray and His Cat Come Back*, which contains a wide range of the word and syllable structures that create difficulty for beginning readers.

{3} Record the child's reading errors on the diagnostic sheet following *Ray and the Rat Come Back*.

{4} From the information on your student's reading errors, the RX program will help you to plan your reading instruction. You'll be able to see which decoding skills each child has mastered or has trouble with, and you'll know how to focus the majority of your time on helping him/her with any trouble spots.

Figure 24: An example of a set of Instructions to tutors from the RX Program, from Labov

Throughout the IRM tutors are given specific instructions on what needs to be taught, and also what specific assessment and reporting requirements need to be implemented for each individual learner. This provided the teacher the necessary tools to get to know every learner's capabilities and to thus provide the appropriate assistance on an individual basis.

An introduction to the basic sound-to-letter correspondences of the English alphabet for consonants, vowels, and letters which are sometimes consonants and sometimes members of the vowel nucleus

### KNOW THE SOUND EACH LETTER MAKES!

In the alphabet listed below, the vowels are green and the consonants are red or blue. The red consonants are always consonants. The blue consonants W, Y, G, H are consonants at the beginning of the word but can go after a vowel to make a vowel team like OW, AY, and GH. The letter Y can be a vowel all by itself, as in MY.

|   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|
|   |   | A | B | C | D | E | F | G |   |   |
|   | H | I | J | K | L | M | N | O |   |   |
| P | Q | R | S | T | U | V | W | X | Y | Z |

Every vowel has a long and a short sound. The long sound is the same as the name of the letter. Here are the short sounds:

[Tutors: Have the kids say these along with you.]

The letter A is short in pat and cat and rat

The letter E is short in pet and bet and wet

The letter I is short in pit and bit and sit

The letter O is short in pot and not and hot

The letter U is short in but and cut and nut

2-3

Figure 25: An example of reading consonant vowel consonant (cvc) words from section 2 of the RX program, from Labov

From figure above it can be seen that color is used in direct instruction to focus attention on the letters that are involved in the correspondences being taught. Almost all pages of the IRM include four-color illustrations for both direct instruction in sound to letter correspondences and the narrative texts with graphic representations.

Routines for focusing children's attention on the elements of word structures with complex onsets, nuclei and codas

### The Silent-e Rule:

#### Vowels and Rules You Need to Know

**Kids:** Here are the vowels and the sounds that they make:

A, E, I, O, and U

The Vowel **A** :

The vowel **A** can make 2 sounds: **a** and **a**, as in **pan** and **pane**.

The Vowel **E** :

The vowel **E** can make 2 sounds: **e** and **e**, as in **pet** and **Pete**.

The Vowel **I** :

The vowel **I** can make 2 sounds: **i** and **i**, as in **bit** and **bite**.

The Vowel **O** :

The vowel **O** can make 2 sounds: **o** and **o**, as in **hop** and **hope**.

The Vowel **U** :

The vowel **U** can make 2 sounds: **u** and **u**, as in **hug** and **huge**.

**Kids:** Think of a word for each vowel that has the sound of the vowel's own name. Then think of another word for each vowel that has the short vowel sound:

**A**

**E**

**I**

**O**

**U**

**Tutors:** Have your students write these words in their journals.

4-3

Figure 26: An example of rules for word structures with complex onsets using the silent e, from section 4 of the RX program, from Labov



Direct instructions on the English word structures that involve relations of sounds to letters that are not 1-to-1

Let's read these words:

Add **n** to **sack** and make it **snack**  
Add **s** to **nip** and make it **snip**  
Add **n** to **suck** and make it **snuck**  
Add **s** to **nag** and make it **snag**  
Add **s** to **nob** and make it **snob**  
Add **n** to **sore** and make it **snore**

Here are some more sn cluster words to read:

**snub**    **snug**    **snuff**    **snare**    **sneak**

Now, read these sentences:

Sam **sneaked** into **Steve's** sack and got out a **snack**. He ate **stuff** like cake, cookies, and coke. He got sick from too many **snacks**.



6-7

Figure 27: An example of English word structures that involve relations of sounds to letters that are not 1-to-1 from section 6 of the RX program, from Labov.

The above example shows how direct instruction is given where English word structures change by attaching additional or different sounds to the original English words.

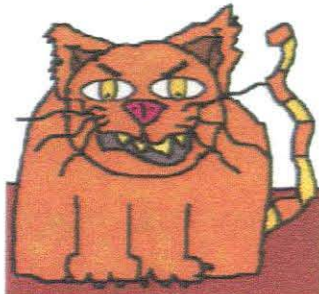
For example when one follows the instruction **Add n to sack and make**

it snack n is added to the word sack, and the original English word changes completely to snack.

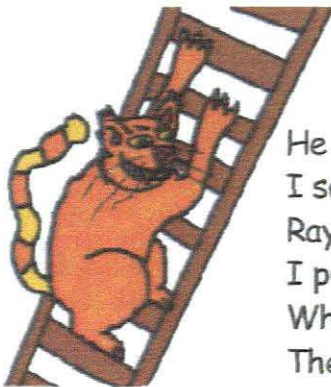
**Narrative texts written with a controlled vocabulary on themes that engage the interests and concerns of inner city children**

## Ray and His Bad Cat

by Michael LeeYow and Bill Labov



This kid Ray had a big, bad cat.  
The cat was bigger than the mat where it sat.  
One day, I met Ray.  
He had the cat with him that day.  
Ray had the cat in a sack that he had on his back.  
He and his cat went in back of me.  
Ray put the cat in my sack, but I did not see.



He said, "Do you have a pencil?"  
I said, "No, I have a pen."  
Ray said, "Give me that then!"  
I put my hand in my bag and said, "Dag!  
What's in my bag?"  
The cat fell out, and it made me mad.  
I was mad, but Ray was madder  
The cat bit Ray and went up a ladder.

1-3

Figure 28: A page of section I of The RX Program Individual Diagnostic Story, from Labov

The narratives included themes and situations that were familiar to the inner city children, so that they could relate to the written texts. The vocabulary of the texts is controlled so that the most frequent and the most complex structures were those just taught. The narratives are also preceded by an introduction that introduces the theme and any words outside of that vocabulary.

**Comprehension questions on the motivations and reasoning of the characters in the narrative**

## **Comprehension Questions for Ray and His Bad Cat**

- 1. Who was badder, Ray or his cat?**
- 2. What did Ray get mad about?**
- 3. If Ray asked you for a pencil, what would you do?**

Figure 29: An example of a set of comprehension Questions on the narrative Ray and His Bad Cat, from Labov

Comprehension questions at the end of each story provided an excellent tool so that the Childs' understanding of the narrative and skills could be evaluated.



A page asking students to state how much they liked the story

Student \_\_\_\_\_ Date \_\_\_\_\_  
Tutor \_\_\_\_\_ Grade \_\_\_\_\_

How did you like  
Bugs at School?



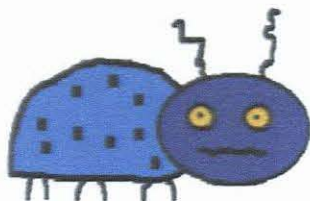
Circle the right answer

5

"Da Bomb"

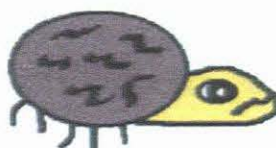
4

"Hype"



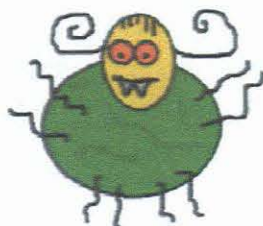
3

"Decent"



2

"Aiight"



1

"Wack"

3-14

Figure 30: An example of a page from the RX Program asking students how much they liked the story, from Labov

The above example provided training in self assessment for the children. This has become an integral part of assessments in the Outcomes-based Education here in South Africa.

Diagnostic tests for each section to measure children's achievement

## Know Your Consonants and Vowels Progress Assessment

Put a "v" next to the following words when the tricky letters w, y, g, or h act as vowels. Put a "c" next to the following words when the tricky letters act as consonants. And put a "t" when the tricky letters are members of vowel teams.

- |                |                |
|----------------|----------------|
| 1. silly _____ | 6. yarn _____  |
| 2. ghost _____ | 7. night _____ |
| 3. boat _____  | 8. oh _____    |
| 4. try _____   | 9. hop _____   |
| 5. sew _____   | 10. out _____  |

**Tutors:** Make sure the students score at least 90% on this assessment before they move on. This means that they must get at least 9 out of 10 questions right!

Student's score: \_\_\_\_\_ out of 10 questions right, \_\_\_\_\_%

**Tutors:** Record times for "Time Yourself" exercises here:

Before \_\_\_\_\_  
After \_\_\_\_\_  
Total \_\_\_\_\_

3-22

Figure 31: An example of an assessment page from the RX Program to measure the student's progress, from Labov

**A final diagnostic reading with the same range of orthographic structures  
as the initial reading**

Student \_\_\_\_\_ Date \_\_\_\_\_  
Tutor \_\_\_\_\_ Grade \_\_\_\_\_ Age \_\_\_\_\_  
Teacher \_\_\_\_\_ School \_\_\_\_\_

### **Ray and His Cat Come Back - Diagnostic**

I told you all about Ray and his bad cat. I didn't know that they were going to come back. On Friday, I was in Aunt Brenda's store, and Ray was with the same old cat that I saw before. Ray and his cat were a pain in the rear. Ray sneaked up on Matt and put the cat in his ear. Matt flew about a mile in the air. Then Ray said, "Matt, my cat wants a treat!" Ray grabbed Matt's chips and let his cat eat. The cat took a small bite of the chips, and that was it. Ray said, "Those chips are stale! I see that you bought them on sale. Those chips taste like food that's served in a jail." The cat spit out the

1-9

Figure 32: An example of a page of a final diagnostic reading from the RX Program, from Labov

The texts of the Individualized Reading Manual (IRM) were based on the cultural context and themes that revolved around the African American children. Earlier research showed that African American children in the 2nd to 5th grades had a profound and persis-

tent interest in the hip-hop culture and the lyrics of rap songs, and thus the children preferred to read materials associated with this cultural complex more than any other type of reading. The children memorized the most popular lyrics, and were comfortable reading copies of lyrics. Although much of the content of these lyrics was not acceptable in the classroom, the reading texts developed by the linguistic component included the style and rhythm of hip-hop lyrics so that the children would want to read the narratives. The themes, settings and scenarios of the narratives took into consideration issues that were universally relevant to children, and also included those unique to the African American learners.

The IRM was designed for use by tutors and the school staff as a supplementary instructional program that would complement the existing school district curricula. The sequence of instruction was based on the individual reading abilities of each child. Tutors receive a copy of the reading error profile for each student. The reading error profile and a plan of instruction indicating which sections of the manual are most important for each child is presented to the tutor by the tutor coordinator so that individual assistance is provided to every child to progress at his own pace and level. Orthographic development as well as comprehension ability of each child is assessed when learners complete the comprehension questions based on the stories that they have read. The child's knowledge of the decoding principles presented in the IRM lessons is also assessed. Learners have to read 90% of the words correctly in each section before moving on to the next section. If the learner fails to achieve the 90 % in a section, repeated instruction in the sound to letter correspondence in that section is provided until the learner has mastered the skills.

The program using the IRM and RX programs has had considerable success in raising reading levels in Philadelphia schools. It has been implemented with over 300 children in grades 1 through 5 who were 1 to 2 years behind in reading grade levels. The aim of this program is to increase children's ability to decode the words in their active vocabulary, and after about 20 half hours of instruction, errors on most of the orthographic structures concerned have practically disappeared. In the standardized tests that were conducted 73% of the children in the program showed increased improvement in mastering the reading skills. Although the program was originally written for African American children in West Philadelphia, it is also being adapted to cater for the Latino children and other minority groups. In the IRM and RX programs Labov follows a specific pattern in teaching learn-

ers the 26 letters and their sounds. He begins from the simplest and progresses to the complex sound combination to construct words and sentences for reading. The different levels will now be discussed as it is found in each section of the IRM and RX programs.

In section one of the reading manual tutors and teachers are assisted to learn about their students' individual reading capabilities. The teacher reads the story of Ray and His Bad Cat aloud to the child, pointing to each line with their finger so that the student can follow. Then the student reads the diagnostic story, Ray and His Cat Come Back, and the teacher records the student's reading errors on the diagnostic sheet following Ray and the Rat Come Back. From this information the RX program helps the teacher to plan reading instruction that will assist that individual student. The teacher will also be able to see which decoding skills each child has mastered or has trouble with, and thus know how to focus the majority of the time on helping the individual student with his or her reading difficulties.

In section two of the reading manual attention is given to reading consonant-vowel-consonant (CVC) words. The student has to recognize the basic sound values of all of the consonants and vowels in the alphabet so that the student can read simple consonant-vowel-consonant combinations in words such as cat, dip, pot, and mud. The strategy for teaching these simple short vowel letter combinations according to Labov is as follows:

- Review and ensure that the student knows the sounds each short vowel makes and how consonants combine with it.
- Help the student read the combinations of vowels and consonants with similar patterns such as, at, cat, mat, rat, sat, etc.
- Apply the above knowledge of sound-to-letter correspondences in order to read CVC words placed in sentences and paragraphs that contain common sight words such as, and, of, that, is, etc.

It is important for the student to understand this basic structure of CVC words and the roles that consonants and vowels play in words so that they can add other sound to letter correspondences to build their knowledge base. It is also very important for the student

to learn all the most common sight words thoroughly to be able to read properly. In figure 25 above it can be seen how the sound of each letter of the alphabet is taught. Different colors are used to identify the various vowels and consonants. The consonants are red or blue, and the vowels are green as shown below.

**A B C D E F G H I J K L M N O P Q R**  
**S T U V W X Y Z**

The red consonants are always consonants. The blue consonants W, Y, G, and H are consonants at the beginning of the word but can go after a vowel to make a vowel team like OW, AY, and GH. The letter Y can be a vowel all by itself, as in *my*. Every vowel has a long and a short sound, for example the letter 'a' in *cat*, *mat* and *rat* are a short sounds. The long sound is the same as the name of the letter. The letters C and G have two sounds. When C comes before i or e, it always sounds like S as in city or cent. When C comes before a, o or u, it sounds like K as in, cat, can and cut. When G comes before i or e, most of the time it sounds like J as in giraffe and gentle. At times it's a regular G, such as in, girl or give, but a G before a, o or u is always a regular G such as, game, gum and got.

The student is then taught to put the letters together and read the words that are formulated. For example **a** and **t** are put together to form at. Then other consonants are added such as **c**, **h**, **m**, **s**, and **f** to **at** and we get the words cat, hat, mat, sat and fat. Students then read sentences that are constructed with these words, for example: **The fat cat sat in the hat on the mat.** The same pattern is followed to extend the learners vocabulary, which is by bringing together each vowel sound with a consonant, and reading the words that rhyme, and then the sentences, which are eventually put into stories. In order to assist the students in this learning process, they were encouraged to "LEARN TO RHYME IT, READ IT, AND RAP IT!" Not all the words that rhyme are meaningful. The words 'dat' and 'lat' rhyme with cat, fat, mat and rat, but are meaningless. Students love to rap, and this was used in a positive manner to develop reading vocabulary.

In section three of the Individualized reading program, the focus is on developing the students decoding skills which are of utmost importance to reading. Decoding letters is a skill that involves the ability to identify and distinguish consonants and vowels accurately and rapidly, which forms the basic foundation on which reading skills are developed. In

order to accomplish this, the student must know all the five vowels and the 21 consonants well. The child must also know that the letters **W**, **H**, and **Y** can either be vowels or consonants, such as in words *saw* and *day*. These three letters are part of the vowel team where the vowel sound is long. **Y** is different because it can be a vowel all by itself. Labov calls the **Y** a “tricky letter” and the **W** and **H** “crafty consonants” in the IRM. Learners are given numerous activities to help them identify the 26 letters accurately.

Learners are taught that vowels are sometimes at the beginning of a word, as in ‘in’, and are at most times in the middle of words, as in ‘fat’, and they are sometimes at the end of words, as in ‘free’. All the variation with the letters **W**, **H**, and **Y** are taught. Labov refers to the letters **GH** as the “Ghost Consonant Team”, where **G** by itself is never a vowel, but when it is put together with **H** it forms a big vowel team. The ghost letters **GH** are never pronounced by themselves, but they tell us that the vowel is long and what kind of a vowel it is, such as the words, *fight*, *rough*, and *through*.

In section four the learners are taught the silent-e rule and how to apply it. The silent-e rule is used to indicate which vowels are long and which are short. Although children can understand and appreciate the transformation from a short vowel to a long vowel sound, they are not familiar with the silent-e rule, and this confuses the child when identifying to which vowels make which sounds. Thus each vowel sound must be taught independently. The manual contains a silent-e rule lesson for each vowel that is a, i, o, and u. Learners must also remember at this stage that a vowel name makes the same sound as the long vowel sound. Each vowel makes 2 sounds. Examples of this are given below:

The Vowel A: a and a, as in *rat* and *rate*.

The Vowel E: e and e, as in *pet* and *Pete*.

The Vowel I: i and i, as in *bit* and *bite*.

The Vowel O: o and o, as in *hop* and *hope*.

The Vowel U: u and u, as in *cub* and *cube*.

When a silent-e is added to the end of a word that has just one consonant as the last letter the vowel in the middle of the word changes its sound. This happens only if the word ends with just one consonant. If a word ends with more than one consonant, then the vowel in the middle does not change its sound. The silent-e is never added after two consonants, but always after one, such as in file, bake, and space. There is an exception to the silent-e rule, that is, whenever the vowel *a* comes before *st*, the silent-e rule works, as in taste, waste, and haste. When a single vowel, a single consonant is followed by an e, the e is silent, as in the word ate. There are various exceptions to the e- rule that are dealt with individually and in detail in section five of the reading program.

In section six of the RX program the teaching of consonant clusters is implemented. Before actually teaching the consonant clusters, revision of the sound to letter correspondences done in the previous lessons has to be done. The singular and combined sounds that *st*, *sp*, *ct*, and other clusters make are taught orally and read by the learners and the teacher. The two -letter consonant clusters will include some of the following: *nk* as in tank, *nt* as in rent, *sp* as in spin, *st* as in star, *sn* as in snap, *sk* as in skip, *tr* as in trap, and *sc* as in scar. The strategy used to help learners to recognize the sounds of the consonant clusters is to teach them clusters at the beginning and the ends of words simultaneously. After the two -letter consonant clusters are mastered the learners are introduced to the three -letter consonant clusters. Some of the three -letter consonant clusters include: *str* as in strip, *rst* as in first, *sts* as in roasts, *spr* as in spray, and *scr* as in scream .

In our South African classrooms, learners come from diverse cultures and backgrounds and they bring with them the various factors that influence the sounds of the letters and the pronunciation of words which impact on the reading skills. The Individualized Reading Manual: A Textbook for Tutors and Children as part of the Urban Minorities Reading Project (UMRP), developed by Labov to assist the children in inner city schools in developing their reading skill levels was discussed in detail above because it has relevance to what is taking place in South African classrooms when it comes to reading. By applying similar strategies in teaching phonics and reading to South African learners will open up a channel to improve their reading levels. The language spoken and understood by the present generation, together with their current interests and surroundings need to be taken into account in developing a suitable and successful reading program to teach reading today in



South African classrooms. The above contribution of Labov to reading reform also provides a sound empirical basis for synthetic phonics which will be discussed next.

## Synthetic phonics

According to the Concise Oxford dictionary, (1990) the adjective 'synthetic' refers to "using combinations of simple words or elements in compounded or complex words." Learners are thus taught to build or put together letters or words to achieve pronunciations by translating letters into sounds and blending the sounds together. Simply put, this is blending of sounds or synthesizing. Synthetic phonics involves teaching letter-sound correspondences. Synthetic phonics allows beginners to start learning words containing only the simplest letter-sound correspondences and teaches the children to read at every point by translating letters into sounds and blending the sounds throughout the word. The new correspondences are introduced rapidly, including the complex ones, so that all or most of the sound correspondences are taught in a matter of weeks. Only one strategy, that is blending, is used in teaching. Analytic phonics, on the other hand focuses more on the analysis of words after they have been identified in some way. This can include words given by the teacher, such as sight-words.

According to Hopkins, (1998) "Synthetic Phonics is a system of teaching reading which accents the "sounds" of the letters and refers to those sounds in words as "spellings" An example of this is : The sound of *j* is spelled **dge** as in **ledge**, **ge** as in **age** and **j** as in **jump**. The word **judge** has two **j** spellings in it." [hopkingw@mediaone.net](mailto:hopkingw@mediaone.net). The vowels are taught in a similar way. Hopkins further states that this approach is combined with kinesthetic, sound cassettes teaching the vowel and consonant sounds and identifying them with picture cards and linking them with a sound and story. Writing skills and classic literature are included along with higher level thinking skills, organizational skills and vocabulary acquisition, oral reading and group reading. Since the teaching of phonics was left out for a while, Farr, (undated) the founder of Which Phonics? supports the UK government's decision to set up an independent review into the role of synthetic phonics in teaching reading. She says that "It is fantastic news that the synthetic phonics approach is finally being taken more seriously. The alphabet is a code that is within anyone's ability to deconstruct. Identifying, blending and segmenting sounds provide an invaluable platform for decoding, which I believe benefits children of all abilities."

[jaz@whichphonics.co.uk](mailto:jaz@whichphonics.co.uk) Teachers need to be made aware of the difference between synthetic and analytic phonics and also be able to identify the many different sounds of the English language.

According to the article, 'The Government must learn from phonics fiasco' in the opinion telegraph synthetic phonics is the reading technique that teaches children the alphabet first, and then to build up words from their constituent sounds. In 1996 this still included the 'whole-word' teaching approach. Then in 1998 the whole word method was adopted by schools to overcome the mass illiteracy. The article also states that, "well over a million children have failed to achieve basic standards of literacy. A quarter of a million 11-year-olds are unable to read and write properly." [www.opinion.telegraph.co.uk](http://www.opinion.telegraph.co.uk) If schools had been allowed to employ the phonics method, illiteracy at age 11 might have been eradicated altogether. Judging by tests in Clackmannanshire, where synthetic phonics have been taught since 1998, the method reduces the rate of reading failure to near zero. The evidence suggests that pupils taught using phonics are over three years ahead of their peers taught by other techniques.

The Clackmannanshire synthetic phonics programme is where reading is taught by using synthetic phonics. According to the report by the National Literacy Trust on this programme, "the researchers found the beneficial effects of the synthetic programme to be long lasting: for word reading, the gains increased from a seven-month advantage in Primary 1 to a 26-month advantage in Primary 5. The likely reason for this, they say, is that in learning to recognize and blend sounds early on, children are given a procedure that they can apply for themselves whenever they meet an unfamiliar word." [www.scotland.gov.uk/insight](http://www.scotland.gov.uk/insight). According to the latest results from a project that now takes in all 19 of the authority's primary school children have made significant progress in reading and the rate of success has increased in both the fast and slow learners. The Clackmannanshire synthetic phonics programme has also indicated that this method of teaching reading has long lasting effects on the learners reading abilities.

According to the Times, of 6 November 1998 at [www.literacytrust.org.uk](http://www.literacytrust.org.uk) a radical way of teaching children to read has out performed the Government's preferred literacy strategy where a literacy hour is taught every day in primary schools in England. The one year pilot study of 300 schoolchildren in Scotland

showed that those taught using "synthetic phonics" were seven months ahead with their reading and nine months ahead with their spelling compared to the Government's strategy. The method was pioneered by Dr Rhona Johnston, and consists of boosting children's reading, spelling and phonemic awareness through learning just six letters a day. Children are taught the 42 letter sounds at about six a day over eight days. At the same time, they are taught to identify letters in the initial, middle, and final position in words and to sound and blend words using magnetic letters. The children on the programme were a year ahead of their chronological age. They had completed two years of work in one year. One of the most deprived school's, Park Primary School in Clackmannanshire reported to now achieving levels above pupils from well to do areas, thus showing that poverty does not hinder learning. The value of including synthetic phonics in educational programmes to teach reading can now not be overlooked.

Nissen, (2005) states that, "learning involves perception, comprehension, retention and recall. There are various effects we can employ to increase the retention and recall processes." [www.curriculum.gov.uk](http://www.curriculum.gov.uk) He discusses the different effects from a paper by Sharifian in relation to memory and synthetic phonics. Many of the effects are employed by teachers, either instinctively or by training, and it is interesting to know their cognitive research basis. The research results can be applied to improve teaching techniques in reading. These valuable suggestions can be applied very effectively in our South African classrooms, regardless of the socio-economic status of the school. The researcher will therefore now discuss all these effects and indicate how they can be directly applied to the learning and teaching situation in South African classrooms, especially in relation to the teaching of phonics.

The effects are as follows: Firstly, we get the generation effect where learners are most likely to remember things they have generated in some way or another and any activity included with the learning process is likely to enhance memory. Nissen (2005) says that the "synthetic aspect of synthetic phonics actually refers to a generation process, which helps to explain why the approach is so effective. Thus the pupil is taught to generate 'cat' from 'c', 'a' and 't'. This generation can be by sound, by typing letters, or by selecting objects (such as magnetic letters) and putting them together." The research indicates that spelling out a word helps one to remember the word, and that writing cues or drawing pictures is also helpful in remembering the meaning of a word. When remember-

ing individual letters, it is useful to have some form of action that the learner can perform to promote memory. For example when the *s* is being taught the learners can wriggle like a snake.

The second is the isolation effect where there is increased memory retention for anything which stands out from other items, when it is included among them. This effect occurs when an item or word is placed among others which have similar attributes, such as shape, size, attributes, etc. For example, if the word pen is put into a vocabulary list about transport, such as car, bus, train, ship, etc. the memory for the word pen is enhanced. *The third effect is the time-of-day effect. Research has shown that the efficiency of mental processing depends on the time of day when they are carried out. "There are differences in efficiency of recall of comprehension and memory of a text at different times of day. During the morning the surface linguistic forms were remembered better, but during the afternoon, semantic features were likely to be remembered better. Research also suggests that memorizing is best done before a period of tranquility, such as sleep" states Nissen (2005). It is therefore important to read to a child at bedtime as it can be of great benefit, as this will assist in the memory process. One could also teach a new phoneme sound and letter shape each evening, illustrated from a storybook. Then see if the child remembers the new phoneme sound and letter shape in the morning, by presenting the child with the appropriate illustration. It is also useful to do a warm-up activity, to get the brain ready for learning, and for this purpose the recollection or revision of previously learnt information is valuable.*

The fourth effect is the serial-position effect is where memorizing a list of items or events takes place, the first few items are remembered best, the last few the next best, and the items in the centre are the most difficult to recall. The serial position effects can be utilized in various tasks. Teachers can apply this memory effect when organizing the learning content and resources. They can for instance, present the most complex items at the beginning of a lesson or list and the next most complicated at the end of the lesson or the list. More attention can then be directed to the middle items. When teaching phonics the most complex sounds and rules can be taught at the beginning of a lesson, and provision must be made for revision of the same sound at the end of the lesson.

The fifth effect is the spacing effect, where the recall of the letters is better when the items that need to be repeated are spaced out, instead of being placed together. This effect can be observed in practically any learning situation with any kind of learning material, especially in the teaching of phonics where a lot of repetition of the letters and their sounds is required regularly. This effect can be applied to the learning of the shapes of letters, the mapping of phonemes to graphemes, and the rules and exceptions of pronunciation and spelling.

The sixth effect is the modality effect. This is where information presented orally is *remembered better than the information presented visually*. Researchers who tested memory for the order of items in a list found that there was a higher accuracy for items which were heard rather than those which were seen because of the prosodic features of spoken language. Memorization became easier when information is presented in both the auditory and visual modalities. The modality effect can be employed very effectively to synthetic phonics because the auditory aspects play an important role right from the beginning to build phonemic awareness by listening to sounds and by showing how the spoken words are composed of phonemes. The letters of the alphabet and their specific sounds, and later the words and their proper pronunciations must appear simultaneously for effective learning.

The seventh effect is the self reliance effect. Here the recall language is improved when the learner refers to him/herself that is language is used in the first person, such as 'my home'. Nissen suggests that the words 'I' and 'my' must be introduced early to the child in teaching phonics. In South African schools these two words are often introduced early to the child, but not as part of phonic teaching, instead they are introduced to the child as core words or as sight vocabulary.

The eighth effect is the bizarreness effect where memory is improved with things that are bizarre or out of the ordinary. This occurs because of the increased mental effort required in extracting the meaning. For example when one is presented with the sentence, ***'The baby carried the mountain in his left hand.'*** Much mental effort is needed to imagine this, and the increased effort creates longer retention of the visual interpretation and the language involved. This effect can be of great benefit in the teaching of phonics, by making

learning fun. Learners can construct or read humorous sentences such as '*The fat rat sat on the cat.*'

The ninth effect is the encoding-context effect. Memory is improved if learning and testing happens in the same place or in a similar environment. The information about the context is stored with the encoded memories, and by reviving the situation or the context, recall is improved. This helps to activate those memories. In the teaching of phonics pictures or concrete objects are utilized to facilitate the learning of the content. Nissen (2005), states that when testing the recall, the picture should be shown without the letter, the word, or the passage, which it was illustrating. But educators today find that it is more accurate to leave out the pictures and show the learner the letter or word when testing the child's ability to recall. The child's ability to associate the letters to the appropriate speech sounds is tested, or when words are presented to the child s/he must be able to use the various speech sounds represented by the set of letters to pronounce the word in order to produce the spoken language. The use of objects and pictures enhances the child's understanding of the content being learned. Educators can provide the same place and a similar environment to assist the child in the recall process.

The last effect is the processing-difficulty effect. When mental effort is used to encode or learn information there is less difficulty in recalling. Research shows that the greater the difficulty experienced in the process of memorizing, the better the memorization or ability to retain the learned information. Learners must therefore be actively involved in the learning process. The child must be helped to acquire the skills involved in both encoding and decoding words, so that s/he can perform this process by themselves. The letters or words must be sounded out verbally, and where possible the child can perform some form of action to illustrate the meaning or understanding of the learning content. In this way the child will be using his different senses at the same time. By processing information, a new letter sound or a new word in this manner, memorization and recall becomes less difficult.

The effects just discussed can be applied in a very practical manner on a day to day basis when teaching phonics in the classroom. With education now being more learner orientated, and parental involvement being stressed, even parents can benefit by using these effects to assist their children at home to improve in letter-sound and word recognition so that reading can become an enjoyable experience and the reading levels can be elevated.

When teaching phonics the ability to encode and decode is a process that has to be stressed. Once children master these basic skills the foundation for reading is laid.

In synthetic phonics the sound correspondences including the complex ones are taught rapidly, and in most instances involve whole class teaching. From her personal experience as an educator, the researcher has noted that teaching second language learners the 26 sounds of the alphabets rapidly is not always successful, especially for the slow learners. A large number of the S.A. learners are exposed to the alphabets and their sounds for the first time in a language that is totally new to them, and therefore need time and constant repetition to comprehend and remember what they are learning. On the other hand in Labov's reading program learners were taught the sound correspondences systematically, from the simple to the complex, and learners are tested to ensure that they have mastered the specific sounds before progressing to the next level. The Individualized Reading Program was designed to assist learners individually by assessing and identifying their weak areas and then providing assistance at the appropriate stage of intervention to eradicate reading failure.

The RX reading program provides specific instructions to teachers to pronounce or read the words or stories so that learners can first listen, and then to permit the learners to read. Synthetic phonics teaches children to blend in order to arrive independently at a pronunciation for a printed word. The teacher does not pronounce the word for them because the purpose of this method is to allow learners to blend sounds to derive the words by themselves. In order for the S.A. learner to be successful with blending independently to arrive at the correct word or pronunciation, s/he will have to know all the alphabets, their sounds, and the rules that apply to the combination of the sounds thoroughly.

Synthetic phonics does not incorporate grammatical patterns which is an integral part of the reading process. It is therefore important to include grammatical patterns when synthetic phonics is utilized to teach reading in the classroom. The reading program developed by Labov to assist inner city learners that was discussed above, emphasized the linguistic and grammatical aspects that had to be included in the teaching of reading. The importance of vocabulary construction and recognition also, cannot be minimized. Vocabulary development and the ability to recognize lexical and grammatical patterns are extremely relevant when teaching second language learners to read. The techniques utilized in Labov's

reading program to improve the reading and spelling skills can be successfully implemented to assist S.A. learners today, with the proper technological resources, a workable learner – teacher ratio, and trained facilitators in the field of teaching phonics in every classroom. Although all aspects of teaching synthetic phonics may not be of practical benefit in S.A. classrooms, the numerous effects in relation to memory and synthetic phonics that were discussed most certainly can be incorporated the strategies implemented to encode and decode when teaching phonics in S.A. classrooms.

## **Summary**

In this chapter the researcher discussed the relationship between speech sounds and the alphabets, and how they relate to reading. Both the spoken and the written language of the reading process were discussed. Voice articulation and the production of the various speech sounds were emphasized. The importance of including all the different aspects such as grammar, and syntax when teaching reading were also discussed. The researcher demonstrated how the vowels sounds can be developed into words by combining them with the various consonants to assist in the reading process. A discussion of Labovs' contribution to improve reading failure in American inner city schools was done in depth to examine how vernacular learners can be assisted in improving their reading skills today. Synthetic phonics and its valuable contribution to accelerate the teaching of phonics and reading in British schools were also discussed. Here the different ways to improve memorization with regard to the teaching of phonics were highlighted with practical examples involving intrapersonal and interpersonal communication skills that can be applied in our South African classrooms today.



## READING PROBLEMS

### Introduction

In the previous chapter the researcher highlighted the role of speech sounds and the alphabets in the reading process. In this chapter the researcher will list the various reading problems, give an explanation of exactly what these problems are, and point out the possible causes of such reading problems. Reading problems can be a result from different specific issues or from a combination of physical weakness experienced by an individual. Reading problems can be attributed to poor speech, poor vision, hearing difficulties, attention deficit disorders, ineffective reading instructions and methodology, language processing difficulties.

### Identifying reading problems

To identify reading problems in children, it is important to understand what a reading error really is. Children make different kinds of errors that can be attributed to varied factors when they are reading. According to Labov (2003) "A reading error can be defined as the selection of the wrong word in a printed text that is, not the word intended by the writer of the text. A question of some importance is how broadly such incorrect selections affect the over-all interpretation of the text." [www.ling.upenn.edu/~wlabov/Papers](http://www.ling.upenn.edu/~wlabov/Papers) Labov uses the example of the word *son* for *sun* in a text. When the word *sun* is replaced with *son* the meaning of the text is completely changed. Teachers must allow learners to read a text aloud orally so that the errors can be identified and recorded by the teacher. The determination of what is a reading error is an essential step in measuring child's progress in comprehension skills, and in mastering alphabetic relations. Errors with regard to pronunciation must be examined in correlation with the home language and dialect of the children.

Reading errors can arise when children experience difficulty in decoding skills. Research and investigation into the impact of phonological and grammatical patterns utilized in speech by the different dialects spoken by children is essential to identifying reading errors when these children are required to read a text in English. Children that possess learn-

ing disabilities related to neurological or physical attributes are prone to experience difficulties in reading.

## **Dyslexia**

According to the National Institute of Neurological Disorders and Stroke (2006) at [www.ninds.nih.gov/disorders/dyslexia/dyslexia](http://www.ninds.nih.gov/disorders/dyslexia/dyslexia). "Dyslexia is a brain-based type of learning disability that specifically impairs a person's ability to read. These individuals typically read at levels significantly lower than expected despite having normal intelligence. Although the disorder varies from person to person, common characteristics among people with dyslexia include difficulty with phonological processing (the manipulation of sounds) and/or rapid visual-verbal responding." Dyslexia is a condition related to poor reading, and it is one of the most common reading problems today. Dyslexic individuals have a problem with verbal and written codes or symbols. They experience difficulty in translating written symbols and spoken words into written symbols. So dyslexia is an information processing difficulty. The disability affects a wide range of people, producing different symptoms and varying degrees of severity. Dyslexia is prevalent in all age groups, and can affect individuals regardless of their level of intelligence. However research has shown that more boys than girls are dyslexic.

Children with dyslexia have difficulty learning to read due to one or more information processing problems such as visual perceptual or auditory perceptual deficits. Some children with dyslexia have difficulty with reversals of numbers, letters or words. Dyslexic individuals, not only experience reading problems, they also have difficulty in spelling and writing tasks assigned to them. According to Science Daily (2006), researchers have found that humans code words in three forms while learning how to read and spell. These codes draw on common and unique brain circuits. The three forms in which the brain codes words are, by their sound which is phonology, by the parts of words that signal meaning and grammar that is morphology, and by their visual or written form which is orthography. Learning how to read, cannot be done in isolation because spelling and writing capabilities will also become part of the process of learning to read.

Dyslexia is a learning disability that is difficult to recognize because you can't see it when you look at a child, or hear it when you talk to him. As a result, many children with reading difficulties never know why they have learning problems, and never get the neces-

sary help they desperately need to overcome the problem. However there are various symptoms that can be identified in an individual who is dyslexic. Some of these symptoms are as follows:

- Letter or word reversals when reading, such as in, was/saw, b/d, or p/q.
- Letter or word reversals in writing exercises.
- Experience difficulty when repeating what is said to them.
- Poor handwriting where legibility is an issue.
- Drawing ability is a challenge.
- Reversing letters or words when spelling words that are presented orally.
- *Experiences difficulty in comprehending the written or spoken instructions.*
- Has difficulty with right to left directions.
- Have difficulty in understanding or remembering what is said to them.
- Have difficulty in understanding or remembering what they have just read.
- Have difficulty in putting their thoughts on paper.
- Has a low concentration level, and is easily distracted.
- Confuses words and symbols.
- *Experiences difficulty in copying texts correctly from the chalk board and other sources.*
- Has difficulty in spelling words correctly and as a result s/he spells the same word in different ways.

The above symptoms are experienced because of brain dysfunction. The lower centers of the brain scramble the images or sounds before they reach the higher processing centers of the brain. This causes confusion as well as frustration for the learner. A problem with hearing, vision, neurological development, coordination, visual perception, or auditory perception can lead to a learner experiencing the above symptoms. Learners who experience auditory discrimination problems can be assisted with educational exercises that involve training the brain in discrimination and to repeatedly teach the formation of the sounds used in speaking and reading. Learners who have visual perception problems may reverse letters or words. They have difficulty matching the word image on the page with previously stored images of the word in their brain. Exercises that train the brain to apply instructions with the phonics approach can assist to overcome this problem. Difficulty in language processing can contribute to poor reading and listening comprehension together with difficulty in verbal and written expression. By learning appropriate word attack skills through phonics and by developing basic language usage will contribute to overcoming language processing difficulties. Much can be done within the regular classroom to assist learners to overcome dyslexia when the symptoms are recognized early. Patience, creativity and a positive outlook with the determination to genuinely conquer the problem of dyslexia will drive both teachers and parents of dyslexic learners to provide the necessary help and direction to the dyslexic learners.

According to Science Daily (2006) the brain images of children with dyslexia taken before they received spelling instruction show that they have different patterns of neural activity than do good spellers when doing language tasks related to spelling. But after specialized treatment emphasizing the letters in words, they showed similar patterns of brain activity. These findings are important because they show that the human brain can change and normalize in response to spelling instruction, even in dyslexia, the most common learning disability. So with specialized assistance dyslexic children can overcome this disability, and in turn improve their ability to read and spell. When a learner has developed the ability to read and spell, then s/he will also be capable to express thoughts in the written form more easily.

According to Temple et al. (2003) a study was conducted examining whether behavioral remediation ameliorates the dysfunctional neural mechanisms in children with dyslexia. Functional MRI was performed on 20 children with dyslexia of 8 to 12 years of age during

phonological processing before and after a remediation program focused on auditory processing and oral language training. Behaviorally, training improved oral language and reading performance. Physiologically, the children with dyslexia showed increased activity in multiple brain areas. Black circles in the two figures that follow each other below highlight the left temporal-parietal region, which is disrupted in children with dyslexia and affected by remediation. Purple circles highlight the left frontal region that is active in normal reading children and is affected by remediation in children with dyslexia. In figure 33 below a MRI scan reveals the brain activity with no remediation in normal reading children and dyslexic children while rhyming.

## Children with no remediation

**Normal reading children  
while rhyming**



**Dyslexic reading children  
while rhyming  
before remediation**

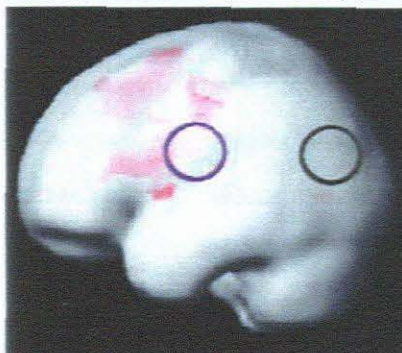


Figure 33: Functional MRI scan indicating left hemisphere activations in the brain of normal reading children and dyslexic reading children while rhyming before remediation, from Temple et al, 2003

The figure below indicates the neural effects of remediation in children with developmental dyslexia during phonological processing.

## Dyslexic children increases after remediation

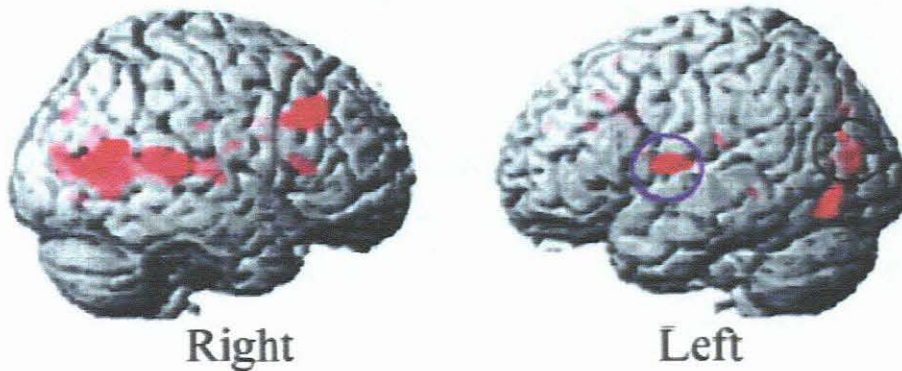


Figure 34: Functional MRI scan of brain areas that showed increased activity during phonological processing in the dyslexic children after remediation, from Temple et al, 2003

An increase in brain activity occurred in left temporal-parietal cortex and left inferior frontal gyrus, bringing brain activation in these regions closer to that seen in normal-reading children. Increased activity was also observed in the right-hemisphere frontal and temporal regions and in the anterior cingulate gyrus. Children with dyslexia showed a correlation between the magnitude of increased activation in left temporal-parietal cortex and improvement in oral language ability. The results above suggest that a partial remediation of language-processing deficits, resulting in improved reading, ameliorates disrupted function in brain regions associated with phonological processing and produces additional compensatory activation in other brain regions. The changes in the neural activity observed in the Functional MRI scan above in dyslexic children indicates that through remediation dyslexic children and adults can be assisted in improving their reading skills. With appropriate assessment and correct remediation, however, most children with reading difficulties can thus learn to overcome this reading problem.

## Dyscalculia

Dyscalculia is a type of specific learning disability where the individual experiences difficulties relating to mathematics. According to Ramaa and Gowramaa (2002) a factor

analysis of mathematical abilities and detailed psychological analysis of disorders of mathematical functions of the brain in adults showed clearly that mathematical ability itself is not simple and compact, and if any of its component abilities are unevenly developed and some areas are severely impaired, then there will be a disorder in calculation ability and that is dyscalculia. So dyscalculia is a learning disability where an individual has difficulty in performing calculations.

The mathematical calculations can be linked with both a reading disorder and spelling disorder, these disorders may often overlap. Dyscalculia may have a genetic origin or it could be acquired in prenatal development. Ramaa and Gowramaa (2002) describe two independent studies in India for identifying and classifying children with dyscalculia in primary schools, the “primary factors responsible for difficulty in mathematics were cognitive deficient development, poor linguistic competence; neuropsychiatric problems, minimal brain damage (MBD), Asperger’s Tourettet’s syndrome and dyscalculia.” The paper also mentions dyslexic difficulties, reading difficulties, and inappropriate teaching methods as secondary factors for poor mathematics performance. The research revealed that children who were identified with dyscalculia also experienced reading and writing problems. The ability to read well is of utmost importance because it influences all other areas of learning, including mathematics.

Ramaa and Gowramaa (2002) state some of the following important observations made by the earlier investigators with regard to the factors associated with dyscalculia. Some of these factors are as follows:

- There may be difficulty in the retrieval of number facts and the ability to solve story problems, thus indicating a deficiency in two areas of mathematical cognition.
- Individuals may use preliminary calculation strategies such as counting with fingers, and counting errors, which may last for a longer period of time.
- There may be a persistence of fact-retrieval deficits throughout the primary school stage.



- Fact-retrieval deficits may be apparent in children attributed to general deficiencies in the speed of processing information.
- The mathematically disabled children continued to have difficulty across different grades at the primary school stage in story-problem-solving skills involving change, equalizing, combining and comparing of numbers.
- Individuals that experience difficulty in mathematical calculations may have problem in information-processing skills such as attention deficits, visual spatial deficits, auditory processing difficulties, memory problems and motor disabilities.
- Individuals experience difficulty or delay in conservation, seriation and classification aspects of cognitive development among dyscalculics.
- Mathematically disabled children experience extra stress, anxiety and depression.
- Not all individuals who experience reading disorders necessarily have serious arithmetic disability.
- Dyscalculia frequently occurs concurrently with reading and spelling disorders.
- Subtle cognitive deficits in symbolic or representational thinking, temporal-sequential organization, verbal memory, and the rate of verbal processing may underlie language deficits in children. Some of these verbal cognitive deficits also have been implicated as possible causes of certain arithmetic difficulties.

When identifying learners with dyscalculia, it is also necessary to take into consideration additional difficulties in reading or writing for the purpose of diagnosis of neuropsychological factors, specific to mathematical difficulties and remediation. When assisting learners with dyscalculia in the classroom situation all the related factors should be taken into consideration, and a systematic procedure of recognizing dyscalculia can be applied.



Weaknesses associated with problem conceptualization and the execution of calculation strategies is usually detected. So the application of mathematical rules in solving a problem or performing calculations becomes a hurdle to a dyslexic learner. Regardless of the cultures, traditions, location or language spoken mathematics is everywhere, and is known as a universal symbolic language that unites people globally, enabling humans to communicate and relate quantity in all aspects of life. The application of number skills to solve daily problems is essential. Mathematical conceptualization, logic, reason and analysis are all part of the process. Thus it is clear that the universal problem of dyscalculia cannot be ignored for our learners to succeed.

## **Apraxia**

According to Lewis *et al.* (2004) apraxia is a general linguistic disorder where individuals have difficulty in syllable sequencing and nonsense word repetition. Childhood apraxia of speech, speech-sound disorder, and language disorder are linked. Children with apraxia also experience articulation, and spelling difficulties, and language problems. Lewis *et al.* (2004) also states that “speech – motor programming difficulties may also contribute to reading, writing and spelling difficulties. Children lacking the motor control to pronounce a word, either aloud or covertly; may have difficulty with segmentation task.” Children with apraxia have difficulty with speech-sound discrimination and analysis. Speech delays associated with apraxia are related to expressive language delays which in turn can be part of a language processing delay that put these children at risk for language-based social and academic problems. Thus these children experience difficulties with reading, spelling and writing.

Children with childhood apraxia may have deficits in phonological representation that are demonstrated by their inability to rhyme and to identify syllables. There is a variation in the symptoms that can be identified in learners with apraxia. The variation in the symptoms is due to the age of the learner. Apraxia begins early in the speech-sound development of the individual. Some children have only speech-sound disorders, which can improve with speech therapy and remediation. Children with combined speech-sound and language disorders also have later reading and writing difficulties. Often the articulation problems improve, but the language disorder persists as they grow older. These findings were evident according to Lewis *et al.* (2004) in a study of ten children who were clinically

diagnosed with childhood apraxia of speech, and were observed from the age of four to ten years. Assessments included measures of articulation, diadochokinetic rates, language, reading, and spelling. The study also indicated that it is difficult to differentiate from childhood apraxia of speech and other forms of speech-language impairment in preschool children; it is possible to distinguish children with childhood apraxia of speech from children with isolated speech-sound disorders. Diagnosis should therefore be based on analysis of conversational speech-sound error patterns and observations of motor speech production. Caution is required to avoid a premature diagnosis of apraxia because apraxia becomes more apparent with age since the child's speech becomes more defined, and the errors can be easily identified. To assist learners with apraxia the therapy should include phonic awareness, spelling and pre-reading skills development exercises. Learners with apraxia have a weakness in syllable segmentation and sequencing skills; therefore the teaching of spelling skills is very important. The diagnoses and symptoms of childhood apraxia of speech in learners is a challenge because there is insufficient research available on this disorder.

## **Scaffolding**

Scaffolding refers to the identification of early reading behavior that can predict later reading success. Reading abilities can be correlated with scaffolding errors identified at an early age. According to Savage *et al.* (2001) "Identification of patterns of early reading behavior that predict later reading success is clearly important. Reading errors of 6-year-olds represent a source of such early assessment information, but their significance as predictors of later reading is unknown." A study of 6 and 8 year old children investigated the relationship between word reading errors at the age of 6 and accurate word reading at the age of 8, and concluded that "Scaffolding errors represent a significant qualitative indicator of later word reading success." Analyzing errors made in reading continuous text in terms of possible syntactic, semantic and orthographic influences have become common tools of literacy assessment. Phonological awareness and the skill of decoding and recoding of words are essential for fluent reading.

According to Savage *et al.* (2001), some longitudinal studies of word reading errors have attempted to investigate which kinds of reading errors are most strongly correlated with the success of reading development. Twenty-three 4-year-olds were followed over 18 months into their early school careers. Scaffolding errors which accurately represented the

initial and final letters but not the vowels of words, such as 'bat' for 'boat' were positively correlated with accurate word reading ability, whereas other responses such as non-phonological errors such as 'milk' for 'lorry' were not correlated with accurate word reading ability in the study. Single word reading errors can thus be related to both phonological errors and non-phonological errors. Analyses of the study revealed that even when measured reading ability at the age 6 was entered in the first step of analyses, scaffolding errors still accounted for significant variance in word reading, suggesting that such errors are good predictors of subsequent reading ability. The study also confirmed that scaffolding errors were not simply an alternative measure of serial decoding skills. Scaffolding errors were found to explain unique variance in word reading even after a measure of decoding skills was first entered into. Early use of scaffolding errors might therefore be expected to play a necessary role in later accurate word reading ability.

Scaffolding can be used in identifying reading errors early and qualitatively to evaluate the existence of productive word recognition processes and thus provide direction to remedy, and intervention exercises to assist the learners to read both fluently and with accuracy as they progress each year to a higher level in their school career.

## **Summary**

In this chapter the researcher discussed reading problems such as dyslexia, dyscalculia, and apraxia, and the identification of the symptoms of these specific reading problems. Scaffolding was also explained indicating how it can assist in identifying reading errors at an early age, so that learners can be helped to overcome identified reading errors. Scaffolding reveals that errors in reading identified early can predict later reading success. The main reasons for reading problems are related to auditory perception difficulties, visual perception difficulties and ineffective reading instruction. *An intensive phonic driven program can improve reading achievements, comprehension levels and language processing difficulties tremendously.*

RESEARCH METHODOLOGY AND FIELD WORK

**Introduction**

In the previous chapter reading problems and their possible causes and symptoms were explained. In this chapter the researcher will outline the procedure that was adopted to conduct the research and how the fieldwork was conducted among learners from all exit phase levels, that is grades 3, 6, 9, and 12, and their parents in the eThekweni region. The rationale behind the organization of the questionnaire that was used, and how access to respondents at particular schools was gained and how, the actual fieldwork was conducted with the learners by allowing the management and educators at the various schools to act as fieldwork facilitators. This chapter will begin by listing some critical questions that this research will attempt to answer.

**Critical questions**

The critical questions that need to be addressed by this research study are as follows:

- Does a reading culture exist in the homes of the learners?
- What kind of entertainment and extracurricular activities are the learners involved in?
- What impact does the entertainment and extracurricular activities chosen by the learners have on their reading skills?
- Is Outcomes-based Education the cause of the serious reading problems that exist today?
- What role does intrapersonal and interpersonal communication play in the reading process?

- What major factors contribute to South African learners experiencing problems with spelling and the reading of non technical to technical levels of complexity?

## **Research methodology and Selection of respondents**

The research consisted of an empirical survey of the respondents' reading skills by means of a questionnaire. Each respondent was asked to report on matters such as their personal reading habits, the culture of reading in their homes, and their extracurricular and entertainment habits. Individual results were quantified in the Statistical program SPSS 11.5. The researcher constructed a database with all the questions, and set up a coding system of the possible responses in order to capture and analyze the data received. In order to process the data received, each respondent was allocated a specific respondent code, which was used by the researcher to capture and process the data collected from the responses to each question in the questionnaire. Various sets of responses will be compared and analyzed by means of the tables and graphs. The quantitative analysis was done after the extraction of the tables and graphs using SPSS 11.5.

The schools were selected randomly to include respondents who were learners in grades 3, 6, 9, and 12, since these are the exit grades of each phase. The parents of these learners were also given the opportunity to give their responses regarding factors that impacted on the reading skills of their children. Respondents that were selected to participate in this research included respondents from the many different ethnic groups, diverse cultures, and the various socio-economic statuses that presently exist in the region.

## **Fieldwork protocols and the actual fieldwork**

The researcher sought the assistance of her supervisor to facilitate correspondence with the KZN Department of Education to obtain permission to conduct research among learners at the exit levels of each phase in a number of different schools in the eThekweni region. This letter is presented in Addendum 3.

The following protocol procedures were executed which ensured the success of the fieldwork that was conducted.

- The researcher designed and formulated questionnaires for each grade of learners that were tested. Questionnaires for these learners' parents were also appropriately formulated.
- A correspondence letter from my supervisor seeking permission to conduct the research in schools in the eThekweni region was sent to the KZN Department of Education.
- The sample questionnaires for the different groups of respondents were also submitted to the KZN Department of Education for approval.
- When a positive response was received from the KZN Department of Education (letter of approval from KZN Department of Education is attached in addendum 4), the researcher made specific appointments to meet personally with the principals of the chosen schools. The researcher approached the principals of the various schools of the selected respondents with the necessary documentation from the KZN Department of Education to conduct the research, and also discussed the research purpose and procedure.

Specific days, times and proper procedures to conduct the research were negotiated with the principals so that normal instruction times of learners was not disrupted. They were also assured of complete confidentiality. The appropriate number of questionnaires for both the learners and their parents were given to the principals or their designated management member of staff. The researcher explained the procedure of how the questionnaires needed to be filled in so that valid and accurate statistics could be maintained. The learners completed the questionnaires under the direct supervision of the educators in the classroom. Educators were asked not to assist or influence the response of the learners in any way. Completed questionnaires were collected by the educators as soon as the learners had completed filling in their individual responses. Learners were then given the parent questionnaires to hand over to their parents, and they were asked to return the completed questionnaires to the educators the next day. Some principals voluntarily sent their own covering letters to the parents with the questionnaires, encouraging their participation. The researcher then collected the com-

pleted questionnaires from the schools by appointment. The researcher sent a written note of thanks to the principals, staff, learners and their parents for their participation, support and assistance in completing the questionnaires.

## **The questionnaires**

Questionnaires were prepared for learners in each specific grade and their parents according to their own level of understanding. The same line of thought and reasoning were utilized for each question asked in all the grades. Where specific responses pertaining to only a particular grade were required to be investigated, and then those questions appeared at the end of the questionnaire of that particular grade only. The parent questionnaires were correlated with the learners' questionnaires with a similar pattern of questions, and a few added questions relating specifically to parents were included. All questionnaires began with a note to the respondents, explaining how the questionnaire should be filled in, and emphasized that their participation was voluntary, and that all responses were confidential.

To set the appropriate frame of mind for the voluntary completion of the questionnaire under relaxed conditions, a naïve graphic of a happy educator surrounded by equally happy learners (~😊😊😊😊😊😊~) and the orientation notes. This graphic psychologically restores the self-esteem, and helps the respondent to feel at ease, acknowledged, and empowered to assist. The graphic suggests an unforgettable bond that exists among them, an environment, and an educator every educator desires and strives to achieve in his or her classroom. The graphic also appears at the conclusion of the questionnaire to end with a sense of fulfillment and a contentment.

The first page of the grades 3, 6, and 9 questionnaires followed the same format, with the grade only being changed. On the second page the learners were given two practice questions, which were followed by request for permission to use the research. The practice questions set the tone and procedure that needed to be followed for the responses to the questions that followed. The content of the practice questions were not related to the actual research. Participants were again assured of confidentiality when their permission to use their answers in the research was sought. Questions 1 to 7 required personal information regarding the respondent such as their grade, age, and gender.

The purpose of questions 1 to 7 was to facilitate responses to assist in analyzing the demographic profile of the respondents. The researcher was able to collect information regarding the grade, the age, and the gender of the respondent from responses to questions 2 to 5. Question 6 informed the researcher of the number of siblings in each respondent's family. Question 7 indicated who the respondent lived with. The purpose of question 6 and 7 was to assist in providing information about the family, since the family is a focal component of the social structure of humanity that plays an important part in impacting on the reading culture in the home of the respondents. Questions 8 to 12 that followed gave insight into the socio-economic status of the respondents, the type of reading material that was available at home, and how often they read such available material. Questions 13 to 15 revealed information about the reading habits of the respondents, and also included questions regarding how often the respondents had borrowed and read books from the school and public libraries.

It is important for this study to note the type of entertainment that the respondent engaged in and how often the respondents were involved in such entertainment, so that this can later be correlated to his/her reading habits. Questions 16 to 18 made provision for such responses. The questions posed here investigated the habits of respondents with regard to television viewing and other extracurricular activities that they were involved in throughout the week. Questions 19 to 22 were intended to provide the respondents preference of a book as a gift compared to other items. Responses to these questions will indicate to the researcher how important reading is to the respondent, and whether s/he valued reading. Question 23 was a direct question related to reading which appeared as follows: 'Do you like to read?' Respondents were required to respond with either 'Yes' or 'No'.

The questions that followed provided the researcher with insight with regard to the reading culture in the home of the learners. The reading habits and preferences of the learners and their parents were required to closely examine whether any reading trends were practiced in the homes. Children often follow the examples set by their parents, and therefore specific questions were concerned with the reading habits of the parents. The purpose of these questions was to investigate the reading culture in the home, and how it influenced the learners reading abilities. Responses to question 34 will indicate the influence of the grandparents in encouraging reading. Question 30 says 'With whom do you mostly watch television? The purpose of this question is to find out with whom the re-



spondent spends his or her time, and whether s/he is supervised by family members while watching television.

Question 37 allowed the respondent to assess his own reading ability. Self assessment plays a crucial role in the learning and teaching process. The responses to this question will also indicate the level of confidence the respondent has in his or her own reading ability. This question the respondents could choose from good, satisfactory or poor. In the grade 3 questionnaire these responses were accompanied with rubrics of happy to sad faces to assist these younger learners with their responses.

Question 38 in the grade 12 questionnaire is as follows: 'Have you read all your set works for this year?' The responses to this question is relevant since grade 12 is the final year of schooling and reading of the set works will have a direct impact on the learners' results to succeed in securing a good pass rate at the end of the year. Question 38 was adapted in the grades 3, 6, and 9 questionnaires to correspond with their specific levels of performance. Question 38 appeared as follow in these questionnaires: 'How many books have you read on your own for this year?' Respondents were required to pick one of the following responses: More than 20 books; 16 - 20 books; 11- 15 books; 6 - 10 books; 1 - 5 books; and None.

The purpose of questions 39 and 40 was to reveal the work status of the parents. This is important because it will indicate the amount of time parents have available to assist and promote reading in the home. The questionnaires for the grades 3, 6, and 9 learners included two additional questions to identify the reading culture in the learning and teaching situation at school. These questions (41 and 42), addressed the issue of how often teachers read to the children, and how often the children read to their teacher in the classroom. The respondents were once again thanked for their participation after the last question.

The parent questionnaires began with a note to the parents informing them of the purpose and relevance of the survey, and how their responses would benefit both the education system and their children in the future. Parents were also informed that this was a voluntary survey, and that their participation was voluntary and the personal information derived via the questionnaires will be kept confidential. The parent questionnaire included the request for permission to use their responses at the end of that questionnaire. This

questionnaire also included 6 additional questions (41 to 46) to provide further insight into the background of the respondents.

The responses were excellent. A total of 1600 completed questionnaires were received. Learners from six different schools participated in the survey. The names of the schools are not revealed because confidentiality was assured to all participants, and is therefore also not included in this dissertation. A personal record of this information was essential to facilitate the retrieval of completed questionnaires. Samples of the Grades 3, 6, 9, 12 and the parent questionnaires are included in the addendum 1.

The information received via the questionnaires was captured to form a database using the computer programme SPSS 11.5. This is how the data base was constructed.

## **SPSS 11.5**

SPSS 11.5 is a statistical analysis database programme. By pressing the Alt and Print screen buttons at the same time, snap shots of particular functions of SPSS 11.5 were taken and placed in Word, to help the reader better envisage how SPSS 11.5 was set up to code the results.

### **Rows, columns and cells**

SPSS 11.5 is a statistical analysis database organized in vertical columns and horizontal rows. Each column contains the data for a particular question of the questionnaire. Each row contains the total number of responses of a particular respondent as shown in the SPSS 11 screen shot below. The rows and columns attribute what the researcher has been testing for. The data is entered in the numeric codes 1 to 9, including 0. The first column is the respondent number, which represents the respondent in an anonymous way. This was done because respondents were assured of confidentiality, and thus they were not identified. The sum total of a respondent's responses makes up the total number of attributes that reflect the respondent's overall response about the aspect that is being surveyed. The point where a row and column intercept is identified as a cell. Data is entered in a cell.

The data for each respondent is entered one cell at a time, proceeding from left to right. Each cell in the respondent row contains the respondent's particular response to the attribute which is being tested in that particular column of the database.

In the above image one can see the coding parameters for permission, grade, school, age gender, and so on. Responses were entered in numeric format that is 0 to 9. The researcher used 0 as default places because they are not sum able.

### Variable view and data view

The researcher set up the coding parameters for each survey item of the questionnaire by right clicking on the column banner at the head of each column, by then selecting the Define Variable option, indicating whether the question relates to a scalar, an ordinal or a nominal measurement set of variables. One first fills in the Age label on the panel, and then Scale is clicked as the measurement unit before clicking on the Labels tab, as shown in the image below:

|    |    |   |   |   |
|----|----|---|---|---|
| 18 | 18 | 3 | 1 | 5 |
| 19 | 19 | 4 | 1 | 5 |
| 20 | 20 | 3 | 1 | 3 |
| 21 | 21 | 1 | 1 | 4 |
|    |    |   |   |   |

Figure 35: The Data View in SPSS 11.5

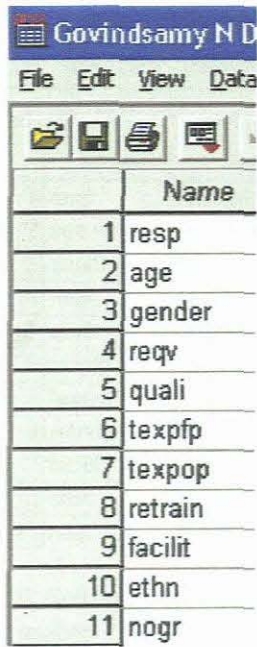
Figure 36 below indicates the variable view of the database. Coding parameters such as the respondent ID number for each respondent, age, gender, school and for the

possible responses to questions are set up in the variable view mode.

|    | Name    | Type    | Width | Decim | Label                                  |
|----|---------|---------|-------|-------|----------------------------------------|
| 1  | resp    | Numeric | 8     | 0     | Respondent number                      |
| 2  | age     | Numeric | 8     | 0     | Your age                               |
| 3  | gender  | Numeric | 8     | 0     | Your gender                            |
| 4  | reqv    | Numeric | 8     | 0     | Your REQV level                        |
| 5  | quali   | Numeric | 8     | 0     | Do you have foundation phase qualifi   |
| 6  | texpfp  | Numeric | 8     | 0     | Teaching experience in foundation p    |
| 7  | texpop  | Numeric | 8     | 0     | Teaching experience in any other ph    |
| 8  | retrain | Numeric | 8     | 0     | Attended workshop conducted by KZ      |
| 9  | facilit | Numeric | 8     | 0     | Trained as facilitator to conduct work |
| 10 | ethn    | Numeric | 8     | 0     | Your ethnic group.                     |
| 11 | nogr    | Numeric | 8     | 0     | Total no. of grades in your school.    |

Figure 36: The variable view in SPSS 11.5

**The name column in variable model**



The screenshot shows the 'Govindsamy N D' window in SPSS. The menu bar includes 'File', 'Edit', 'View', and 'Data'. Below the menu bar is a toolbar with icons for opening, saving, printing, and other functions. The main area is a table with a single column labeled 'Name'. It contains 11 rows of data, each with a numeric code and a text label.

|    | Name    |
|----|---------|
| 1  | resp    |
| 2  | age     |
| 3  | gender  |
| 4  | reqv    |
| 5  | quali   |
| 6  | texppf  |
| 7  | texpop  |
| 8  | retrain |
| 9  | facilit |
| 10 | ethn    |
| 11 | nogr    |

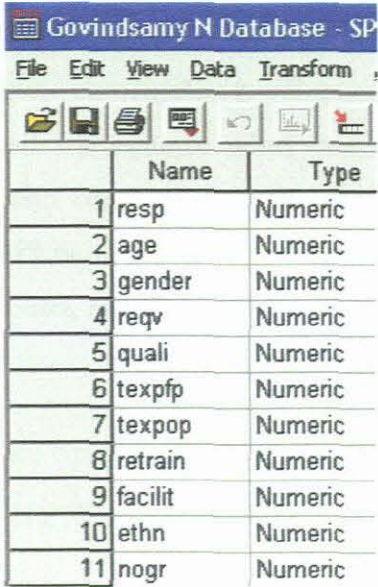
Figure 37: The Name column

searcher used numeric codes (numbers 0-9, or combinations of them) to represent the responses that respondents indicated on their questionnaire. When one clicks on any cell under the Type column, the Variable Type selection box opens up, allowing one to select most appropriate type of variable to translate the response to data.

The name column gives the short hand name for each of the question elements to be coded into SPSS 11.5. It appears in the abbreviated form, and gives an indication of which questions or statements appear in the questionnaire. For example, 'resp' represents the column for the respondent number.

**The type column in variable mode**

The Type column in Figure 38 indicates the nature of the coding symbols that will be used to encode each respondent's responses in SPSS. As can be seen from this figure the re-



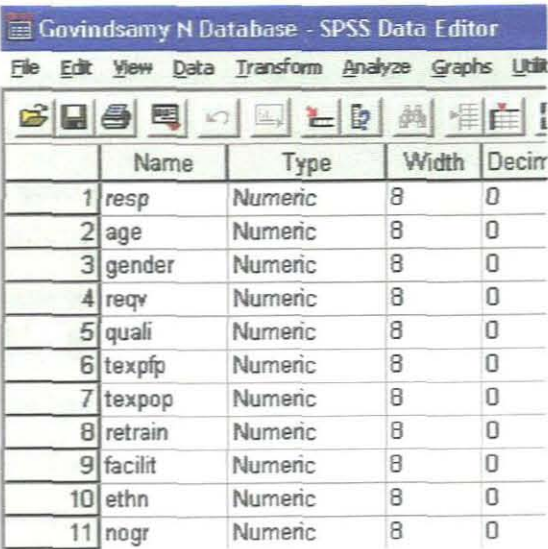
The screenshot shows the 'Govindsamy N Database - SP' window in SPSS. The menu bar includes 'File', 'Edit', 'View', 'Data', and 'Transform'. Below the menu bar is a toolbar with icons for opening, saving, printing, and other functions. The main area is a table with two columns: 'Name' and 'Type'. It contains 11 rows of data, each with a numeric code, a text label, and a data type.

|    | Name    | Type    |
|----|---------|---------|
| 1  | resp    | Numeric |
| 2  | age     | Numeric |
| 3  | gender  | Numeric |
| 4  | reqv    | Numeric |
| 5  | quali   | Numeric |
| 6  | texppf  | Numeric |
| 7  | texpop  | Numeric |
| 8  | retrain | Numeric |
| 9  | facilit | Numeric |
| 10 | ethn    | Numeric |
| 11 | nogr    | Numeric |

Figure 38: The type column in variable mode



The width and decimals columns in variable mode



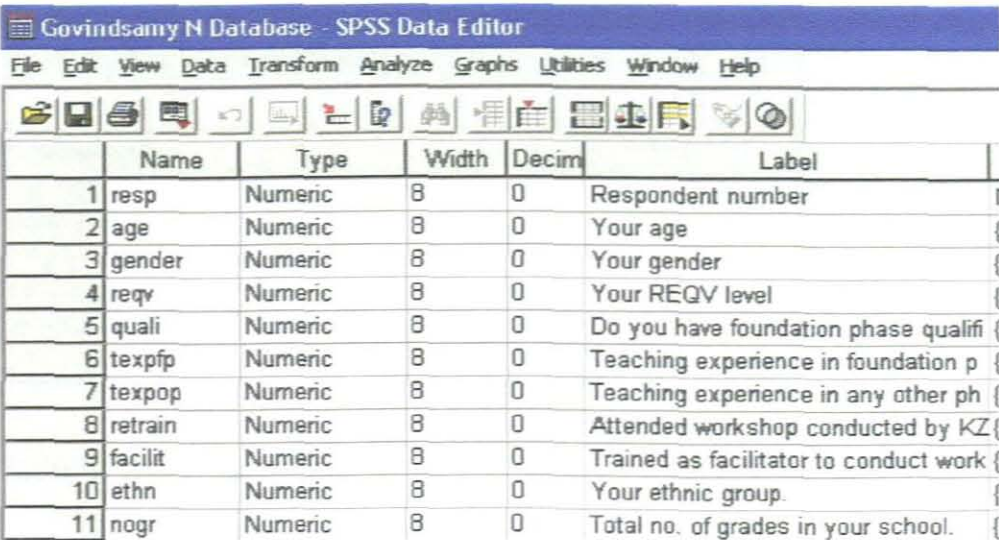
|    | Name    | Type    | Width | Decim |
|----|---------|---------|-------|-------|
| 1  | resp    | Numeric | 8     | 0     |
| 2  | age     | Numeric | 8     | 0     |
| 3  | gender  | Numeric | 8     | 0     |
| 4  | reqv    | Numeric | 8     | 0     |
| 5  | quali   | Numeric | 8     | 0     |
| 6  | texpfp  | Numeric | 8     | 0     |
| 7  | texpop  | Numeric | 8     | 0     |
| 8  | retrain | Numeric | 8     | 0     |
| 9  | facilit | Numeric | 8     | 0     |
| 10 | ethn    | Numeric | 8     | 0     |
| 11 | nogr    | Numeric | 8     | 0     |

Figure 39: Setting up the column width and number of decimal spaces

The width column defaults to eight spaces. Decimals relate to how many decimal spaces there will be after the numeral. If one selects ‘0’ decimal spaces, then 1 will be represented by 1. If one selects 1 decimal space, then 1 will be represented by a number followed by a fraction, for example, ‘1.0’. If two decimal spaces are chosen, then it will appear as ‘1.00’. If for example when one is working with currency, then the whole number will be followed by 2 decimals, as in 10 dollars, \$10.00

The label column in variable mode

In the Label column, the questionnaire elements are typed in exactly as they appear in the questionnaire. So the text will appear exactly as it appears in the database.



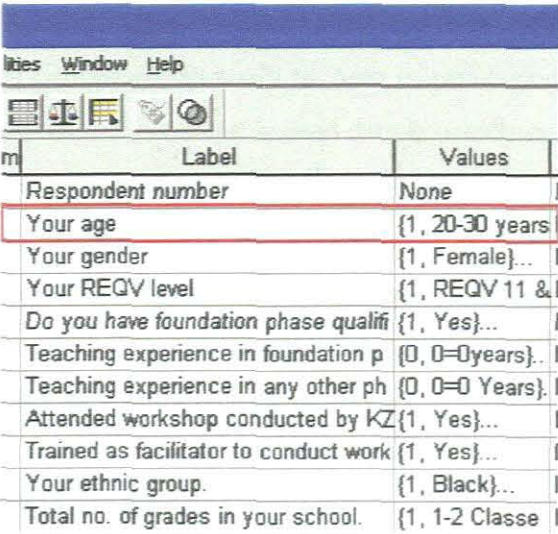
|    | Name    | Type    | Width | Decim | Label                                  |
|----|---------|---------|-------|-------|----------------------------------------|
| 1  | resp    | Numeric | 8     | 0     | Respondent number                      |
| 2  | age     | Numeric | 8     | 0     | Your age                               |
| 3  | gender  | Numeric | 8     | 0     | Your gender                            |
| 4  | reqv    | Numeric | 8     | 0     | Your REQV level                        |
| 5  | quali   | Numeric | 8     | 0     | Do you have foundation phase qualifi   |
| 6  | texpfp  | Numeric | 8     | 0     | Teaching experience in foundation p    |
| 7  | texpop  | Numeric | 8     | 0     | Teaching experience in any other ph    |
| 8  | retrain | Numeric | 8     | 0     | Attended workshop conducted by KZ      |
| 9  | facilit | Numeric | 8     | 0     | Trained as facilitator to conduct work |
| 10 | ethn    | Numeric | 8     | 0     | Your ethnic group.                     |
| 11 | nogr    | Numeric | 8     | 0     | Total no. of grades in your school.    |

Figure 40: The label column in variable mode

**The values column in variable mode**

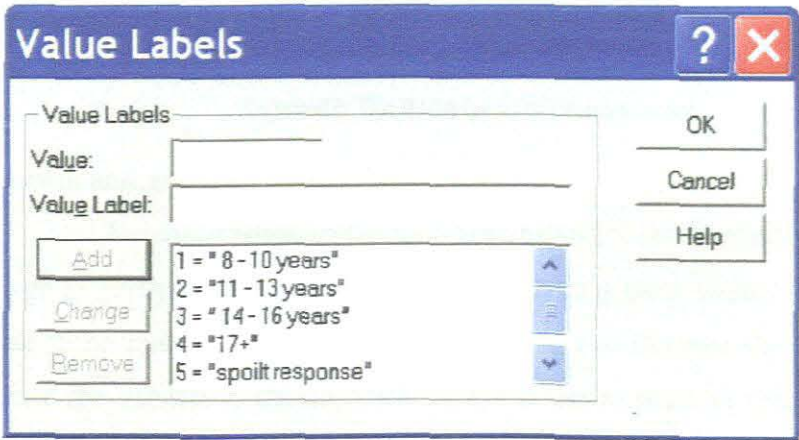
For every response tested, a coding parameter has to be set up in the values column. It can include a simple response such as YES/NO, or a scale or it can take the form of categories such as the racial group or the gender of the respondent. One fills in the age coding parameters by typing “Your age” in the Variable Label slot and then one by one stipulating the age variables. One for instance defines the “1 = 8 -10” years variable by first typing “1” into the Value slot, and then typing “8 – 10 years” in the Value Label slot.

After clicking on the Add tab the coding parameter 1 = 8-10 years appears as the first item on the coding parameter list. A sample of this is provided in Figure 42 below.



| Label                                  | Values           |
|----------------------------------------|------------------|
| Respondent number                      | None             |
| Your age                               | {1, 20-30 years} |
| Your gender                            | {1, Female}...   |
| Your REQV level                        | {1, REQV 11 &... |
| Do you have foundation phase qualific  | {1, Yes}...      |
| Teaching experience in foundation p    | {0, 0=0years}..  |
| Teaching experience in any other ph    | {0, 0=0 Years}.. |
| Attended workshop conducted by KZ      | {1, Yes}...      |
| Trained as facilitator to conduct work | {1, Yes}...      |
| Your ethnic group.                     | {1, Black}...    |
| Total no. of grades in your school.    | {1, 1-2 Classe   |

Figure 41: Setting up the values column



**Value Labels**

Value:

Value Label:

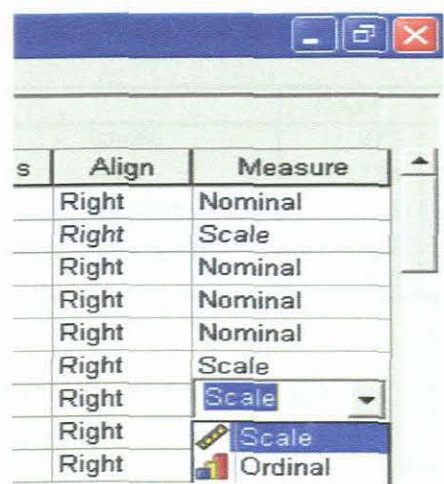
|                       |
|-----------------------|
| 1 = "8-10 years"      |
| 2 = "11-13 years"     |
| 3 = "14-16 years"     |
| 4 = "17+"             |
| 5 = "spoilt response" |

Figure 42: Value Labels

One follows the same procedure, by setting up the coding parameters for each attribute item on the questionnaire as a column in the database. The SPSS database contains 52 columns; the first column for the numeral identifies each respondent anonymously. The 52<sup>nd</sup> column was added to identify the responses of learners from those of the parents.

**Selecting the appropriate measure for the type of data**

There are only three types of measures. They are Nominal, Ordinal and Scale. The scale of measurement will dictate the statistical procedures that will be used in processing the data. According to Leedy (1997) when nominal measurement is used data is usually restricted or limited. For example when we measure gender, we divide into two groups, namely, male or female. Ordinal measurement is used where various pieces of data are brought together and ranked in either higher or lower values than each other. A scale is used to achieve inferential analysis. A scale has equal units of measurement, where a mean can be determined. The figure below indicates the three types of measurement.

A screenshot of a software window with a blue title bar and standard Windows controls (minimize, maximize, close). The window contains a table with two columns: 'Align' and 'Measure'. The table has 10 rows. The first six rows have 'Right' in the 'Align' column and 'Nominal' in the 'Measure' column. The seventh row has 'Right' in the 'Align' column and 'Scale' in the 'Measure' column. The eighth row has 'Right' in the 'Align' column and a dropdown menu showing 'Scale'. The ninth row has 'Right' in the 'Align' column and a dropdown menu showing 'Scale' with a small icon to its left. The tenth row has 'Right' in the 'Align' column and a dropdown menu showing 'Ordinal' with a small icon to its left. A vertical scrollbar is visible on the right side of the table.

| s | Align | Measure |
|---|-------|---------|
|   | Right | Nominal |
|   | Right | Scale   |
|   | Right | Nominal |
|   | Right | Nominal |
|   | Right | Nominal |
|   | Right | Scale   |
|   | Right | Scale   |
|   | Right | Scale   |
|   | Right | Scale   |
|   | Right | Ordinal |

Figure 43: The three types of measurement

**Tables and graphs**

To export tables and graphs from SPSS 11.5 to Microsoft word the researcher had to go to Analysis, click on tables, and then go to general tables. Click on the selected variable to be analyzed. The gender variable is used to illustrate the procedure as an example. Once the variable is chosen, click on the arrow to place in space designated foe rows, it then says define cell, and then, click on Insert total, click edit statistics. Click on Table percentage, then click on add, click on continue, and finally click on OK. There are two tables below. The first table in Figure 44 is a complete table with the count figures and table percentages. The second table that is represented in Figure 45 is the edited version of the first table in Figure x. There are two tables below. The first table, figure 44 is a complete table with the count figures and the table percentages as shown below. The second table below is an edited version of the first table.



|                   |                 | Count | Table % |
|-------------------|-----------------|-------|---------|
| gender of learner | female          | 873   | 54.6%   |
|                   | male            | 724   | 45.3%   |
|                   | spoilt response | 1     | .1%     |
|                   | no response     | 2     | .1%     |
| Total             |                 | 1600  | 100.0%  |

Figure 44: An example of a complete table

To derive at the second table, the researcher had to delete the words ‘gender of learner’ in the first column. The second table was used to construct the bar graph in figure 46.

|       |                 | Count | Table % |
|-------|-----------------|-------|---------|
|       | female          | 873   | 54.6%   |
|       | male            | 724   | 45.3%   |
|       | spoilt response | 1     | .1%     |
|       | no response     | 2     | .1%     |
| Total |                 | 1600  | 100.0%  |

Figure 45: An example of an edited table

To create the graph below the researcher selected the percentages for the responses in the edited table by highlighting the first four rows in the percentage column and right clicked, a dialogue box then appears where the researcher selected and clicked on ‘create graph’ to produce the graph in figure 46 which follows:



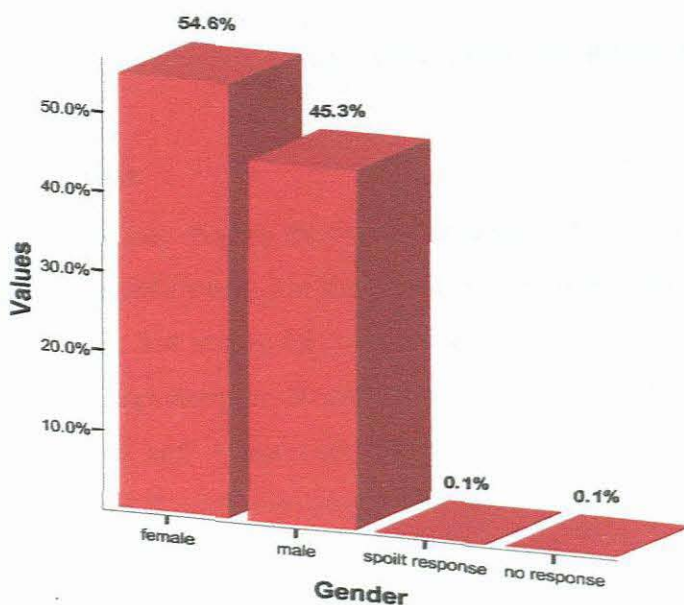


Figure 46: Example of Bar graph

## Summary

In this chapter the researcher stated the research methods that were employed to conduct the empirical research regarding factors relating to and influencing reading among learners in South African schools. The researcher also provided insight with regard to the respondent selection. The protocols that were followed regarding the fieldwork were outlined, and how the actual fieldwork was conducted. The designs of the questionnaires were also outlined. The statistical program SPSS 11.5 was explained and how it was implemented to capture the data received by means of the questionnaires. In the next chapter the researcher will report and interpret the results of the research that were obtained using the statistical program SPSS 11.5.

## DATA ANALYSIS AND RESULTS

### Introduction

In the last chapter the researcher discussed the research methodology, the procedures for the field work, and the actual field work for disseminating and retrieval of the questionnaires. The use of the computer programme SPSS 11.5, which was utilized to capture, analyze and interpret the data, was also explained. In this chapter the researcher will report, analyze, and interpret the results of the research that were obtained via the questionnaires using the statistical program SPSS 11.5.

### Demographic profile

The survey included learners from all four phases at the exit grade levels. The age of the learners in the different grades that were surveyed is as follows: Grade 3, 8 to 10 years, grade 6, 11 to 13 years, grade 9, 14 to 16 years, and grade 12, 17 to 19 years. Provision was also made for learners who were 20 years and older. The number of respondents that participated in the survey in each of these age groups is shown in the table below.

|                |                   | Count | Col %  |
|----------------|-------------------|-------|--------|
| age of learner | 8 - 10 years      | 562   | 35.1%  |
|                | 11 - 13 years     | 416   | 26.0%  |
|                | 14 - 16 years     | 402   | 25.1%  |
|                | 17 -19 years      | 213   | 13.3%  |
|                | 20 years and more | 4     | .3%    |
|                | no response       | 3     | .2%    |
| Total          |                   | 1600  | 100.0% |

Figure 47: Table reflecting the age of the learners

The table above indicates that a total of 1600 respondents willingly participated in the survey. This further indicates the high level of confidence displayed by the respondents in participating in the survey. There is also a good balance of learners from the different grades that participated in the survey. The questionnaire allowed the researcher to gain knowledge of the gender of the participants which is provided in the graph below.

The number of males compared to the number of females that partook in the research is clearly shown in the graph that follows.

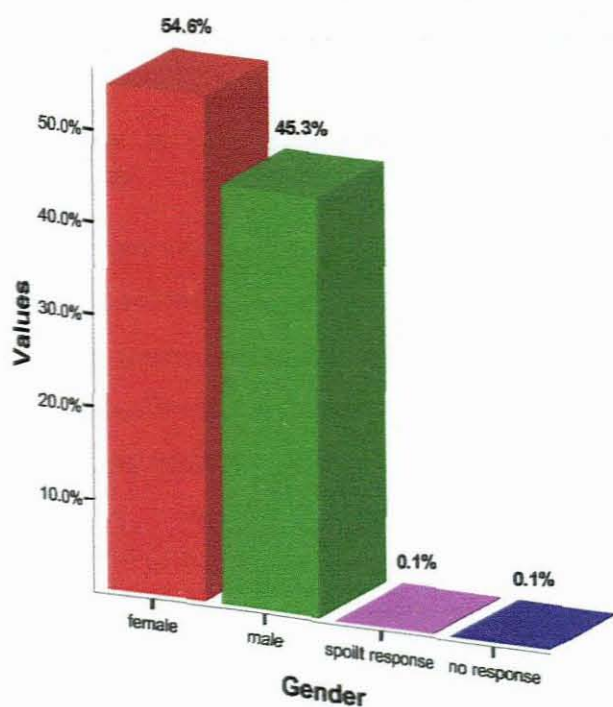


Figure 48: Graph reflecting the percentage of gender responses

There are a slightly lower percentage of males compared to the number of females that participated in the survey. However the slight difference in the number of male participants compared to the number of female participants does not impact on the overall results of the survey, and therefore this disparity will be overlooked in this study.

Participants were included from the various socio-economic groups to provide a fair assessment of the many factors that were being researched. These socio-economic groups included the lower class, the lower middle class, the middle class, the upper middle class, and the upper class. This table below indicates the number and the percentage of participants in the various socio- economic groups.

|                |                    | Count | Col %  |
|----------------|--------------------|-------|--------|
| type of school | lower class        | 340   | 21.3%  |
|                | lower middle class | 716   | 44.8%  |
|                | middle class       | 130   | 8.1%   |
|                | upper middle class | 219   | 13.7%  |
|                | upper class        | 195   | 12.2%  |
| Total          |                    | 1600  | 100.0% |

Figure 49: Table reflecting the type of schools participated in the survey

The socio-economic status was determined by the neighbourhood, in which the school was situated, and by taking into consideration the economic and social factors that influenced the community surrounding the school and its learners. The participants also included learners from all the various racial groups. The respondents also indicated who took care of them and their physical needs, by stating with whom they lived, as shown in the table below.

|           |                   | Count | Col %  |
|-----------|-------------------|-------|--------|
| caretaker | mother and father | 924   | 57.8%  |
|           | mother            | 396   | 24.8%  |
|           | father            | 69    | 4.3%   |
|           | grandparents      | 96    | 6.0%   |
|           | sister/ brother   | 31    | 1.9%   |
|           | aunt              | 41    | 2.6%   |
|           | neighbours        | 1     | .1%    |
|           | spoilt response   | 32    | 2.0%   |
|           | no response       | 10    | .6%    |
| Total     |                   | 1600  | 100.0% |

Figure 50: Table reflecting the caretakers of the learners

Almost 58% (924) of the learners came from two parent families. About 25% (396) of the learners live with their mothers only. In total about 29 % that is 465 of the learners come from single parent families. 96 learners live with their grandparents. While 41 learners live with their aunt, and 31 of the learners were taken care of by either their brother or sister. There were 32 spoilt responses. This could be an indication that these learners were either confused as to whom really took care of them either because of the large number of members in the household or that they were taken care of by different members of the family due to the changes of the family structures in today's families, because of the

change of the marital status of the parents or because of the death of both the learners parents. In many homes both parents need to seek employment because of the economic and financial strains on families. Respondents indicated in the next two figures below whether their mum or dads were employed. Figure 51 tells us how many of the mothers go to work.

|                           |                 | Count | Col %  |
|---------------------------|-----------------|-------|--------|
| does your mum go to work? | yes             | 703   | 43.9%  |
|                           | no              | 370   | 23.1%  |
|                           | spoilt response | 5     | .3%    |
|                           | no response     | 5     | .3%    |
|                           | not applicable  | 517   | 32.3%  |
| Total                     |                 | 1600  | 100.0% |

Figure 51: Table reflecting the how many mums go to work

Figure 52 below states how many fathers go to work.

|                           |                 | Count | Col %  |
|---------------------------|-----------------|-------|--------|
| does your dad go to work? | yes             | 855   | 53.4%  |
|                           | no              | 196   | 12.3%  |
|                           | spoilt response | 6     | .4%    |
|                           | no response     | 23    | 1.4%   |
|                           | not applicable  | 520   | 32.5%  |
| Total                     |                 | 1600  | 100.0% |

Figure 52: Table reflecting how many fathers go to work

From figures 51 and 52 it can be noted that a large number of parents are employed. Almost 44% (703) of the mothers have to go to work and just over 53% (855) of the fathers go to work. Just over 12% (196) of the fathers are not at work and just over 23% (370) of the mothers do not go to work. From the next table the researcher is able to identify how many of the respondents have a radio at home.

|                              |                 | Count | Col %  |
|------------------------------|-----------------|-------|--------|
| do you have a radio at home? | yes             | 1513  | 94.6%  |
|                              | no              | 81    | 5.1%   |
|                              | spoilt response | 5     | .3%    |
|                              | no response     | 1     | .1%    |
| Total                        |                 | 1600  | 100.0% |

Figure 53: Table reflecting the number of learners that have a radio at home.

The figure above shows that almost 95 % (1513) of the learners have a radio at home. The table below indicates the number of respondents that have a computer at home.

|                                       |                 | Count | Col %  |
|---------------------------------------|-----------------|-------|--------|
| do you have<br>a computer<br>at home? | yes             | 618   | 38.6%  |
|                                       | no              | 976   | 61.0%  |
|                                       | spoilt response | 4     | .3%    |
|                                       | no response     | 2     | .1%    |
| Total                                 |                 | 1600  | 100.0% |

Figure 54:Table reflecting the number of learners that have a computer at home

There are a large number of respondents who do not have access to a computer at home. The statistics reveal that 61 % (976) of the respondents do not have computers, while almost 39 % (618) have computers at home. The learners were asked the question, “Do you read books at home?” Their responses are revealed in the next table.

|                                  |                 | Count | Col %  |
|----------------------------------|-----------------|-------|--------|
| do you read<br>books at<br>home? | yes             | 1339  | 83.7%  |
|                                  | no              | 255   | 15.9%  |
|                                  | spoilt response | 4     | .3%    |
|                                  | no response     | 2     | .1%    |
| Total                            |                 | 1600  | 100.0% |

Figure 55: Table reflecting the whether learners read books at home

The table above indicates that majority that is almost 84 % (1339) of the respondents has access to and read books at home. Almost 16 % (255) do not read books at home. From figures 53 to 55 it is clear that radios and books are more accessible to the respondents at home than computers. The use of computers, radios, books and the television involve listening, viewing and reading skills. These skills are also essential in the reading process to develop successful and fluent readers.

Perceptual profile

In order to gain insight into understanding of the levels of the reading skills of the learners at the different grade levels, it is important to examine whether they read at home, and from what source reading material is available to them. From figure 55 above it has been noted that most of the respondents have books at home. Learners generally obtain books from either the school or public libraries. The figures that follow enlighten us in this regard. Respondents indicated how often they borrowed and read books from the school library in figure 56 below.

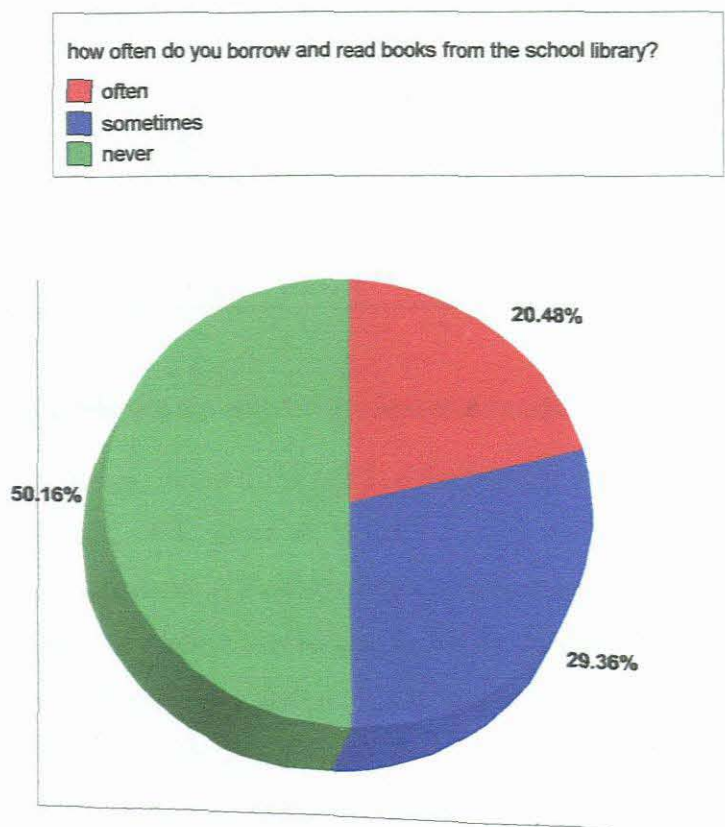


Figure 56: Pie Graph reflecting the percentage of learners that borrow books from the school libraries

It is alarming to note that just over 50 % (826) of the learners **never** borrow and read books from the school libraries. About 29 % (466) sometimes borrow books from the school libraries, and only just over 20 % (325) of the learners often borrow and read books from the school libraries. There could be various reasons why these statistics are so shock-

ing. It is possible that the learners do not have access to the school libraries, or that the school environment of learning and teaching does not uphold the view that reading is a priority in our education system any more. The school libraries should be the driving instrument in the promotion of the culture of reading in every school, and in each learner.

The next figure shows how often the learners borrow and read books from the public libraries.

|             |        |       | how often do you borrow and read books from the public library? |           |       |                 |             |
|-------------|--------|-------|-----------------------------------------------------------------|-----------|-------|-----------------|-------------|
|             |        |       | often                                                           | sometimes | never | spoilt response | no response |
| grade level | 3 fp   | Count | 150                                                             | 233       | 180   | 3               | 3           |
|             |        | Col % | 26.4%                                                           | 40.9%     | 31.6% | .5%             | .5%         |
|             | 6 ip   | Count | 96                                                              | 224       | 81    | 8               |             |
|             |        | Col % | 23.5%                                                           | 54.8%     | 19.8% | 2.0%            |             |
|             | 9 sp   | Count | 65                                                              | 228       | 122   | 1               |             |
|             |        | Col % | 15.6%                                                           | 54.8%     | 29.3% | .2%             |             |
|             | 12 fet | Count | 42                                                              | 132       | 32    |                 |             |
|             |        | Col % | 20.4%                                                           | 64.1%     | 15.5% |                 |             |
| Total       |        | Count | 353                                                             | 817       | 415   | 12              | 3           |
|             |        | Col % | 22.1%                                                           | 51.1%     | 25.9% | .8%             | .2%         |

Figure 57: Table reflecting how often learners borrow and read books from the public libraries

In total, only about 22 % (353) of the learners often borrow and read books from the public libraries, while about 51 % (817) sometimes borrow and read books from the public libraries, and about 25 %(415) of the learners **never** borrow and read books from the public libraries. The highest percentage, just over 26 percent (150) of learners that often borrow and read books from the public libraries is found in the Foundation Phase. They are closely followed by the Intermediate Phase (IP) with about 23 % (96) of learners who often borrow and read books from the public libraries. Senior Phase (SP) has the lowest percentage of learners that utilize books from the public libraries. Just over 20 % (42) of learners in the Further Education and Training (FET) Phase often borrow and read books from public libraries. The public libraries are the focal centers that can promote and encourage reading, not only among learners, but in the community as a whole. With regard to the learners’ usage of this facility, much depends on the role played by the parents or care-givers in encouraging and inculcating good reading habits in the learners at home.



Grade 12 learners have to read the prescribed books for the year in order to be able to answer questions at the end of the year to achieve a good to average result in English to secure a pass in that grade. When the grade 12 learners were asked whether they had read the prescribed literature they responded in the following manner.

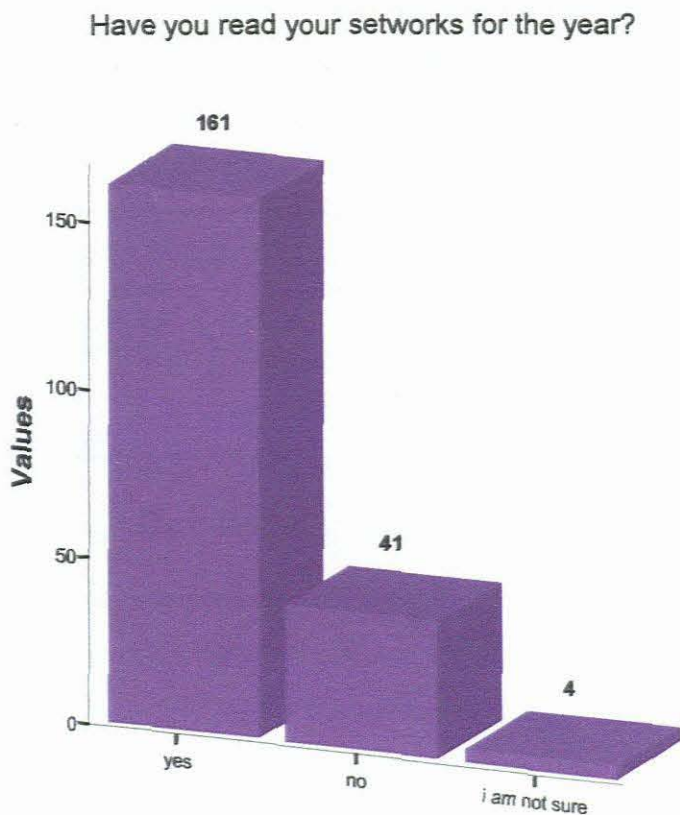


Figure 58: Bar graph reflecting the number of grade 12 learners that read the prescribed books for the year

There were 206 grade 12 learners that participated in the survey. According to the graph above, 161 of the learners stated that they read the prescribed set books for the year, while 41 learners stated that they did not read the prescribed books, and 4 of the learners indicated that they were not sure whether they had read the prescribed books for the year. Almost 22% of these grade 12 learners indicated that they had not read the prescribed books on which they were going to be shortly tested upon. It must be noted that this questionnaire was completed by respondents just before the final metric examinations. So a large number of learners had written their literature paper in the trial examinations without

reading the prescribed books for the year. It is thus clear from the statistics above that a large number of learners have not developed the love of reading or the culture of reading after going through 12 years of the schooling system. This is a matter of great concern because it raises serious questions with regard to the education system, especially since these learners are to become our future parents and teachers for the generations ahead.

One way in which parents or caregivers can motivate and encourage their children is to read is by setting the example by reading to the child regularly, or even daily if possible. The table below helps us to note how active parents are in this regard.

|                                                     |                 | Count | Col %  |
|-----------------------------------------------------|-----------------|-------|--------|
| how often does your mum or dad read a story to you? | everyday        | 165   | 10.3%  |
|                                                     | on some days    | 843   | 52.7%  |
|                                                     | never           | 582   | 36.4%  |
|                                                     | spoilt response | 7     | .4%    |
|                                                     | no response     | 3     | .2%    |
| Total                                               |                 | 1600  | 100.0% |

Figure 59: Table reflecting how often parents read to their children

The above table clearly indicates that very few parents, only about 10 % (165), are reading to their children on a daily basis. About 53 % (843) are reading to their children on some days and over 36 % (582) of the parents **never** read to their children at all. When the learners were asked ‘How often would you like your mum or dad to read to you?’ this is how they responded below:

|                                                                  |                 | Count | Col %  |
|------------------------------------------------------------------|-----------------|-------|--------|
| how often would you like your mum or dad to read a story to you? | every day       | 543   | 33.9%  |
|                                                                  | on some days    | 705   | 44.1%  |
|                                                                  | never           | 343   | 21.4%  |
|                                                                  | spoilt response | 5     | .3%    |
|                                                                  | no response     | 4     | .3%    |
| Total                                                            |                 | 1600  | 100.0% |

Figure 60: Table reflecting the how often children would like their parents to read to them

Almost 34 % (543) of the learners responded positively by indicating that they would like their parents to read to them every day. About 44 % (705) of the learners wanted their parents to read to them on some days, while just over 21 % of the learners did not

want their parents to read to them at all. So a total of 78 % (33.9% plus 44.1%) 1248 of the learners indicated that they wanted their parents to read to them. By having others reading to them, can be of great benefit to the learners. Firstly, their listening skills can improve, and secondly, learners will have an example to follow, of how to read or pronounce words correctly, and most important of all a love for reading and a culture of reading will eventually be developed in the home. Learners were also asked whether their grandparents read to them. Their responses are shown below.

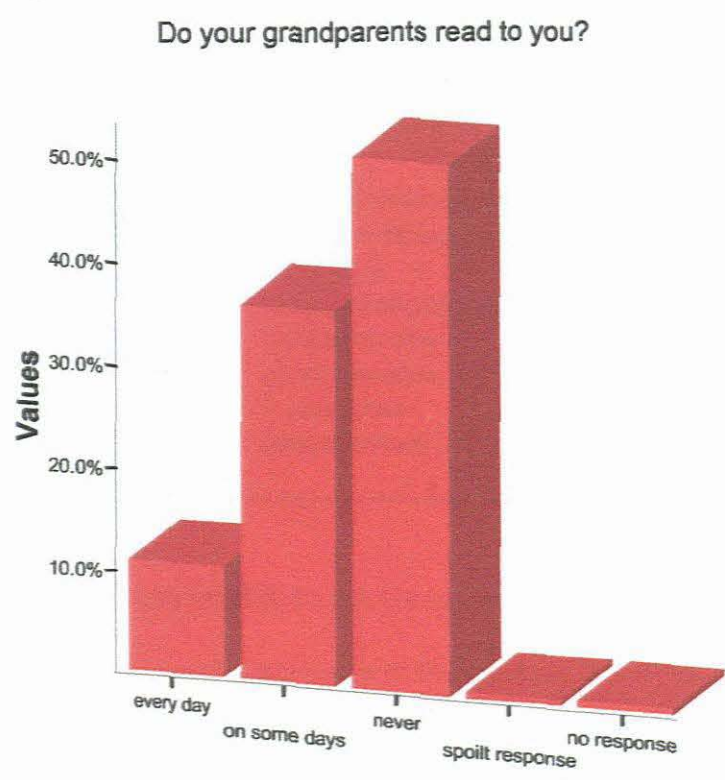


Figure 61: Table reflecting when grandparents read to their grandchildren

Over 50 % (825) of the respondents showed that their grandparents **never** read to them at all. About 35 % (584) indicated that their grandparents read to them on some days, and only about 10 % (173) stated that their grandparents read to them every day. Grandparents can play an important role in assisting young ones to read since many parents have to work due to the difficult economic situations that exists in many households today. From the last four figures the researcher can deduce that the reading culture in the homes of our learners is a matter of serious concern and needs to improve drasti-

cally. Parents and guardians have to give more attention to not only setting a good example regarding proper reading habits, but they also need to read along with the child to promote the culture of reading in the home. Reading activities must be pleasurable and enjoyable experiences so that a love of reading can be developed in our children.

In order to gain further insight into the reading culture of our learners, it is important to examine what they are doing when they are not in school, what extracurricular activities they are involved in, and how much time do they allocate to such activities, and what impact this has on the reading skills of the learners.

|                                                                              |                        | Count | Col %  |
|------------------------------------------------------------------------------|------------------------|-------|--------|
| what do you like doing best after school/with your free time every week day? | watching television    | 435   | 27.2%  |
|                                                                              | reading                | 200   | 12.5%  |
|                                                                              | playing games outside  | 261   | 16.3%  |
|                                                                              | playing computer games | 105   | 6.6%   |
|                                                                              | homework               | 236   | 14.8%  |
|                                                                              | talking to neighbours  | 63    | 3.9%   |
|                                                                              | something else         | 254   | 15.9%  |
|                                                                              | spoilt response        | 19    | 1.2%   |
|                                                                              | no response            | 2     | .1%    |
|                                                                              | personal study         | 25    | 1.6%   |
| Total                                                                        |                        | 1600  | 100.0% |

Figure 62: Table reflecting the activities learners engage in on week days

Figure 62 above provides responses to the question ‘What do you like doing best after school/with your free time every week day?’ The respondents’ were given a wide range of activities to choose from so that they could reflect honestly how they spent their time. Just over 27 % (435) of the respondents spent their time watching television. About 13 % (200) of the respondents engaged in reading, just over 16 % (261) of them spent their time playing outdoor games, and about 7 % (105) played computer games. From the given list of activities most of the respondents watched television in their free time after school. Some of the same activities were included as part of a list of activities to respond to the question, ‘What do you like doing best with your free time during weekends?’ By comparing the responses in figure 62 above and figure 63 below the researcher found that the number of respondents that spent their time watching television during the weekend dropped significantly to half the number, which is from just over 27 % to only 13 % (208). The number of

respondents that engaged in activities such as reading, playing games outside, and playing of computer games also dropped by more than half in all the cases examined.

|                                                                  |                               | Count | Col %  |
|------------------------------------------------------------------|-------------------------------|-------|--------|
| what do you like doing best with your free time during weekends? | watching television           | 208   | 13.0%  |
|                                                                  | reading                       | 105   | 6.6%   |
|                                                                  | playing games outside         | 163   | 10.2%  |
|                                                                  | playing computer games        | 60    | 3.8%   |
|                                                                  | going to the movies           | 125   | 7.8%   |
|                                                                  | shopping                      | 227   | 14.2%  |
|                                                                  | spending time in the mall     | 158   | 9.9%   |
|                                                                  | with my friends               |       |        |
|                                                                  | listening to the radio        | 100   | 6.3%   |
|                                                                  | visiting friends or relatives | 280   | 17.5%  |
|                                                                  | something else                | 149   | 9.3%   |
|                                                                  | spoilt response               | 20    | 1.3%   |
|                                                                  | no response                   | 5     | .3%    |
| Total                                                            |                               | 1600  | 100.0% |

Figure 63: Table reflecting the activities learners engage in during weekends

A fairly large number of learners spend their time on weekends shopping (227), and visiting friends and relatives (280). The last two tables indicate that the learners as a whole engage in a wide variety of activities in their free time after school each day and during the weekends. This is good since it promotes holistic development of the learners. Although the learners are involved in a variety of activities, they are not spending all their free time engaging in them because the next table below provides evidence that majority of the respondents are spending most of their free time watching television.

|                                            |                                 | Count | Col %  |
|--------------------------------------------|---------------------------------|-------|--------|
| how long do you watch television each day? | most of the day                 | 312   | 19.5%  |
|                                            | most of the afternoons/evenings | 598   | 37.4%  |
|                                            | some of the afternoons/evenings | 616   | 38.5%  |
|                                            | not at all                      | 63    | 3.9%   |
|                                            | spoilt response                 | 9     | .6%    |
|                                            | no response                     | 2     | .1%    |
| Total                                      |                                 | 1600  | 100.0% |

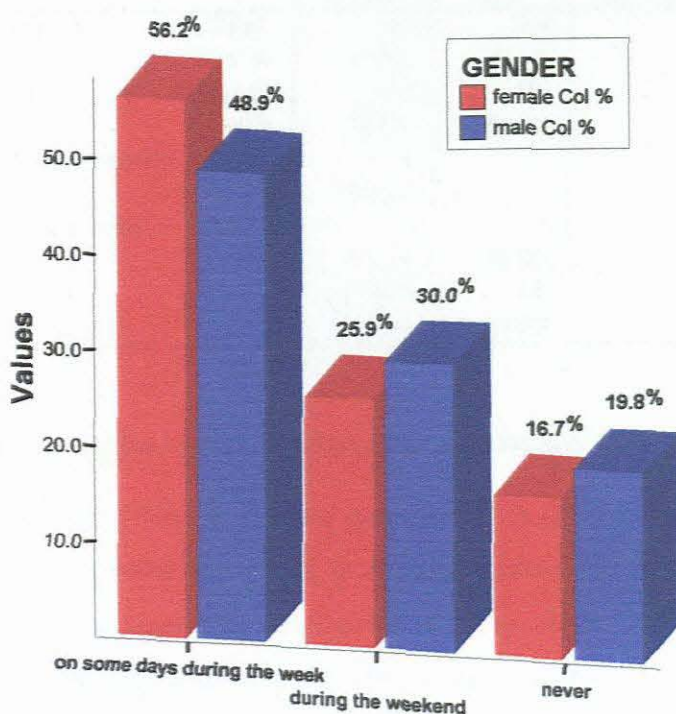
Figure 64: Table reflecting the time learners spend watching television each day

Almost 20 % (312) of the learners watch television for most of the day. About 37 % (598) of the learners watch television for most of the afternoons and evenings each day. By adding the two, that is those who watch television most of the day, and those who watch television most of the afternoons and evenings, we arrive at almost 57 % of the respondents (910). Over 38 % (616) of the learners watch television on some of the afternoons and evenings. Only about 4 % (63) of the learners indicated that they do not watch television at all. So it is clear that majority of the learners spend most of their time watching television. Although there is nothing wrong with watching television, there has to be some kind of balance in the way learners use their free time. The television, a technologically advanced box can be a very useful learning and teaching tool in the home. Besides providing a family with entertainment and a time for relaxation our learners can develop their general knowledge and viewing, listening, reading and reasoning skills which are included as part of the learning outcomes in the Revised National Curriculum, and have to be achieved at all the different levels in the learners' school life. However proper supervision during television watching and the selection of the type of programmes being watched can influence the kind of benefits that can be derived from television viewing. Furthermore watching television does not allow for any social interaction, and the statistics is clear that the learners are viewing television most of the time. From this it can be deduced that there is very little emphasis on actual reading in the home of the learners.

### **Correlation between demographic and perceptual profiles**

Various aspects from the demographic profiles were correlated with aspects of the perceptual profile of the respondents. The results are shown in the tables and graphs that follow.





**How often do you read the newspaper at home?**

Figure 65: Bar graph reflecting the percentage of males and females that read the newspaper at home

The graph above reveals the number of females compared to the males that read the newspaper at the various times in the week. From the above graph, it can be noted that more than 56 % (491) of the females read the newspaper on some days of the week while almost 49% (354) of the males read the newspaper on some days of the week. Almost 26 % (226) of the females and 30 % (217) of the males read the newspaper during the weekend. About 17% (146) females and almost 20 % (143) of the males **never** read the newspaper at all. So in total just over 18 % (290) never read the newspaper at home at all. The newspaper is one of the most widely distributed sources of reading material available to the learners both at school and at home. Learners have more free time available during the weekends, and the above statistics reveal that fewer of the respondents that include both the males and females read the newspaper during the weekend. When the respondents were asked whether they read books at home, a similar pattern emerged regard to the reading habits of females in comparison to the males. The results can be seen in the table below.

|                            |                 |       | gender of learner |       |                 |             |
|----------------------------|-----------------|-------|-------------------|-------|-----------------|-------------|
|                            |                 |       | female            | male  | spoilt response | no response |
| do you read books at home? | yes             | Count | 767               | 569   | 1               | 2           |
|                            |                 | Col % | 57.3%             | 42.5% | .1%             | .1%         |
|                            | no              | Count | 101               | 154   |                 |             |
|                            |                 | Col % | 39.6%             | 60.4% |                 |             |
|                            | spoilt response | Count | 4                 |       |                 |             |
|                            |                 | Col % | 100.0%            |       |                 |             |
|                            | no response     | Count | 1                 | 1     |                 |             |
|                            |                 | Col % | 50.0%             | 50.0% |                 |             |
| Total                      | Count           |       | 873               | 724   | 1               | 2           |
|                            |                 | Col % | 54.6%             | 45.3% | .1%             | .1%         |

Figure 66: Table reflecting the comparison between males and females that read books at home

Just over 57 % (767) females and just over 42 % (569) males read books at home. There are more males, (60% that is 154) than females (almost 40% that is 101) that do not read books at home. By examining the statistics of the number of respondents who read the newspaper and those who read books it can be stated that the female respondents read more than the male respondents do. The table below also reveals that more females like to read than males.



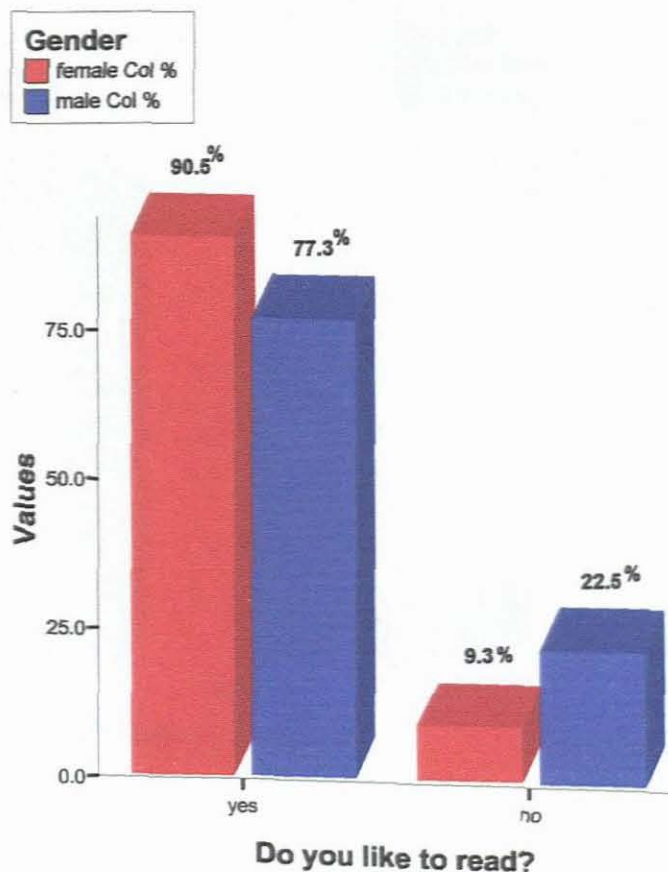


Figure 67: Bar graph reflecting the percentage of males compared to females that like to read

Over 90% of the female respondents indicated that they like to read, while only just over 9 % of them stated that they did not like reading. Just over 77% of the males indicated that they like to read, and over 22% of them stated that they do not like to read. Here again there is a clear indication that females prefer to read more than the males. The learners were asked to assess their own reading capabilities. The graph below gives us the results of their responses by comparing the choices of males in comparison to the females.

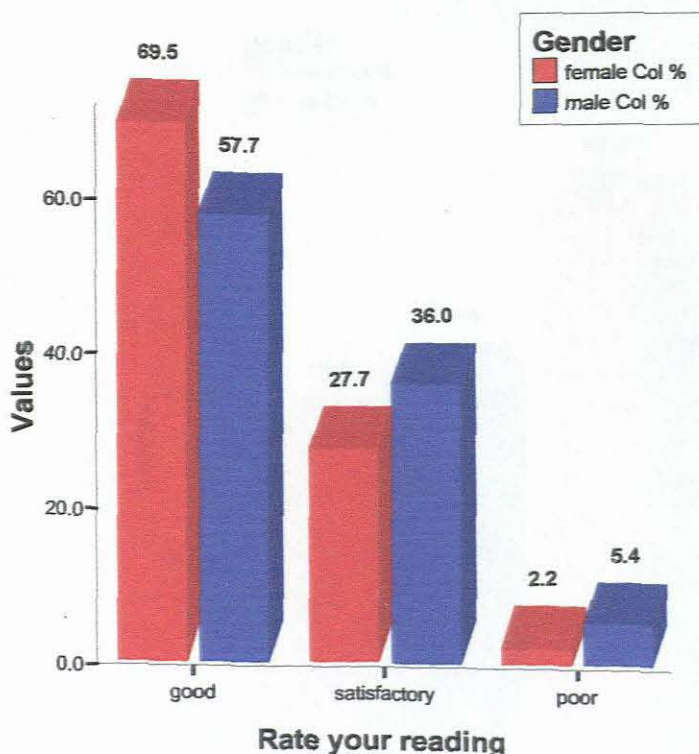


Figure 68: Bar graph reflecting self assessment of reading abilities of males and females

Almost 70% of the females and almost 58 % of the males said that they were good readers, while almost 28% of the females and 36 % of the males rated their reading as satisfactory. Just over 2% females and 5% males stated that their reading is poor. More females than males claim that they are good readers. From these statistics it can be deduced that the females reflect a higher degree of self esteem and confidence in their reading capabilities than their male counterparts. The male respondents are probably spending more of their time by engaging in other activities. One such activity could include the use of a computer as the graph below reveals that a higher percentage of males than females have access to a computer at home.

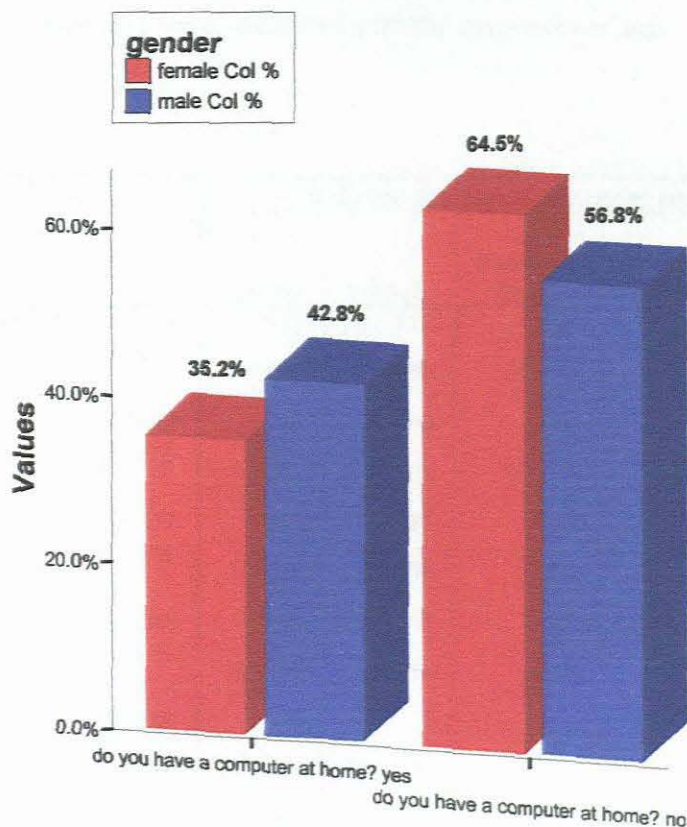


Figure 69: Bar graph reflecting the percentage of females and males that have computers

More than 42% (310) of the males have computers at home, and about 35 % (307) of the females have computers at home. About 65 % (563) of the females do not have a computer at home. Almost 57% (411) of the males do not have computers at home. So more males respondents have access to computers at home than females. Engaging in activities on the computer does not necessarily mean that the learners are not involved in reading, because they have to read instructions and apply them to succeed in any given task on the computer. This is also required even when one is just playing a computer game. As mentioned earlier on by examining figure 64 it was noted majority of the learners spend most of their time watching television. Learners are occupied with technological products such as computers and the television at home. This could be an indication that actual reading is not a priority in the homes of the learners. This conception can also be seen in the

next figure where the learners were asked to respond to what they would like for a birthday present. Their responses were correlated with the respondents' age.

|               |       | what do you like best as abirthday present from the following? |        |                 |                |                 |             |
|---------------|-------|----------------------------------------------------------------|--------|-----------------|----------------|-----------------|-------------|
|               |       | clothing                                                       | a book | a computer game | something else | spoilt response | no response |
| 8 - 10 years  | Count | 177                                                            | 112    | 184             | 87             | 1               | 1           |
|               | Col % | 31.5%                                                          | 19.9%  | 32.7%           | 15.5%          | .2%             | .2%         |
| 11 - 13 years | Count | 171                                                            | 49     | 102             | 90             | 4               |             |
|               | Col % | 41.1%                                                          | 11.8%  | 24.5%           | 21.6%          | 1.0%            |             |
| 14 - 16 years | Count | 246                                                            | 39     | 40              | 72             | 3               | 2           |
|               | Col % | 61.2%                                                          | 9.7%   | 10.0%           | 17.9%          | .7%             | .5%         |
| 17+           | Count | 149                                                            | 9      | 21              | 37             | 1               | 1           |
|               | Col % | 68.3%                                                          | 4.1%   | 9.6%            | 17.0%          | .5%             | .5%         |
| no response   | Count | 1                                                              | 1      |                 |                |                 |             |
|               | Col % | 50.0%                                                          | 50.0%  |                 |                |                 |             |
| Count         | Count | 744                                                            | 210    | 347             | 286            | 9               | 4           |
|               | Col % | 46.5%                                                          | 13.1%  | 21.7%           | 17.9%          | .6%             | .3%         |

Figure: 70: A table reflecting what the respondents liked the best as a birthday present in correlation with their age

In all age groups a book was the most unpopular choice as a birthday present. Almost 20% (112) of the 8 to 10 year old, almost 12 % (49) of the 11 to 13 year old, almost 10% (39) of the 14 to 16 year old, and only 4% (9) of the respondents who were 17 years and older wanted a book as a birthday present. In total only 210 (13.1%) out of 1600 respondents preferred to have a book as a birthday present. More than 46 % (744) of the respondents wanted clothing as a present and almost 22% of the respondents wanted computer games as a present. This indicates that there is a great lack of the love of books in the learners, and thus majority of them would prefer to engage in activities that would not include reading a book. The culture of reading must be inculcated in our learners at a very early age by their parents at home so that the learners can love and value reading. It is possible that parents feel that it is the responsibility of the teacher and the school to teach the child to read, and they therefore neglect to instill good reading habits in their

children at home. When learners were asked whether they had received a book as a present, this is how they responded as shown in the table below.

|                |               |       | have you ever received a book as a present? |       |                 |             |
|----------------|---------------|-------|---------------------------------------------|-------|-----------------|-------------|
|                |               |       | yes                                         | no    | spoilt response | no response |
| age of learner | 8 - 10 years  | Count | 322                                         | 235   | 3               | 2           |
|                |               | Col % | 57.3%                                       | 41.8% | .5%             | .4%         |
|                | 11 - 13 years | Count | 266                                         | 150   |                 |             |
|                |               | Col % | 63.9%                                       | 36.1% |                 |             |
|                | 14 - 16 years | Count | 161                                         | 239   |                 | 2           |
|                |               | Col % | 40.0%                                       | 59.5% |                 | .5%         |
|                | 17+           | Count | 113                                         | 105   |                 |             |
|                |               | Col % | 51.8%                                       | 48.2% |                 |             |
|                | no response   | Count | 2                                           |       |                 |             |
|                |               | Col % | 100.0%                                      |       |                 |             |
| Total          | Count         |       | 864                                         | 729   | 3               | 4           |
|                |               | Col % | 54.0%                                       | 45.6% | .2%             | .3%         |

Figure 71: Table reflecting the number of learners in the various age groups that received a book as a present

The above table indicates that 54 % (864) of the learners did receive a book as a present at some stage of their lives, while over 46% (729) did not receive a book as a present at all. The highest percentage of learners to receive books as a present was between the ages 11 and 13 years. The next figure indicates at what part of the day parents read to their children. Their responses were correlated with the grade level of the learners.

|             |        |       | when does your mum or dad usually read to you? |              |            |       |                 |             |
|-------------|--------|-------|------------------------------------------------|--------------|------------|-------|-----------------|-------------|
|             |        |       | at bed time                                    | after school | after work | never | spoilt response | no response |
| grade level | 3 fp   | Count | 228                                            | 76           | 116        | 144   | 1               | 4           |
|             |        | Col % | 40.1%                                          | 13.4%        | 20.4%      | 25.3% | .2%             | .7%         |
|             | 6 ip   | Count | 118                                            | 51           | 127        | 110   | 3               |             |
|             |        | Col % | 28.9%                                          | 12.5%        | 31.1%      | 26.9% | .7%             |             |
|             | 9 sp   | Count | 42                                             | 48           | 88         | 234   | 4               |             |
|             |        | Col % | 10.1%                                          | 11.5%        | 21.2%      | 56.3% | 1.0%            |             |
|             | 12 fet | Count | 10                                             | 19           | 50         | 126   | 1               |             |
|             |        | Col % | 4.9%                                           | 9.2%         | 24.3%      | 61.2% | .5%             |             |
|             | Total  | Count | 398                                            | 194          | 381        | 614   | 9               | 4           |
|             |        | Col % | 24.9%                                          | 12.1%        | 23.8%      | 38.4% | .6%             | .3%         |

Figure 72: Table reflecting when parents read to their children in each grade level

The above table shows that some of the parents of learners from all the different grade levels read to their children at bed time, after school or after work. About 40 % (228) of the Foundation phase learners say that their parents read to them at bed time. As the learners advance in grade level, the number of parents that read to their children at bed time decreases drastically to almost 29% (118) in the Intermediate phase, to about 10% (42) in the Senior phase, and eventually to almost 5% (10) in the further Education and Training phase. It is alarming to note the number of parents that **never** read to their children at all. Just over 25% (144) parents of learners in the Foundation phase, almost 27% (110) parents of the learners in the Intermediate phase, about 56% (234) parents of learners in the Senior phase, and just over 61% (126) parents of learners in the Further Education and Training **never** read to their children at all. In total more than 38 % (614) of the learners indicate that their parents do not read to them at any part of each day. When examining the statistics with regard to the number of parents who do not read to their children at all across the different grade levels, it can be noted that the percentage increases tremendously from just over 25% in the Foundation phase to over 61% in the Further Education and Training phase. This could be an indication that parents may feel that it is not necessary to take an interest in the reading activities of their children since the learners are older. Yet this is not how the learners felt, because according to figure 60 mentioned earlier in this chapter 78 % of the learners indicated that they would like their parents to read to them, showing that the learners want their parents to interact with them when it comes to reading.

The graph below shows that majority of the learners in all the different age groups are not actively involved in borrowing and reading books from the school libraries.



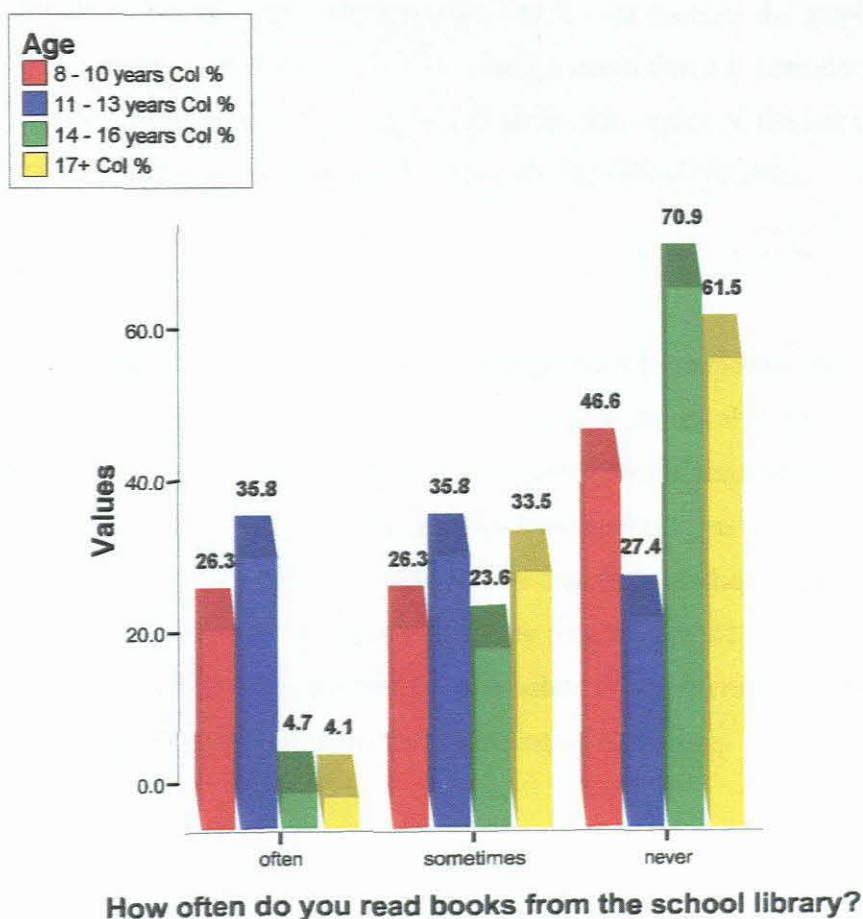


Figure 73: Bar graph reflecting the percentage of learners in each age group that read books from the school library

Almost 47 % of the learners that are 8 to 10 years old (Foundation phase), just over 27 % of the learners that are 11 to 13 years old (Intermediate phase), almost 71 % of the learners that are 14 to 16 years old (Senior phase) and about 62 % of the learners that are 17 years and older never borrow and read books from the school library. More learners from the Intermediate phase than any other phase borrow and read books from the school library. More than 71 % of the learners in the intermediate phase make use of the school library either often or at some-time. Learners that are 14 to 16 years old make the least use of the school library compared to learners of the other age groups. Only about 5 % of the learners who are 14 to 16 years of age borrow and read books from the school library often, and about over 26 % of them borrow and read books from the school library sometimes. The learners from the higher age groups should by this time period in their school life be used to a routine of visiting the school library regularly be-

cause over the years they should have acquired this routine as an essential means of developing their reading skills to become good and fluent readers. To the contrary the graph above does not reveal this to be a reality in the schools, thus it could be stated that it is critical for all schools and the KZN Department of Education to closely examine this aspect of the learning and teaching component, since all schools involved in this survey do have library facilities.

## **Summary**

In this chapter the researcher reported, analyzed, and interpreted the results of the research that was obtained via the questionnaires using the statistical program SPSS 11.5. The demographic profile was reported, and then the perceptual profile was discussed. These were followed by a critical analysis of the comparison of various aspects from both the demographic and perceptual profiles. The analysis of the results indicate that there is a lack of a culture of reading in the home environment, and it is also alarming to see that the school environment is also doing very little to promote and develop essential reading habits in our learners. Results also reveal that learners would like adults to interact with them with regard to reading.



## Chapter 9

### CONCLUSIONS AND RECOMMENDATIONS

#### **Introduction**

In the previous chapter the results were reported of the research that was obtained via the questionnaires, analyzed, and interpreted, using the statistical program SPSS 11.5. In this chapter the researcher will conclude by providing a prospective summary of the final chapter, followed by a brief overview of the dissertation which will be discussed on the basis of the literature survey. The researcher will then indicate to what extent she has been able to answer the critical questions by means of her own empirical research. The researcher finally states various recommendations that stem from this study for further research, and presents the final conclusion.

#### **Prospective summary of the final chapter**

In this, the final chapter of the dissertation the researcher concludes the study by providing a brief overview of each chapter in the dissertation which was discussed on the basis of the literature survey. The researcher also indicates to what extent she was able to answer the critical questions by means of her own empirical research, and she then finally stated a number of recommendations that can be investigated for further research with regard to the reading skills of South African learners. Reading between the lines became an essential part of analyzing and interpreting the results that the researcher documented in this study which is aptly entitled:

#### READING BETWEEN THE LINES

##### *The conceptual basis of knowledge construction*

A central aspect of this study is an in-depth analysis of the intimate relationship between conceptualization, the production and decoding of speech sounds, and the relationship between speech sounds and alphabetic symbols during the reading process – all of which facilitate knowledge construction.

## **A retrospective overview of the dissertation**

In *chapter one*, the researcher set the scene for of the dissertation by stating the problems regarding reading among learners in South African schools. Insight with regard to the research design, the objectives and the research methodology implemented in conducting the study was also provided. Information relating to the actual fieldwork and the protocols that were followed was also stated. The questionnaire design, data collection and processing was briefly outlined.

In *chapter two* the researcher discussed the key concepts relating to her research regarding the conceptual basis of reading in knowledge construction that leads the way to the unfolding of subsequent chapters so that the reader would have some sense of direction as to what to expect. The key concepts defined were: reading and knowledge construction, conceptual blending, the neurophysiology of reading, phonics and reading, and reading problems. The definition of key concepts was followed by an extensive literature review from chapters' three to six in which the researcher reviewed literature relating to specific aspects of the reading process as indicated below.

In *chapter three* the researcher discussed the cognitive basis of reading, which included an explanation of the process of knowledge construction, conceptual blending, and conceptual categorization in relation to the reading process.

In *chapter four* the researcher examined the neurophysiology of reading which provided insight for the interpretation of the empirical results that were resented in later in chapter 8. The different components of the brain and their functions were discussed. The roles of the visual and auditory inputs together with memory that make the process of reading possible were also explained.

In *chapter five* the relationship between speech sounds and the alphabets, as they are perceived by the brain, were examined, and how they impact on reading. The close relationship between the complex reading process and writing was also discussed. The impact of phonology and phonetics in reading was examined in great detail. Synthetic phonics, as an approach to harness readers' subconscious knowledge of how speech sounds are combined to form words, and by analogy, how letters are combined to form written words, was explained, revealing the valuable contribution synthetic phonics could provide to accelerate the teaching of phonics and reading in

the South African classrooms. A discussion of Labov's contribution to improve reading failure using the IRM was included in this chapter.

*In chapter six* the researcher enumerated the various reading problems that are prevalent among learners. An in-depth explanation of exactly what dyslexia, dyscalculia, apraxia and scaffolding are was given. The possible causes and symptoms of such reading problems were discussed to assist teachers and other supervisors of our learners reading capabilities to easily identify such problems for intervention purposes to benefit the learners.

*In chapter seven* the critical questions that focus this study were posed, the research methodology and the fieldwork were explained. The organization and rationale behind the questionnaire for grades 3, 6, 9, 12 learners and their parents, together with the procedure utilized in conducting the actual fieldwork was explained. The information received via the questionnaires was captured to form a database using the computer programme SPSS 11.5. An explanation of how the database was constructed and captured, and how the results were analyzed was also given in this chapter.

*In chapter eight* the researcher reported, analyzed, and interpreted the results of the research that were obtained via the questionnaires and captured using the statistical computer program SPSS 11.5. The demographic and perceptual profiles were reported. This was followed by an analysis of a comparison of the demographic results to the perceptual results that were reported. The results indicate that there is a lack of reading culture in the homes of the learners. The role of the school in promoting reading skills was also of great concern.

Finally, in the present chapter, *chapter nine* a retrospective overview of the dissertation is given, it is shown to what extent the empirical results of the project enable the researcher to answer the critical questions that were posed in chapter seven, followed by the recommendations that flow forth from this study .

### **Critical questions and answers**

The critical questions addressed by this study are listed below. Answers with regard to the extent to which this study was successful concerning these critical questions are also provided as follows:

### ***Does a reading culture exist in the homes of the learners?***

The research shows that a reading culture does not exist in majority of the homes of the learners. Although a large number of learners claim that they have access to books and read at home in figure 55, an alarming number of learners do not borrow and read books from either the school or public libraries. According to figure 71, a large number of learners also have not received a book as a gift at any time. So, if learners do not have books available, the majority of them cannot be reading. According to figures 62 and 63, only about 12 % of learners indicated that they read in their free time after school, and only just over 6% indicated that they read in their free time during the weekends. Therefore, it is clear that learners are not reading at home. The statistics also indicate that parents and grandparents do not read to their children as often as they should, and a large number of parents do not read to their children at all. The learners on the other hand would like their parents to read to them. There is a definitely a lack of a culture of reading in the home environment of our learners. From the results summarized above, it is clear that the researcher was able to answer the first critical question, as follows: “No, there is no culture of reading in the homes of the children surveyed.” To this could be added that due to the high number of completed questionnaires – 1,600 when only 400 were required to obtain valid results – it is clear that the answer “No, there is no culture of reading in the homes of the children surveyed.” can with safety be extrapolated from the sample population to all urban communities with a similar demographic profile as the eThekweni sample.

### ***What kind of entertainment and extracurricular activities are the learners involved in?***

According to the results obtained learners are participating in a variety of entertainment and extracurricular activities, such as watching television, playing outdoor games, playing computer games, going to movies, reading, shopping, talking to neighbors, spending time at the mall with friends, listening to the radio, and visiting friends and relatives. The statistics derived from the survey reveal that the most popular form of entertainment is watching television, because almost 57% (910) of the respondents watch television most of the afternoons and evenings on weekdays, and most of the day and evenings over weekends. Only about 16 % (261) of the learners reported that they engage in outdoor games or activities in their free time after school, while about 10% (163) reported participating in outdoor sports on weekends. Engaging in physical activities such as outdoor games and sports is vital for physical development, and is just

as important as reading which promotes academic development in educating a learner holistically to become a worthy and contributing citizen of the country. Learners are not participating enough in physical activities as required by the human body for proper physical development, and this will certainly affect the mental and emotional development, which will impact on scholastic and academic development, of reading is an integral part. According to figure 63 above about 14% (227) of the respondents reported that they by preference spend their time free time shopping, about 17% (285) that they visit friends and relatives during the weekend, almost 4% (60) that they play computer games, almost 8% (125) that they like going to movies, almost 10% (158) that they spend time with their friends at the mall, and only just over 6% (105) prefer to read in their free time during the weekends. From the above results it is clear that the researcher was able to provide a nuanced answer to the question: “What kind of entertainment and extra-curricular activities are the learners involved in?” The researcher was able to clearly answer the critical question ‘What kind of entertainment and extracurricular activities are the learners involved in?’ by providing the above evidence from the results extracted from this survey.

***What impact does the entertainment and extracurricular activities chosen by the learners have on their reading skills?***

At phase value it seems as if the time spent watching television, playing computer games, and engaging in the various other activities is having a negative impact on the reading skills of children. The previous evidence reported also establishes that there is no culture of reading in the homes of the learners. It is therefore an open question whether this lack of a culture of reading is not a primary factor, if not the primary factor that determines children’s love of reading and consequently the level of reading skills they attain. It has also been established that the attitude of parents concerning the value of reading play a major role in creating this lack of a culture of reading in the homes of the learners and thus impacts on their reading skills.

***Is Outcomes-based Education the cause of the serious reading problems that exist today?***

It is well-known that when Outcomes-based Education (OBE) was introduced in South African schools in 1998 it was received with much negativity and antagonism by teachers as well as the public at large because it required a paradigm shift in all aspects of the education. This was also a result of a lack of knowledge and understanding of Outcomes-based Education in all sectors and a lack of proper training of educators on the implementation of principles of Outcomes-

based Education in the classroom. As a result Outcomes-based Education is also accused of causing the serious reading problems that exist today. However it must be noted that the complex reading problems go way beyond the introduction of OBE into South Africa. Large class sizes, lack of proper updated training and resources for educators, and the drastic changes in family structures, social and economic status, are contributing factors to the problems experienced in reading.

The third learning outcome in the Languages Learning Area is entitled "Reading and Viewing" and is stated as follows "the learner will be able to read and view for information and enjoyment, and respond critically to the aesthetic, cultural and emotional values in texts." Department of Education 2002. In order to achieve this outcome, there are various assessment criteria included to guide the teacher in the lessons, and to assist in assessing the learners. The assessment criteria change progressively to correspond with each grade level while the learning Outcome remains the same for all grades and phases. In the Foundation phase the assessment criteria focuses on developing phonic awareness, and using phonic knowledge and skills as part of the reading and writing strategies to sound out words when reading and to spell words when writing. Although there is no further provision for the continuation of the development in the curriculum for the phases that follow, one assessment criteria does require learners to achieve a minimum requirement of word vocabulary in each progressive grade. According to the Revised National Curriculum Statement Policy learners in grade 3 must demonstrate a reading vocabulary of between 700 and 1500 common words, learners in grade 6 must demonstrate a reading vocabulary of between 3000 and 5000 common words, and learners in grade 9 must develop a reading vocabulary of between 6000 and 7000 common words. So the Outcomes Based curriculum does make provision for learners to specifically develop reading skills, and it is not the total cause of the serious reading problems that exist today.

***What role does intrapersonal and interpersonal communication play in the reading process?***

The role of intrapersonal and interpersonal communication in the reading process cannot be undermined. The evidence throughout both the literature survey and the empirical research of this study provide proof that intrapersonal and interpersonal communication plays a vital role in the reading process. The interaction within the human body of the mind and brain with the eyes, ears,

vocal organs and the mouth cavity to interpret and sound out or read the written text shows that intrapersonal communication is being engaged in by every human who is involved in the reading process. Even when an individual is engaged in silent reading or reading aloud to oneself both intrapersonal communication and interpersonal communication takes place because the individual is communicating the messages from the written text to him or herself. Interpersonal communication (the interpretation of a written narrative) in the form of a dialectic between the information provided by the author, and the understanding provided by the mind of the reader requires that a culture of reading must have been established in order for intrapersonal communication in the form of silent reading can take place. From this it should be clear that if the culture of reading exists in a household, a learner from such a household would experience difficulty to “negotiate meaning” while interpreting written text. Having established empirically that there is no culture of reading in the households in which the respondents live, it can be answered by inference that intrapersonal communication (ability to understand what one reads) and interpersonal communication (the ability of parents to foster culture of reading) play a minimal influence on the establishment of children’s reading skills. Thus the question “What role does intrapersonal and interpersonal communication play in the reading process?” has been clearly answered by the above evidence in this study.

***What major factors contribute to South African learners experiencing problems with spelling and the reading of non technical to technical levels of complexity?***

As indicated above the results of the empirical survey pointed to the lack of a culture of reading in the households of the respondents, and it is this lack of a reading culture that leads to reading as becoming a far less priority to the learners at home, and furthermore schools are not providing the necessary motivation and resources to make the development of reading skills a priority. There are also no outcomes in the Revised National Curriculum Statement Policy of South Africa that caters for consolidation or further development of reading through phonic awareness in the other phases. So if learners have not achieved the outcomes concerned with phonic awareness and reading in the Foundation phase, there is no provision for development in this area again, and thus learners move from one grade to another without the basic grounding necessary for an individual to be able to read. Teachers’ abilities to teach phonics may also need attention. The above major factors mentioned that contribute to South African learners experiencing problems with spelling and the reading of non technical to technical levels of complexity are only part of the

contributing factors that revolve around the issue of spelling and reading problems that South African learners experience.

## **Recommendations**

Firstly, the school and the parents should form a partnership with a common goal of focusing on the learner and his/her holistic development. After analyzing the results from the research it is clear that this is obviously not happening when it comes to reading. When Outcomes-based Education was introduced in 1998 such a partnership between the parents and the school for the benefit of the learner was emphasized. The concept of learner-centered education was brought to the fore to all who were linked with education. The results reported in this study reveals that parents seemingly have the attitude or belief that it is the responsibility of the school only to teach and supervise reading of the learners, and that is why most parents probably do not read to their children regardless of their age. There is a lack of a culture of reading in the homes of our learners, and parents need to pay more attention to the cries of help from their children who according to the survey indicate that they would like their parents to read to them and thus show more interest in their reading capabilities.

Secondly, the issue of the impact of television watching on reading skills should be subject to further research in which a group of households that must be identified where there is a healthy culture of reading among parents as well as children, and for those households it must be determined whether there are children and adolescence that are avid readers, as well as lovers of watching television, movie attendance, and playing of computer games. These activities are not mutually exclusive forms of story telling, but complementary ones, and that a love of reading is primarily determined by the attitudes of adults in the households.

Thirdly, school libraries need to become more accessible to learners. Learners need to be taught the value of reading, and to inculcate the love and respect for books and other reading material. After analysis of the responses regarding the borrowing and reading of books from the school library the researcher contacted personal from some of the schools that were selected to participate in the research to enquire about the use of the school libraries. The researcher discovered that from the schools were contacted that although they do have libraries, the libraries were not operational due to the shortage of personnel to oversee the operation of the library. The schools' financial restraints did not allow for such personnel to be employed. One school only



allowed the children into the library for only half an hour a week and the learners were not allowed to borrow or take any books out of the library. This procedure was followed because learners who were allowed to borrow books previously, damaged the books so badly that they could not be used again, and at most times the books that were borrowed were taken home and never returned. In another school the library was always continuously locked due to the lack of staff. Thus learners were not borrowing and reading books from the school libraries. Training learners to from an early age to utilize the library will not only promote the development of reading skills, but will also develop research and investigative skills that are required to achieve the outcomes set out in the Revised National Curriculum Statement policy.

Fourthly, learners need to become aware and acquainted with the public libraries as a facility to promote the culture of reading in the home and in the communities at large.

Fifthly, it has been noted that although the teaching of phonic awareness is only done in the Foundation phase in South African schools more emphasis must be given to phonics as a means of teaching and improving reading skills, not only in the Foundation phase, but also in the grades that follow. Teachers' abilities to teach phonics and monitor the consolidation of phonics may also need further attention and research. When synthetic phonics is used as a means of teaching reading, it is important to include the lexical and grammatical patterns involved in the reading process, and to take into consideration the South African pronunciations, especially since majority of our learners are second language learners.

Sixthly, teacher development and training programmes must include information on reading problems and the recognition of the symptoms of reading problems so that teachers regardless of the grade or subject they are teaching can identify reading difficulties in learners and either provide the necessary assistance or refer the learner for assistance.

Seventhly, interpersonal communication is evident not only when teachers and learners read to each other, but also when parents and children hear each other reading. The lack of the culture of reading in the home of the learners indicate that interpersonal communication between learners and their parents is an issue for further investigation and research since it impacts on the reading development and the education of the learner.

Finally, further research needs to be conducted whether a love of reading, a love of watching television, a love of going to the movies, and a love of playing computer games are mutually exclusive, mutually complementary forms of engaging in the interpretation of narratives. In printed narratives the reader is a passive participant, often a companion of the fictional characters of the process, but in computer games the player becomes the main character, not a passive companion.

## **Final Conclusions**

Major factors that contribute to South African learners experiencing problems with spelling and reading was examined by means of an empirical survey conducted with exit phase learners, in grades 3, 6, 9, and 12. The empirical survey indicated that there existed a definite lack of a culture of reading in the households of the respondents. The learners' choice of extracurricular and entertainment activities, and how they impacted on their reading skills were examined in depth. Learners engage in a wide variety of extracurricular activities and entertainment activities, and spend most of their time engaging in these activities. As a result there is no priority given to actual reading. Learners are deprived of the knowing and experiencing the value of reading which an integral part of successful living today. It has also become evident that the attitude displayed by parents concerning the value of reading affect the attitude of learners in the promotion and the creation of this lack of a culture of reading in the homes of the learners which impacts on their reading skills. The role of the school as a centre of motivation and development of proper reading habits and skills of learners cannot be minimized. The school libraries are not accessible in most instances to the learners, and thus lacks in its purpose of providing the proper incentive and reading materials or resources to foster a culture of reading to improve spelling and reading skills.

This study has also revealed that Outcomes-based Education methodologies cannot be implicated totally for poor reading skills that exist among the learners of today. The existence of other primary and contributing factors that were already discussed were identified for the lack of spelling and reading skills. The actual Outcomes-based curriculum to a certain extent has outcomes that promote the development of phonological awareness and proper reading skills; however the understanding of the principles and the application of them by educators with the focus on the learner, and learner based education needs to be considered with regard to actual implementation in the classroom. A learner based curriculum must be implemented under the appropriate circumstances and environment to benefit the learners' needs, especially when it comes to

reading because as individuals each learner needs to be guided by instruction to improve his/her reading skills and spelling at the their own appropriate levels of development and performance. The discussion in chapter 5 on Labov's contribution to improving reading skills in inner city learners where individualized reading programs were implemented shows that the reading levels of learners can improve with the appropriate instruction and resources. When teaching reading, all domains, such as the lexical, the grammatical and the cognitive principles involving knowledge construction must be taken into consideration. A holistic approach to reading will also emphasize the importance of vocabulary building in scenarios directly involving the learner and his environment so that conceptualization and knowledge construction as natural processes can continue without any inhibition in regard to reading. There is a cry for drastic measures of intervention that need to be implemented both in the homes and in the schools to improve the reading culture, and thus improve the spelling and reading skills of our learners in their quest for knowledge which is constructed through conceptualization and cognition in every human brain.

## **Addenda**

**Addendum 1: Samples of learner Questionnaires: Grades 3, 6, 9 and 12**

FOR OFFICE USE ONLY: Respondent Code: \_\_\_\_\_

## **VOLUNTARY QUESTIONNAIRE FOR GRADE 3 LEARNERS**

**How you like to spend your free time at home**

**Researcher: Mrs. N.D. Govindsamy**

**Supervisor: Prof. Rembrandt Klopper  
Department of Communication Science  
University of Zululand  
(Cell: 0844466662, E-mail: [rklopper@iafrica.com](mailto:rklopper@iafrica.com))**

- (i) This is a voluntary, anonymous and confidential survey.
- (ii) We would like you to tell us what you like doing best during your free time at home.
- (iii) **Your name will be kept confidential.**
- (iv) Please feel free to give your true opinions.
- (v) Your participation is greatly appreciated.
- (vi) Mark only **one** answer with a tick (✓) or a cross (✗) or fill in the required word or numbers.
- (vii) Please read each question carefully and think about your answer before you make a tick (✓) or a cross (✗).
- (viii) Please use a **pen** to mark your answer by placing a clear (✓) or a (✗) in the correct space.
- (ix) Your answers will help me in my research.
- (x) You will have to give us permission to use your answers for our research.



*Thank you very much for filling in this questionnaire.*

### HERE ARE TWO PRACTICE QUESTIONS

Please mark your answer with a ✓ or a ✗

1. How I feel about eating hotdogs:

- ☐ I love them
- ☐ I don't mind them
- ☐ I hate them

2. How often I eat hotdogs:

- ☐ Regularly
- ☐ Occasionally
- ☐ Never

### PERMISSION TO USE MY ANSWERS FOR RESEARCH

*I hereby give permission that my answers may be used. (Your name and the name of your school will be kept a secret).*

1. My name is: \_\_\_\_\_ My surname is: \_\_\_\_\_

2. I am in grade 3 \_\_\_\_\_.

3. The name of my school is: \_\_\_\_\_

4. I am \_\_\_\_\_ years old.

5. I am a: ☐ Girl ☐ Boy

6. I have \_\_\_\_\_ sisters and \_\_\_\_\_ brothers

7. Who takes care of you? (pick one answer)

- ☐ My mother and father
- ☐ My mother
- ☐ My father
- ☐ My grandparents
- ☐ My sister / brother
- ☐ My aunt
- ☐ Neighbours

8. Do you have a radio at home?
- ☐ Yes
  - ☐ No
9. Do you have a computer at home?
- ☐ Yes
  - ☐ No
10. Do you read story books at home?
- ☐ Yes
  - ☐ No
11. How often do you read a newspaper at home?
- ☐ On some days during the week
  - ☐ During the weekend
  - ☐ Never
12. How often do you read a magazine at home?
- ☐ Never
  - ☐ On some days during the week
  - ☐ During the weekend
13. If you had a newspaper while you were waiting for someone else, what would you read first?
- ☐ The comic section
  - ☐ News reports
  - ☐ Reports about sports
  - ☐ Reports about clothes and fashion
  - ☐ Advertisements and sales
  - ☐ Reports about music and pop stars
  - ☐ Reports about film stars/ movie stars
  - ☐ I would not read the newspaper while I'm waiting



14. How often do you borrow and read books from the public library?
- ☐ Often
  - ☐ Sometimes
  - ☐ Never
15. How often do you borrow and read books from the school library?
- ☐ Often
  - ☐ Sometimes
  - ☐ Never
16. How long do you watch television each day?
- ☐ Most of the day
  - ☐ Most of the afternoons/evenings
  - ☐ Some of the afternoons/evenings
  - ☐ Not at all
17. What do you like doing best after school every day? (pick one answer)
- ☐ Watching television
  - ☐ Reading
  - ☐ Playing games outside
  - ☐ Playing games on the computer
  - ☐ Homework
  - ☐ Talking to neighbors
  - ☐ Something else: \_\_\_\_\_
18. What do you like doing best with your free time during weekends? (pick one answer)
- ☐ Watching television
  - ☐ Reading
  - ☐ Playing games outside
  - ☐ Playing games on the computer
  - ☐ Going to the movies
  - ☐ Shopping
  - ☐ Spending time in the Mall with my friends.
  - ☐ Listening to the radio
  - ☐ Visiting friends or relatives
  - ☐ Something else: \_\_\_\_\_

19. What would you like best as a birthday present from the following? (pick one answer)
- ☐ Clothing
  - ☐ A book
  - ☐ A computer game
  - ☐ Something else: \_\_\_\_\_
20. Have you ever received a book as a present?
- ☐ Yes
  - ☐ No
21. If you got a book as a present for your next birthday, how much of it would you read?
- ☐ Read all of it.
  - ☐ Read it until I get bored with it.
  - ☐ I will not read it at all.
22. How would you feel if someone gave you a book as your next birthday present?
- ☐ Happy
  - ☐ Sad
23. Do you like to read?
- ☐ Yes
  - ☐ No
24. Does your mum or dad read stories to you?
- ☐ Yes
  - ☐ No
25. How often does your mum or dad read a story to you?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
26. When does your mum or dad usually read to you?
- ☐ At bed time
  - ☐ After school
  - ☐ After work
  - ☐ Never

27. How often would you like your mum or dad to read a story to you?
- ☐ Every day
  - ☐ On some days
  - ☐ Never
28. How often do you read a story or something to your mum or dad?
- ☐ Every day
  - ☐ On some days
  - ☐ Never
29. With whom do you mostly watch television?
- ☐ Alone
  - ☐ With my mum/dad
  - ☐ With my brother or sister
  - ☐ With friends
  - ☐ With Others \_\_\_\_\_
30. How often does your mum/dad read the newspaper at home?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
31. How often does your mum/dad read magazines at home?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
32. How often does your mum/dad read books at home?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never

33. What does your mum/dad like to read best?
- ☐ The newspaper
  - ☐ Magazines
  - ☐ Books
  - ☐ Not at all
34. Do your grandparents read to you?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
35. Does your mum or dad encourage you to read daily?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
36. Do your mum and dad like reading?
- ☐ Yes
  - ☐ No
37. Tell me about your reading. Pick one.
- ☐ Good 😊
  - ☐ Satisfactory 😐
  - ☐ Poor ☹️
38. How many books have you read on your own for this year? (pick one answer)
- ☐ More than 20 books
  - ☐ 16 \_ 20 books
  - ☐ 11 \_ 15 books
  - ☐ 6 \_ 10 books
  - ☐ 1 \_ 5 books
  - ☐ None

39. Does your mum go to work?
- ☐ Yes
- ☐ No
40. Does your dad go to work?
- ☐ Yes
- ☐ No
41. How often does your teacher read to you?
- ☐ Everyday
- ☐ On some days
- ☐ Never
42. How often do you read to your teacher in the classroom?
- ☐ Everyday
- ☐ On some days
- ☐ Never

*Thank you again for helping us with this survey!*



FOR OFFICE USE ONLY: Respondent Code: \_\_\_\_\_

## **VOLUNTARY QUESTIONNAIRE FOR GRADE 6 LEARNERS**

### **How you like to spend your free time at home**

**Researcher: Mrs. N.D. Govindsamy**

**Supervisor: Prof. Rembrandt Klopper  
Department of Communication Science  
University of Zululand  
(Cell: 0844466662, E-mail: [rklopper@iafrica.com](mailto:rklopper@iafrica.com))**

- (i) This is a voluntary, anonymous and confidential survey.
- (ii) We would like you to tell us what you like doing best during your free time at home.
- (iii) **Your name will be kept confidential.**
- (iv) Please feel free to give your true opinions.
- (v) Your participation is greatly appreciated.
- (vi) Mark only **one** answer with a tick (✓) or a cross (✗) or fill in the required word or numbers.
- (vii) Please read each question carefully and think about your answer before you make a tick (✓) or a cross (✗).
- (viii) Please use a **pen** to mark your answer by placing a clear (✓) or a (✗) in the correct space.
- (ix) Your answers will help me in my research.
- (x) You will have to give us permission to use your answers for our research.



***Thank you very much for filling in this questionnaire.***

**HERE ARE TWO PRACTICE QUESTIONS**

*Please mark your answer with a ✓ or a ✗*

1. How I feel about eating hotdogs:

- ☐ I love them
- ☐ I don't mind them
- ☐ I hate them

2. How often I eat hotdogs:

- ☐ Regularly
- ☐ Occasionally
- ☐ Never

**PERMISSION TO USE MY ANSWERS FOR RESEARCH**

*I hereby give permission that my answers may be used. (Your name and the name of your school will be kept confidential).*

1. My name is: \_\_\_\_\_ My surname is: \_\_\_\_\_

2. I am in grade 6 \_\_\_\_\_

3. The name of my school is: \_\_\_\_\_

4. I am \_\_\_\_\_ years old.

5. I am a: ☐ Girl ☐ Boy

6. I have \_\_\_\_\_ sisters and \_\_\_\_\_ brothers

7. Who takes care of you? (pick one answer)

- ☐ My mother and father
- ☐ My mother
- ☐ My father
- ☐ My grandparents
- ☐ My sister / brother
- ☐ My aunt
- ☐ Neighbours

8. Do you have a radio at home?

- ☐ Yes
- ☐ No

9. Do you have a computer at home?

- ☐ Yes
- ☐ No

10. Do you read books at home?

- ☐ Yes
- ☐ No

11. How often do you read a newspaper at home?

- ☐ On some days during the week
- ☐ During the weekend
- ☐ Never

12. How often do you read a magazine at home?

- ☐ Never
- ☐ On some days during the week
- ☐ During the weekend

13. If you had a newspaper while you were waiting for someone else, what would you read first?

- ☐ The comic section
- ☐ News reports
- ☐ Reports about sports
- ☐ Reports about clothes and fashion
- ☐ Advertisements and sales
- ☐ Reports about music and pop stars
- ☐ Reports about film stars/ movie stars
- ☐ I would not read the newspaper while I'm waiting



14. How often do you borrow and read books from the public library?
- ☐ Often
  - ☐ Sometimes
  - ☐ Never
15. How often do you borrow and read books from the school library?
- ☐ Often
  - ☐ Sometimes
  - ☐ Never
16. How long do you watch television each day?
- ☐ Most of the day
  - ☐ Most of the afternoons/evenings
  - ☐ Some of the afternoons/evenings
  - ☐ Not at all
17. What do you like doing best after school every day? (pick one answer)
- ☐ Watching television
  - ☐ Reading
  - ☐ Playing outdoor sport
  - ☐ Playing games on the computer
  - ☐ Homework
  - ☐ Talking to neighbors
  - ☐ Something else: \_\_\_\_\_
18. What do you like doing best with your free time during weekends? (pick one answer)
- ☐ Watching television
  - ☐ Reading
  - ☐ Playing outdoor sport
  - ☐ Playing games on the computer
  - ☐ Going to the movies
  - ☐ Shopping
  - ☐ Hanging out in the Mall with my friends.
  - ☐ Listening to the radio
  - ☐ Visiting friends or relatives
  - ☐ Something else: \_\_\_\_\_

19. What would you like best as a birthday present from the following? (pick one answer)
- ☐ Clothing
  - ☐ A book
  - ☐ A computer game
  - ☐ Something else: \_\_\_\_\_
20. Have you ever received a book as a present before?
- ☐ Yes
  - ☐ No
21. If you got a book as a present for your next birthday, how much of it would you read?
- ☐ Read all of it.
  - ☐ Read it until I get bored with it.
  - ☐ I will not read it at all.
22. How would you feel if someone gave you a book as your next birthday present?
- ☐ Happy
  - ☐ Disappointed
23. Do you like to read?
- ☐ Yes
  - ☐ No
24. Does your mum or dad read to you?
- ☐ Yes
  - ☐ No
25. How often does your mum or dad read to you?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
26. When does your mum or dad usually read to you?
- ☐ At bed time
  - ☐ After school
  - ☐ After work
  - ☐ Never

27. How often would you like your mum or dad to read to you?
- ☐ Every day
  - ☐ On some days
  - ☐ Never
28. How often do you read something to your mum or dad?
- ☐ Every day
  - ☐ On some days
  - ☐ Never
29. With whom do you mostly watch television?
- ☐ Alone
  - ☐ With my mum/dad
  - ☐ With my brother or sister
  - ☐ With friends
  - ☐ With Others \_\_\_\_\_
30. How often does your mum/dad read the newspaper at home?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
31. How often does your mum/dad read magazines at home?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
32. How often does your mum/dad read books at home?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never

33. What does your mum/dad like to read best?
- ☐ The newspaper
  - ☐ Magazines
  - ☐ Books
  - ☐ Not at all
34. Do your grandparents read to you?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
35. Does your mum or dad encourage you to read daily?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
36. Do your mum and dad like reading?
- ☐ Yes
  - ☐ No
37. How would you rate your reading ability?
- ☐ Good
  - ☐ Satisfactory
  - ☐ Poor
38. How many books have you read on you own for this year? (pick one answer)
- ☐ More than 20 books
  - ☐ 16 \_\_ 20 books
  - ☐ 11 \_\_ 15 books
  - ☐ 6 \_\_ 10 books
  - ☐ 1 \_\_ 5 books
  - ☐ None

39. Does your mum go to work?
- ☐ Yes
- ☐ No
40. Does your dad go to work?
- ☐ Yes
- ☐ No
41. How often does your teacher read to you?
- ☐ Everyday
- ☐ On some days
- ☐ Never
42. How often do you read to your teacher in the classroom?
- ☐ Everyday
- ☐ On some days
- ☐ Never

***Thank you again for helping us with this survey!***



FOR OFFICE USE ONLY: Respondent Code: \_\_\_\_\_

## **VOLUNTARY QUESTIONNAIRE FOR GRADE 9 LEARNERS**

### **How you like to spend your free time at home**

**Researcher: Mrs. N.D. Govindsamy**

**Supervisor: Prof. Rembrandt Klopper  
Department of Communication Science  
University of Zululand  
(Cell: 0844466662, E-mail: [rklopper@iafrica.com](mailto:rklopper@iafrica.com))**

- (i) This is a voluntary, anonymous and confidential survey.
- (ii) We would like you to tell us what you like doing best during your free time at home.
- (iii) **Your name will be kept confidential.**
- (iv) Please feel free to give your true opinions.
- (v) Your participation is greatly appreciated.
- (vi) Mark only **one** answer with a tick (✓) or a cross (✗) or fill in the required word or numbers.
- (vii) Please read each question carefully and think about your answer before you make a tick (✓) or a cross (✗).
- (viii) Please use a **pen** to mark your answer by placing a clear (✓) or a (✗) in the correct space.
- (ix) Your answers will help me in my research.
- (x) You will have to give us permission to use your answers for our research.



***Thank you very much for filling in this questionnaire.***

**HERE ARE TWO PRACTICE QUESTIONS**

*Please mark your answer with a ✓ or a ✗*

1. How I feel about eating hotdogs:  
☐ I love them  
☐ I don't mind them  
☐ I hate them
  
2. How often I eat hotdogs:  
☐ Regularly  
☐ Occasionally  
☐ Never

**PERMISSION TO USE MY ANSWERS FOR RESEARCH**

*I hereby give permission that my answers may be used. (Your name and the name of your school will be kept confidential).*

1. My name is: \_\_\_\_\_ My surname is: \_\_\_\_\_
2. I am in grade 9 \_\_\_\_\_.
3. The name of my school is: \_\_\_\_\_
4. I am \_\_\_\_\_ years old.
5. I am a:    ☐ Girl            ☐ Boy
6. I have \_\_\_\_\_ sisters and \_\_\_\_\_ brothers
  
7. Who takes care of you? (pick one answer)  
☐ My mother and father  
☐ My mother  
☐ My father  
☐ My grandparents  
☐ My sister / brother  
☐ My aunt  
☐ Neighbours

8. Do you have a radio at home?

- ☐ Yes
- ☐ No

9. Do you have a computer at home?

- ☐ Yes
- ☐ No

10. Do you read books at home?

- ☐ Yes
- ☐ No

11. How often do you read a newspaper at home?

- ☐ On some days during the week
- ☐ During the weekend
- ☐ Never

12. How often do you read a magazine at home?

- ☐ Never
- ☐ On some days during the week
- ☐ During the weekend

13. If you had a newspaper while you were waiting for someone else, what would you read first?

- ☐ The comic section
- ☐ News reports
- ☐ Reports about sports
- ☐ Reports about clothes and fashion
- ☐ Advertisements and sales
- ☐ Reports about music and pop stars
- ☐ Reports about film stars/ movie stars
- ☐ I would not read the newspaper while I'm waiting



14. How often do you borrow and read books from the public library?
- ☐ Often
  - ☐ Sometimes
  - ☐ Never
15. How often do you borrow and read books from the school library?
- ☐ Often
  - ☐ Sometimes
  - ☐ Never
16. How long do you watch television each day?
- ☐ Most of the day
  - ☐ Most of the afternoons/evenings
  - ☐ Some of the afternoons/evenings
  - ☐ Not at all
17. What do you like doing best after school every day? (pick one answer)
- ☐ Watching television
  - ☐ Reading
  - ☐ Playing outdoor sport
  - ☐ Playing games on the computer
  - ☐ Homework
  - ☐ Talking to neighbors
  - ☐ Something else: \_\_\_\_\_
18. What do you like doing best with your free time during weekends? (pick one answer)
- ☐ Watching television
  - ☐ Reading
  - ☐ Playing outdoor sport
  - ☐ Playing games on the computer
  - ☐ Going to the movies
  - ☐ Shopping
  - ☐ Hanging out in the Mall with my friends.
  - ☐ Listening to the radio
  - ☐ Visiting friends or relatives
  - ☐ Something else: \_\_\_\_\_

19. What would you like best as a birthday present from the following? (pick one answer)
- ☐ Clothing
  - ☐ A book
  - ☐ A computer game
  - ☐ Something else: \_\_\_\_\_
20. Have you ever received a book as a present before?
- ☐ Yes
  - ☐ No
21. If you got a book as a present for your next birthday, how much of it would you read?
- ☐ Read all of it.
  - ☐ Read it until I get bored with it.
  - ☐ I will not read it at all.
22. How would you feel if someone gave you a book as your next birthday present?
- ☐ Happy
  - ☐ Disappointed
23. Do you like to read?
- ☐ Yes
  - ☐ No
24. Does your mum or dad read to you?
- ☐ Yes
  - ☐ No
25. How often does your mum or dad read to you?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
26. When does your mum or dad usually read to you?
- ☐ At bed time
  - ☐ After school
  - ☐ After work
  - ☐ Never

27. How often would you like your mum or dad to read to you?

- ☐ Every day
- ☐ On some days
- ☐ Never

28. How often do you read something to your mum or dad?

- ☐ Every day
- ☐ On some days
- ☐ Never

29. With whom do you mostly watch television?

- ☐ Alone
- ☐ With my mum/dad
- ☐ With my brother or sister
- ☐ With friends
- ☐ With Others \_\_\_\_\_

30. How often does your mum/dad read the newspaper at home?

- ☐ Everyday
- ☐ On some days
- ☐ Never

31. How often does your mum/dad read magazines at home?

- ☐ Everyday
- ☐ On some days
- ☐ Never

32. How often does your mum/dad read books at home?

- ☐ Everyday
- ☐ On some days
- ☐ Never

33. What does your mum/dad like to read best?
- ☐ The newspaper
  - ☐ Magazines
  - ☐ Books
  - ☐ Not at all
34. Do your grandparents read to you?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
35. Does your mum or dad encourage you to read daily?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
36. Do your mum and dad like reading?
- ☐ Yes
  - ☐ No
37. How would you rate your reading ability?
- ☐ Good
  - ☐ Satisfactory
  - ☐ Poor
38. How many books have you read on you own for this year? (pick one answer)
- ☐ More than 20 books
  - ☐ 16 \_\_ 20 books
  - ☐ 11 \_\_ 15 books
  - ☐ 6 \_\_ 10 books
  - ☐ 1 \_\_ 5 books
  - ☐ None

39. Does your mum go to work?
- ☐ Yes
- ☐ No
40. Does your dad go to work?
- ☐ Yes
- ☐ No
41. How often does your teacher read to you?
- ☐ Everyday
- ☐ On some days
- ☐ Never
42. How often do you read to your teacher in the classroom?
- ☐ Everyday
- ☐ On some days
- ☐ Never

***Thank you again for helping us with this survey!***



FOR OFFICE USE ONLY: Respondent Code: \_\_\_\_\_

## **VOLUNTARY QUESTIONNAIRE FOR GRADE 12 LEARNERS**

### **How you like to spend your free time at home**

Researcher: Mrs. N.D. Govindsamy

**Supervisor: Prof. Rembrandt Klopper  
Department of Communication Science  
University of Zululand  
(Cell: 0844466662, E-mail: [rklopper@iafrica.com](mailto:rklopper@iafrica.com))**

- (i) This is a voluntary, anonymous and confidential survey.
- (ii) We would like you to tell us what you like doing best during your free time at home.
- (iii) Your name will be kept confidential.
- (iv) Please feel free to give your true opinions.
- (v) Your participation is greatly appreciated.
- (vi) Mark only **one** answer with a tick (✓) or a cross (✗) or fill in the required word or numbers.
- (vii) Please read each question carefully and think about your answer before you make a tick (✓) or a cross (✗).
- (viii) Please use a **pen** to mark your answer by placing a clear (✓) or a (✗) in the correct space.
- (ix) Your answers will help me in my research.
- (x) You will have to give us permission to use your answers for our research.



***Thank you very much for filling in this questionnaire.***

**HERE ARE TWO PRACTICE QUESTIONS**

*Please mark your answer with a ✓ or a ✗*

1. How I feel about eating hotdogs:  
☐ I love them  
☐ I don't mind them  
☐ I hate them
  
2. How often I eat hotdogs:  
☐ Regularly  
☐ Occasionally  
☐ Never

**PERMISSION TO USE MY ANSWERS FOR RESEARCH**

*I hereby give permission that my answers may be used. (Your name and your school name will be kept confidential).*

1. My name is: \_\_\_\_\_ My surname is:  
\_\_\_\_\_
2. I am in grade 12 \_\_\_\_\_.
3. The name of my school is: \_\_\_\_\_
4. I am \_\_\_\_\_ years old.
5. I am a:    ☐ Girl        ☐ Boy
6. I have \_\_\_\_\_ sisters and \_\_\_\_\_ brothers
7. With whom do you live? (tick the correct answer.)  
☐ My mother and father  
☐ My mother  
☐ My father  
☐ My grandparents  
☐ My sister / brother  
☐ My aunt  
☐ Neighbours

8. Do you have a radio at home?

☐ Yes

☐ No

9. Do you have a computer at home?

☐ Yes

☐ No

10. Do you read books at home?

☐ Yes

☐ No

11. How often do you read a newspaper at home?

☐ On some days during the week

☐ During the weekend

☐ Never

12. How often do you read a magazine at home?

☐ Never

☐ On some days during the week

☐ During the weekend

13. If you had a newspaper while you were waiting for someone else, what would you read first?

☐ The comic section

☐ News reports

☐ Reports about sports

☐ Reports about clothes and fashion

☐ Advertisements and sales

☐ Reports about music and pop stars

☐ Reports about film stars/ movie stars

☐ I would not read the newspaper while I'm waiting



14. How often do you borrow and read books from the public library?
- ☐ Often
  - ☐ Sometimes
  - ☐ Never
15. How often do you borrow and read books from the school library?
- ☐ Often
  - ☐ Sometimes
  - ☐ Never
16. How long do you watch television each day?
- ☐ Most of the day
  - ☐ Most of the afternoons/evenings
  - ☐ Some of the afternoons/evenings
  - ☐ Not at all
17. What do you like doing best after school every day? (pick one answer)
- ☐ Watching television
  - ☐ Reading
  - ☐ Playing outdoor sport
  - ☐ Playing games on the computer
  - ☐ Homework
  - ☐ Talking to neighbors
  - ☐ Something else: \_\_\_\_\_
18. What do you like doing best with your free time during weekends? (pick one answer)
- ☐ Watching television
  - ☐ Reading
  - ☐ Playing outdoor sport
  - ☐ Playing games on the computer
  - ☐ Going to the movies
  - ☐ Shopping
  - ☐ Hanging out in the Mall with my friends.
  - ☐ Listening to the radio
  - ☐ Visiting friends or relatives
  - ☐ Something else: \_\_\_\_\_

19. What would you like best as a birthday present from the following? (pick one answer)
- ☐ Clothing
  - ☐ A book
  - ☐ A computer game
  - ☐ Something else: \_\_\_\_\_
20. Have you ever received a book as a present before?
- ☐ Yes
  - ☐ No
21. If you got a book as a present for your next birthday, how much of it would you read?
- ☐ Read all of it.
  - ☐ Read it until I get bored with it.
  - ☐ I will not read it at all.
22. How would you feel if someone gave you a book as your next birthday present?
- ☐ Happy
  - ☐ Disappointed
23. Do you like to read?
- ☐ Yes
  - ☐ No
24. Does your mum or dad read to you?
- ☐ Yes
  - ☐ No
25. How often does your mum or dad read to you?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
26. When does your mum or dad usually read to you?
- ☐ At bed time
  - ☐ After school
  - ☐ After work
  - ☐ Never

27. How often would you like your mum or dad to read to you?
- ☐ Every day
  - ☐ On some days
  - ☐ Never
28. How often do you read something to your mum or dad?
- ☐ Every day
  - ☐ On some days
  - ☐ Never
29. With whom do you mostly watch television?
- ☐ Alone
  - ☐ With my mum/dad
  - ☐ With my brother or sister
  - ☐ With friends
  - ☐ With Others \_\_\_\_\_
30. How often does your mum/dad read the newspaper at home?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
31. How often does your mum/dad read magazines at home?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
32. How often does your mum/dad read books at home?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never

33. What does your mum/dad like to read best?
- ☐ The newspaper
  - ☐ Magazines
  - ☐ Books
  - ☐ Not at all
34. Do your grandparents read to you?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
35. Does your mum or dad encourage you to read daily?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
36. Do your mum and dad like reading?
- ☐ Yes
  - ☐ No
37. Is your reading ability?    ☐ Good      ☐ Satisfactory      ☐ Poor
38. Have you read all your set works for this year?
39. Does your mum go to work?
- ☐ Yes
  - ☐ No
40. Does your dad go to work?
- ☐ Yes
  - ☐ No

***Thank you again for helping us with this survey!***



## **Addendum 2: Parent Questionnaire**

FOR OFFICE USE ONLY: Respondent Code: \_\_\_\_\_

## VOLUNTARY QUESTIONNAIRE FOR PARENTS

### **How you prefer to spend your free time at home**

**Researcher: Mrs. N.D. Govindsamy**

**Supervisor: Prof. Rembrandt Klopper  
Department of Communication Science  
University of Zululand**

**(Cell: 0844466662, E-mail: [rklopper@iafrica.com](mailto:rklopper@iafrica.com))**

Dear Parents/Guardian

Just a decade ago South Africa changed to a democracy. It has become necessary to do research about how children are experiencing the new democratic South Africa, and how they are coping with major changes to our education system. Research has shown that children model their behavior on the example set by their parents. The KZN Department of Education has given me permission to do research about how learners and their parents prefer to spend their free time at home. Although this is a voluntary survey, we would greatly appreciate your assistance to enable us to use actual research, so that the education system can be upgraded to prepare and benefit our children for the future.

- (i) This is a voluntary, anonymous and confidential survey.
- (ii) We would like you to tell us what you like doing best during your free time at home.
- (iii) **Your personal particulars will be kept confidential.**
- (iv) Please feel free to give your true opinions.
- (v) Your participation is greatly appreciated.
- (vi) Use a pen and mark only **one** answer with a cross ( ✕ ) or fill in the required word or numbers.
- (vii) Please read each question carefully and think about your answer before you make a cross ( ✕ ).
- (viii) You will have to give us permission to use your answers for our research.



***Thank you very much for filling in this questionnaire.***

**HERE ARE TWO PRACTICE QUESTIONS**

*Please mark your answer with a \**

1. How I feel about eating hotdogs:

- ☐ I love them
- ☐ I don't mind them
- ☐ I hate them

2. How often I eat hotdogs:

- ☐ Regularly
- ☐ Occasionally
- ☐ Never

---

**My child/ward's general particulars:**

1. My child/ward's name is \_\_\_\_\_.
2. My child/ward above is in grade \_\_\_\_\_.
3. The name of the school he/she is attending is: \_\_\_\_\_.
4. S/he is \_\_\_\_\_ years old.
5. My child/ward is a ☐ Female ☐ Male
6. I have \_\_\_\_\_ boys and \_\_\_\_\_ girls.
7. Who takes care of and provides for all the basic needs of this learner?
  - ☐ Mother and Father
  - ☐ Mother
  - ☐ Father
  - ☐ Grandparents
  - ☐ Sister / Brother
  - ☐ Aunt
  - ☐ Neighbours

8. Do you have a radio at home?

☐ Yes

☐ No

9. Do you have a computer at home?

☐ Yes

☐ No

10. Do you read books at home?

☐ Yes

☐ No

11. How often do you read a newspaper at home?

☐ On some days during the week

☐ During the weekend

☐ Never

12. How often do you read a magazine at home?

☐ Never

☐ On some days during the week

☐ During the weekend

13. If you had a newspaper while you were waiting for someone else, what would you read first? (Cross only one)

☐ The comic section

☐ News reports

☐ Reports about sports

☐ Reports about clothes and fashion

☐ Advertisements and sales

☐ Reports about music and pop stars

☐ Reports about film / movie stars

☐ I would not read a newspaper while I'm waiting



14. How often do you borrow and read books from the public library?
- ☐ Often
  - ☐ Sometimes
  - ☐ Never
15. How often do you read the books your child/ward borrows from the school library?
- ☐ Often
  - ☐ Sometimes
  - ☐ Never
16. How long do you watch television each day?
- ☐ Most of the day
  - ☐ Most of the afternoons/evenings
  - ☐ Some of the afternoons/evenings
  - ☐ Not at all
17. What do you like doing best in your free time every week day? (Cross only one)
- ☐ Watching television
  - ☐ Reading
  - ☐ Playing outdoor games/sports
  - ☐ Playing games on the computer
  - ☐ Personal study
  - ☐ Talking to neighbors
  - ☐ Something else: \_\_\_\_\_
18. What do you like doing best with your free time during weekends? (Cross only one)
- ☐ Watching television
  - ☐ Reading
  - ☐ Playing outdoor games/sports
  - ☐ Playing games on the computer
  - ☐ Going to the movies
  - ☐ Shopping
  - ☐ Visiting the Mall with friends.
  - ☐ Listening to the radio
  - ☐ Visiting friends or relatives
  - ☐ Something else: \_\_\_\_\_

19. What would you prefer to give your child/ward as a birthday present? (Cross only one)
- ☐ Clothing
  - ☐ A book
  - ☐ A computer game
  - ☐ Something else: \_\_\_\_\_
20. Have you ever given a book as a present to your child/ward before?
- ☐ Yes
  - ☐ No
21. If you did give your child/ward a book as a present, how much of it did s/he read?
- ☐ Read all of it.
  - ☐ Read it until he/she got bored with it.
  - ☐ Sh/e did not read it at all.
22. How would your child/ward feel if he/she received a book as a birthday gift?
- ☐ Happy
  - ☐ Disappointed
23. Do you like to read?
- ☐ Yes
  - ☐ No
24. Do you read to your child/ward?
- ☐ Yes
  - ☐ No
25. How often do you read a story/something else to your child/ward?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
26. When do you usually read to your child/ward?
- ☐ At bed time
  - ☐ After school
  - ☐ After work
  - ☐ Never

27. How often would you like to read to your child/ward?
- ☐ Every day
  - ☐ On some days
  - ☐ Never
28. How often does your child/ward read a story or something else to you?
- ☐ Every day
  - ☐ On some days
  - ☐ Never
29. With whom do you mostly watch television?
- ☐ Alone
  - ☐ With my spouse
  - ☐ With my child/ward
  - ☐ With friends
  - ☐ With others \_\_\_\_\_
30. How often does your child/ward read the newspaper at home?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
31. How often does your child/ward read magazines at home?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
32. How often does your child/ward read books at home?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never

33. What does your child/ward like to read best?
- ☐ The newspaper
  - ☐ Magazines
  - ☐ Books
  - ☐ Not at all
34. How often did your parents read to you when you were young?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
35. How often do you encourage your child/ward to read daily?
- ☐ Everyday
  - ☐ On some days
  - ☐ Never
36. Does your child/ward like reading?
- ☐ Yes
  - ☐ No
37. How would you rate your child/ward's reading ability?
- ☐ Good
  - ☐ Satisfactory
  - ☐ Poor
38. How many books have your child/ward read on their own for this year only?
- ☐ More than 20 books
  - ☐ 16 \_\_ 20 books
  - ☐ 11 \_\_ 15 books
  - ☐ 6 \_\_ 10 books
  - ☐ 1 \_\_ 5 books
  - ☐ None
  - ☐ I am not sure

39. Tell me about your work status. (Cross only one)
- ☐ Employed full time
  - ☐ Employed part time
  - ☐ Self employed
  - ☐ Unemployed
  - ☐ Home executive/Housewife
  - ☐ Pensioner
40. Tell me about the work status of your spouse. (pick one answer)
- ☐ Employed full time
  - ☐ Employed part time
  - ☐ Self employed
  - ☐ Unemployed
  - ☐ Home executive/Housewife
  - ☐ Pensioner

**PERMISSION TO USE MY ANSWERS FOR RESEARCH**

*I hereby give permission that my answers may be used. (Your personal details and the name of the school will be kept confidential).*

41. My name and surname is: \_\_\_\_\_
42. I am \_\_\_\_\_ years old.
43. How are you (the person filling in this questionnaire) related to the learner?
- ☐ Mother
  - ☐ Father
  - ☐ Guardian/caregiver
44. The total number of persons in my household is \_\_\_\_\_.

45. Are you a single parent?
- ☐ Yes
  - ☐ No
46. With whom do you spend most of your free time?
- ☐ Only with my children
  - ☐ With my entire family
  - ☐ Only with my spouse
  - ☐ Alone
  - ☐ None of the above

***Thank you again for helping us with this survey!***



**Addendum 3: Letter from the promoter to KZN Department of Education  
requesting permission to conduct research in public schools**



# University Of Zululand

**Department Of Communication Science (Durban Campus)**  
**Unit for Postgraduate Studies in Cognition, Language Learning & Communication**

Care of Department of Information Systems and Technology  
University of KwaZulu-Natal  
Private Bag X54001  
Durban  
4000

Tel 0844466662  
Fax (031) 260-7251  
E-Mail [rkopper@ukzn.ac.za](mailto:rkopper@ukzn.ac.za) or [rkopper@iafrica.com](mailto:rkopper@iafrica.com)

Tuesday, September 28, 2004

Attention:

Director: Research Strategy Development and ECMIS  
KwaZulu-Natal Department of Education  
Private Bag X05  
ROSSBURGH 4072

Dear Mr. Alwar

PERMISSION SOUGHT TO USE PRIMARY AND SECONDARY SCHOOL LEARNERS IN THE ETHEKWINI REGION AS TEST SUBJECTS FOR EMPIRICAL RESEARCH ABOUT THE READING SKILLS OF LEARNERS IN ALL FOUR EXIT LEVELS

One of my doctoral students, Mrs. N.D. Govindsamy (persal number 15791939), is doing an empirical study on the topic above, for which she has to use about 500 learners as respondents. She is an educator at Ferndale Combined School in Phoenix.

I am hereby applying for permission in principle for her to contact principals in your jurisdiction for the purposes of such research.

- Participation will be on a voluntary and anonymous basis.
- The survey will be of a constructive nature.
- The questionnaire is appended for your information.
- After obtaining permission in principle from you the principals of about six or seven schools will be approached to fill in the accompanying questionnaire, emphasizing the anonymous and voluntary nature of their participation.
- The researcher will conduct the surveys herself during special leave.
- The KZN Department of Education will be acknowledged in the thesis, of which a copy will be provided upon completion.

Kind regards

Prof. R M Klopper  
HOD: Communication Science (Durban)



**Addendum 4: Letter from KZN Department of Education granting permission to conduct research in public schools**



PROVINCE OF KWAZULU-NATAL  
ISIFUNDAZWE SAKWAZULU-NATAL  
PROVINSIE KWAZULU-NATAL



DEPARTMENT OF EDUCATION  
UMNYANGO WEMFUNDO  
DEPARTEMENT VAN ONDERWYS

HEAD OFFICE

INHLOKO HHOVISI

HOOFKANTOOR

ADDRESS: EX-DURBAN COLLEGE OF EDUCATION  
IKHELI: CNR. NICHOLSON ROAD AND QUEEN  
ADRES: MARY AVENUE  
UMBULO

PRIVATE BAG:  
ISIKHWAMA  
SEPOSI:  
PRIVAATSAK:

X05  
ROSSBURGH  
4072

TELEPHONE:  
UCINGO: 031 2744919  
TELEFOON:

FAX: 031 2744922

Cell: 083 337 1324

ENQUIRIES: S. R. Alwar  
IMIBUZO:  
NAVRAE:

REFERENCE:  
INKOMBA: Permission: Research  
VERWYSING:

DATE: 18 October 2004  
USUKU:  
DATUM:

RE: PERMISSION TO CONDUCT RESEARCH

TO WHOM IT MAY CONCERN

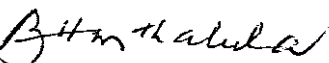
This is to serve as a notice that **Mrs. N. D. Govindsamy** has been granted permission to conduct research with the following terms and conditions:

- That as a researcher, she/he **must** present a copy of the written approval from the Department to the Head of the Institution concerned before any research may be undertaken at a departmental institution.
- Attached is the list of schools she/he has been granted permission to conduct research in. however, it must be noted that the schools are not obligated to participate in the research if it is not a KZNDEC project.
- **Mrs. N. D. Govindsamy** has been granted special permission to conduct her/his research during official contact times, as it is believed that her/his presence would not interrupt **education programmes**. Should education programmes be interrupted, she/he must, therefore, conduct his/her research during nonofficial contact times.
- No school is expected to participate in the research during the fourth school term, as this is the critical period for schools to focus on their exams.

Comments: \_\_\_\_\_

  
Thandile Zungu  
Deputy Director: Research, Strategy and Policy Development

Comments: \_\_\_\_\_

  
B H Mthabela  
Director: Research, Strategy Development and ECMIS

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