THE IMPLEMENTATION OF INTERVENTION PROGRAMMES THAT ENHANCE THE INCLUSION OF LEARNERS WITH DYSLEXIA IN MAINSTREAM PRIMARY SCHOOLS OF BUBI DISTRICT, ZIMBABWE

by

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DECLARATION

I, **DUDUZILE NKOMO**, declare that the research report entitled:

THE IMPLEMENTATION OF INTERVENTION PROGRAMMES THAT ENHANCE THE INCLUSION OF LEARNERS WITH DYSLEXIA IN MAINSTREAM PRIMARY SCHOOLS OF BUBI DISTRICT, ZIMBABWE

is my own work and has not been previously submitted in any form whatsoever, by myself or anyone else to this University or any other educational institution for any degree or examination purposes. All resources that I have used or quoted have been indicated and duly acknowledged by means of complete references.

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DUDUZILE NKOMO **DATE**

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DEDICATION

This thesis is dedicated to:

- My late mother, Mrs Sibongile Ncube Nkomo, for her determination towards my schooling and my father, Mr Joseph Nkomo for his care, support and continual guidance in my existential circumstances, and finally,

- My siblings, Thulani, Sipho, Nozizwe and Bhekinkosi.

ABSTRACT

This study sought to evaluate the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream primary schools of Bubi District, Zimbabwe. A mixed-methods research design was adopted. Questionnaires were used to collect quantitative data while semi-structured interviews and documentary evidence were used to collect qualitative data. All the 50 mainstream primary schools found in the district were included in the study. From these, simple random and purposive sampling procedures were adopted to select participants. Simple random sampling technique was used to choose 150 teachers, that is, 3 from each school. In this case, 50 were Grade 1 teachers, the other 50 taught Grade 3 classes and the last 50 were schools' clinical language remedial teachers. Purposive sampling was used to select 10 heads of schools who had established special classes in their institutions. The same sampling technique was also used to select a District Remedial Tutor, District Early Childhood Development Trainer and District Schools Inspector. Quantitative data was analysed through the use of the Statistical Package for Social Sciences (SPSS) Version 24. Qualitative data was analysed and interpreted thematically. The major findings of the study were that, lack of adequate policies, negative attitudes from some stakeholders, shortage of expert teachers and relevant material resources were some crucial factors that hampered effective implementation of intervention programmes for learners with dyslexia. The study recommends the development of dyslexia-friendly schools through designing relevant policies, holding dyslexia awareness campaigns both in schools and communities, training of more specialist teachers and the provision of learning resources that are more sensitive to the diverse needs of learners with dyslexia.

Key terms: Intervention programmes, inclusion, dyslexia, mainstream primary school.

LIST OF ACRONYMS

ADHD	:	Attention Deficit Hyper-activity Disorder
BDMB	:	Bubi District Management Board
BtL	:	Breakthrough to Literacy
CEO	:	Chief Education Officer
CPDT	:	Continuous Professional Development Training
DEO	:	District Education Officer
DfES	:	Department for Education and Skills
DoE	:	Department of Education
DRT	:	District Remedial Tutors
DSI	:	District Schools Inspector
ECaR	:	Every Child a Reader
ECD	:	Early Childhood Development
ECDt	:	Early Childhood Development trainer
EF	:	Executive Functions
EGRA	:	Early Grade Reading Achievement
EO	:	Education Officers
ERI	:	Early Reading Initiative
ESEA	:	Elementary and Secondary Education Act
ICT	:	Information and Communication Technology
IDA	:	International Dyslexia Association
IQ	:	Intelligence Quotient
LAC	:	Literacy Across the Curriculum Programme
MoE	:	Ministry of Education
MOPSE	:	Ministry of Primary and Secondary Education
MSTE	:	Ministerial Committee on Teacher Education
NCLB	:	No Child Left Behind
NICHD	:	National Institute of Child Health and Development
NISTCOL	:	National In-service training college
NRP	:	National Reading Panel

NRS	:	National Reading Strategy
OBE	:	Outcome Based Education
PASS	:	Planning, Attention, Simultaneous and Successive Processing
PLAP	:	Performance Lag Address Programme
PREP	:	PASS Reading Enhancement Programme
RAN	:	Random Automised Naming
RtL	:	Reading to Learn
RTW	:	Reading Through Writing
SBST	:	School Based Support Teams
SHRP	:	School Health and Reading Programme
SNE	:	Special Needs Education
SPS	:	Schools Psychological Services
SPSS	:	Statistical Package for Social Sciences
THRASS	:	Teaching Handwriting Reading and Spelling Skills
TIC	:	Teacher in Charge
UK	:	United Kingdom
UNEB	:	Uganda National Examinations Board
UNEB	:	Uganda National Examinations Board
UNESCO	:	United Nations Educational, Scientific and Cultural Organisation
UNICEF	:	United Nations International Children's Emergency Fund
USA	:	United States of America
USAID	:	United States Agency for International Development
VWFA	:	Visual Word Form Area
WRAT1	:	Wide Range Assessment Test 1
WSRP	:	Whole School Remedial Programme
ZAMISE	:	Zambia Institute of Special Education
ZIMSEC	:	Zimbabwe School Examinations Council

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CHAPTER ONE

INTRODUCTION AND BACKGROUND TO THE STUDY

1.1 INTRODUCTION

The observation of rights of persons with disabilities worldwide has largely been influenced by the perceptions that society holds of them. In the past decades, such individuals were generally viewed as sub-human and therefore, considered incapable of benefiting from the availed educational systems or contributing to the socio-economic development of any society (Ntibea, 2011:13 ; Haage, 2017:11). In some instances, these individuals were either, annihilated or venerated and Greek philosophers like Plato, Aristotle and Seneca approved of such practices (Haage, 2017:22). This maltreatment continued until the period of renaissance which brought more scientific knowledge and influenced a paradigm shift in the general world view of disability. Gradual acceptance of one another further led to the development of inclusive communities and education systems that continually strive to cater for diversity amongst learners. In this regard, those with dyslexia are not an exception (Tremblay, 2007:7; Sestic, Dimic & Sesum, 2012:149).

Dyslexia is a specific learning disability which leads to a deviation between reading potential and intelligence in learners receiving adequate educational support. Ozernov-Palchik and Gaab (2016:1) relate dyslexia to a reading disorder which emanates from poor development and functioning of the brain. Learners with this condition generally show slower activation in all or some parts of the reading network which includes the frontal, parietal, temporal and occipital lobes of the brain. The frontal lobe is mainly responsible for speech production and organisation, the parietal lobe facilitates the mapping of letter sounds and their spelling, the temporal lobe is where verbal memory resides, and the occipital lobe is known as the home for the visual cortex (Menting, 2014:2).

Figure 1.1 shows the differences between the brain of non-dyslexic and dyslexic learners.

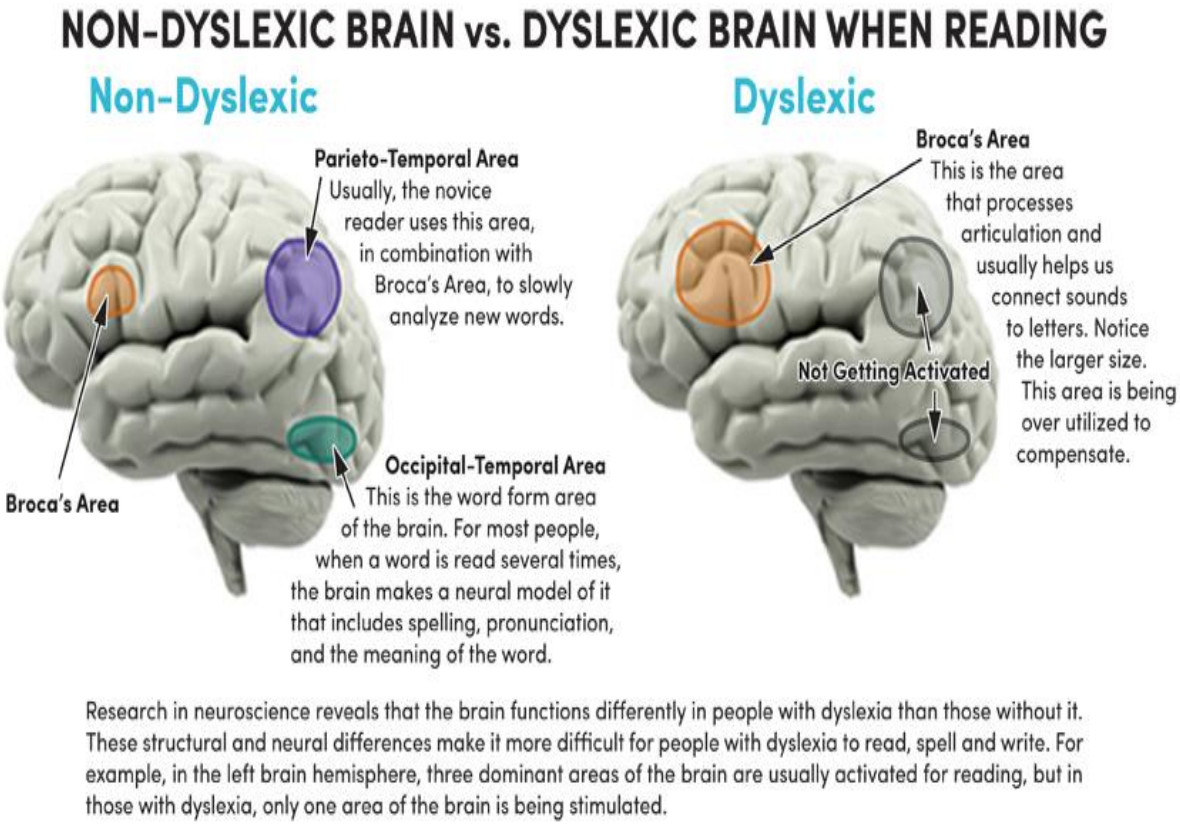

Figure 1.1: The Brain of a Non-dyslexic and Dyslexic Learner. Adapted from Sally and Shaywitz (2012:7). **Dyslexia: The Science of Reading.** http://knoll.google.com/k/dyslexia. Accessed on 10 March 2017.

Figure 1.1 shows the differences in the functioning of the brain between individuals with dyslexia and those without. In dyslexic learners, the Broca's area is over-utilised during the process of reading because of a deficit in the frontal, parietal, temporal and occipital lobes of the brain. In non-dyslexic individuals, these brain parts assume their distinct roles as expected. For instance, the parieto-temporal area makes it possible for a reader to slowly analyse words while the occipital-temporal lobe helps in the formation of words, their meaning, spelling and pronunciation.

Learners with dyslexia experience reading difficulties that vary from one to another. This depends on the type of dyslexia that an individual has and its severity. Paul and Norbury (2012:2) observe that dyslexia can either be developmental or acquired. Developmental dyslexia is caused by biological anomalies while acquired dyslexia is caused by brain damage that would have occurred after the individual's acquisition of basic reading skills (Woollams, 2014:8). The subcategories of developmental dyslexia include dysphonetic (auditory), dyseidetic (visual) and mixed dyslexia (Heim & Brande, 2012:10). Dulude (2012:23) cites peripheral and central dyslexia as the two main types of acquired dyslexia. Knowledge about the types of dyslexia assists educators and other relevant stakeholders to provide educational interventions that are specific to the needs of individual learners.

The implementation of intervention programmes that further enhance the inclusion of learners with dyslexia and other disabilities into mainstream education is supported by international and national legal frameworks. The UNESCO Constitution of 1945 was ratified to mandate full and equal opportunities to education for all learners (Calderbank, 2009:9 ; Getty, Martin, Porter & Corral, 2012:6). This legislation received added impetus from the 1990 World Conference on Education for All (Jomtien) which also set the goal of achieving universal primary education for learners in a flexible manner, while responding to their needs, cultural backgrounds and circumstances (Munene, 2015:2). The 1994 Salamanca Statement and Framework for Action on Special Needs Education called for governments to invest greater effort in early identification and intervention strategies, as well as in vocational aspects of inclusive education (Calderbank, 2009:12). To further drive the inclusionary education philosophy, the Dakar Framework for Action (2000) was instituted (Chisaka *et al.,* 2013:3).

Individual developed countries also crafted their own educational policies that responded to the social justice agenda, embodied in inclusive education. Konza (2008:40) observes that in the United States of America (USA), the rights of learners with disabilities are enshrined in the Education for all Handicapped Children Act (1975) and the Individuals with Disabilities Education Act (1990). According to Lauchlan and Greig (2015:73), in United Kingdom (UK), the Warnock Report (1978) gave a basis to the crafting of the

Education Act (1981), Special Educational Needs and Disability Act (2001) and the Special Educational Needs Code of Practice 1994, which were revised in 2001 and 2014. Foreman and Arthur-Kelly (2015:7) also reveal that in Australia, the Disability Discrimination Act (1992) and the Disability Standards for Education (2005) support the enrolment and full participation of learners with disabilities in mainstream schools. All these educational policies state a moral and philosophical acceptance of inclusion and support its fundamental principles.

In developing countries, the formulation of relevant inclusive education legal frameworks is still an on-going process. In South Africa, the Education White Paper 6 outlines the government's new policies for a single undivided education system for all learners, including those with disabilities (Department of Education, 2008:10). In Uganda, the Constitution of the Republic of Uganda (2011:41) provides the basis for the enactment of subsequent laws that address the concerns of people with disabilities. Furthermore, the Children's Statute Number 6 of 1996 encourages early assessment of disabilities among learners, for appropriate treatment, rehabilitation and education. The Zambian Government Constitution (1996) Article 23 (3) prohibits discrimination against learners with disabilities in the education sector and the entire community. It provides for just and fair distribution of social benefits to meet the needs of such individuals.

In Zimbabwe, the main law that gives guide to all activities in mainstream and special needs education is the Education Act which was initially designed in 1987 and amended in 2006 (Mutamiswa, Mapepa & Sixpence, 2004:13). This law puts emphasis on the fact that every child has a right to access quality education at a school nearest to his or her home. To complement the provisions of this law, a number of educational circulars which specify fair service provision to certain diverse groups were put in place. Amongst these is the Chief Education's Circular Minute Number 12 of 1987 which facilitates the administration of clinical remediation in mainstream primary schools. The Secretary's Circular Minute Number 11 of 2015 also stipulates how the Early Reading Initiative (ERI) programme should be administered in schools. The Disabled Persons Act (1996:1) emphasises that learners with disabilities should be afforded support services for their

educational and social development. This is also enshrined in the 2013 Constitution of Zimbabwe, Amendment (Number 20).

Rose (2009:65) points out that the intervention programmes available for learners with dyslexia in the USA and UK encompass explicit training in phonological awareness, phonological decoding, auditory training, supported and independent reading. In New Zealand, the Danks Davis Dyslexia Tutoring Programme assists struggling readers to gradually counter their reading challenges (Dawson & D'souza, 2015:34). In Uganda, one of the viable programmes offered is the Uganda School Health and Reading Programme (SHRP). This identifies and implements various strategies to improve reading abilities of learners with various reading disorders (UNICEF, 2016:3). In South Africa, the Davis Correction Programme uses the learner's existing skills to overcome learning problems. In this case, the strengths of the learner are identified and used as foundations for mastering more complex academic material.

The intervention programmes available for learners with dyslexia in the Zimbabwean context and Bubi District in particular, are either implemented within the usual teaching and learning process or after lessons on selected days. This denotes the adoption of both full and partial inclusion practices with the ultimate goal being to improve individual participation in mainstream education. According to Armstrong, Armstrong and Spandagou (2011:30), full inclusion entails teaching learners with special needs in mainstream classes while providing the least restrictive learning environment which accommodates and necessitates full access to the curriculum. Partial inclusion involves withdrawal of learners with special needs from mainstream classes, for part of the time so that they receive more demanding and individualised intervention which may not be adequately given in a normal teaching and learning situation. Tafirei, Makanye and Mapetere (2013:243) observe that learners who benefit from the full inclusion setting often have mild to moderate disabilities while those with severe to profound challenges may need partial inclusion in mainstream classes.

Learners who are identified with reading challenges at infant level are mainly assisted through the Early Reading Initiative (ERI). This programme is offered on a full inclusion basis. According to the Ministry of Primary and Secondary Education Teacher's Module (2015:3), ERI was considered for implementation in Zimbabwe in 2015 after a number of researchers discovered that the teaching of reading had declined over the years, hence, the need to offer intervention from early grades. Another intervention programme that is offered on a full inclusion basis is the Performance Lag Address Programme (PLAP). This is meant for learners who are in Grade 3 up to 7. PLAP was adopted by the Zimbabwean government in 2012 as a measure for improving pass rates in schools after the devastating educational effects caused by the country's worst economic meltdown of 2008 (Kurebwa & Mabhanda, 2015:27). In administering PLAP, learners with various abilities are first identified then grouped according to their specific needs before being exposed to instruction that relates to their aptitudes (Nkhoma, 2014:2).

Learners who fail to benefit from the intervention programmes that are offered on full inclusion basis are usually assisted through whole school or clinical remediation. In justifying the adoption of remediation, Brooks (2009:4) argues that, although good classroom teaching is the bedrock of effective practice, it does not enable learners with significant and more complicated literacy difficulties to catch up. These individuals, therefore, need more time and help than what an ordinary lesson provides. In most Zimbabwean schools, the Whole School Remedial Programme (WSRP) is conducted by regular class teachers, twice or thrice a week, after normal lessons, on selected days. There are no specific instruments that guide the administration of this intervention programme from the Ministry of Primary and Secondary Education (MOPSE) but the Schools Psychological Services and Special Needs Education (SPS/SNE) Department adopts other measures to ensure that this service is provided (Manyumwa, Manyumwa & Mutemeri, 2013:148). Remedial sessions' records and learners' work books are used as evidence of programme implementation.

According to Ndebele (2014:498), learners with severe to profound reading difficulties are considered eligible to participate in the clinical remedial programme. Unlike in WSRP

where regular class teachers informally identify and assist suitable candidates, those eligible for clinical remediation are selected by the SPS/SNE personnel through the administration of standardised diagnostic tests supplied as appendices to the CEO Minute Number 12 of 1987. The test used in this case is called the Wide Range Achievement Test 1 (WRAT 1) and is conducted at the end of learners' third year or at the beginning of fourth grade in the primary school (Remedial Programme Booklet, 2011:2). At this stage, learners are expected to have acquired adequate literacy and numeracy skills that enhance smooth transition from infant to junior primary education. Clinical remediation in Zimbabwean primary schools is administered by remedial teachers who are chosen by the school heads using their own discretions (Manyumwa *et al.*, 2013:147). Each school may have one or two remedial teachers per learning area, that is, in language and mathematics. This depends on the total school enrolment. Clinical remediation is done twice a week after normal lessons and each remedial session must last for approximately an hour.

The implementation of intervention programmes which are conducted by both regular class teachers and school remedial teachers is monitored and supervised by a number of stakeholders. These include deputy heads, heads of schools, Education Officers (EO), District Schools Inspectors (DSI) and the SPS/SNE personnel (Remedial Programme Booklet, 2011:3). The Secretary's Circular Minute Number 11 of 2015 also states that Teachers In Charge (TIC) are crucial in monitoring the administration of ERI at infant level. This instrument also emphasises the significance of Continuous Professional Development Training (CPDT) workshops in equipping teachers with requisite skills for teaching certain academic aspects of reading and writing.

Despite the adoption of various strategies and increasing efforts to meet the unique needs of learners with a wide range of reading difficulties, the participation and academic performance of learners with dyslexia in mainstream primary schools of Bubi and other districts across Zimbabwe was observed to be declining. This influenced, amongst other issues, the development of negative attitudes in some teachers towards these learners. Chitsa and Mpofu (2016:64) observe that when teachers cast learners with dyslexia in a

negative light, alienation and disenfranchisement may follow, causing adverse ramifications on these individuals' total development. Dyslexia has also been observed to be influential in the increase of the number of school drop-outs and a general low pass-rate in schools as evidenced in the results of Grade 7 public examinations over the years. According to Tafirenyika (2015:1), the Zimbabwe Schools Examinations Council (ZIMSEC) statistics reveal that in 2015, the Grade 7 national pass-rate was at 38.12 %. Although there was a notable improvement from 20.11% in 2011, educationists, inclusive of Bubi District Management Board (BDMB) and other interested stakeholders constantly raised concerns on the retarded academic progress of learners with dyslexia. Therefore, it is against this background that the researcher was prompted to conduct an in-depth study that evaluated the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in Bubi District mainstream primary schools.

1.2 STATEMENT OF THE PROBLEM

In Bubi District, the intervention programmes available for learners with dyslexia included ERI, PLAP, whole school and clinical remediation. ERI was meant for learners in the infant category, whereas PLAP, whole school and clinical remediation assisted those in Grade 3 up to 7 (Secretary's Circular Minute Number 12 of 2015; Nkhoma, 2014:2). ERI and PLAP were administered by regular class teachers during the normal teaching process and usually benefitted learners with mild to moderate reading problems. The WSRP was usually offered after normal teaching periods to learners with moderate to severe reading problems and this was also the responsibility of regular class teachers. The CEO Circular Minute Number 12 of 1987 recognises clinical remediation as another strategy for assisting learners with severe to profound problems in reading and mathematical calculations. In the district of study, clinical remediation was the responsibility of schools' remedial teachers who were nominated by the school heads.

The implementation of all intervention programmes that were in place was monitored and supervised by a number of stakeholders. These included deputy heads, heads of schools, EOs, DSI and the SPS/SNE personnel (Remedial Programme Booklet, 2011:3). The

Secretary's Circular Minute Number 12 of 2015 also acknowledges the crucial role assumed by TICs in monitoring the administration of ERI at infant level. This legal instrument also emphasises the significance of CPDT workshops in equipping teachers with requisite skills for teaching certain academic aspects of reading and writing to learners with special needs.

Despite the adoption of various strategies and increasing efforts to meet the unique needs of learners with dyslexia, their participation and academic performance in mainstream primary schools of Bubi and other districts across Zimbabwe, continued to decline. This influenced, amongst other issues, the development of negative attitudes in some teachers towards these learners. Chitsa and Mpofu (2016:64) observe that when teachers cast learners with dyslexia in a negative light, alienation and discrimination may follow, causing adverse effects on these individuals' total development. Dyslexia also resulted in an increase in the number of school drop-outs and a general low pass-rate in schools as evidenced in the results of the Grade 7 public examinations over the years (Tafirenyika, 2015:1). In this regard, Bubi District Management Board (BDMB) and other interested stakeholders constantly raised concerns on the retarded academic progress of learners with dyslexia.This prompted the researcher to evaluate the effectiveness of the implementation of intervention programmes that enhanced the inclusion of such learners in mainstream primary schools.

1.3 PURPOSE OF THE STUDY

The purpose of the study was to evaluate the implementation of intervention programmes that enhanced the inclusion of learners with dyslexia in mainstream primary schools. It was hoped that from the results of the study, a model for improving the reading competence for such learners would be designed.

Based on the statement of the problem and the purpose of the study, the following subsidiary objectives were developed:

1.3.1 to examine the nature of intervention programmes for learners with dyslexia in mainstream primary schools.

1.3.2 to explore factors that are crucial in the implementation of intervention programmes for learners with dyslexia.

1.3.3 to establish the challenges encountered by mainstream primary schools in the implementation of intervention programmes for learners with dyslexia.

1.4 RESEARCH QUESTIONS

The main research question based on the purpose of the study was: To what extent is the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream primary schools effective?

The following subsidiary questions were raised:

1.4.1 What is the nature of intervention programmes for learners with dyslexia in mainstream primary schools?

1.4.2 Which factors are crucial in the implementation of intervention programmes for learners with dyslexia?

1.4.3 What challenges are encountered by mainstream primary schools in the implementation of intervention programmes for learners with dyslexia?

1.5 THEORETICAL FRAMEWORK

According to Grant and Osanloo (2014:13), a theoretical framework can be defined as what one uses as a frame of reference when conducting a particular study. Grounded theory guides qualitative research and the emphasis is on some paradigm or other studies. A theoretical framework can also be understood as philosophical underpinnings of a study (Grant & Osanloo, 2014:13). It is the philosophical basis on which the study is conducted and provides a link between theoretical aspects and practical components of a study. The decisions and directions undertaken at every stage of the research process

are guided by the ideas and beliefs that are held about the phenomenon of interest (Herek, 2011:39). A theoretical framework guides the logic of what one is doing in a dissertation or thesis.

This study was guided by the magnocellular theory of dyslexia. According to Boets, Wouters, Wieringen, De Smedt and Ghesquiere (2008:30), proponents of this theory view dyslexia as a consequence of a multimodal deficit in the processing of transient and dynamic stimuli. This contention acknowledges that a number of senses are crucial in the reading process and if any or some are impaired, reading achievement is likely to be affected. Ramus *et al.* (2003:843) also maintain that the magnocellular theory integrates all the findings of the visual, auditory, phonological and cerebellar hypotheses in explaining dyslexia.

The visual theory presents the oldest philosophy in the study of dyslexia. It opines that this learning disability is caused by a visual deficit which gives rise to difficulties with the processing of letters and words on a page. This may take the form of unstable binocular fixations, poor vengeance or increased visual crowding (Ritchey & Goeke 2006:171). Learners with this problem may confuse similar looking letters when reading. The rapid auditory processing theory specifies that the primary deficit of reading in a dyslexic learner lies in the perception of short or rapidly varying sounds (Catherine & Stein, 2012:274). Learners with dyslexia show poor performance on a number of auditory tasks including, frequency discrimination and temporary order judgement. The phonological theory postulates that dyslexics have a specific impairment in the presentation, storage and retrieval of speech sounds (Ramus *et al.,* 2003: 842). This is an indirect route which involves translating the letters into sounds and knowing the pronunciation of words from the combination of sounds. Lastly, the cerebellar theory asserts that a mild dysfunctional cerebellum can cause dyslexia (Catherine & Stein, 2012:272). Learners affected may have poor automatic reading skills and articulation problems.

1.6 DEFINITION OF KEY TERMS

This section defines key terms according to how the researcher used them in this study and not necessarily in accordance with their meanings in the dictionary.

1.6.1 Intervention Programmes

According to Singleton (2009:8), intervention programmes refer to more intensive instruction to address the learning challenges faced by learners. Falth (2013:23) concurs that intervention programmes are planned activities that seek to prevent the worsening of an identified problem in a learner. In this study, intervention programmes denote well-structured, specific and well co-ordinated learning activities and processes meant to assist learners with dyslexia to improve their reading and other language skills.

1.6.2 Inclusion

Inclusion is an educational philosophy which requires schools to educate learners, including those with disabilities and other special needs, together, in high quality, age-appropriate general education classrooms (Konza, 2008:32). It can also be viewed as a process of increasing the participation of all learners in activities that are done in schools and communities (Armstrong *et al.,* 2011:30). In this study, inclusion denotes the accommodation of learners with dyslexia in mainstream classes through adopting teaching strategies, techniques and skills that meet their unique and diverse needs. It is also acknowledged that inclusion can be implemented fully or partially. This depends on the type and severity of the reading problems that a learner has.

1.6.3 Dyslexia

Reid (2009:1) explains dyslexia as a specific learning disability caused by a speed processing gap within and between the various entities taking part in the word-decoding process. Dyslexia relates to specific learning difficulties that affect the fluent and accurate

reading abilities of learners (Singleton, 2009:6). In relation to this study, dyslexia is viewed as a combination of reading, as well as, spelling, and writing difficulties that affect the learning process. Accompanying weaknesses may be identified in areas of speed of processing, short-term memory, sequencing and organisation, auditory and or visual perception, spoken language and motor skills.

1.6.4 Mainstream Primary Schools

Mainstream schools, according to Pillay and Terlizzi (2009:493), are learning centres basically meant for learners who can benefit from the mainstream curriculum without or with few modifications. In the same vein, Bergsma (2000:15) states that mainstream schools advocate for teaching learners with disabilities with their non-disabled counterparts, for all or part of the day and for all or a few subjects. In this study, mainstream primary schools are those that accommodate all learners in the learning activities then provide extra services to cater for diversity.

1.7 RESEARCH PARADIGM, DESIGN AND METHODOLOGY

This section describes the research paradigm, design and methodology which were considered relevant for this study.

1.7.1 Research Paradigm

Wahyuni (2012:69) notes that research paradigms are relevant philosophies that influence the carrying out of social research, including the choice of a particular research design and methodology. Corbin and Strauss (2008:1) further posit that, paradigms address fundamental assumptions, such as beliefs about the nature of reality (ontology), the relationship between knowledge and how it can be acquired (epistemology) and values that are upheld in the process of acquiring knowledge (axiology). The three paradigms that are open to researchers are positivism, interpretivism and critical paradigm. In this research, pragmatism, which involves a combination of positivism and

interpretivism, was used. Pragmatism recognises objectivity and subjectivity as two points on a continuum which can be useful at different points even within a single research study (Donaldson, Christie & Mark, 2009:120).

1.7.2 Research Design

A research design is a plan or strategy for carrying out research. Mouton (2009:107) defines a research design as the blue print of the research project that precedes the actual research process. In this study, a mixed-methods research design was used. A mixed-methods design involves the combination of both quantitative and qualitative research methods in a single study (Cresswell, 2012:12). This design helps to view phenomena, from multiple perspectives, for better understanding. The mixing of techniques also enhances detailed analysis and the production of rich research outcomes (Lichtman, 2013:105). The two methods produce results that are improved in terms of clarity and illustrations.

1.7.3 Research Methodology

Rajasekar, Philominathan and Chinnathambi (2013:5) view research methodology as a systematic way of conducting research in order to solve a problem. It involves a study of methods which provide the work plan of a research. This section outlines the methods that were used to collect relevant data for this particular study which employed the mixed-methods research.

1.7.3.1 Quantitative Methods

Quantitative research methods are characterised by the collection of information which can be analysed numerically, and the results typically presented using statistics, tables and graphs (Allwood, 2012:1419). Common quantitative research tools may include, mark profiles, questionnaires and checklists. In this study, a self-designed questionnaire was used to gather quantitative data. A questionnaire is a set of written questions that solicit opinions and information pertaining to a particular phenomenon (McMillan & Schumacker,

2010:195). In this case, the questionnaire items sought to establish the views of participants on the nature of intervention programmes that were offered to learners with dyslexia, the factors that were considered crucial in the implementation of these programmes and the challenges that were encountered in achieving the desired outcomes. Participants who responded to the questionnaire items were selected mainstream teachers.

1.7.3.2 Qualitative Methods

Qualitative research methods adopt an inductive research process and involve the collection and analysis of qualitative data to search for patterns, themes and holistic features (Allwood, 2012:1419). Qualitative data is basically non-numerical, instead reflects the views, attitudes and opinions of participants. This study adopted interviews and documentary analysis to gather qualitative data. Each of these methods is outlined as follows:

- **Interviews**

Merrian (2009:88) defines an interview as a process in which a researcher and participant engage in a conversation focused on questions related to a research study. The interviewer asks an interviewee some questions based on a certain phenomenon; the responses are recorded and analysed. In this research, interviews were conducted to generate research data from heads of schools, the DRT, District ECD trainer and the DSI. Fox (2009:6) states that interviews are ideal, for they allow the clarification of questions, probing and use of non-verbal cues for in-depth data generation.

- **Documentary Analysis**

Ahmed (2010:2) clarifies documentary analysis as a process involving detailed examination of certain documents produced across a wide range of social practices, taking a variety of forms, from the written word to a visual image. Policy documents, assessment instruments, reading and planning record books were reviewed to establish their relevance in the implementation of intervention programmes that enhance the inclusion of learners with dyslexia, in mainstream primary schools.

1.8 SAMPLING

The sampling process that was followed in this research involved selecting the population and the determination of appropriate sampling procedures and samples.

1.8.1 Population

Pandey and Pandey (2015:40) indicate that a population is a group of people with one or more characteristics that the researcher is interested in and from which a sample is drawn. The population for this study was made up of mainstream primary school teachers, heads of schools, the DRT, District ECD trainer and DSI.

1.8.2 Sampling Procedures

According to Pandey and Pandey (2015:53), sampling procedures involve techniques that researchers use to select groups from the wider population. The choice of a research design determines the selection of sampling procedures used. This section describes the sampling techniques that relate to the mixed-methods design used in this study.

1.8.2.1 Quantitative sampling procedures

Participants who responded to the self-designed questionnaire were identified through the adoption of simple random sampling techniques. Bryman (2012:190) contends that the simple random sampling technique gives every member of the chosen population an equal chance of participating in the study. To select participants in a single school, the 'hat method' was used to choose 1 teacher from each of the three chosen categories. These categories were composed of teachers that taught Grade 1 and those that taught Grade 3 classes. The other group of participants were those responsible for conducting the clinical reading remedial programme in schools.

1.8.2.2 Qualitative sampling procedures

Purposive sampling technique was used to select participants who responded to the interview questions. Purposive sampling allows researchers to deliberately select small groups or individuals who are knowledgeable about the phenomenon of interest (Gray, 2009:152). The DSI was considered for being at the apex of the district administration. The DRT represented the SPS/SNE department in the district. The District ECD trainer represented the infant category. Lastly, the heads of schools chosen, manned institutions that had special classes therefore had considerable experience in managing individuals with diverse learning needs.

1.8.3 Samples of the Study

Johnson and Christensen (2008:223) classify a sample as a subset of cases drawn from a population. A sample can also be viewed as a particular set of a population selected for measurement, observation or questioning to provide statistical or non-statistical information about the population. In this study, two samples drawn from the quantitative and qualitative domains were as follows:

1.8.3.1 Quantitative Sample

A quantitative sample was drawn from all the 50 mainstream primary schools found in Bubi District. It was made up of 150 participants. Of these, 50 represented the infant category and were Grade 1 teachers. The other 50 represented the transitional phase and were Grade 3 teachers. The remaining 50 teachers were responsible for conducting the clinical language remedial programme in schools.

1.8.3.2 Qualitative sample

The qualitative sample was composed of 1 DSI, 1 DRT, 1 District ECD trainer and 10 heads of schools.

1.9 DATA ANALYSIS

Quantitative data were analysed through the Statistical Package for Social Sciences (SPSS) version 24. According to Russell and Booth (2008:1), researchers employ the SPSS system to generate tabulated reports, charts and plots of distribution and trends. This package is also functional in editing data such as computing sums and means over columns or rows of data. SPSS further assists in running inferential statistics such as Analysis of Variance (ANOVA), regression and factor analysis (Landau & Everitt, 2004:26). Qualitative data were analysed thematically. This involves scrutinising data in search of common meanings and patterns. It can begin with the coding of data, sorting different codes into potential themes and collating all the relevant coded data extracts within identified themes (Nowell, Norris, White & Moules, 2017:3).

1.10 MEASURES OF QUALITY CONTROL

Measures of quality control refer to strategies that can be implemented to ensure that relevant data is gathered, managed and utilised with accuracy and precision (Reynolds, 2011:4). Quality control measures may be developed and implemented before, during and after data collection. In this study, measures of quality control that were employed included ensuring the validity and reliability of quantitative data as well as trustworthiness of qualitative data. These are discussed in detail hereunder:

1.10.1 Validity and Reliability of Quantitative Data

This section outlines the basis for judging the credibility of the research findings gathered through the adoption of quantitative procedures.

1.10.1.1 Validity

Validity is the demonstration that a particular instrument measures what it purports to measure (Pandey & Pandey, 2015:21). In other words, it determines the extent to which a research instrument manages to solicit relevant information for the study. Validity was

achieved through conducting a pilot study where the questionnaire items were pre-tested before the actual study. In doing this, the researcher used 5 schools that were conveniently selected from a district which was not going to be used for the actual study. In the identified schools, a total of 20 teachers were randomly selected and included in this mini-study. Of these, 7 taught Grade 1, 6 taught Grade 3 and another 7 were responsible for conducting clinical remediation in their schools. Modifications on the self-designed questionnaire were made based on the responses of the participants.

1.10.1.2 Reliability

Reliability relates to consistency of measurement (Drost, 2011:106). Punch and Oancia (2014:382) points out that reliability of a study hinges on the reputation of the sources of data used. This study therefore, selected participants with a reputation of providing useful and reliable research information. Some directly taught learners with dyslexia on a daily basis while others attended individually to those with serious reading problems. These included regular class teachers and language remedial teachers from both infant and junior school categories.

1.10.2 Trustworthiness of Qualitative Data

This concept relates to the rigour of a research study so that it generates trust and confidence in the findings. The four criteria for trustworthy studies include credibility, transferability, dependability and confirmability (Korstjens & Moser, 2018:121).

1.10.2.1 Credibility

Credibility relates to the relationship between the findings of the study and reality. It can also be defined as the confidence that can be placed in the truth of the research findings (McMillan & Schumacher, 2010:102). Attention to credibility establishes whether or not the research findings represent plausible information drawn from the participants' original data and is a correct interpretation of the participants' original views. Credibility strategies that are often adopted by qualitative researchers include prolonged and varied field experience, triangulation and use of the interview technique. Triangulation involves the

use of multiple and different methods, investigators, sources and theories to obtain corroborating evidence (Billups, 2014:2). In this study, credibility was realised through the adoption of established research methods and personally visiting education offices and primary schools of interest to interview different information-rich participants who included the heads of schools, DRT, District ECD trainer and DSI. An analysis of policies, assessment documents, plan books for various programmes and progress records was also done. Document analysis and interviews made it possible for collected data to be corroborated. The use of multi-methods and simple triangulation in a single study is a strategy that adds value, rigour and breadth (Chowdhury, 2015:158).

1.10.2.2 Transferability

Transferability is the extent to which the findings of the study can be generalised to other similar contexts (Leedy & Omrod, 2014:105; Billups, 2014:3). It denotes, therefore, the degree to which the results of qualitative research can be transferred to other settings, with other respondents. It is the interpretive equivalent of generalisability (Chowdhury, 2015:149). A researcher facilitates the transferability judgment by a potential user through 'thick description' and purposeful sampling. This is a similar concept to external validity which is concerned with the way in which the research results can apply beyond the present investigation or context. In this study, transferability was ensured through detailed description of the research process and selection of participants that assumed crucial roles in the implementation of intervention programmes for learners with dyslexia.

1.10.2.3 Dependability

Billups (2014:3) points out that dependability refers to the stability of findings over time. It involves participants evaluating the findings and recommendations of the study to make sure that they are all supported by the data received from the informants of the study. In other words, the extent to which the findings of the study reflect the views of the participants rather than those of the researchers is an important aspect of dependability. Dependability is established using an audit trail, stepwise replication, triangulation and peer examination (Carcary, 2009:15). An audit trail involves an examination of the inquiry process and product to validate the data, whereby a researcher accounts for all the

research decisions and activities to show how the data were collected, recorded and analysed (Lietz & Zayas, 2010:195). In order for an auditor to conduct a thorough audit trail the following documents should be kept for cross-checking; raw data, interview and observation notes, documents and records collected from the field, test scores and others. To achieve dependability of the findings in this research, the use of triangulation and an audit trail were relied upon.

1.10.2.4 Confirmability

Confirmability is concerned with reducing researcher bias in order to realise research objectivity (Billups, 2014:4). It refers to the degree to which the results of an inquiry can be confirmed or corroborated by other researchers. Confirmability is concerned with establishing that data and interpretations of the findings are not figments of the inquirer's imagination but are clearly derived from the collected data (Korstjens & Moser, 2018:122). Additionally, confirmability of qualitative inquiry is achieved through an audit trail, keeping a reflexive journal and triangulation (Bowen, 2009:307). An audit trail offers visible evidence from the process and products' stage, that the researcher did not simply find what he or she set out to find. In this study, conformability was achieved through selection of reliable participants, justifying the use of particular research methods and techniques, an audit trail and member checking.

1.11 DELIMITATION OF THE STUDY

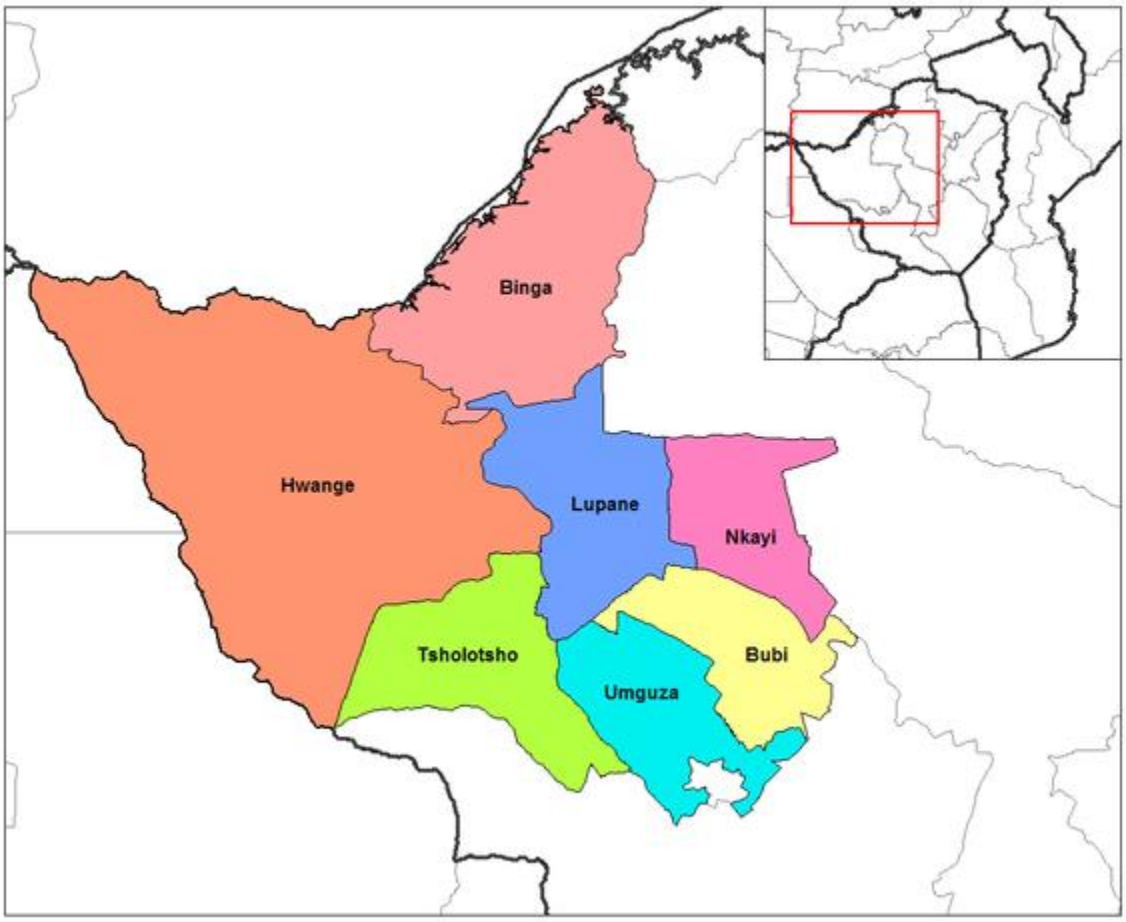

Figure 1.2: Map of Zimbabwe Showing Bubi District in Matabeleland North Province. Source: www.google.com/search=map+of+bubi district.

This study was conducted in Bubi District of Matabeleland North Province in Zimbabwe as shown in Figure1.3 above. The district borders Nkayi District to the North, Lupane District to the North West and uMguza District to the South.

1.12 SIGNIFICANCE OF THE STUDY

The study was considered significant to a number of stakeholders that included, the Ministry of Primary and Secondary Education, the district education officers, heads of schools, teachers and learners with dyslexia. It was expected that the Ministry of Primary and Secondary Education would realise the necessity of ensuring the availability of adequate and specific policies for the administration of intervention programmes meant for learners with dyslexia. The need to allocate sufficient funds for resource mobilisation, supervision of the intervention programmes and provision of CPDT was also expected to be unveiled. In addition, the value of ensuring that all schools had adequate qualified teachers from the ECD category to all grade levels at primary school would be realised. The district officers that included the DSI, DRT and District ECD trainers were also expected to realise the crucial role played by reading competence in academic achievement and overall improvement in the pass rate of schools, hence, ensure the effective implementation of the intervention programmes that were in place. Heads of schools were also expected to gain appreciation of the need to develop dyslexia-friendly schools so that learners with this condition would be assisted to fully reach their academic potentials. In addition, teachers were expected to acquire skills of identifying and assisting learners with various types of dyslexia and strive to reflect a positive mind set and an attitude that promotes the academic development of such learners. Learners with dyslexia were also expected to benefit in that efforts to mitigate the challenges they faced in their acquisition of knowledge were likely to be improved. Finally, it was expected that the researcher would grow in research and knowledge through interaction with experienced scholars.

1.13 ETHICAL CONSIDERATIONS

Ethical considerations refer to general agreements among researchers on measures to be taken so as to observe the rights of participants in a research project. In line with this view, Fouka and Mantzorou (2011:3) state that ‘ethics’ denote a system of principles which direct decision-making, concerning what is right and wrong in the conduct of a

scientific investigation. In this study, the ethical principles that were considered included informed consent as well as confidentiality and anonymity.

1.13.1 Informed Consent

According to Fouka and Mantzorou (2011:5), informed consent is one of the most important ethics in research which means allowing a participant to knowingly and voluntarily decide his or her involvement in a research study. In other words, informed consent is one of the means by which the right to autonomy is protected. It further seeks to prevent assaults on the integrity of the participant (Leedy & Omrod, 2014:107). In this study, the researcher assisted the participants to make informed decisions by explaining in detail the objectives of the study, its significance and methods that were to be used in gathering relevant data. The risks involved, and the demands placed upon participants were revealed. Freedom to be involved or withdraw participation at any point in the research process was emphasised. The researcher also sought permission from participants to record their responses.

1.13.2 Confidentiality and Anonymity

Confidentiality and anonymity are ethical issues which are closely related to rights of beneficence, respect for the dignity and fidelity. According to Fouka and Mantzorou (2011:5), confidentiality means that the investigator has to use the information disclosed to him or her for research purposes only, it goes beyond ordinary loyalty. On the other hand, research participants, are afforded freedom to share and withhold information they wish to. Anonymity is protected when the participant‘s identity cannot be attached to personal responses. If the researcher is not able to promise anonymity he or she has to address confidentiality. Roberts (2015:319) states that under no circumstances should other people be aware of how participants behaved in an investigation. In this study, participants were granted both confidentiality and anonymity. The information obtained was not revealed in public and their identities were not disclosed to anyone.

1.14 RESEARCH OUTLINE

The thesis is organised into six chapters as indicated below:

Chapter One comprises the background to the study which encompasses the statement of the problem, purpose of the study, research questions, objectives, the methodology utilised, as well as a definition of key concepts, amongst other aspects.

Chapter Two constitutes literature review on theories and concepts of learning as they relate to the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream schools.

Chapter Three reviews literature related to the intervention programmes available for learners with dyslexia in mainstream primary schools. The factors that are crucial in the teaching of such individuals are also evaluated in relation to the views of different authors.

Chapter Four outlines the research paradigm that was chosen and how it influenced the design and research methodology of the study. It also justifies the chosen population, sampling procedures, data collection and the analysis processes.

Chapter Five presents an analysis and interpretation of the generated data.

Chapter Six provides a summary, limitations,conclusion, recommendations and suggestions for further studies.

1.15 SUMMARY

This introductory chapter discussed issues that impelled the researcher to conduct this study. These were hinged on poor performance in reading tasks of primary school learners with dyslexia in Bubi District. The statement of the problem, purpose, research questions, theoretical framework, research paradigm, design and methodology,

delimitation and ethical considerations are discussed individually, as the chapter unfolds. The next chapter discusses the theoretical framework that was considered most relevant for this study.

CHAPTER TWO

THE MAGNO-CELLULAR THEORY OF DYSLEXIA

2.1 INTRODUCTION

Several theories, which include the visual, auditory, phonological and cerebellar, have individually attempted to describe dyslexia. However, none of these has managed to give an inclusive definition which embodies all the diverse experiences faced by individuals diagnosed with this learning disability. This study therefore, adopts the magnocellular theory for its attempt to combine all the theories of dyslexia and account for its manifestations through a single biological cause. Although this theory can be criticized for putting strong emphasis on visual contribution to reading than other sensory modalities, it is however, accredited for recognising the inter-dependence of various mechanisms involved in the entire reading process. The first part of this chapter gives a detailed overview of the magnocellular theory of dyslexia followed by an explanation of how it is connected to its sub- theories. The second part presents the implications of this theory as a guide to this investigation.

2.2 AN OVERVIEW OF THE MAGNOCELLULAR THEORY

The proponents of the magnocellular theory believe that dyslexia is primarily caused by a neurological weakness or impairment in the magnocellular cells of the thalamus, an area of the brain which is responsible for the processing of visual and auditory input (Kranich & Lupfer, 2014:84). This means that, when the magnocellular cells are dysfunctional, information received either through the sense of sight or hearing might not be accurately interpreted, leading to a distortion of its meaning. In a teaching and learning situation, some learners with dyslexia may manage to see the symbols or hear the sounds that represent letters or words but face challenges in attaching meaning to them. Such limitations subsequently lead to poor performance in some reading tasks.

Benasich and Fitch (2012:32) further observe that, magnocellular dysfunction or impairment in the magnocellular cells does not only affect the visual and auditory pathways but may also be responsible for the tactile problems found in some learners with dyslexia. In certain instances, all the sensory modalities might be impaired. The malfunctioning of the parietal lobe, located in the cerebral hemisphere of the brain, may also be a result of deficient input from the magno-cells as the cerebellum receives strong projections from the magnocellular pathways (Jaskowski & Rusiak, 2005:82). Any impairment to the parietal lobe may further affect visual functions, language, reading, internal stimuli, tactile sensation and sensory comprehension, as all these aspects are monitored in this part of the brain. Figure 2.1 shows an illustration of how a magno-cellular dysfunction affects other mechanisms involved in the reading process:

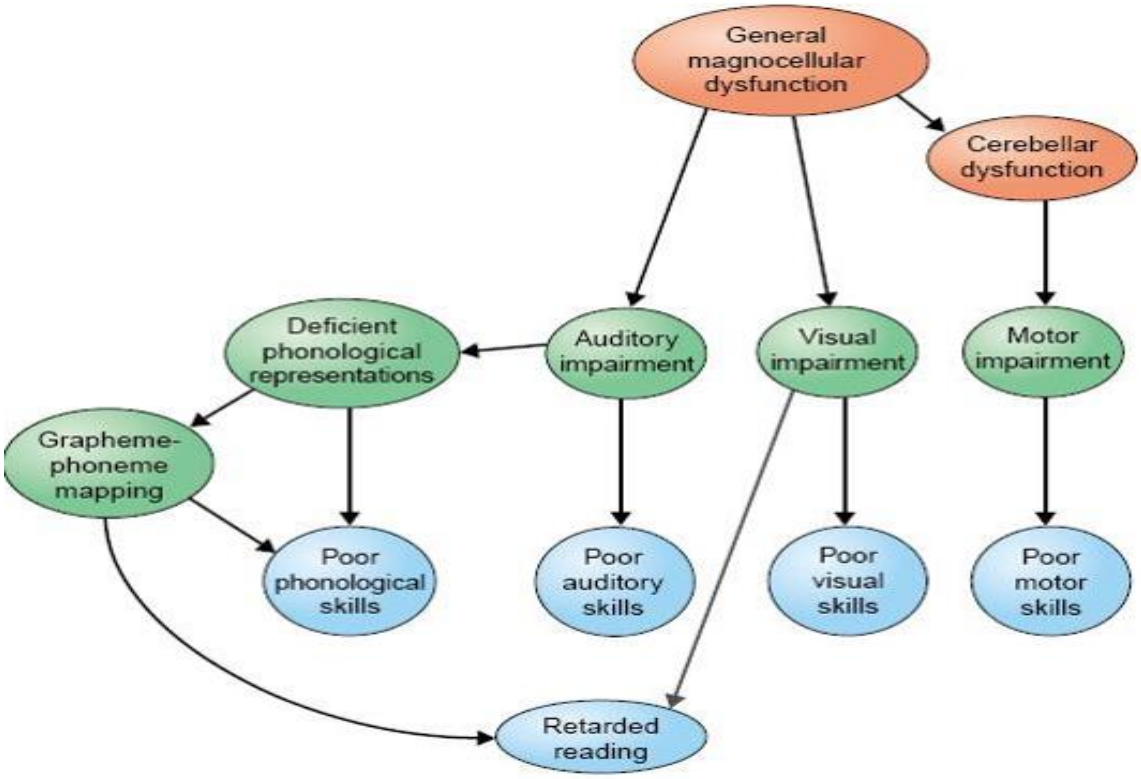

Figure 2.1: Effects of the Magnocellular Dysfunction. Adapted from http://www.co.za/url?=diagrams of the magnocellular theory and the brain of dyslexic learners pdf. Accessed on 5 March 2017.

Figure 2.1 shows that a general magnocellular dysfunction is hypothesised to cause auditory, visual and cerebellar deficits. The auditory deficit in turn causes a phonological deficit, thereby triggering the same cascade of events as predicted in the phonological theory. The visual magnocellular deficit is seen as another direct cause of reading problems. In the cerebellar theory, the cerebellar or motor impairment is also thought to independently contribute to phonological and reading problems.

The following sections describe in detail the nature of the components or sub-theories of the magno-cellular theory. An account of how these are linked to it is also given as the discussion unfolds.

2.2.1 The Visual Processing Theory

This theory reflects the oldest and most popular hypothesis concerning the nature of dyslexia. The first proponent of the visual processing theory according to Vender (2011:30), was Orton (1925) who maintained that, learners with dyslexia see letters and words in reverse, for example, *p* for *q, d* for *b, was* for *saw and ton* for *not*, amongst others. He further reasoned that images of letters are stored in both halves of the brain, but those in the non-dominant hemisphere (usually the right) are mirror images of those in the opposite hemisphere. He thought that letter and word reversals in reading and writing were due to delayed lateral dominance, which resulted in the failure to suppress the "reversed" letter images in the non-dominant hemisphere. Other research findings have further observed that some learners with dyslexia reverse letters when writing from dictation but not when copying from a written source. This means that if the problems experienced were primarily visual, they would affect copying from a written source as well (Richmond & Taylor, 2014:2).

The close link between the visual processing theory and the magnocellular theory is that both of them explain visual difficulties experienced by learners with dyslexia as emanating from poor or impaired development of the magnocellular system, an area of the brain that is sensitive to visual motion (Stein, 2018:1). This system connects the eye retina to the

occipital and parietal lobes of the brain thereby allowing information received by the eye to be processed by the necessary areas of the brain. According to Vidyasagar and Pammer (2009:57), the magnocellular system also helps to keep the two eyes fixated to converge on each word during the process of reading. This further means that, a deficit in the magnocellular pathway, in certain learners with dyslexia, causes deficiencies in visual processing. This, in turn leads to an impediment in the acquisition of orthographical skills (Alvarez-Paromo & Puell, 2010:886; Press, 2012:100).

The first stage in the development of orthographic skills is orthographic mastery (Stein, 2018:3). This is the ability to process the visual form of words or symbols in terms of shapes, letters and their arrangement in order to build meaningful words. The next stage relates to translating letters into sounds (phonemes) of new words. As most words might be unfamiliar when one is learning to read, a problem in the representation and use of phonological information may further hinder effective reading (Caylak, 2010:2). The visual processing theory, therefore, does not exclude the auditory and phonological deficits in some learners with dyslexia but emphasises a visual contribution to their reading competence.

2.2.2 The Auditory Processing Theory

The claim of the auditory processing theory is that some learners with dyslexia have phonological problems that emanate from auditory deficits (Prestes & Feitosa, 2016:2). This means that, poor processing of auditory information is the direct cause of phonological deficits that may further result in retarded reading. Proponents of the auditory theory give a logical presentation of how auditory deficits gradually affect reading competence in some learners with dyslexia. Firstly, auditory sensory deficits are presumed to cause impaired speech perception. This, in turn, leads to challenges in gaining phonemic awareness of sounds. Phonemic awareness problems subsequently result in difficulties in learning letter–sound correspondence during the process of reading development (Fox, 2015:11). Other challenges that are faced by these learners may

encompass having a flat or monotonic speech when reading and other receptive language deficits which include semantics and syntax.

The relationship between the magno-cellular and auditory theories is that, some proponents of the latter view dyslexia as a result of mild auditory magno-cellular impairment (Richardson, Thompson, Scott & Goswami, 2004:216). This implies that any slight deficit in the magnocellular pathway linked to audition may eventually lead to dyslexia. Contrary to this, Stein (2018:7) observes that the magno-cellular theory has not satisfactorily managed to account for the existence of auditory deficits in all learners with dyslexia. This means that some investigations have established an intact rapid auditory processing ability in some learners with dyslexia. Other studies however, do find auditory impairments in a sub-group ranging from a few isolated individuals to about half of the population under study (Richardson *et al.,* 2004:216).

2.2.3 The Phonological Deficit Theory

Proponents of the phonological deficit theory believe that some learners with dyslexia have a specific sound manipulation impairment, which affects their auditory memory, word recall and sound association skills when processing speech (Press, 2012:100). This denotes failure to remember sounds or words previously learnt. The theory further explains that learning to read an alphabetic system requires mastery of the grapheme - phoneme correspondence, that is, the relationship between letters and constituent sounds of speech. If these sounds are poorly represented, stored or retrieved, as is the case with some learners with dyslexia, the learning of the grapheme-phoneme correspondence, the foundation of reading the alphabetic systems, will be affected accordingly (Caylak, 2010:2). In addition, a slow speed in reading shown by some learners with dyslexia also points to a more basic phonological impairment, perhaps having something to do with the quality of phonological representations, or their access and retrieval (Törmänen & Takala, 2009:277). This assertion reveals a close connection between reading rate and mastery of sounds associated with words.

According to Bishop and Snowling (2004:858), the phonological deficit theory reveals a straight forward link between a cognitive deficit and a behavioral problem. At the neurological level, it is usually assumed that the origin of the disorder is a congenital dysfunction of the left-hemisphere of the brain areas underlying phonological representations, or connections between phonological and orthographic representations (Ramus, Marshall, Rosen & Heather, 2013:630). A major weakness however, of the phonological theory in the study of dyslexia is that it focuses more on the relationship between letter symbols and sounds but fails to account for the existence of sensory and motor impairments in some learners with this learning disability. Proponents of this theory tend to dismiss these disorders based on the conviction that there are not basic features of dyslexia. This means that, while they consider the co-existence of motor impairments with phonological deficits as potential signs of dyslexia, they do not perceive them as playing a causal role in the etiology of this reading disorder (Ramus *et al.,* 2003:844).

2.2.4 The Cerebellar Theory

The cerebellar theory is primarily based on the observation that dyslexia is attributable to slightly impaired cerebellar function, probably from birth. Striedter, Avise & Ayala (2012:257) describe the cerebellum as a large mass that is located at the very base of the brain. In humans, it accounts for 10-15% of the brain weight, 40% of the brain surface area, 50% of the brain's neurons (Nicholson, 2014:18). The cerebellar hypothesis further posits that cerebellar impairment may be developmental. This implies that the original defects in the cerebellum may cause a cascade and a variety of symptoms as the child develops from one maturational level to the other. Ramus, Pidgeon and Frith (2003:713), reveal poor motor control and automaticity deficit as some conditions that emanate from any impairment in the cerebellar.

Implications of an impairment of motor skills in learners with dyslexia may further be linked to difficulty forming words due to the need to exact precise mouth movements. For example, in the early years of school learning, a delay or impairment in fine motor skills

may leave an individual susceptible to speech delays which may further hinder other forms of communication, as speech is the first step towards reading and writing. Impaired motor skills may also lead to poor manual dexterity, poor writing skills, impaired balance, poor co-ordination and overall clumsiness in individuals with dyslexia (Martins, Ramos, Kirby & Aparecida, 2014:30). Similarly, in 2001, Fawcett conducted a study on the causes of dyslexia in young children. The basic findings indicated that, there is a link between the difficulties experienced by learners with dyslexia in writing, spelling and reading and direct and indirect cerebellar dysfunction. In addition, the poor handwriting of some of these learners can also be directly linked with the cerebellar impairment hypothesis as writing requires precise timing and co-ordination of diverse muscle groups (D' Angelo & Casali, 2013:8).

Automaticity deficit due to cerebellar impairment can affect rapid naming of objects and symbols (Clark, Boutros & Mendez, 2010:4). Automatisation is described as a process whereby life skills like eating, dressing, bathing, cycling and driving are performed without conscious control. This means that with reasonable consistent conditions, most humans master certain life skills automatically. Nicolson, Fawcett and Dean (2001:508) posit that, most Rapid Automatized Naming (RAN) skills have a strong correlation to positive reading acquisition and have been successfully utilised as early identification predictors for learners with dyslexia and other reading difficulties. RAN involves the learner's ability to quickly identify recognisable visuals, such as numerals, letters, colours and objects. These identification activities involve a combination of phonological, orthographic and processing tasks which represent a similar microcosm of cognitive tasks that are involved in reading development (Swanson, Harris & Graham, 2013:180). Figure 2.2 summarises how cerebellar dysfunction subsequently causes reading, writing and spelling problems:

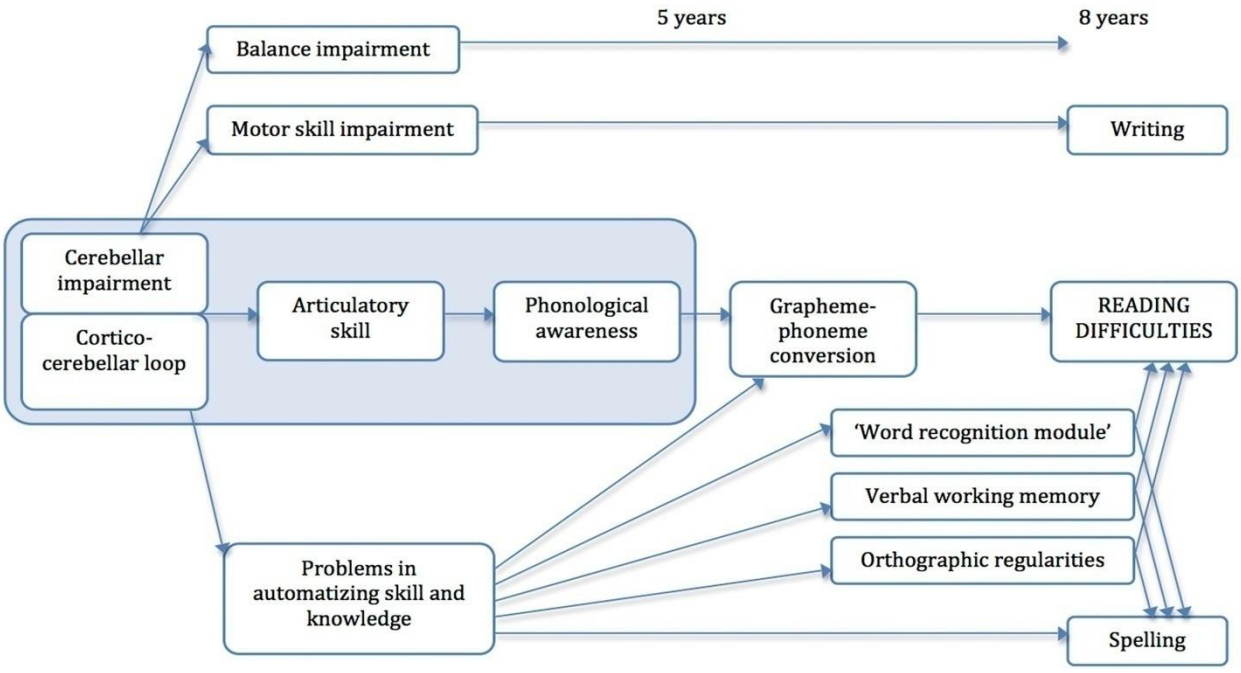

Figure 2.2 Cerebellar Impairment and How it Affects Reading and Other Language Skills. Adapted from http://www.google.co.za/search?q=diagrams. Accessed on 4 March 2017.

Figure 2.2 shows that cerebellar abnormality at birth may lead to mild motor and speech articulation problems. Eventually lack of fluent articulation may in turn enhance the development of an impoverished representation of the phonological characteristics of speech and subsequently lead to well established difficulties in phonological awareness by the age of 5. This then disturbs reading efficiency. Other routes outline the probable problems outside the phonological domain and indicate that the difficulties in learning to read, spell and write might emanate from a number of interdependent factors.

While the cerebellar theory is significant in understanding some reading challenges faced by learners with dyslexia, it has its own limitations. One of these is that, the causal link postulated between articulation and phonology in this theory relies on an outdated hypothesis of the motor theory of speech, in which the development of phonological representations relies on articulation. This opinion has long been rejected in the light of cases of normal phonological development despite severe apraxia of speech (Ramus *et al.,* 2003:844). Also, it remains uncertain as to what proportion of learners with dyslexia

is affected by motor problems. A number of studies have failed to find any, while others have established them in very limited cases (Ramus *et al.,* 2003:843).

According to Ramus (2004:720), the direct link between the magnocellular theory and the cerebellar theory is that a generalised dysfunction of magno-cells does not only affect sensory pathways but further spreads to the posterior parietal cortex and the cerebellum. This encompasses all the known cognitive, sensory, and motor manifestations of dyslexia. On this view, Nicholson and Fawcett (2001:510) and Clark *et al.* (2010:4) posit that, when an individual with dyslexia's cerebellum is mildly impaired, often due to dysfunctional magno-cells, this affects their automatisation as well as their ability to form words using the tongue and facial muscles, resulting in poor articulation. This means that, such learners often read very slowly, with effort and less fluency (Ramus, Pidgeon & Frith, 2003:712). Due to their lack of fluency when reading, learners with dyslexia are often unable to focus on comprehension and consequently fail to analyse, interpret, and draw conclusion from a read text.

2.3 THE MAGNOCELLULAR THEORY AS A GUIDE TO THE STUDY

The magno-cellular theory basically contends that the implementation of intervention programmes for learners with dyslexia must encompass training in visual, auditory and phonological processing of information. Activities that improve automaticity, reading speed and fluency must gradually be inco-operated as learners show mastery of the basic reading skills. The study further suggests that the training and other services provided must be sensitive to the unique needs of individual learners with dyslexia (Birsh, 2011:19). Those with retarded reading which emanates from poor processing of visual information, often need a remedy that differs from those whose challenge is caused by auditory deficits. The establishment of the exact causal factors should be facilitated by a detailed assessment procedure.

Furthermore, as a unit of all the other theories of dyslexia, the magno-cellular theory proposes that the implementation of intervention programmes for learners with dyslexia

must utilise multi-sensory teaching approaches as these assist learners to realise their preferred individual learning styles (Moats & Dakin, 2008:58). Another observation made by this study is that, the success of availed services is also dependent on some factors which include teachers' knowledge of dyslexia, assessment issues, provision of material resources and teaching instruction, amongst others. The following section attempts to discuss how specific training services influence the implementation of intervention programmes. An expose of how the guiding theory ultimately advocates for multi-sensory teaching is also made. In addition, the relevance of factors that enhance service delivery is revealed as the discussion unfolds.

2.3.1 Training Needs of Learners with Dyslexia

This section discusses how specific groups of learners with dyslexia should be assisted to improve visual, auditory and phonological processing of information. The acquisition of automatic reading skills and fluency is also addressed towards the end of this part.

2.3.1.1 Visual Processing of Information

To mitigate the visual processing challenges experienced by some learners with dyslexia in reading activities, the study suggests that, the educational intervention programmes provided, and the strategies adopted in their implementation should emphasise teaching strategies, media and learning environments that have a potential to improve visual perception of information. This encompasses visual discrimination, visual closure and concentration or memory, amongst other related aspects.

Autrey and DeMuth (2012:28) argue that educational tasks that can improve visual discrimination of seen objects, symbols, letters and words may utilise grouping, sorting and matching tasks. Games like "choose the odd one out" may prove to be useful in this regard. Abadiano (2005:52) suggest that, in order for learners to recognise differences that exist in models, they must first be guided to fully know the qualities of these, through paying attention to their detail. Details may include knowing the shape, size and colour amongst other features. In a teaching and learning situation, this requirement may be

achieved through the improvisation of adequate concrete and abstract media that have varying characteristics. Hunter and Murchu (2006:35) state that the ability to differentiate words should start from differentiating concrete objects represented by words and then gradually pictures may be incorporated.

In the actual reading of words, phrases and paragraphs, the study suggests that teachers should teach learners to analyse how letters and words are formed and arranged so that they can differentiate them in the process of reading. Marshall (2008:14) concurs with this by stating that in offering reading intervention, learners with dyslexia should be assisted to clear up confusions regarding letters, numbers, words and language symbols. Other considerations that can be made to improve the dyslexics' ability to note the differences in reading matter may include the adoption of large font size, uncrowded well-spaced-out format, and the use of bold letters for emphasis (French, Blood, Bright, Futak & Grohmann, 2013:301).

The study further recommends that learners with dyslexia who have poor left – right, up-down and top-bottom orientation may be assisted through incorporating a number of educational activities that may correct related confusions. This may include, amongst other efforts, putting a mark or symbol that indicates the starting point in reading. In severe cases, the teacher or programme implementer may assist the learner to use his finger, beginning from left to right, in an attempt to read each word in a sentence. According to Mather and Wendling, (2012:326), for learners to successfully accomplish a learning task, teachers should provide step-by-step instruction supported with relevant demonstrations. This relates to systematic teaching where a concept is thoroughly taught before proceeding to another.

In addition, the magno-cellular theory further advocates for the use of teaching strategies that allow dyslexic learners with visual closure deficits to read new words or content, repeatedly, until mastery has been attained. This may include reading the new words orally, spelling the associated letters while touching and finger-tracing them (Moustafa & Ghani, 2016:152). After a while, the same word may be presented with missing elements,

for learners to complete as expected. Repetition assists learners to automatically recall the proper arrangement of letters in words or sentences. Autrey and DeMuth (2012:27) propose that teachers should gradually empower learners with visual-closure deficits to recognise words by general arrangement of letters without paying too much attention to each individual letter when solving related problems. For instance, given the incomplete word *'b – x'*, the learner should be able to fill in the missing letter and read the complete word accurately, after mastering the normal arrangement of letters in this word. Mastery of word formation must provide a base for learners to complete familiar words and phrases, as well as construct paragraphs.

This study also espouses that the implementation of intervention programmes for learners with dyslexia must assist them to remember previously seen words or learning content. Press (2012:100) posits that visual memory activities must assist in the development of sight vocabulary. In this regard, video plays and games, filmstrips, books, pictures and other concrete media may be considered. The teacher should also assist learners to create individual sight-word files of their level and practice reading these words regularly. Furthermore, learners should be encouraged to use previously learnt knowledge as a base for mastering more complex content, hence, using words already learnt to decode new ones (Hudson, 2005:4). The teacher may assist the learner to remember a word like *'buy'* then use it as a starting point to learn the proper reading and understanding of the word *'buying'*. Both the new and old words may further be used in different language tasks to effectively enhance grasping of the content. The International Dyslexia Association (IDA) (2008:11) recommends that visual concentration or memory in learners with dyslexia may also be improved by regularly assigning learners to write spellings of new words or construct sentences using them.

2.3.1.2 Auditory Processing of Information

To effectively meet the educational needs of dyslexic learners who have problems in processing auditory information, the magnocellular theory proposes that, first, the implementers of relevant intervention programmes should understand that some learners with auditory dyslexia are not hearing impaired but that their brain processes sound input

differently or less accurately than those without this deficit (Jerger & Musiek, 2000:467). This means that learners with dyslexia who have auditory processing deficits may be able to hear sound clearly but experience challenges in attaching meaning to the sound heard. The treatment and management of affected learners should primarily focus on changing the learning environment or improving higher-order listening, amongst other interventions. Remediating the disorder should lead to an increase in the individual's ability to process information, received via the auditory mode (Tallal, 2012:16406).

The study further contends that teachers should provide speech-sound training to learners who have difficulties in decoding words (Moustafa & Ghani, 2016:152). In this regard, focus should be given to stop consonants which include (*b, p, t, d, k*) and other hard-to-hear contrasts (*s, /sh* and *ch / j*). Speech-sound training must be provided by a credible role model for learners to imitate an accurate presentation. In relation to this study, this view advocates that the teachers themselves should clearly articulate letters or words during reading activities. Kyeyune (2012:14) states that there is a close link between the teachers' reading capacity and the learners' reading potential. For those learners with dyslexia who appear to mishear or substitute similar-sounding words for the actual auditory target, the teacher should establish the cause then offer suitable remedies. In addition, the implementation of relevant intervention programmes for learners with dyslexia who are challenged with sound blending or spelling should include activities that enhance symbol-sound association (Kohos, 2015:25). This may be achieved through utilising a visualisation and verbalisation approach to reading and spelling.

This study also emphasises the importance of teaching intonation during oral reading to those learners who have flat, monotonic speech and have difficulties with rhythm and/or stress. For those learners who demonstrate semantic difficulties, such as poor use and understanding of antonyms, categorizations, synonyms or homonyms, the teacher should directly teach these language aspects to affected learners (Mather & Wendling, 2012:326). The study further suggests the adoption of teaching strategies that enhance

auditory comprehension and memory, such as chunking, verbal chaining, mnemonics, rehearsal, paraphrasing and summarizing (Bellis & Anzalon, 2008:145).

2.3.1.3 Phonological Processing of Information

In relation to this study, the magnocellular theory demands that in assisting learners with phonological processing impairment, orthographic mastery must be stressed. Orthographic mastery can be defined as the ability to process the visual form of words in terms of shapes, letters and their arrangement (Perfetti & Liu, 2005:194). Through orthographic mastery, words are processed as a whole unit rather than their individual component sounds to yield meaning. After this process, learners may then be assisted to translate letters into the sounds, phonemes, for unfamiliar words; this is called 'phonologic mastery'. All words are unfamiliar when an individual is learning to read, thus, a problem in the representation and use of phonological information inevitably affects the acquisition of reading competence (Goswami, 2008:136). This means that, in the implementation of relevant intervention programmes, teachers should be able to impart necessary orthographic as well as phonological skills to learners with dyslexia.

According to Birsh (2011:19), phonological awareness is vital when teaching reading to young learners with reading challenges. The ability to look 'inside' words for syllables, rhymes, and individual sounds when reading and spelling is based on the learner's phonological awareness. In this regard, the study posits that the programmes for phonological awareness training should include, rhyming tasks, syllable identification tasks, segmenting and blending tasks and phoneme-manipulation tasks (Gillon, 2008:4). This further means that, learners with dyslexia should be taught to segment, blend, and manipulate syllables and sounds if they are going to be successful in using letter-sound knowledge effectively for reading and writing. The phonological-awareness skills of segmenting and blending are significantly correlated with the first stages in reading acquisition (Lane, 2007:5). In addition, the study acknowledges that, phonological awareness encourages learners to use invented or temporary spelling. This implies that when they attempt to write a word after gaining knowledge of reading it, they must first

listen to their own language, segment the sound in the words and finally match the sounds with known letters.

In addition to phonological awareness, the intervention programmes' implementers must teach phonics to learners with dyslexia through the provision of explicit phonics instruction. This is an organised programme in which letter-sound correspondences are taught systematically (Berninger & Wolf, 2009:53). In this situation when giving the phonics instruction, the teacher must avoid alphabetical order and separate the most confusable pairs of letters, for example, */b/*and */d/.* He or she must also teach the short vowel sounds first before long vowels to reduce confusion and to demonstrate the rule-based nature of long vowels, for example in, *sit – site – sight*. Learners should also be taught to blend letter sounds to decode words. Decoding practice must be provided in many different ways, for instance, decoding a list of words and of text, to help dyslexics transfer their skills to different situations and eventually become competent readers (Sedita, 2005:4). Also, in teaching decoding skills to learners with dyslexia, the teacher must include a systematic explicit instruction of linguistic awareness which encompasses phonological, orthographic, morphological awareness and phonics skills (Torgesen, 2004:353).

2.3.1.4 Automatic word recognition and fluency training

To meet the needs of learners with dyslexia who have cerebellar deficits that is evident in poor automatic word recognition and fluency, the magno-cellular theory, suggests that the intervention programmes provided should encompass educational activities that assist learners to first master the letters of the alphabet then gradually associate them with specific sounds. Berninger and Wolf (2009:70), maintain that in the initial stages of developing accuracy in letter-sound associations, cues such as pictures and key words should be used by teachers or programme implementers. Subsequently, learners should be assisted through the development of automaticity in single words then combination of patterns. Increasing automaticity in word recognition is extremely important in developing reading proficiency (Trezek & Hancock, 2013:391). This means that being able to read words by sight, automatically, is one of the basics for effective reading.

Another effective way of enhancing automatic reading and fluency is to give reading tasks and materials that meet the diverse academic levels of learners with dyslexia. Vardell, Hadaway and Young (2006:738) highlight that reading texts should also be carefully selected, so that the learner is not frustrated by reading material that is too difficult for his or her capabilities. This further calls for assessment services to be extended to verify the relevancy of the reading content used during the implementation of intervention programmes for learners with dyslexia.

To further improve automaticity in learners with dyslexia, the chunking of text or reading material should be considered. Chunking involves the breaking down of information into manageable units. Reading content and tasks, according to Kiefer and Lesaux (2007:136), need to be divided into small units before being presented in a logical sequence. This implies that after breaking down the learning concepts into manageable units, teaching should be sequentially and systematically organised, that is, from simple to complex.

Chunking of reading texts and sequential teaching may also assist learners who are slow readers, focus on sets of words or a reading task for a longer period of time before the introduction of more complex skills. Norton and Wolf (2012:432) concludes that slow word processing, further retards decoding and affects comprehension, both in terms of accuracy and speed. Bexkens *et al.* (2014:213) also contend that learners diagnosed with dyslexia typically need more time to name the RAN items compared to their peers irrespective of the orthographic complexity of one's language. This assertion closely relates adequate time provision to an improvement in automatic reading efficiency. In this view, the magnocellular theory suggests that teachers should provide additional time, give breaks for learners to process, understand and master new information.

Automaticity and fluency can also be improved through multiple readings of text, that is, repeated reading. In this regard, Shaywitz (2003:89) posits that the most effective method to increase fluency is repeated readings of the same material or passage. This means that, during the implementation of intervention programmes that enhance the

inclusion of learners with dyslexia in mainstream classes, the teacher should make sure that the material is read several times for optimal mastery and benefit of all the learners. Multiple readings subsequently influence improvements in reading speed, accuracy, comprehension and expression.

For more impaired readers, the programme implementer should provide more guidance during the execution of reading activities. Guided, repeated and oral reading procedures, according to Sedita (2005:2), have a positive impact on word recognition, fluency and comprehension. In this case, the belief is that, teachers can help learners with dyslexia to become more fluent readers by providing them with models of fluent reading. In relation to this, Martinez, Ramos, Callaway & Miller (2014:26) contend that some learners with dyslexia need expert teacher role models to progress efficiently through the stages of reading development to fluency.

2.3.1.5 Multi-sensory teaching

The magno-cellular theory's unique quality of integrating all theories of dyslexia, ultimately proposes the adoption of multi-sensory teaching methods when handling learners with this condition, in inclusive classes. Multisensory teaching involves making clear links amongst the visual, auditory, kinesthetic and tactile senses (VAKT). Marogna (2012:82) indicates that at the core of educating learners with dyslexia is the idea of making multisensory connections between print, sound, movement and meaning, as these support the learning of reading and spelling skills.

The designed intervention programmes should, thereafter, include a range of activities which show the interconnections amongst the human senses. In situations where learners have confusion in reading similar-looking letters such as, *b* and *d*, they can be allowed to use all their learning modalities as well as concrete and abstract learning aids to master this concept (Kamala, 2014:34). The letters may be presented visually (visual modality), traced (kinetic and tactile) in their hands or plastic letters and the letter name and sounds can then be orally (auditory mode) presented to the learners. In this regard, the magnocellular theory opines the simultaneous and sequential use of all sensory

modalities so as to enhance effective learning and memory. Multi-sensory teaching builds on learners' strong sensory channels while also developing the weaker ones (Adams-Gordon, 2010:3; Kamala, 2014:33). This assertion implies that, one of the goals of assessing learners with dyslexia before service delivery should be to verify the strengths of various sensory modalities then encourage learners to use their more capacitated senses to grasp new concepts, hence, weaker senses should not be strained but used with consideration.

2.4 SUMMARY

This chapter presented the theoretical framework that underpinned this study. It was established that a theoretical framework constitutes a set of concepts, components and beliefs through which a study is conceived and conducted. The magnocellular theory which, through a single biological etiology manages to account for all manifestations of dyslexia was described as it guided the study. The theory's components, which include the cerebellar, visual processing, auditory processing and phonological processing theories were also discussed in relation to how they influence the implementation of intervention programmes for learners with dyslexia. Towards the end of the chapter, the magnocellular theory's demand for the adoption of a multi-sensory approach when teaching learners with dyslexia was revealed.

CHAPTER THREE

INTERVENTION PROGRAMMES FOR LEARNERS WITH DYSLEXIA

3.1 INTRODUCTION

Numerous studies based on the effective teaching of learners with dyslexia have been conducted in many parts of the world and this has had a notable impact on the academic attainment of such learners. In a similar vein, this chapter discusses views and opinions of different authorities on issues related to the implementation of intervention programmes for learners with dyslexia in mainstream primary schools. The chapter first gives a brief history of dyslexia then gradually defines and discusses the meaning of this term in relation to the study. The causes and various types of this condition are also discussed in detail. Other important aspects that are given attention include, the types and nature of intervention programmes for learners with dyslexia availed in selected developed and developing countries, crucial factors that are significant in the implementation of these programmes and finally the challenges that are normally faced by schools in an effort to meet the needs of this group of learners.

3.2 HISTORICAL PERSPECTIVES ON DYSLEXIA

The study of dyslexia back dates to as early as 1878, when a German neurologist, Adolph Kussmaul, observed that there was a co-relation between neurological impairments and reading difficulties (Ashbaugh, 2016:4). This means that some patients who could not read properly and regularly used words in the wrong order were also diagnosed with neurological deficits. Kussmaul introduced the concept ‘word blindness’ to describe the difficulties that these patients experienced and gradually this view was adopted in the medical field to understand similar challenges.

Another milestone in the history of dyslexia occurred in 1891 with a report in the Lancet Medical Journal, by Dr Dejerne (Habib, 2000:2374). This report described a patient who

had suffered a brain injury after being hit on the head by a hard substance. After the incident, the patient lost several language functions, including the ability to read. This originated the now-accepted view that persistent reading and language difficulties emanate from particular brain dysfunctions (Habib, 2000:2374). Dejerne's work appeared to reinforce the conclusions of Kussmaul that reading difficulties were associated with underlying neurological impairments. Consistent with the medical model of learning that dominated that period, individuals who had reading difficulties were considered to have a neurological impairment as well (Rao, Ramanathan, Sharma, Dhar, Thatkar & Pal, 2016:1).

The medical view of reading difficulties continued into the 1900s (Habib, 2000:2374; Tassie, 2010:110). At that time, James Hinshelwood, a Scottish eye surgeon, published an account of a patient who had reading difficulties that emanated from a congenital defect in the brain related to eyesight. From this evidence, he confirmed that the cause of some reading difficulties was a malfunction of eyesight, as a result of a brain defect. Hinshelwood further explained that the primary disability was in the visual memory of words and letters. Symptoms of this included letter reversals, difficulties with spelling and reading comprehension.

In 1925 Samuel T. Orton, a neurologist, began studying reading difficulties and determined that there was a syndrome, unrelated to brain damage, that made learning to read difficult. He named his theory '*strephosymbolia*' which means 'twisted signs'. This concept described individuals with dyslexia who experienced difficulties in associating the visual forms of words with their spoken forms (Nicolson & Fawcett, 2008:3). The observation here was that failure to realise and understand how words were built, subsequently affected reading competence.

Issues of reading difficulties continued to be in the sphere of medicine until the mid-1930s when critics of both the medical model of disability and previous studies on dyslexia began to emphasise that treating individuals with this condition as patients and offering them medical intervention was not the only best way to fully empower them. This

view gradually led to the acknowledgement of the role that is played by social and educational rehabilitation in the development of learners with dyslexia. According to Ashbaugh (2016:5), the mid 1930s marked a new era in the empowerment of people with dyslexia because at this time the condition began to be associated with educational problems. Relatively, new teaching methods to help affected learners were developed and implemented. However, the medical profession continued to emphasise the value of early identification and assessment of learners with special needs before any service delivery.

In the 1970s, a hypothesis emerged that dyslexia partly stems from a deficit in phonological processing, or difficulty in recognising that spoken words are formed by discrete phonemes, thus affected individuals have difficulty in associating these sounds with the visual letters that make up written words (Habib, 2000:2374). Key studies of the phonological-deficit hypothesis concluded that, the strongest predictor of reading success in school learners is their phonological awareness. Therefore, phonological-awareness instruction can improve decoding skills for learners with reading difficulties. In 1994 it was further established that anatomical abnormalities might be present in the auditory system of some learners with dyslexia and this leads to poor development of reading skills (Rosen, 2003:510).

In recent years, the medical profession, educationalists and psychologists have adopted collaborative measures in search of the origins and treatment of learners with dyslexia (Lawrence, 2009:18; Tassie, 2010:111). This approach has partly led to the use of technology to enhance the study of dyslexia. New technology has allowed research to focus on specific parts of the brain that are activated in learning so that it is possible to localise different brain functions and observe the extent of their differences in the learning of language (Schneps, 2014:1).

3.3 Definitions of Dyslexia

Definitions of dyslexia are varied and multi-dimensional since the condition has various forms, causes and effects which may be individualised. Disputes surrounding the neurological origin of dyslexia exist, nonetheless, it is important to explicate the dyslexic variations and the implications of narrow and inclusive definitions for research and practice (Lawrence, 2009:1).

3.3.1 Neurological Definitions of Dyslexia

According to IDA (2014:2), dyslexia is a neurologically-based, often familial, disorder which interferes with the acquisition and processing of language. Varying in types and degrees of severity, it is manifested by difficulties in receptive and expressive language, including phonological processing in reading, writing, spelling and sometimes in Arithmetic (Petrosky, 2010:2). This condition is not a result of lack of motivation, sensory impairment, inadequate instructional or environmental opportunities, or other limiting conditions, but may occur together with these conditions.

It is also defined as a genetically inherited and neurologically-determined inefficiency in working memory, the information-processing system fundamental to learning, as well as performance in conventional educational and work settings. It has a particular impact on verbal and written communication as well as on organisation, planning and adaptation to change (McLoughlin, Leather & Stringer, 2002:19).

3.3.2 Educational Definitions of Dyslexia

The term 'dyslexia' was coined in 1887 by Rudolf Berlin an ophthalmologist practising in Stuttgart, Germany. The word is drawn from the Greek prefix *δυσ - (dus-),* "hard, bad, and difficult" + *λέξις* (*lexis*), "speech, word" (Rao *et al.,* 2016:1). He used the term to refer to a case of a young boy who had a severe impairment in learning to read and write,

despite typical intellectual and physical abilities in all other respects. Literally the word dyslexia means 'an absence of language'.

According to the World Federation of Neurology, dyslexia is a disorder manifested by difficulty in learning to read despite conventional instruction, adequate intelligence and socio-cultural opportunities (Petrosky, 2010:2). This means that dyslexia is evidenced by persons of otherwise normal intellectual capacity who have not learned to read despite exposure to adequate instruction.

In addition, Petretto and Masala (2017:2) describe dyslexia as a combination of abilities and difficulties that affect the learning process in one or more areas of reading, spelling and writing. Accompanying weaknesses may include short-term memory, poor sequencing and organization, poor auditory and/or visual perception, poor spoken language and motor skills. It is also related to mastering and using written language, which may include alphabetic, numeric and musical notation.

3.4 CAUSES OF DYSLEXIA

This section outlines the biological and cognitive factors that may cause dyslexia.

3.4.1 Biological Causes of Dyslexia

Some researchers argue that dyslexia has a biological origin (Rodrick *et al.,* 2008:2). Samuel Orton (1925) describes this condition as a neurological disorder. Since then, many researchers who have explored this notion have investigated different brain areas and the relationship between dyslexia and neurobiology (Ramus, 2004:720; Shaywitz & Shaywitz, 2008:1333). This approach focuses on the brain structure, brain function and the role of the cerebellum.

According to Vellutino, Fletcher, Snowling and Scanlon (2004:21), learners with dyslexia exhibit uncharacteristic symmetries in the left and right hemispheres of their brains. In

non-dyslexics the left hemisphere is larger than the right hemisphere. Since the left hemisphere supports language functioning, the asymmetry of both hemispheres is seen as a partial cause to reading problems that can be attributed to language deficiencies in learners with dyslexia. Similarly, a study that was conducted by Sally Shaywitz in 2002 on brain function established that, the brains of learners with dyslexia showed an inadequacy in the functioning of the left hemisphere posterior brain system. These findings are not completely new to this field of research. Dating back to 1891, Dejerine discovered that a part of the posterior brain was an important component for the ability to read (Shaywitz & Shaywitz, 2008:56).

The cerebellum is considered to be responsible for eye movements and inner speech. These are areas in which a majority of learners with dyslexia experience hardships (Clark, Boutros & Mendez, 2010:4). Such learners also show difficulty in maintaining a clear focus on the words that they are supposed to read. This serves to explain their poor performance in tasks related to spelling as well as those that demand motor skills.

3.4.2 Cognitive Causes of Dyslexia

While some researchers propose a biological cause for dyslexia others believe that it is caused by a cognitive deficit (Caylak, 2010:1). The reading process is a highly composite task for understanding, which relies on brain systems that are originally devoted to other functions. There are many possible causes of dyslexia at a cognitive level and these include visual, language-based and auditory deficits (Reid, 2009:2).

The most influential theories of dyslexia in the 1970s and 1980s identified deficits in the visual system. These theories suggested that dyslexia was due to poor visual perception and arrears in visual memory (Vellutino *et al.,* 2004:22). With this reasoning, dyslexia was associated with the inability to visually track words and understand word patterns that are necessary for effective reading.

The phonological deficit hypothesis of dyslexia on the other hand, denotes weaknesses in the way an individual codes phonics (Caylak, 2010:2). Phonological coding is the ability to use speech codes to represent information in the form of words (Vellutino *et al.,* 2004:9). Poor phonological awareness or representation leads to difficulty in processing information in the working memory, a deficit in rapid-naming skills, difficulties in name storage and retrieval (short-term working memory), word identification, fluency in reading and word spellings.

While many cognitive theorists argue in favour of the phonological deficit hypothesis as being the dominant cause of dyslexia, others propose auditory deficits as the main cause (Heiervang, Stevenson & Hugdahl, 2002:931). The auditory processing deficit hypothesis is sometimes known as the 'temporal processing' or 'temporal perception hypothesis'. The hypothesis states that there is a deficit in the neural system which is responsible for the processing of stimuli and can affect language and reading efficiency (Prestes & Feitosa, 2016:2).

3.5 DYSLEXIA AND OVERALL ACADEMIC ACHIEVEMENT

According to the IDA Handbook (2014:3), dyslexia affects the skills necessary for effective reading, spelling, listening, writing, motor control and memory. All these play a crucial role in academic achievement and progress as depicted in Figure 3.1.

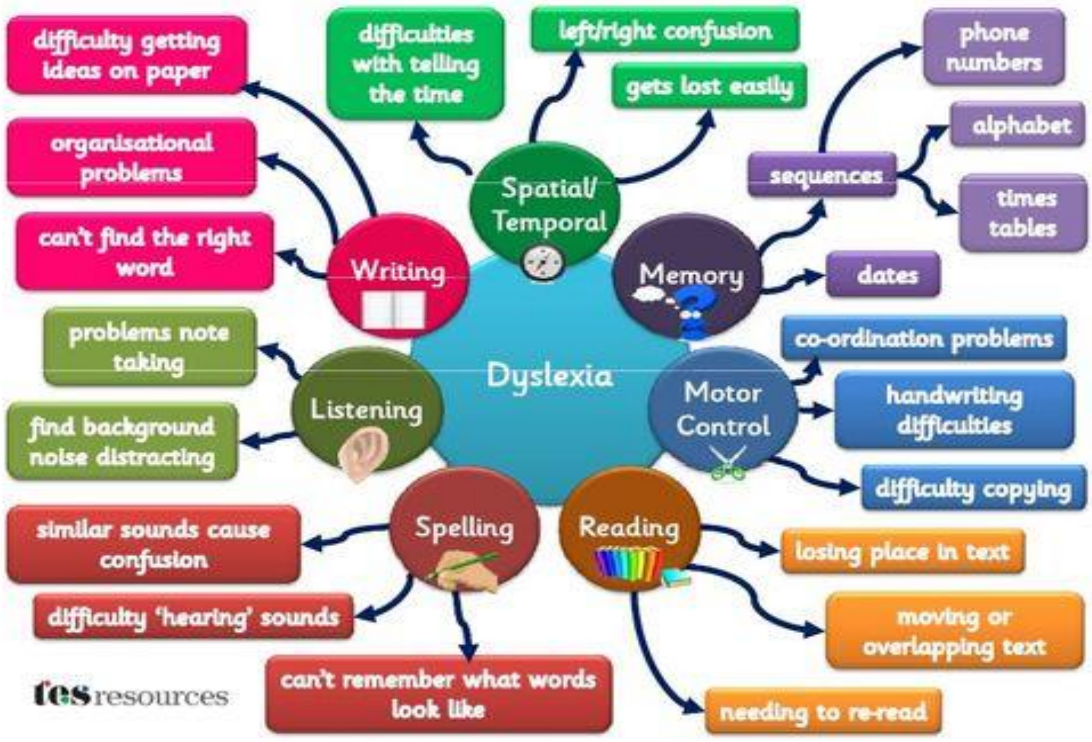

Figure 3.1: Summary of the Impact of Dyslexia on Academic Performance. Adapted from www.uk.pinterest.com/pin/3054010370237301. Accessed on 29 January 2017.

Figure 3.1 shows the various skills that are affected by dyslexia. The ability to spell words is hindered due to difficulty in hearing sounds and the confusion that occurs with similar words. Learners may also experience problems in remembering how learnt words look like. Some learners with dyslexia encounter motor control deficits which present themselves in the form of challenges in co-ordination, handwriting and difficulty in copying. The academic performance of such learners is also disturbed by memory setbacks. These individuals are usually unable to master sequences that are evidenced in phone numbers, letters of the alphabet and time tables at school. In terms of spatial skills, learners may confuse the left/right orientation in reading words or phrases. Some learners with dyslexia exhibit writing problems. In this regard, they experience difficulties in selecting the right word to use in expressing an idea, lack organisational capability and fail to transfer ideas onto paper. Such learners may further experience listening challenges. This subsequently hinders them to effectively take down notes as they would

not have correctly heard the reading of words. The noise in the learning environment also distracts their concentration in the listening process.

3.6 TYPES OF DYSLEXIA

There are two major types of dyslexia. These are collectively, referred to as 'developmental and acquired dyslexia'.

3.6.1 Developmental Dyslexia

Developmental dyslexia may emanate from biological disturbances in the brain at various levels (Al-ghizzi, 2015:49) . This could be morphological or syntactic from prenatal through childhood development. The first person to suggest that there are different types of developmental dyslexia was an educational psychologist, Helmer Myklebust (1965) who suggested that some learners with dyslexia face difficulties in learning to read because they would not have acquired the auditory equivalents of the appearances of the letters. Myklebust referred to this condition as 'auditory dyslexia'. For others, the problem could be an inability to mentally visualise letters and sounds. He referred to this condition as 'visual dyslexia' (Paul & Norbury, 2012:2). This therefore means that, developmental dyslexia has different subcategories within it and these are dysphonetic (auditory), dyseidetic (visual) and mixed dyslexia (Heim & Brande, 2012:10).

3.6.1.1 Auditory Dyslexia

Auditory or dysphonetic dyslexia refers to a difficulty in connecting sounds to symbols. This is due to an auditory processing disorder in which the learner is unable to accurately perceive speech sounds (phonemes) and pair them up with their graphic representation (letters). In relation to this, Heim and Brande (2012:11), posit that, learners with dysphonetic dyslexia have difficulty learning sound-symbol relationships thus committing phoneme-grapheme errors. As pre-literates, they demonstrate deficits while analysing spoken language, for example, deleting syllables and phonemes of aurally presented words. Typical misreadings of most learners with this type of dyslexia are substitutions

based on minimal cues, for example, the word *'dress'* would be read as '*diesel'* or semantic association, for example, 'smile' for 'laugh'. When spelling unfamiliar words, typical errors which can be made by dysphonetic dyslexics include, letter or syllable omissions or letter order confusions (Heim & Brande 2012:12). In addition, affected individuals may be able to recognise words they would have memorised but fail to sound out new ones (Press, 2012:100). Dysphonetic individuals often rely on visual capacities so that a whole-word visual gestalt can be processed quickly and matched with an auditory gestalt. While dysphonetic dyslexia is normally considered a developmental reading disorder, it can also be acquired.

3.6.1.2 Visual Dyslexia

The prominent characteristic of visual or dyseidetic dyslexia is the inability to revisualise the gestalt of a word (Habib, 2000:2383). Learners in this group have deficits in vision, memory of letters and word shapes, making it difficult for them to develop a sight vocabulary (Press, 2012:100). Due to failure to match visual and auditory gestalts of whole words, a dyseidetic individual may rely on subcortical vocalisation to retrieve the meaning of a word. This means that, such learners could have a good grasp of phonetic concepts. Resonance (2016:77) further observes that learners with visual dyslexia have the tendency to confuse letters which vary in orientation, such as *b-d* and *p-q*. This also happens with words which can be reversed, for example, *was* and *saw.*

Press (2012:100) asserts that, dyseidetic learners may also fail to notice the material that has already been read in the learning process. This resembles challenges with visual tracking. In some instances, the image of one letter in a word may be masked. This occurs when the eye is moved quickly to the next letter, increasing the possibility of the first letter being omitted. It is also a challenge to learn irregular words which cannot be sounded out such as the word *sight.* Weakness in the visual retrieval of information subsequently retards the rapid retrieval of words (Friedmann, Biran & Gvion, 2012:4). According to Resonance (2016:77) some learners with visual dyslexia find it easier to learn to read through spelling the words orally and then converting them to print, due to the confusion in the visual stimuli in reading. The reading patterns tend to be

characterised by insertions or substitutions, especially when reading is guided by the meaning of the passage (Habib, 2000:2383). On the contrary, other dyseidetic learners experience difficulty in recalling the actual shape of letters as they write. The spelling of words may be done in a phonetic and not bizarre way, for example, *laf-laugh*; *bisnis-business.*

3.6.1.3 Mixed Dyslexia

Learners with mixed dyslexia have both the dyseidetic and dysphonic types of reading disorders thus combining the deficit of the two groups. In other words, a learner in this category will have a disability in both sight vocabulary and phonetic skills. In relation to this, Flanagan and Alfonso (2011:1) state that mixed dyslexia consist of a variety of reading deficiencies that include poor phonological and orthographic processing. This is considered as the most severe type of dyslexia and a learner with such a condition might also have slower rapid and automatic word recognition as well as inconsistent language comprehension skills.

3.6.2 Acquired Dyslexia

Acquired dyslexia is a reading disorder which is caused by brain trauma that occurred after the individual had already acquired reading skills. Dulude (2012:23) notes that there are two main types of acquired dyslexia. These are peripheral and central dyslexia. Peripheral dyslexia is primarily concerned with matching writing to stored meaning. Central dyslexia is a much more complicated reading disability which involves the processing of text.

3.6.2.1 Acquired Peripheral Dyslexia

There are three types within the category of peripheral dyslexia. These include pure alexia (alexia without agraphia), neglect dyslexia and attention dyslexia. All these are caused by lesions, usually in the posterior region of the dominant hemisphere. This is exemplified by a lesion in the occipital lobe which disrupts the transmission of some visual stimuli to areas of the brain (Dulude, 2012:24).

3.6.2.2 Pure Alexia

Pure alexia is a frequent and incapacitating consequence of left occipito-temporal lesions. It is thought to result from the disruption or the disconnection of the visual word-form area (VWFA); a region which is located within the left occipito temporal sulcus which encodes the abstract identity of strings of visual letters (Cohen *et al.,* 2004:1768). Affected learners suddenly lose competent reading abilities that they had acquired through years of academic training, however, speech comprehension and production, as well as word spelling, is preserved. The essence of this lost perceptual skill is letter identification invariant for position, size font, and case as well as the fast and parallel identification of arrays of several letters (Starrfelt, Olafsdottir & Arendt, 2013:756).

3.6.2.3 Neglect Dyslexia

Neglect dyslexia is an acquired reading disorder in which letters of one side of a word or letter string are misidentified. In left neglect dyslexia, the initial letter or letters may be substituted so that *cage* may be read as, *page* or *huge.* In other instances, the letters may be deleted, causing a word like *c~zge* to be read as *age*. In some cases, letters may be added before the word, for example, *cage* is read as *srcrge.*These errors occur at the end of words in right neglect dyslexia. Neglect dyslexia is usually seen after a cerebro-vascular insult to the occipito-parietal region of either hemisphere of the brain, but usually to the right. The affected side of a word is, in most cases, contra-lateral to the lesion (Dulude, 2012:24).

3.6.2.4 Attentional Dyslexia

A learner with attentional dyslexia, the third type of peripheral dyslexia, could read a word on its own, but not when it is surrounded by other words. Similarly, the learner may identify letters as they appear individually and not in their contexts (Dulude, 2012:24). According to Davis and Coltheart (2002:359), some attentional dyslexics exhibit 'letter migration' errors. This denotes the failure of a selection mechanism that normally attenuates the output of letter-level analysis outside a chosen attentional 'window' in the visual field. The inability to narrow this window to a single word causes letters in other words to participate in the activation of word-form units, which sometimes results in the

perception of illusory words. This challenge is normally caused by brain damage rather than temporal constraints.

3.6.3 Acquired Central Dyslexia

This section discusses deep and surface dyslexia as some of the main types of acquired central dyslexia.

3.6.3.1 Deep dyslexia

Deep dyslexia is usually caused by lesions in the dominant perisylvian region (Davies, Cuetos & Rodriguez-Ferreiro, 2010:1116). Hricova and Weekes (2012:207), explain that the specific characteristic of deep dyslexia is reflected through the production of semantic errors in reading a text. Morphological types of errors are also common in deep dyslexia. This involves cases such as reading *birds* as "*bird*", *played* as "*play*" and *smiles* as "*smiling*". Errors related to their vision cause learners with dyslexia to read *clay* as "*play*", *owl* as "*own*" and *gum* as "*game*". In most cases non-word reading is also impaired, indicating an additional impairment to a sub-lexical reading mechanism (Hricova & Weekes, 2012:207).

3.6.3.2 Surface dyslexia

Karanth (2003:50), asserts that surface dyslexia is one of the main forms of reading disorders observed when the previously-competent reading ability of an individual is disrupted by brain injury or disease.It occurs as a result of damage to the lexical-semantic route. The regularisation pattern observed in learners with this condition is attributed to reading through a non-lexical route. Surface dyslexia is similar to dyseidetic dyslexia in that it also involves a visual perceptual deficit. In relation to this, Coslett (2000:240) contends that surface dyslexia is characterised by a relative ease of reading of phonologically regular words and non-words, but difficulty reading irregular words. Some learners with acquired surface dyslexia are characterised by reading performance on regular words and non-words, that is, within normal limits of both accuracy and speed, and a deficit on irregular words that is strongly modulated by word frequency (Hricova &

Weekes, 2012:207). This means that, in surface dyslexia, the errors are made based upon the visual appearance of the word, whereas in deep dyslexia, the errors relate to the deeper meaning of the word.

3.7 INTERVENTION FOR LEARNERS WITH DYSLEXIA

Without effective instruction, remedial intervention and provision of relevant resources, learners with dyslexia are at risk of social exclusion, school failure and inability to secure employment later in life (Chitsa & Mpofu, 2016:64). Once a learner has been officially identified as having dyslexia, there are a number of approaches that can be adopted to support them in their learning. Peer and Reid (2001:29) observe three models that can be considered. These are segregation, integration, and inclusion. Segregation denotes a more traditional model whereby a learner with a disability is given additional individual help outside of lessons. Integration is the most common current system. In this case, focus may be on support in class, but the assumption is that the 'problem' lies wholly with the learner and not in the overall curriculum or organization. Finally, the inclusion model encourages giving support to individual learners and ensuring their maximum participation in inclusive settings.

3.8 INTERVENTION PROGRAMMES FOR LEARNERS WITH DYSLEXIA IN SELECTED COUNTRIES

This section discusses some intervention programmes that are available for learners with dyslexia in some developed and developing countries. The intention is to identify and describe the existent programmes as well as locate areas of divergence and convergence. Selected developed countries include, New Zealand, Norway and UK. In contrast, the sample for developing countries includes Malawi, Zambia, South Africa and Zimbabwe.

3.8.1 Developed Countries

This section discusses the intervention programmes which are employed to enhance the performance of learners with dyslexia in selected countries of the developed world.

3.8.1.1 New Zealand

In New Zealand, the three programmes to be discussed include the Danks Davis Dyslexia Tutoring, Cellfield Reading Programme and Dore Programme.

The **Danks Davis Dyslexia Tutoring** was developed in New Zealand by Zannie Danks Davis. This programme uses one-on-one weekly 1hour tutoring sessions to help learners with dyslexia learn to read and write (Dawson & D'souza, 2015:34). The programme also targets spelling as one of the key aspects for literary success. It is claimed that gains after exposure to the programme should be seen in listening skills, comprehension, oral language, spelling, writing and reading. The tutoring sessions can be led by tutors, parents, or teachers, but all follow the same seven step method. A full description of the process involves:

Step 1: Brain Gym exercises "to open the learning channels".
Step 2: Assessment to create a list of words the learner is unable to spell.
Steps 3 to 6: Multisensory instruction in spelling to learn the words identified in step 2. Auditory perception problems will also be addressed.
Step 7: Testing to ensure the individual has learned the words and understands how to use them.

The **Cellfield Reading programme** is based on the view that dyslexia arises, possibly, due to a combination of causes and is linked to several deficits. These deficits include auditory, visual and phonological processing problems. To improve these processing problems, letters, words and sentences that are presented on screen correspond to aural tasks that participants hear, through earphones. The programme is computer-based, with

game elements in its design (Dawson & D'Souza, 2015:17). These tasks claim to employ reading-related skills, as well as attention, working memory and focus.

The Cellfield programme consists of ten, one-hour sessions over two weeks which allegedly target neural redevelopment. These sessions generally comprise of ten exercises. Some exercises target phonological processing and require concurrent activation of visual and auditory processing. Other exercises involve decoding and encoding activities, for example, finding text embedded in continuous random text with no spacing.

Cellfield also provides additional ten, one-hour sessions over a period of ten weeks, with supplementary guided reading at home. The programme involves "repetitive reading, tuition by exception, novelty and reward" (Dawson & D'Souza, 2015:17). These sessions target consolidation and the transition into reading fluency. Learners with more complicated reading disabilities may have to repeat Cellfield at a higher level, 6 to 12 months after completing the initial intervention.

Additionally, a part of the session involves matching rhymes from a four-word choice. Target rhymes are presented acoustically and visually for the first five sessions and only acoustically for the last five sessions. The target rhyme is also altered and presented with a stretch. This allows learners with auditory processing problems to hear the word clearly. The degree of stretch is progressively reduced until learners can clearly hear the words at normal speed for the last two sessions (Prideaux, Marsh & Caplygin, 2005:52).

The **Dore programme** is a for-profit intervention targeting dyslexia, dyspraxia and Attention Deficit Hyperactivity Disorder (ADHD) involving particular physical exercises (Dawson & D'Souza, 2015:40). Founded by Wynford Dore, it is based on the theory that learning difficulties arise due to a single underlying cause located within the cerebellum. The Dore programme involves use of a balance board which encompasses throwing and catching of bean bags. This includes throwing items from hand to hand with careful tracking by eye, practice of dual tasking as well as a range of stretching and coordination

exercises (Reynolds, Nicolson & Hambly, 2003:55). Exercises are done for ten minutes twice a day, with the whole programme taking about fourteen months.

3.8.1.2 United Kingdom

The United Kingdom implements the following programmes for learners with dyslexia in mainstream schools: Reading Recovery Programme, Catch-up Literacy and THRASS.

May (2014:6), describes the **Reading Recovery** programme as a first-grade literacy intervention designed to help the lowest-achieving readers reach average levels of classroom performance in literacy. Learners identified to be in need of assistance meet individually with a teacher trained in Reading Recovery each school day for 30-minute lessons over a period of 12 to 20 weeks. Reading Recovery instruction is intended to be supplemental; learners receiving the lessons typically continue to participate in regular classroom literacy instruction while the intervention is in progress (Brookes, 2013:44). The purpose of Reading Recovery lessons is to support the rapid acceleration of literacy acquisition. The intervention's underlying principle is that short-term, highly-responsive instruction, delivered by an expert can disrupt the trajectory of low literacy achievement, produce accelerated gains and enable learners to catch up with their peers and sustain achievements made at grade level, into the future. Reading Recovery instruction attends to phonemic awareness, phonics, vocabulary, fluency, comprehension, and composition writing (Slavin *et al.,* 2010:6).

Reading recovery ultimately strives to help learners develop a set of self-regulated strategies for problem-solving words, self-monitoring, and self-correcting that they can apply to the interpretation of text (May, 2014:6). These strategies focus on enabling learners to use meaning, structure, letter-sound relationships, and visual information in their reading and writing processes. The Reading Recovery model is based on a theory which asserts that, once equipped with these strategies for independent processing, struggling readers can achieve average reading levels and maintain proficiency in the regular classroom without special intervention (Brookes, 2013:44).

Catch-up Literacy is a one-to-one literacy intervention programme for struggling readers aged 6–14 (Brookes, 2013:19). It is centred on a 15-minute structured teaching session delivered twice a week by a teacher or teacher-assistant and tailored to the needs of individual learners. Holmes *et al.* (2011:34), claim that it has been used to support about 210,000 learners in 4,250 schools in 86 LA areas across England and Wales. Test results have shown that it has made a significant difference in literacy skills for the majority of primary learners who have received sessions. A key factor in its success appears to be that it is practical and easy to implement in a variety of school contexts.

Catch-up Literacy sessions begin with a comprehensive assessment procedure which provides pre-intervention data and from which the tutor determines the learner's catch up literacy level and targets. The Catch-up Literacy level is then used to identify a book appropriate for the individual learner that she or he will be able to read with 90% success (Brookes, 2013:19). The individual sessions are composed of three segments:

- In the initial segment of prepared reading, the tutor discusses the chosen pictures or text in the book, offering appropriate vocabulary, hence making the child familiar with the story.
- The learner is given the opportunity to read the story before the tutor who has to record progress and pick up words for use in the follow-up session.
- Then a spelling activity or linked writing that depends on the learner's earlier mistakes is done. The learner is assisted by the tutor to read and spell words, making use of a number of methods. These include the visual recognition of irregular words and phonics.

Davies and Ritchie (2006:9), elucidate **THRASS** as standing for Teaching Handwriting Reading and Spelling Skills. It is a structured multi-sensory literacy programme which teaches learners letters, speech sounds (phonemes) and spelling choices (graphemes). It is divided into the three main areas of handwriting, reading and spelling (Callinan & Zee, 2010:21). It increases understanding of the way the English language is structured, with 44 phonemes, of which 20 are vowel sounds and 24 are consonant sounds. Learners

learn that the same sound can be represented by different letters or groups of letters (graphemes). The natural links between the 44 phonemes, which comprise the smallest speech sounds and the 120 key graphemes, are taught to learners in order for them to identify, blend sounds for reading, and to segment and spell sounds in words, for writing. This is accomplished by introducing learners to words commonly found in the environment, such as names of people, places and products (Davies & Ritchie, 2006:9).

According to Callinan and Zee (2010:21), synthetic teaching of phonics involves part-to-whole learning, where learners are taught letter-sounds so that they can blend the letter-sounds to construct words. Learners acquire up to 44 phonemes and their related graphemes. They recognise each grapheme, and then sound out each phoneme in a word, building up the sounds together through blending, in order to pronounce the word phonetically. Analytic phonics involves whole-to-part learning, which is the analysis of whole words to detect phonetic or orthographic (spelling) patterns, then splitting them into smaller parts to help with decoding (Davies & Ritchie, 2006:9).

3.8.1.3 United States of America

The intervention programmes for learners with dyslexia that are operational in USA encompass the Davis Dyslexia Correction Programme, Open Court Reading and Reading Mastery Plus.

The **Davis Dyslexia Correction programme** was developed by Ronald Davis in the 1980s. In 1995, the Davis Dyslexia Association International was established. Ronald Davis primarily developed the programme to overcome his own learning difficulties. He presented it as a two-sided condition, the negative that produces difficulties in learning, especially in reading and language and the positive that introduces a different way of thinking, producing genius in many who have dyslexia (Dyslexia Foundation of New Zealand, 2008:4; Dawson & D'Souza, 2015:34).

Davis used a multi-sensory approach to help learners with dyslexia to develop a "mind's eye" and master the symbols that had to be read (Paul & Florian, 2004:19). Learners

mould letters out of clay, put them in order and learn to say the alphabet forward and backwards. Furthermore, they moulded the letters of words and objects that represented those words. When it came to abstract trigger words, the individual moulded a representation of that word. The Davis Dyslexia Correction Programme helps an individual to discover his/her innate gift, and to apply it to the learning difficulty (Marshall, 2008:14). In this way, the blockages to effective learning are removed. Learners are shown how to clear up confusions regarding letters, numbers, words and language symbols and are aided in the process by the use of clay.

The **Open Court Reading Programme** is a research-based programme that is funded by the NCLB Act. This programme recognises that if learners are to read with fluency and comprehension, they need explicit, systematic-skills instruction and rich experiences with authentic literature (Borman, Dowling & Schneck, 2000:390). The instruction's main aim is to teach learners to read through a well-designed, systematic programme, balancing phonics and literature (Slavin, Lake, Cheung & Davis, 2009:16).

The Open Court Reading programme has several discernable characteristics; included is its ability to build the needed ground for reading. It basically sets the foundation for reading. Learners are engaged in a quest to construct meaning from the text or the reading material. They become active players in the process which eventually aids understanding. The reading programme infuses writing as part of learning and individual communication while the teachers are also provided with tools to teach (Slavin *et al.,* 2009:16).

The programme is divided into three parts for administrative purposes. These involve, preparing to read, reading and responding, as well as integrating the curriculum. The initial lesson is concerned with the ability to decode information and master skills of building words in the reading process. Once the learner has acquired skills of building words and decoding messages, the reading and responding processes resume. The emphasis is to comprehend or understand texts as learners engage in reading. The final part involves learners in the writing process. The programme enables learners to develop

essential language art skills. They are also encouraged to use independent work time to read, write and understand written texts. Finally, the individual needs of each learner are taken into account through re-teaching selected concepts.

Reading Mastery Plus is a core programme which utilises the direct Instruction approach (Schiefer *et al.,* 2002:8). It is particularly appropriate for learners who need additional support, such as those with low language development, or those traditionally identified as at risk of learning disabilities (Eppley, 2011:1).

Reading Mastery Plus gives learners the clear, explicit instruction and guidance they need in order to master the fundamentals of reading. This structured approach gradually diminishes as learners learn key skills and strategies, helping them to become more independent learners (Stockard, 2011:2). The concepts and strategies are identified, carefully sequenced according to their complexity, developed to mastery, and purposefully connected with authentic learning exercises (US Department of Education, 2013:1).

In order to maximise the amount of learning that takes place in the classroom, the programme identifies necessary skills and strategies and organises them in a logical way, which reflects their relationships. The skills and strategies are introduced through clear instruction with the chosen examples provided in the written down lesson plans. Guided practice is provided to learners to aid their grasp of the concepts of concern. Constructive feedback is offered to report on the performance of learners, and this takes place through cumulative assessment (Stockard, 2011:2). The involvement of learners is considered essential in the process. The programme also integrates tools, procedures and strategies to find out what learners know, their levels of knowledge and what they are capable of doing. Learners tend to develop confidence through an ability to independently employ the learnt skills. This further cultivates enthusiasm to read (Mart, 2011:2).

3.8.2 Developing Countries

This section discusses the intervention programmes that are implemented to enhance the academic performance of learners with dyslexia. Three countries focused upon, outside Zimbabwe are Malawi, Uganda and South Africa.

3.8.2.1 Malawi

The programmes to be given attention in Malawi to improve the performance of learners with dyslexia in mainstream classes include, the Literacy Boost Programme, Literacy Across the Curriculum (LAC) Programme and Early Grade Reading Programme (EGRA).

Literacy Boost uses assessments to identify gaps in the five core reading skills which include letter knowledge, phonemic awareness, vocabulary, reading fluency and comprehension (Trudell, Dowd, Piper & Bloch, 2012:9). It also trains teachers to teach the national curriculum with an emphasis on these skills and mobilises communities for reading action. Core to Literacy Boost is the Save the Children's initiative. The notion behind the programme is that more learners will master reading with comprehension, if teacher training, materials and opportunities to practice are combined with the use of reading skills in a daily life that elicits both motivation and enjoyment. This programme begins with a baseline assessment of a learner's reading skills, backgrounds and literacy environments. Literacy Boost is a system of effective and iterative response to learning challenges, intended to ensure learners gain critical skills essential for sustainable personal and national development (Trudell *et al.,* 2012:9).

The **LAC** programme adopted the "Reading Through Writing" (RTW) approach to the teaching of literacy. The RTW approach is grounded on the premise that reading and writing are the same cognitive processes (Chiuye, 2009:11). Emerging from this conceptualization, the RTW approach embraces the phonics method of teaching reading based on the premise that a word is segregated into its parts, that is, syllables first. LAC uses a skills-based approach by teaching the parts-to-the-whole letters and syllables before teaching the whole word. Learners first learn literacy in their home language and

then transfer the skills when learning other languages. Learner centeredness and recognition of learners' eagerness to learning are the bases of the LAC programme. The programme purports to facilitate the learning process by engaging learners in meaningful contexts, from their lived experiences (Chiuye, 2009:11).

EGRA is another programme designed to improve the reading performance of Standard A, Grade 1–3 learners (Pouezevara, Costello & Banda, 2013:2). EGRA has developed a Disability Education Resource Guide, which serves as a centralised data collection and dissemination resource. The guide also links health and education programmes to strengthen referral systems and enhance awareness of specialised services available, to children with disabilities in Malawi. During training workshops, SNE teachers train and provide practical guidance to mainstream teachers. Malawi's EGRA has also held two national Braille literacy competitions- the Braille Cups.

3.8.2.2 Uganda

The country has intervention programmes which are useful in assisting learners with dyslexia to master the content of learning. These include the School Health and Reading Programme, Reading to Learn Programme and Breakthrough to literacy.

As part of its overall efforts to improve the reading ability of more than 2 million Ugandan children, the U.S. Agency for International Development (USAID) has funded **Uganda School Health and Reading Programme** (SHRP). The initiative identifies and implements strategies to improve reading abilities of learners with disabilities (UNICEF, 2016:3). Early grades' teachers' guides provide special assistance in developing literacy skills of learners with special learning needs. Key areas that the programme is supporting include, specialised skills-training for hearing, visual and intellectual impairment, dyslexia, guidance and counselling (UNICEF, 2016:3).

The **Reading to Learn** (RtL) programme was first implemented in Australia approximately ten years ago, with the goal of increasing the reading levels of those performing behind their grade levels, especially the Aboriginal population. Since its

inception, it has been expanded to Afghanistan, Kenya, Uganda and Sweden. The model was designed to support learners whose mother tongues have a strong oral tradition and very limited exposure to written language (Lucas, McEwan, Ngware & Oketch, 2012:3). The RtL design in Kenya and Uganda includes three components: teacher preparedness and practice, school leadership and classroom learning environments. Early-grade teachers were centrally trained, within each country on a learner-centred, systematic, and social-interactive, focused and instructional approach that emphasised the use of local materials. The intervention applies a 5-step "scaffolding" approach: (1) preparation before reading, when the teacher tells the learners the story;(2) reading the story; (3) sentence making; (4) spelling and phonics, finally (5) writing. The approach is a balanced approach to the teaching of reading, with elements that include look-say, whole language, and phonics methodology.

Breakthrough to Literacy (BTL) was originally developed to teach functional literacy skills to learners in their first language then later, the second language may be introduced (Mubanga, 2012:5). It is an approach that brings into the classroom, language that learners are already experiencing at home. Through this approach, learners are taught to recognise familiar spoken words when translated into a written code, and to generate written language (Lentshabo, 2002:1). The learning environment in a BTL classroom is organised into social and ability groups which are required to perform tasks interactively in a relaxed and highly stimulating atmosphere.

BTL in Uganda aims to develop literacy functional skills in young learners, such that 85% of girls and boys are able to read and write in a local language by end of P3. It also promotes other important features of the Uganda education landscape; such as establishing learner- friendly learning environments in all lower primary schools and learning centres and ensuring that learners demonstrate proficiency in at least 3 selected life skills by end of P3 (Lentshabo, 2002:2).

3.8.2.3 South Africa

In South Africa, the **National Reading Strategy** (NRS), PREP/PASS, Reading Enhancement Programme and Whole Language Remediation Programme are some of the strategies used to improve the academic performance of learners.

The NRS launched in 2008, was intended to promote reading across the curriculum, inculcate a reading culture amongst learners and teachers by providing support and resources (DoE, 2008:5). The NRS is inclusive because it aims to reach all learners, including those who experience barriers to learning, whether they are in mainstream or special schools. A common approach does not mean that all learners must be taught in the same way and at the same time. Effective education differentiates between learners and respects their unique capabilities. Learning to read occurs not only in the Foundation Phase at school but starts from birth, therefore, learners should be stimulated from an early age (Hlalethwa, 2013:5).

The NRS programme is based on the PASS theory of Intelligence (Planning, Attention, Simultaneous and Successive Processing). PREP was designed to improve simultaneous and successive processing that underlie reading, while at the same time avoiding the direct teaching of word-reading skills (Mahapatra, 2016:146). The programme proposes that cognition is organised in three systems and four processes.

The first system is the planning system, which involves executive functions responsible for controlling and organising behaviour, searching, goal-setting, selecting, constructing and executing plans or strategies, monitoring performance, evaluating the course of action and decision-making. The second system is the attention system, which is responsible for maintaining arousal levels and alertness and ensuring focus on relevant stimuli to the exclusion of irrelevant ones. The third system is the information processing system which employs simultaneous and successive processing to encode, transform and retain information. Simultaneous processing is engaged when the relationship between items and their integration into whole units of information is required.

Successive processing, on the other hand, is required for organizing separate items in a sequence (Mahapatra, 2016:2).

The four processes can also occur at three levels, that is, perceptual, memory and conceptual varying from one another in terms of the level of abstraction they involve and maintain a hierarchy with perception at the bottom, conceptualization at the top and memory, in-between (Mahapatra, 2016:147). The four processes are also carried out in different blocks or areas of the brain. Thus, attention- arousal is located in Block 1 that involves brainstem, the diencephalon and the medial regions of the cortex. Coding is the function of Block 2 and includes parietal, occipital and temporal lobes. Planning is carried out in Block 3, involving the frontal, especially, the pre-frontal areas of the cortex. The PASS processes, however, operate on a knowledge base that includes one's past learning experiences, emotions, motivation as well as the performance (behaviour) which emerges out of it.

Whole language is an approach to, or attitude toward learning that sees language as a whole entity, therefore, writing, speaking, reading, and listening should be integrated when learning (Moghadam & Adel, 2011:1643). Whole language activities in the elementary language classroom include individual and small group reading and writing activities, ungraded dialogue journals, writing portfolios, writing conferences, and student-made books. The Whole Language remediation programme enables individualisation and development of language and reading skills through experience. As such, it can be used to address a variety of special needs and is adaptable to any number of learning situations.

3.8.2.4 Zimbabwe

Zimbabwean schools engage strategies that are intended to enhance the academic mastery of learners with dyslexia in mainstream schools. The intervention programmes that are in place include, the clinical remedial programme, Performance Lag Address Programme (PLAP) and Early Reading Initiative (ERI).

Mukoko and Mdlongwa (2014:44), explain **a clinical remedial programme** as a specialised remedial instruction adjusted to the needs of a learner who does not perform satisfactorily with regular reading instruction and is also an intensive, specialised reading instruction for learners reading considerably below expectancy. The Chief Education Officer's (CEO) Circular Minute Number 12 of 1987 indicates that the remedial education programme was introduced in all primary schools in Zimbabwe in 1982, in Mathematics and reading (Mutswanga & Mpezeni, 2015:99; Muchemwa, 2014:194; Kaputa, 2016:108).

Justifying the remedial programme, the CEO Circular Minute Number 12 of 1987 notes that there are large numbers of learners who cannot read and calculate at Grade 7 level, therefore, early detection and assistance is required if learners are to be given a chance to develop their potentials and also if the large sums of money spent on education are to be cost effective. In this regard, Selvarajan and Asanthagumar (2012:3) aver that, remedial teaching acts as a safety valve for the learners who are not attaining the expected level of achievement and involves diagnosis of specific difficulties, provides suitable remedial measures and provides support to prevent re-occurring of these difficulties in future.

Learners who are eligible to participate in the programme are selected through specially designed standardised diagnostic tests, supplied as appendices to the CEO Minute number 12 of 1987 at the end of their third year in the primary school. The English test is divided into four sections, covering synonyms, use of phrases, use of prepositions and a comprehension passage involving punctuation and the use of tenses. A department of SPS/ SNE was established within the Ministry of Education and Culture to monitor and assist with matters pertaining to remedial education (Ndebele, 2014:496). The third year in the primary school in Zimbabwe is the transitional year from the infant to junior grades. It is during this year that main concepts in the junior grades are introduced and once learners do not perform satisfactorily during this stage, then remedial work must be provided to avoid total failure or grade repetitions.

PLAP is a form of remediation which seeks to identify ways of improving learners' performance (Mukoko & Mdlongwa, 2014:42). The difference between PLAP and usual remediation is that, firstly, the usual remediation procedure works on the learners' weakness within the learners' levels of study. The PLAP initiative is based on the concept that learners' weaknesses developed from concepts missed at lower levels thus affecting their present performance. Secondly, under the usual remediation, a one-to-one situation is expected between teacher and the student, whereas for PLAP the under-performing learners are handled as a group consisting of learners with common identified challenges.

The PLAP programme also involves re-visiting the syllabus and targeting concepts that have been persistently difficult for learners to internalise. The goal is to assess learners, then offer support beginning from their last point of success (Kurebwa & Mabhanda, 2015:26). The programme emphasises grouping learners according to their academic levels and providing each group with instruction appropriate to its level of aptitude. Learners remain within their classrooms for the whole school day. In other words, there are not withdrawn for service provision but are assisted within the usual teaching-learning process.

The teacher uses differentiated instruction and materials for within-class groups as this approach is important for the success of within-class groups (Mukoko & Mdlongwa, 2014:44). Differentiation can be defined as an approach to teaching in which teachers proactively modify curricula, teaching methods, resources, learning activities, and student materials to address the diverse needs of individual learners and small groups of learners to maximize the opportunity of each student in a classroom. Thus, PLAP leaves teachers with the need to address learner variance in the regular classroom. This is in contrast to organizational arrangement that has often served to relieve the classroom teacher of the primary responsibility for attending to the needs of learners who diverge markedly from the norm (Kurebwa & Mabhanda, 2015:27). PLAP encourages the teachers to adjust the curriculum and materials so that each student has equal access to high quality instruction.

ERI is a programme which seeks to assist learners with reading challenges at infant level. It is offered on a full inclusion basis. According to the Ministry of Primary and Secondary Education Teacher's Module (2015:3), ERI was considered for implementation in Zimbabwe in 2015 after a number of researchers discovered that the teaching of reading had declined over the years, hence the need to offer intervention from early grades. In relation to this, Falth (2013:11) observes that when intervention is timely for young learners, a downward trajectory related to the acquisition of competent reading skills may be altered. This results in reduction in the number of learners who may require more intensive special needs education, in the later years.

3.9 CRUCIAL FACTORS IN THE IMPLEMENTATION OF INTERVENTION PROGRAMMES FOR LEARNERS WITH DYSLEXIA

This section discusses the crucial factors that are important in the implementation of intervention programmes for learners with dyslexia. Factors include, policies, teachers' understanding of dyslexia, attitudes of stakeholders towards learners with dyslexia, assessment and evaluation of learners with dyslexia, skills and competencies of teachers, teaching instruction, learning styles and preferences of learners, continuous professional development of teachers, provision of support resources, counselling, motivation and supervision of teachers.

3.9.1 Availability of Policies

In education, as in other fields of human endeavour, every official action of an organisation must have a backing or a basis. The formulation of an educational policy sets the stage for implementation which is perhaps, the most important aspect of planning. Planning is usually an action which succeeds policy formulation but precedes implementation. Unfortunately, educational policies and goal attainment have been irreconcilable due to implementation constraints (Hunt, 2009:20). The formulation and implementation of policies that give guidance on activities executed in the education system is high on the agenda of governments across the world (Bell & Stevenson,

2008:58). The experience of each individual learner is therefore decisively shaped by the wider policy environment.

The policies on inclusive education and programmes for learners with disabilities, inclusive of those with dyslexia crafted in different countries and communities are rooted in international and national legal frameworks. In relation to this, the UNESCO Constitution (1945) was ratified to mandate full and equal opportunities to education for all (Calderbank, 2009:9). This legislation received added impetus from the United Nations Universal Declaration of Human Rights (1948:6) and the Convention on the Rights of the Child (1990: Article 20) which proclaimed the right of every human being to free and compulsory education "without distinction". The 1990 World Conference on Education for All (Jomtien) also set the goal of achieving universal primary education for learners in a flexible manner, while responding to their needs, culture and circumstances. This convention was followed closely by the 1993 Standard rules on the equalisation of opportunities for persons with disabilities. While Special Education was to be provided in the mainstream education system, equal educational opportunities were demanded at primary education through to tertiary level for children, youths and adults with disabilities. From these international policies, individual countries formulated their own policies which were most relevant to their communities.

In the international arena, governments have continued to craft policies to develop and maintain ways to assist learners with dyslexia. New Zealand adopted a thrust to decentralise special education services (Powell, 2012:6). The Special Education 2000 is a framework that intends to tackle a “continuum of needs” in regard to a wide range of learners, through providing a range of services and specific funding. The 2001 New Zealand Disability Strategy reflects the government’s commitment to ensure that learners with disabilities are not denied access to their local regular schools and that they enjoy equal access to resources (Powell, 2012:6). Marshall (2008:9) indicates that funding was targeted at generic intervention programmes to help increase the literacy skills of low-achieving learners. Jorgensen and Hoffmann (2003:4) state that, in America the No Child Left Behind’s Act (NCLB) of 2001 was crafted in an effort to meet the needs of

disadvantaged learners. The Act focuses on, among other crucial issues, accountability for results, increased choices for parents of learners from disadvantaged backgrounds and effective teaching methods with emphasis on the reading of English. The NCLB Act affects all programmes under the Elementary and Secondary Education Act (ESEA).

In the UK, dyslexia has been a recognised disability for many years and is referred to in the Special Educational Needs Code of Practice (DfES, 2001, paragraphs 7:55 and 7:58). This code of practice provides advice on the execution of duties which include identifying, assessing and providing suitable intervention for learners with special educational needs. According to Garbe (2016:5), the inclusion and provision of intervention programmes for learners with dyslexia in mainstream schools of Norway are mainly guided by the Education Act of 1998, last amended in 2013. This mandates that education has to be adapted to the abilities and aptitudes of the individual learner. Inclusive education is a fundamental and universal principle in primary and secondary education. Learners with dyslexia are entitled to extended time during exams, the right to use computers during the lessons, the provision of necessary helping programmes and audiobooks. In some cases they are provided with help in the form of special teaching organised at their schools (Szaszkiewicz, 2013:4).

The Constitution of the Republic of Uganda (1995:41) provides the basis for the enactment of laws that are meant to address the concerns of all learners with special needs, inclusive of those with dyslexia. They comprise The Children's Statute of 1996, The Uganda Communications Act of 1997 and The Universal Primary Education Act of 1997. These instruments basically demand early assessment of learners with disabilities, for appropriate intervention as well as the development of techniques and technologies to aid their communications. According to Chirwa (2011:5), the government of Zambia adopted a number of policies and legal frameworks to enhance the participation of learners with special needs in diverse social activities. The emphasis is for learners to read and write correctly in a Zambian language and in English. In South Africa, the White Paper 6 commits the state to the achievement of equal and non-discriminatory participation of all learners in the education system. The education system should

accommodate the range of learning needs through instructional and curriculum transformation (Dalton, McKenzie & Kahonde, 2012:3). It also stresses differentiated curriculum delivery.

In Zimbabwe, the advent of independence in 1980 brought with it educational policy changes and reforms. The policy on education promoted growth with equity (Samkange, 2013:2). According to Mutamiswa, Mapepa and Sixpence (2004:13), the Education Act of 1987, as amended in 1996 and 2006, is the main law that gives guide to all activities in mainstream and Special Needs Education. A number of educational circulars were then put in place to complement this law and one of these is the Chief Education's Circular Minute Number 12 of 1987. The Disabled Persons Act (1996:1) states that learners with disabilities should be afforded support services in their education and social development. This is also enshrined in the Constitution of Zimbabwe, Amendment (Number 20) Act 2013.

3.9.2 Assessment of Learners with Dyslexia

One of the first aspects to consider when implementing intervention programmes for learners with dyslexia is assessment. The IDA (2008:9) states that an assessment procedure for learners with dyslexia must be conducted before any service provision. Evans (2013:71) views assessment as the whole process of collecting information which is relevant to the education of a learner in order to make informed decisions.

Assessment assists interested stakeholders to first identify learners with disabilities in a mainstream population. It further helps to verify the type and severity of disabilities that individual learners have. Gilakjani (2012:106) also notes that the preferred learning styles of learners with special needs are identified through an assessment procedure. Assessment also facilitates placement of a learner in a specific educational programme for intervention purposes (Paul & Norbury, 2012:22). Assessment results may also suggest the need to make referrals for further assistance, if needs be. Above all, assessment is done so as to evaluate the effectiveness of a programme or treatment.

The IDA (2008:10) has identified components that should be considered for an effective assessment and evaluation process for learners with dyslexia; intelligence is one of them. Singer (2008:318) suggests that a diagnosis of dyslexia should include a formal testing of the intellectual capacity of the learners, referred to as the 'intelligent quotient' (IQ). The process tests language-based skills, such as rapid naming of items, phonemic awareness and word identification. Learners also need to be tested in oral language skills, which relate to the ability to listen well, understand speech, as well as convey ideas through the spoken word. Low level language skills, such as sound recognition and high level ones, as in expressing thought, in a written form constitute oral skills.

Word recognition is another critical part of assessment and involves an ability to read printed words. It is also known as 'word identification' or 'word reading'. This concept pertains to accuracy and fluency of reading. Some learners with dyslexia can read accurately but at a very slow speed. The two aspects of accuracy and speed in reading words are pivotal in understanding that which is being read (Falth, 2013:11). During the assessment, the presented words have to be decoded, hence, involves the capacity to read unfamiliar words and derive sense from them through the system of spelling patterns of chunking. In testing the ability to decode, learners are exposed to nonsense words that force them to come up with fresh interpretations instead of depending on the memory of words which they already know (Singer, 2008:318).

Spelling also plays an important part in assessment for it tests the ability of the learner to spell words from memory. Inability to spell subsequently hinders word identification and pronunciation. Inability to spell words is perceived as the most deep-seated weakness among learners with dyslexia and quite challenging to remedy (IDA, 2008:11). Assessment also has to take cognisance of the auditory processing skill that learners utilise to decode the speech of adults. This is a phonological process, which is a low-level language skill that does not involve the decoding of meaning. It is the 'sound system' of language. Learners with dyslexia often have difficulty identifying, pronouncing or recalling sounds (Kumburu, 2011:32).

An effective assessment and evaluation of learners with dyslexia should take into account the automaticity or fluency skills of learners as individuals with dyslexia are normally slow in processing information. Processing information relates to an ability of an individual to receive, store and retrieve information. The speed of naming letters and words is one of the best predictors of reading ability or problems (Falth, 2013:11). Learners with dyslexia tend to get lower scores on reading comprehension tests than on listening comprehension due to the difficulty they encounter in decoding printed words. Kumburu (2011:32) posits that learners with reading problems such as dyslexia exhibit poor development of vocabulary as they do not often read well. In addition, their difficulty with memory and ability to learn the meaning of words affects their vocabulary acquisition.

Wooley (2010:89) contends that a multi-disciplinary approach must be considered when conducting assessment for learners with dyslexia. A multi-disciplinary team may be comprised of parents or caregivers of a learner, teachers, school heads or principals, educational psychologists, speech therapists, medical doctors and other relevant stakeholders (The National Special Needs Education Policy Framework, 2009:30). Parents or caregivers would give background information which will form the basis of other activities that will be conducted. Teachers may provide information based on the learner's achievement during class activities and other peculiar behaviours observed. Educational psychologists administer standardised tests that verify cognitive and language skills of learners. Medical practitioners may also assess suspected brain damage or dysfunction in some learners with dyslexia. In relation to this, Wooley (2010: 89) suggests that, multi-disciplinary teams should have access to on-going professional development of team members so that they are enlightened of their distinct roles and the value of team work in the education of learners with dyslexia.

Gutuza and Mapolisa (2015:2) advise that, assessment tools used for individuals with special needs must be relevant to the needs of learners in a particular environment. Hayes (2010:40) concurs that these instruments must be sensitive to the culture of those who are eligible for assessment. For instance, the instruments used in developed

countries to assess learners with dyslexia may not be suitable for those in some developing countries. In addition, assessment tools must be user-friendly and have a capacity to detect the specific learning challenge that a learner has. This may suggest a suitable programme for a particular individual. Wooley (2010:88) further reveals that several researchers have cautioned that some tests are not broad enough and as such do not consider difficulties associated with teaching and preferred individual learning styles.

Hayes (2010:43) advises that assessment should be an on-going process. When a learner has been diagnosed, for example, with auditory dyslexia, the next stage is the development of a suitable individualised educational programme for that particular learner. Every stage taken during programme implementation must be assessed, thus Hoskins (2015:15) posits that assessment should be repeated with the aim of evaluating the effectiveness of the entire programme on the learners' academic development. Assessment results may further suggest a change of an intervention programme, for the benefit of a learner. This often happens when this service fails to bring a positive outcome.

3.9.3 Provision of Early Intervention

After assessment and identification of learners' specific problems, suitable intervention should follow (Coyne, Zipoli, & Ruby, 2006:166). For learners with dyslexia, it may be for prevention purposes or aimed at solving the already existing problem (Wooley, 2010:82). The latter may be achieved through introducing remedial reading activities at an early stage. Coyne *et al.* (2006:166) add that it is easier to prevent reading difficulties in the early grades than to try and remediate them after they have become entrenched and intractable. This implies solving the problem soon after realising it to avoid complications.

Torgesen, Alexander, Wagner, Rashotte, Voeller and Conway (2001) in their study found, that programmes that are aimed at reducing the impact of reading difficulties in elementary grades, if well implemented, can be effective (Chuunga, 2013:18). Similarly,

another empirical investigation that focused on examining the effects of reading interventions among Grade 4 learners concluded that, intervention strategies implemented when learners with reading difficulties are in higher grades, have less impact. This underscores the importance of early detection of a problem and early intervention (Snowling *et al.,* 2011:158).

Early intervention for reading difficulties also makes a significant difference in the long-term reading abilities of learners identified to be dyslexic. Without early intervention, the "reading gap" between struggling readers and their peers without a reading challenge continues to widen over time. Research has also established that learners who are reading below grade-level by third grade, rarely, "catch-up" in later grades (Chuunga, 2013:18). Although learners who are behind with their reading in third grade can catch up with enough intensive intervention, it takes significantly longer if remediation begins after second grade. Academic work also becomes difficult and time-consuming when reading skills are below grade level, because third grade marks the transition from "learning to read" to "reading to learn". In addition, many learners with dyslexia suffer reduced self-esteem and lowered self-perception when they struggle with reading but see their peers acquiring the same skills with ease.

3.9.4 Teachers' Awareness and Understanding of Dyslexia

To ensure appropriate service provision or intervention for learners with dyslexia, teachers' knowledge and understanding of dyslexia, as well as its impact on academic performance is paramount (Rose, 2009:15; Kamala & Ramganesh, 2013:169). Teachers should be able to differentiate dyslexia from other specific learning disabilities. They are also expected to know the signs and symptoms of dyslexia as this will enhance their ability to identify learners with this condition in their classes. Recent intervention studies, according to Moats (2009:380), highlight the need for multi-component interventions that require teacher expertise, across several content domains, including phonology, phoneme-grapheme correspondence, morphology, semantic organisation, syntax, discourse and pragmatics.

It is also crucial for teachers to further recognise the type and severity of dyslexia that individual learners have and then design intervention programmes that match these needs (Wooley, 2010:89). Those with visual dyslexia therefore will need a different programme from those with mixed dyslexia. Awareness of the severity of a learner's reading disorders may also assist a teacher to place a learner in a specific programme or suggest more advanced services that may be relevant and effective.

Another significant aspect that a teacher has to be aware of is the onset of a reading disorder in an individual. The knowledge of teachers about causal factors and worsening conditions of a disability assists in making informed decisions (Lopes & Crenitte, 2012:1214). In this regard, they should have basic knowledge of the cognitive and biological causes of dyslexia as these may contribute towards the designing of relevant treatment. The cognitive causes of dyslexia that teachers should know include visual, auditory, as well as language-based deficits. On the other hand, the biological causes, such as brain structure or brain and cerebellum dysfunction, in some instances, may require both medical and educational intervention.

It is also crucial for mainstream teachers to be aware of the environmental factors that may worsen the condition of being dyslexic so that they may provide a least restrictive learning environment for such individuals. For instance, if there is a need to provide more relevant reading material for the benefit of a particular learner with dyslexia; that must be noted by the teacher. Knudsen (2012:13) asserts that, what is key for learners with dyslexia is meeting teachers who seem to understand what it is like to be dyslexic and who can explain the theory behind the difficulties that they experience. A lack of awareness means that intervention is delayed or never occurs.

3.9.5 Teachers' Skills and Competencies

Apart from knowing the signs, causes and types of dyslexia, teachers are expected to have relevant teaching skills that necessitate proper handling of learners with dyslexia (Moats, 2010:5). Teachers need to have an in-depth knowledge in the basic concepts of

language and be able to impart this knowledge in a multisensory, explicit and structured programme that is positively associated with a learner's reading achievement (Washburn & Mulcahy, 2014:329). The European Commission (2011:79) provides information on a number of studies which highlight the links between teaching competencies and learners' reading achievement. These include, research whose primary purpose is to investigate widely, the educational factors which have an impact on learner outcomes. The European Commission (2011:84) reveals, for example, that, Ferguson (1991) explored the impact of teaching quality, as measured by teachers' pedagogical skills and subject knowledge, in a state-licensing examination. He discovered that, it was a very powerful explanatory factor for the variance in learner achievement at various years of primary and secondary education.

In South Africa, the DoE (2008:8) explains lack of teacher competency as a specific challenge for implementing its NRS. Teachers in South Africa may have an under-developed understanding of how to teach literacy, especially reading and writing. They may not know how to teach reading or may know only one method, hence, they cannot adapt to the instructional needs of individual learners. As a result of misunderstanding the role of the teacher in developing reading skills for C2005 and the subsequent RNCS, many teachers mistakenly thought that they did not have to actively teach reading but merely had to facilitate the process, as learners would teach themselves to read (DoE, 2008:8).

The IDA (2007:5) establishes that effective teachers of reading are knowledgeable, strategic, adaptive, and reflective; they understand the science of reading and how to use engaging, plus motivating learning strategies. Similarly, according to the National Reading Panel (NRP) (2000:15).

> *"Teaching reading comprehension strategies to learners at all grade levels is complex. Teachers not only must have a firm grasp of the content presented in text, but also must have substantial knowledge of the strategies themselves, of which strategies are most effective for different learners and types of content and of how best to teach and model strategy use".*

Beck and Condy (2017:2) reveals that, effective teachers of reading have skills in helping readers make connections between the texts they read and their personal lives and experiences. These teachers also provide learners with practice reading materials at an appropriate level of difficulty while monitoring learner progress in reading by administering informal assessments.

3.9.6 Teacher Expectations and Attitudes towards Learners with Dyslexia

Other factors that have an impact on the implementation of intervention programmes for learners with dyslexia are the teachers' expectations and attitudes. Teacher expectations can be defined as their judgments about individual learners regarding their academic potential. Biased teacher perceptions of learners can affect how they interact and teach them, which may then affect their academic achievements (Klehm, 2013:8). This may also hold for learners diagnosed as having dyslexia. Differences in the expectations of teachers, for learners with dyslexia versus those without learning disabilities can certainly be explained by accurate perception of the relatively lower levels of performance displayed by learners with dyslexia in reading and spelling (Klehm, 2013:8).

Teachers' attitudes towards their learners' learning disabilities also affect the way learners see themselves and consequently this can affect their academic and personal success (Hallam, 2009:27; Chitsa & Mpofu, 2016:64). This is known as the 'snowball effect'. In this situation, a learner may at first only experience shame due to low test scores, but eventually suffer from depression and anxiety due to a series of failures. It has long been established that teacher attitude and expectation can have lasting consequences, particularly, in the case of a classroom teacher who holds a less-than-positive attitude towards learners with a disability (Hallam, 2009:27). In addition, the teacher's attitudes may further influence how other learners view and perceive the capacities of those with dyslexia.

Khader (2012:74) similarly, notes a co-relation between teacher beliefs, knowledge and attitude. Teachers with a high degree of self-efficacy are consistently found to be more open to new ideas and more willing to experiment with new methods to meet the needs of their learners. This plays a crucial role in learners' educational experience and achievement. Research also suggests that when teachers have limited access to information, training or support, a sense of helplessness develops in them and this is likely to be transferred to the learner (Kerr, 2001:82). This, significantly affects the level of support teachers provide for learners with dyslexia.

3.9.7 Academic Instruction for Learners with Dyslexia

Another relevant issue that has to be considered in the implementation of intervention programmes for learners with dyslexia is the academic content and teaching methods that are employed to impart knowledge. The principles for effective intervention for such learners may include the following:

3.9.7.1 Multisensory Instruction

According to Moustafa and Ghani (2016:152), multi sensory instruction is also known as the Orton Gillingham approach because this social scientist was amongst the first to discover the benefits of teaching learners to employ all their senses in mastering reading concepts. Birsh (2011:19) concurs that multisensory instruction utilises all the learning pathways in the brain simultaneously in order to enhance memory and learning. These include the visual, auditory as well as the kinaesthetic or tactile senses. Visual pathways rely on the sense of sight, the auditory on hearing while kinaesthetic hinges on the feelings and touch (Moats & Dakin, 2008:58). In the auditory method, the learner is trained to identify the auditory sounds and gradually match letters with specific sounds. The visual method focuses on assisting the learner to identify specific letters from other letters and linking them to related sounds. Furthermore, in using the sense of touch, learners are encouraged to use their hands and fingers in writing the letters or drawing them in the air. Moustafa and Ghani (2016:152) urge that the physical engagement of touching the grapheme enables the learner to keep focused, while imprinting the shape

of the grapheme in the mind which will foster their ability to remember the sounds or the letters. This notion emphasises that,learners with dyslexia are able to learn better by remembering the letters if they are allowed to see, pronounce, and write them.

3.9.7.2 Systematic and cumulative instruction

Systematic instruction means breaking down complex skills into smaller, manageable "chunks" of learning and carefully considering how to best teach these discrete pieces to achieve the overall learning goal (Vaughn, Wanzek, Murray & Roberts, 2012:18). This type of instruction also includes sequencing learning chunks from easy to more difficult and providing scaffolding, or temporary supports, to control the level of difficulty throughout the learning process. The most common and predictable skills and concepts are taught first so that learners may acquire skills with the highest utility first. In teaching learners with dyslexia, teachers may break down a complex task, like reading a comprehension passage, into multiple steps or processes with manageable learning chunks and teach each chunk to mastery before bringing together the entire process. For example, based on 38 studies, the NRP (2000:15) found that systematic phonics instruction that progressed from smaller to larger units and sequenced from easy to difficult sounds and word types was more effective in increasing word reading than a less systematic instruction. Similarly,cumulative instruction suggests that the aspects of a new lesson should be based on concepts previously learnt. This implies that, in order to strengthen or enhance learners' memory of content taught, the link between what they already know and what they are expected to master should be clearly elaborated (Birsh, 2011:19).

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3.9.7.3 Explicit instruction

Explicit instruction means overtly teaching the steps or processes needed to understand or complete a task. Explicit instruction includes teacher presentation of new material, teacher modeling and step-by-step instruction to demonstrate what is expected so that learners can accomplish a learning task (Mather & Wendling, 2012:326). Research has associated interventions incorporating explicit instruction with improved outcomes for learners with learning difficulties for both basic skills and high-level concepts (Vaughn *et*

al., 2012:17). Explicit instruction is warranted during initial instruction of new content and when teaching learners to generalise known-content to new situations (Fuchs *et al.,* 2003:160). This type of instruction ensures the explanation and demonstration, by the teacher, of one language concept at a time, rather than learners being left to discover concepts through incidental encounters with information; poor readers do not learn that print represents speech simply from exposure to books or print (Moats & Dakin, 2008:58).

3.9.7.4 Diagnostic teaching to automaticity

Diagnostic teaching is knowledge of prescriptive instruction that will meet individual learner needs of language and print concepts. This type of approach is sometimes referred to as 'individualised' instruction. The relevant teaching plan drawn should be based on methodical, continual assessment of the retention of the learner and application of skills (Birsh, 2011:19). Teacher knowledge is essential for guiding the content and providing relevant instruction, for the individual learner (Moats & Dakin, 2008:58). The content presented must be mastered to the degree of automaticity. When learners make errors during the learning process, the teacher should analyse the cause of those errors then design suitable instruction to help increase the learners' skill and improve their accuracy. In this way, the teacher ensures that learners master presented content to automaticity, which is crucial in reading for comprehension and expression. According to Berninger and Wolf (2009:70), a reading skill which has become automatic is normally performed in an efficient way. This means thatthe learner achieves direct access to a word form without conscious awareness.

3.9.7.5 Differentiated instruction

According to Gentry, Sallie and Sanders (2013:3), differentiated instruction is a flexible approach to teaching in which a teacher plans and carries out varied approaches to address content, learning processes, learning style, practical procedures, presentation strategies and assessment tools. It results in a more personal, proactive learning environment, making possible the inclusion of a wide variety of learners. When teachers differentiate instruction, they provide learners with the structures to maximise strengths, work around weaknesses and experience timely remediation. This enables learners to

take advantage of effective learning strategies, as they begin to understand their own personal learning styles, interests and needs resulting in increased learner motivation. Reid (2009:22) concurs that differentiation is about making school work and the texts used in class more accessible to learners with dyslexia.

3.9.7.6 Synthetic and analytic instruction

Synthetic instruction is availing to learners, the components of any alphabetic language or morphemes (Davies & Ritchie, 2006:9). The focus is to teach the way in which parts of words function together to create a whole, for example, a base word and a derivative (Birsh, 2011:19). According to Henbest and Apel (2017:304), synthetic instruction means guiding learners to realise the link between individual letters and sounds. With synthetic phonics, learners are taught to segment sounds represented by each letter of a word and then gradually blend those sounds, which is, decoding. This means that, in using synthetic instruction, a learner may be required to isolate the sounds represented by each letter of a word, for example, ***CAT*** *to /k/ /ae/ /t/* and then combine them together to produce the whole word */kaet/.* Researchers in favor of synthetic instruction believe that, in learning to read, learners use grapheme–phoneme correspondences to decode words, and this facilitates storage of these words in memory and further prepares individuals to learn new, unfamiliar words (Birsh, 2011:19).

Analytic instruction begins by focusing on the whole-word form, such as a base word or a derivative. The teacher then proceeds to teach the way in which the whole word can be broken down into its component parts, therefore, there is focus on a base word, root, prefix and suffix (Birsh, 2011:19). This means that,in analytic phonics, the learner may be taught to manipulate the onset and rime of a word rather than their individual letters and sounds (Davies & Ritchie, 2006:9). Supporters of analytic phonics suggest that learners should make use of larger sub-units of words in their process of learning to read and this should be capitalised on in early reading instruction (Henbest & Apel, 2017:304). This further depicts a connection between learners' early understanding of rhymes and the relationship between the ability to manipulate rhymes and reading skills.

3.9.7.7 Learner-centred instruction

Moate and Cox (2015:382) posit that, learner-centred instruction emerged from the constructivist learning theory and represents a paradigm shift from traditional teacher-centred pedagogical practices. Proponents of the learner-centred approach view knowledge through lenses of social and relational processes and therefore prioritise the learners' individual ways of constructing personal knowledge and understanding rather than rote mastery of course content. According to Kasim (2014:202), learner-centred instruction focuses on the needs, interests, abilities and learning styles of the learner. It acknowledges the teacher as a facilitator of learning and values every learner's voice as central to their learning experience. This approach further helps to strengthen learner motivation, peer interaction, confidence, responsibility and active learning while reducing disruptive learner behaviour (Garretti, 2008:36).

3.9.8 Learning Styles and Preferences

In order to effectively cater for the needs of various learners with dyslexia, teachers must be aware of the individual's preferred learning styles. Learning styles relate to the way in which different learners acquire new knowledge. This has led to the development of labels, such as 'auditory learner', 'visual learner' and 'tactile or kinaesthetic learner' (Boneva & Mihoca, 2012:5). Other researchers have considered some possible influences on a person's learning style and suggested that these include personality, cognitive styles, temperaments, sensory processes and age. In addition, Gilakjani and Ahmad (2011:470) assert that, one of the most significant issues in learning is an individual's responsibility for his or her own learning.When learners take the responsibility of their own learning, they attribute meaning to the process of learning. Such learners further develop an understanding of their own form of learning style and become extremely satisfied with the environment they interact with. Learning styles are important for a number of reasons. However, there are three vital ones. First of all, individuals' learning styles vary because everyone is unique. Secondly, learning styles suggest the use of a wide range of methods in an effective way. Thirdly, important educational goals

can easily be achieved if the diversity of learners is recognised (Gilakjani & Ahmadi, 2011:470).

Gentry, Sallie & Sanders (2013:7) reveal that learning-style theorists, for learners with dyslexia, have devised a number of models of learning styles and ways of identifying them. Some models are related to brain functionalities while others are rooted in theories of personality or motivation. Some are developmental and follow Piaget in suggesting that style evolves from stage to stage throughout a learner's lifetime, in a bid to achieve maturity. Each model is accompanied by its own assessment methodology and with suggestions as to ways of implementing subsequent programmes. It is, however, generally accepted that learners with dyslexia benefit most from a multisensory approach, where information is simultaneously presented through several channels (Kamala, 2014:34). This approach enables weaker modalities to be supported by stronger ones in the acquisition of knowledge.

3.9.8.1 Visual Learners

Visual learners tend to think in pictures. So, while reading they usually create a mental picture of what is described in the text, thus, they do not pay much attention to the dialogue and may miss the meaning of some phrases, if they contain words that are difficult to visualise (Gilakjani & Ahmadi, 2011:469). That is the reason it is essential for a visual learner to have the educational material presented using such tools as maps, diagrams, charts and pictures.

Boneva and Mihoca (2012:12) suggest that visual learners might prefer to learn vocabulary by using visual imagery. This imagery involves the forming of associations between a picture and a word and is generally more effective than using words in isolation. They also argue that because the pictorial-verbal combination involves different parts of the brain, it is likely to provide greater cognitive power. Another suggestion is that learners could visualise a set of locations, such as the rooms in their house and could then associate each place with a particular word or expression and then

'take a mental walk from place to place'. This is likely to be effective for dyslexic learners, for whom visualisation is often an area of strength.

3.9.8.2 Auditory Learners

Auditory learners learn best by hearing information (Gilakjani & Ahmadi, 2011:470). They may have difficulties understanding a text if they read it, but if they listen to it, they will be able to capture more of the required detail. That is why these learners' results on listening comprehension tests are usually higher than the results they obtain on reading comprehension tests. Auditory learners are very sensitive to the speech quality, tone, timbre of the voice and intonation. They are often talkative, needing to think aloud; they usually enjoy music, and remember well, song lyrics and conversations.

3.9.8.3 Kinaesthetic (tactile) learners

Kinaesthetic learners learn best through touch, movement, imitation and other physical activities (Gilakjani & Ahmadi, 2011:470). They remember best by writing or physically manipulating the information. Kinaesthetic learners do not usually like to read instructions, and it is difficult for them to sit still for a long time. Many dyslexic learners favour a kinaesthetic approach.

3.9.9 Continuous Professional Development of Teachers

Pre-service training for teachers cannot be expected to prepare teachers for all the challenges they will face throughout their careers (OECD, 2009:49). Joyner (2005:1) opines that education systems worldwide should seek to provide teachers with opportunities for in-service professional development as this facilitates the maintenance of a high standard in teaching and a high-quality teacher workforce. Education systems today are charged with addressing ever-increasing demands, reducing the achievement gap, adopting evidence-based practices, managing the requirements of special needs learners, and remaining current on the increasing amount of pedagogical and content area research. King and Newman (2001:86) believe that, teachers have the most direct, sustained contact with learners, as well as considerable control over what is taught and

the climate of learning, therefore, it is reasonably assumed that improving their knowledge, skills and dispositions is one of the most critical steps to improving student achievement (Hirsh, 2005:38; Shaw, 2003:39).

Professional development is defined as the process of improving staff skills and competencies needed to produce outstanding educational results for learners. As Guskey (2004:4) states, one constant finding in the research literature is that notable improvements in education almost never take place in the absence of professional development. It is the key to meeting today's educational demands. OECD (2009:5)'s comparative review on teachers noted that, effective professional development is on-going, includes training, practice and feedback, and provides adequate time and follow-up support. Successful programmes involve teachers in learning activities that are similar to ones they will use with their learners and encourage the development of teachers' learning communities. There are a number of pathways to teacher professional development which encompass attending conferences, interacting with online communities, reading groups and programmed action research. Other forms for teacher growth include, presenting professional sessions in the form of small in-school meetings and engaging in writing, from short articles to books. Teachers may also be required to participate in a formal course or enrol with professional institutions. Peer observation, reflective practice, class action research and exploratory work with colleagues serve as yet other strategies for professional development.

Tillotson (2011:27) contends that being well-versed in the signs of dyslexia would allow a teacher to develop the skills necessary to support the affected learner's learning. Knowledge and confidence with teaching reading and spelling is requisite in recognising specific areas of difficulties and furthermore in developing specific strategies for remediation and success. This can be enhanced through the conduction of continuous staff development workshops in various educational settings.

In Ireland, as well as in the United Kingdom (England, Wales & Northern Ireland) some teachers have been trained as 'Reading Recovery' teachers (European Commission

(2011:75). In England, for example, this training receives funding through the national Every Child a Reader (ECaR) programme, which supports schools and local authorities in introducing a range of interventions, of which Reading Recovery is the most intensive. Reading Recovery teachers are specially trained to provide selected learners with daily half-hour, one-to-one lessons tailored to their needs. The aim is also for schools to capitalise on the professional development provided for Reading Recovery teachers. These teachers can advise, mentor and support other stakeholders to meet the needs of learners with literacy challenges.

In New Zealand, effective literacy practice in the first four years of schooling is the primary response to recommendations made by the Literacy Taskforce to ensure that learners receive the best possible teaching and was designed as the key reference for professional development programmes (Patel, 2010:52). An Effective Literacy Practice document is used as a guide in training student teachers in literacy education and is the principle handbook provided free of charge, to all practicing teachers, in schools, by the Ministry of Education.

In Norway, practising teachers can take a higher education course focusing on the teaching of reading although this is not compulsory (European Commission, 2011:109). In this context, it is unclear to what extent some of these courses are easily available to teachers or if funding is provided for them. In Finland, it is the educational staff dealing with special needs who receive training on reading difficulties as part of a compulsory programme. They assist classroom teachers in various tasks which include, diagnosing learners' reading skills; providing learning support, giving guidance and counselling and developing flexible arrangements, such as flexible grouping and simultaneous teaching. In Sweden, the Speciallärare are teachers in special needs education who are trained in, amongst other things, in-depth knowledge of reading techniques and effective methods for encouraging and supporting learners' skills in reading at an early stage (European Commission, 2011:75).

In Zambia, there are two types of In-service education and training programmes, a long term up-grading or professional courses for school teachers offered by the National In-service Training College (NISTCOL), the Zambia Institute of Special Education (ZAMISE) and the University of Zambia (Mubanga, 2012:2). Short term INSET or Continuing Professional Development (CPD) consisting of capacity building aimed at improving the professional as well class room practice of school teachers are mostly school-based or held in Teachers' Resource Centres. INSET programmes have been used to upgrade the teachers' capacity, sensitise and train teachers to implement interventions in the Education System, such as the Primary Reading Programme, Action to Improve English, Mathematics and Science, Multi-grade, and Learner-centred Methodologies.

In South Africa, the DoE faces many challenges in promoting literacy (DoE (2008:4). Many teachers in South Africa have an under-developed understanding of teaching literacy, reading and writing. Too often, teachers know only one method of teaching reading, which may not suit the learning styles of all learners (DoE, 2008:8). To support teacher development, accredited training courses in strategies for teaching reading are offered at tertiary institutions enabling teachers to implement the NRS, amongst other programmes.

The need for more attention to be accorded to the professional development of practising teachers in South Africa is emphasised in the Report of the Ministerial Committee on Teacher Education (MSTE) (Gulston, 2010:1). Van Deventer and Kruger (2003:219), however, argue that any fundamental changes to existing teaching practices and procedures are not easily accepted, especially if these changes involve disruption and additional work. After the attainment of independence in 1994, South Africa saw the introduction of new methods of teaching, including continuous assessment criteria, Outcome Based Education (OBE) and the introduction of new policies, such as the South African Schools Act, No. 84 of 1996, The South African Council of Teachers Act, No. 31 of 2000, Skills Development Act, No. 97 of 1998, The Employment of Teachers Act, No. 76 of 1998 and the National Education Act, No. 27 of 1996. The introduction of these

acts necessitated training teachers to understand and implement these Acts. The period for training teachers is sometimes seen as inadequate and insufficient (Gulston, 2010:5).

In Zimbabwe newly-appointed remedial teachers who administer the clinical remediation in reading and mathematics have to undergo training conducted by the old remedial teachers (Manyumwa & Mutemeri, 2013:132). Later they visit the District Remedial Tutor for guidance on all remedial matters. CEO Circular Minute Number 12 of 1987 expects remedial teachers to attend in-service courses run by SPS/SNE staff and in turn, brief other teachers on the techniques learnt. There are concerns, however, that some teachers located in very remote schools are not receiving adequate training specific to the needs of varied groups of learners (Nkhoma, 2014:3). In consultation with heads of schools, the remedial teachers in the clinical remediation programme decide on days feasible for them to conduct remedial education. Sessions must be done at least twice a week for the duration of thirty minutes. Time for remediation lessons must appear on the master timetable in the school head's office and remedial teachers have to be exempted from some, if not all, extra-curricular activities (Ndebele, 2014:498).

The responsibility of the remedial teacher is to form an individual instruction programme that is suitable for the under-achiever and to keep records of an individual learner's area of need, performance and the assistance given (Chimhenga & Chitsa, 2016:9). Learners are kept in a remedial programme for six months to two years. The remedial teacher in liaison with the class teacher should be satisfied that the learner has overcome his or her difficulties before ending the sessions. For a learner who does not show improvement over a period of two years a referral form or note is written for a School Psychologist's attention. CEO Circular Minute Number 12 of 1987 requires each school to keep a file on remedial activities in which all information pertaining to remedial education in the school is kept. Termly reports by both remedial teachers and heads of schools are to be submitted to the DRT, who in turn submits them to the Principal Educational Psychologist before the end of each term. Each remedial teacher must keep remedial record books, learners' exercise books and a register of attendance. End of year returns in the form of

visual plot sheets and lists of selected learners for the following year are also a pre-requisite.

3.9.10 Provision of Support Resources

The use of specialist materials and resources for learners with dyslexia is closely linked to classroom-based learning support for learners with dyslexia. The availability of appropriate materials is one of the criteria of dyslexia-friendly practice. Alsobhi, Khan and Rahanu (2015:113) concur that materials and tools employed in the teaching of individuals with dyslexia should be aligned with the learners' needs, capabilities and learning objectives. According to Nel, Tlale, Engelbrecht & Nel, 2016;13), there are several support materials that teachers can use when teaching learners with dyslexia and these include use of coloured chalk and markers for board work. Eventually, teachers may write alternate lines in different colours on black/white board or use two colours and alternate between these. In addition to this, teachers may introduce cream-coloured paper instead of white. Hunter and Murchu (2006:35) observe that some learners with dyslexia find it difficult to read black print on white paper. That is why it is recommended that coloured paper or transparencies be used. Whitlow (2014:4) asserts that teachers may also make use of pictures and posters to aid the understanding and grasp of content amongst learners with dyslexia. Learners with this condition may need to build stories from availed pictures and the use of videos may also facilitate visual and auditory processing of information.

The adoption of more technological devices is recommended for learners with this disability. In relation to this, the British Dyslexia Association (2013:1) posits that technology is a key tool to help dyslexic learners in the classroom in both learning and teaching experiences as well as accessing or recording written information. Several learning challenges experienced when reading, writing, spelling, accessing the curriculum, learning vocabulary and improving phonic skills become manageable for such learners when technology is adopted. Technology can also provide the necessary risk-taking, patience and a multi-sensory environment that many dyslexic learners need.

Sutton (2016:16) adds that the adoption of worksheets for learners with dyslexia is another support service which may improve the reading competency of such individuals. In relation to this, recent studies have been investigating the impact that font style has on the ease of reading for learners. Use of a three-dimensional font has shown improvement in the reading process. The use of a disfluent (hard to read) font leads to better recall and retention due to the deeper processing needed (French, Blood, Bright, Futak & Grohmann, 2013:301; Sutton, 2016:16). Other considerations that allow for ease of reading comprise the use of visual aids, left justification, well-spaced-out format, use of bold type and avoiding using italics, capitals and underlining.

3.9.11 Counselling and Motivation

In order for learners with disabilities in general and those with dyslexia in particular, to cope with the challenges presented by their conditions, there is a vital need for them to be exposed to guidance and counselling services. When dyslexia is identified, the psychologist will recommend a course of action. These are intervention strategies that will assist the individual to realise their full potential. Traditionally, the field of learning disabilities has focused its intervention strategies on the improvement of affected learners' academic skills, but this is inadequate without counselling services (Monsef, 2003:1). There is increasing research that links emotional problems, such as anxiety, school phobia and depression with learning disabilities. Indeed, all learners need positive feedback and support to help them deal with feelings of inadequacy, such as feeling "dumb" or "stupid". Counselling is sometimes also recommended for persons with learning disabilities because of problems with self-esteem, anxiety, and depression that build in the wake of associated conditions (Monsef, 2003:1).

In relation to counselling services, learners with dyslexia should be motivated throughout their acquisition of knowledge. According to Reid (2015:1), motivation and the nature of the learning experience are important factors for all learners, inclusive of those with dyslexia. The teacher may motivate dyslexic learners by acknowledging their individual

styles, encouraging creativity and self-assessment, developing learner responsibility, rewarding achievement, providing immediate feedback about their progress and assisting learners to believe in their own abilities (Reid, 2015:4).

3.9.12 Supervision of Teachers

Another crucial factor in the teaching-learning process is supervision of teachers. Supervision is the process of helping, guiding, advising and stimulating growth in subordinates in order to improve on the quality of their work (Kortide & Yunos, 2014:53). Supervision involves the stimulation of professional growth and the development of teachers to better handle materials of instruction and methods of teaching and the evaluation of teachers' instruction. A basic premise of supervision is that a teacher's instructional behaviour affects individual learning, therefore, an examination of teachers' instructional behaviours can lead to improvement in teaching and learning. Research into effective school practices has identified instructions being associated with measurable improvements in learner achievement. These "effective school practices" include elements associated with a clearly defined curriculum, focused classroom instruction and management, firm and consistent discipline, close monitoring of learner performance and strong instructional leadership (Kortide & Yunos, 2014:53). The education of learners with learning disabilities inclusive of those with dyslexia in Zimbabwe is monitored and supervised by a number of stakeholders which include the deputy heads, heads of schools, DRTs, teachers, EOs and DEOs (Remedial Programme Booklet, 2011:3). Teachers require skills to diagnose a particular disability of the child, match treatment with the learner, implement and monitor the effectiveness of an adopted intervention strategy over time (Ndebele, 2014:498).

3.10 CHALLENGES IN IMPLEMENTING INTERVENTION PROGRAMMES FOR LEARNERS WITH DYSLEXIA

The teaching of learners with dyslexia is faced with various challenges. These include the attitude of teachers towards learners with dyslexia, lack of adequate literacy skills of

teachers, limited in-service training programmes, lack of material resources, large classes, limited time allocated for the programmes, inadequate supervision of teachers and poor parental involvement.

3.10.1 Teachers' Lack of Awareness and Knowledge of Dyslexia

The challenges faced by teachers in teaching learners with dyslexia in mainstream classes partly stem from their lack of awareness and knowledge of this specific learning disability. The majority of teachers may not struggle with identifying indicators of dyslexia, although what is required beyond this detection appears to be where the problem begins (Elias, 2014:4; Sethosa, 2001:76). Rontou (2010:12) reports that in a survey conducted by Constantopoulou in 2002, it was gathered that, most language teachers are not competent to teach learners with dyslexia as there is a lack of teacher training on dyslexia and that there is confusion about the types of dyslexia. The two school advisers who participated in the Constantopoulou (2002)'s study stated that they had not organised any seminars on dyslexia in their region.

Similarly, Arapogianni (2003) conducted a small-scale study investigating the approaches used by teachers to support learners with dyslexia in the classroom, their knowledge and training on dyslexia and their collaboration with other professionals. The findings showed that, the majority of the teachers do not know what to do to support learners with dyslexia in the classroom as they do not have any relevant training hence, lack understanding about the nature of the learners' individual challenges (Rontou, 2010:12).

Another study carried out by Ogano in 2012 on the teaching methods used by teachers to teach reading and writing in one primary school in Oslo, Norway indicated that, many teachers ignore the learning needs of learners with dyslexia because they do not know these needs and consequently lack knowledge on how to assist the affected individuals (Ogano, 2012:37). Gama and Thwala also conducted a similar research in 2016 on the inclusion of learners with dyslexia in Swazi mainstream classrooms. They discovered

that lack of language knowledge in teachers is one of the issues that basically hinders the academic success of learners with reading challenges (Gama & Thwala, 2016:39). In response to this scenario, both professionals and parents believe that, teacher education programmes are lacking in preparing teachers to teach reading effectively. Such limited literacy training and knowledge does not only constrain learners' academic achievement but may further lead to social and emotional problems (Shaywitz, 2003:52).

3.10.2 Attitudes of Teachers

The general feelings of teachers that they do not have abilities to teach learners with dyslexia can be seen as one of the causes of their negative attitudes towards such individuals (Khader, 2012:74). Similarly, when studying beliefs and perspectives, Wadlington and Wadlington (2005:22) found that, numerous groups of teachers, inclusive of primary and secondary school teachers, special education teachers, school counsellors, administrators and university lecturers, have significant misconceptions about dyslexia. Consequently, these lead to negative attitudes about learners with dyslexia. This further enhances lack of acceptance of these learners, not only among themselves and stakeholders, but also other learners within the school setting (Kapp, 2002:459). Many teachers feel inadequate working with learners with dyslexia and believe that learning how to provide effective instruction to these learners is a pressing necessity.

3.10.3 Teachers' Lack of Adequate Literacy Skills

One of the challenges that hinder the success of learners with dyslexia is the lack of adequate literacy skills that some teachers have. In the 2011 assessment by the Uganda National Examinations Board (UNEB), teachers' reading skills were also assessed. The findings indicated that, the weak performance of learners in literacy could have emanated from the deficiency in the skills of teachers to teach, especially, reading skills. This was reflected by the weak performance of teachers in oral reading, implying that the teachers themselves may not have been well instructed in reading skills. This means, therefore,

that there are teachers in Uganda who are not fully prepared to handle the challenges involved in the teaching of reading (Kyeyune, 2012:14). As the UNEB report concludes, 'it is difficult for teachers to properly manage reading when they themselves have some difficulties with reading' (Ssentanda, 2014:5).

3.10.4 Limited In-service Training Programmes

According to Birsh (2011:1), teachers need to qualify to handle learners with barriers to learning. This can be enhanced through conducting constant research, attending workshops or seminars and perhaps, doing in-service courses. The same author further clarifies that workshops and related provisions must ensure that teachers of learners with dyslexia undergo extensive preparation in the disciplines that are contained in literacy and these encompass, spelling, phonology, development of language, knowledge of the alphabet, hand writing, fluency, vocabulary, lesson planning and skills of study for learners. In relation to this, Wei, Darling-Hammond and Adamson (2010:8) state that in 2008, teachers in America had fewer opportunities to participate in professional learning areas such as reading instruction, use of computers, the teaching of special education learners and English language. The short-term workshops which were conducted were evaluated as unlikely to influence practice and student achievement in regard to the teaching of learners with dyslexia.

3.10.5 Lack of Material Resources

Lack of material resources in most parts of the world also impedes successful academic achievement of some learners with dyslexia. A study by OECD revealed that, 99.5 per cent of learners with disabilities are fully included in mainstream education in Italy. Very few countries in the world have such high inclusion rates (OECD, 2009: 20). The reasons for such practices are multiple and lie in the understanding that human, material and financial resources need to be allocated to the education of learners with disabilities to meet their special educational needs in order to promote equity in curriculum access and outcomes (Agnelli, 2011:3). Another study of dyslexia in Greece showed lack of teaching

resources as a serious impediment in mitigating the challenges caused by this learning disability (Chitsa & Mpofu, 2016:65). Teaching resources in this case include teaching modules and guides amongst others. Furthermore, in the current education systems that have adopted *e-learning* as a measure of improving efficiency in content acquisition, Alsobhi, *et al*. (2015:113) observe that a lot of scientists involved in the development and implementation of *e-learning* tools overlook the needs of learners with dyslexia. As such, these learners have limited access to the resources that may be offered to their counterparts without this disability and this leads to a disability divide or some kind of exclusion.

3.10.6 Large Class Sizes

According to Kapp (2002:72), a learner with dyslexia naturally requires more attention and assistance. For teaching to be effective, the traditional size of the class will have to be adjusted, considerably; smaller classes are essential. Marias (2016:2) observes that teachers are generally convinced that to cope with the normal day-to-day problems in large classes is more than they can bear. The concern arises from the understanding that an impaired learner demands so much more attention, yet no additional allowance is provided for this by the education department if teachers are to adhere to the prescribed class sizes (Pretorius, 2000:6). Similarly, Thompson (2014:15) argues that studies conducted in Ghana indicate that teachers there also have the added burden of teaching very large classes, which may not be a significant impediment in developed countries. Such countries boast of low class sizes which emanate from the low teacher-learner ratio allowing for increased funding in those countries. In Zimbabwe, generally, there has been an increase of enrolments over the years raising learner- teacher ratios. The growth in mainstream primary schools' enrolment point to a huge possibility of having more learners with dyslexia thereby overstretching the utilisation of teaching staff and compromising quality (Chitsa & Mpofu, 2016:65).

3.10.7 Limited Time Allocation

In most regular classes of developing countries, learners with dyslexia are not afforded adequate time to master certain reading skills due to the use of rigid timetables. A study conducted by Gama and Thwala in 2016, based on the challenges faced by teachers in including dyslexic learners in mainstream classes indicated, that these learners are not allocated adequate time to complete their reading assignments and this has a negative impact on their overall performance (Gama & Thwala, 2016:37). Apart from their daily tasks, learners with dyslexia should be provided with personally-appropriate additional time in test situations. Other concerns for learners with dyslexia include providing them with tasks that are shorter and achievable. It is particularly necessary also that deadlines for the submission of assignments be made more flexible to carter for the abilities of this group of learners. Learners with dyslexia report that their second greatest difficulty is to concentrate for long periods of time (Sutton & Shield, 2016:17). This implies that these learners need to be given 'brain breaks' - instances where they are able to move about and stretch their bodies as a strategy to maintain concentration.

The DoE (2008:6) posits that individuals with mild learning disabilities should continue to learn in mainstream schools and be afforded additional assistance which may consist of special materials, consultation, equipment, internet services and tutoring. The teaching of learners with disabilities should be carried out in a resource room that is manned by a special education teacher. The centre in which the teaching takes place has to be diagnostic, prescriptive and allow for the adjustment of time so that these learners can understand and complete given tasks. Hariparsad (2010:31) however observes that the overall teaching standards could possibly drop due to the neglect of the "regular" learners in order to accommodate learners with dyslexia. Teachers feel that it is not fair to expect the regular learners to support and wait for learners with dyslexia when their focus should be on their own education (Pillay, 2001:94). This calls for the adoption of strategies that will maximise positive contributions to different types of learners in the classroom.

3.10.8 Poor Supervision and Management of Teachers

The school management team plays a pivotal role in directing and managing the development of an inclusive school. In order to do this effectively, the team needs competencies and knowledge in accommodating diversity as well as addressing barriers to learning and development. Where these competencies are absent, attempts should be made to develop them. Management should provide leadership in the process of building an inclusive school (Engelbrecht & Jansen, 2003:40).

Supervisors need continuous and sufficient training to carry out their responsibilities effectively. Lack of training for supervisors, weak relationship between teachers and supervisors and lack of support for supervisors from higher offices affect the supervisory practice in the school (Tesema, 2014:32). In line with this, Tesfaw (2012:33) points out that lack of continuous training system for supervisors to up-date their educational knowledge and skills is an obstacle in the practice of supervision. This means that there is a vital need for supervisors to be trained to supervise teachers as they implement the intervention programmes for learners with dyslexia.

In addition, there can be no effective supervision of instruction without adequate instructional materials (Mohammedsiraj, 2015:27). Materials like supervision guides and manuals have their own impact on supervisory work. Debelo (2014:23) acknowledges that these materials are helpful to the supervisors as well as the schools. They can turn the inspection visit into a more objective exercise through making transparent the process of informing schools and teachers the matters on which the supervision would be based. The absence of a specific budget for supervision and support is naturally another critical problem that negatively affects the quality of supervision. Inadequate budget hampers the capacity to effectively run supervisory activities such as in-service training programmes for teachers and visiting other schools to share experiences (Debelo, 2014:38).

3.10.9 Poor Parental Involvement

Kapp (2002:142) posits that some parents have a negative attitude towards the school. This leads to some learners manifesting poor school attendance behaviours as a resistance towards the school in general and mastery of concepts in particular. Some parents lack interest in the education of their children. They demonstrate this through failure to supervise their homework or attending school meetings that focus on learners' progress. A study conducted by Ogano (2012:41) on the teaching of reading in Norwegian schools concluded that some parents have a negative attitude towards the education of their children with disabilities because they link disability to inability. However, parents are fundamental to the uninterrupted and continuous development of the learner between home and the school, without which, the remedial or education process for the affected learners would be retarded (Ogano, 2012:41). On a different note, Engelbrecht and Jansen (2004:122) posit that some parents are willing to be voluntary teacher aides, either by assisting in the classroom or in the preparation of teaching materials. In this regard, teachers should make sure that they avail themselves of this valuable voluntary role and regularly send out invitations to such parents. A productive parent-teacher relationship provides greater understanding of the needs of the learner. De Jong (2000:15) emphasises that central to any concerted intervention efforts regarding learners with special needs, are parents.

3.11 SUMMARY

This chapter presented and discussed the views and opinions of different authorities on the issues that influence the implementation of intervention programmes to enhance the academic improvement of learners with dyslexia. The chapter identified a few programmes that are available for such learners in selected developed and developing countries. Some of these programmes include, reading recovery, reading remediation, performance lag address programme and reading mastery. The discussion also covered the crucial factors in the implementation of the identified programmes. The final part discussed some challenges that hinder the effective teaching of learners with dyslexia

learners in inclusive classes. This was closely related to the findings of similar studies previously conducted by several scholars in both developed and developing countries.

CHAPTER FOUR

RESEARCH PARADIGM, DESIGN AND METHODOLOGY

4.1 INTRODUCTION

This chapter discusses the research paradigm, design and methodology in depth. An outline of the sampling process which involved selecting the population and drawing samples is also given. The research instruments that were utilised to collect both quantitative and qualitative data are also described in detail. The process of data collection, analysis and interpretation is also advanced.

4.2 RESEARCH PARADIGM

According to Azizi (2014:1575), the term 'paradigm' originated from the Greek word *'paradeigma'* which means pattern or a set of assumptions that is shared by a community of scientists. In research, it denotes a specific culture comprised of beliefs, values and predictions that researchers have in common regarding the nature and conduct of a scientific investigation. Corbin and Strauss (2008:1) observe that paradigms guide researchers in their search for truth about certain phenomena. Wahyuni (2012:69) further concurs that research paradigms address fundamental assumptions which are ontology, epistemology and axiology.

According to Saunders, Lewin and Thornhill (2009:110), ontology is viewed as the theory of what exists. It focuses on the nature of knowledge or the way in which one perceives reality (Wahyuni, 2012:69; Cohen *et al.,* 2007:7). Two basic ontological arguments exist. The first one presents the existence of reality as being outside of individuals and independent of their interpretation of it (Pring, 2000:59). This position is known as objectivism or realism. On the other hand, Wahyuni (2012:69) posits that proponents of subjectivism contend that reality is subjective and differs from one individual to the other. Huff (2009:108) views epistemology as concerned with the very base of knowledge, its nature and how it can be acquired and communicated to other human beings. In other

words, epistemology is seen as the theory of what we can know (Kalof, Dan & Dietz, 2008:19). Furthermore, axiology is a philososophy which is concerned about values and ethics. The role that the researcher's own values play in all stages of the research process is of great importance if the research results are to be credible (Mingers, 2003:560).

Mack (2010:6) explains that the alignment of ontology, epistemology and axiology ultimately provides the desired logic of the chosen metholdology of a particular study. To clarify this, it can simply be said that ontology is concerned with what exists or the nature of reality, epistemology is knowledge about that reality including relationships that may exist in things that are considered as real, axiology is linked to values or ethics that one observes in the entire process of gathering knowledge about reality, Researchers demonstrate their axiological skill right from the choice of the topic, study area, participants, instruments and the entire research process. Lastly methodology depicts those actual procedures undertaken to know the reality about a phenomena under investigation. Ontological, epistemological and axiological orientations have borne basic research paradigms namely positivism, anti-positivism (interpretivism) and the critical paradigm. In this research, pragmatism which involves a combination of positivism and interpretivism was used.

According to Shannon-Baker (2016:322), pragmatism was formulated as a philosophical alternative to abstract and rationalistic science. It has a clear foundation in empiricism but goes beyond a pure orientation to analysis of a given reality. In other words, it sidesteps the contentious issues of truth and reality, accepts philosophically, that through an empirical enquiry, other facts about a phenomenon may be discovered. In this study, research questions and items included in data collection instruments were formulated in a way that made it possible to discover causal factors to observable behaviour while gaining a deeper insight about the phenomenon under study.

Pragmatism also advocates for the use of different research methods to obtain both objective and subjective knowledge (Donaldson, Christie & Mark, 2009:120). This implies the adoption of mixed methods approaches in the conduct of a study. In this case,

qualitative and quantitative research methods are viewed as two points on a continuum, which however complement each other. Quantitative methods measure some aspects of the phenomenon in question while qualitative methods do so to others.

Nowell (2015:143) states that pragmatism does not only focus on what 'is', which denotes observable reality, but also on what 'might be'. This means that, the basic interest for action in pragmatism is not conceiving action as an end in itself but as a means for further improved action (Huffman, 2013:4). To perform changes in desired ways, action must be guided by purpose and knowledge. The world is thus changed through reason and action and there is an inseparable link between human knowledge and action (Donaldson *et al*., 2009:120). This emphasises that, pragmatism can be understood as a philosophy that fully acknowledges the interplay between knowledge and action. Morgan (2014:1048) adds that while knowledge of each person is unique as it is based on individual experience, much of it is common because it comes from socially shared experiences. The following section focuses on the research design that was considered relevant in this study.

4.3 RESEARCH DESIGN

A research design is a plan or strategy for carrying out research. Mouton (2009:107) defines a research design as the blue print of the research project that precedes the actual research process. This means that the features of a research design must be established in order to ascertain its suitability before it is considered in a particular investigation. A research design ensures that the evidence or data collected from the chosen participants, through employing various research instruments assists in answering the research questions and achieving the set objectives. In this study, the basic convergent type of the mixed-methods research design was adopted. This entails simultaneous collection and analysis of quantitative and qualitative data prior to an integrated analysis (Guetterman, Fetters & Creswell, 2015:555). This type of design further helps to view phenomena from multiple perspectives for better understanding (Creswell, 2012:12). The mixing of techniques also enhances analysis and the production of compelling research

results (Lichtman, 2013:105). The two methods produce results that are improved, in terms of clarity and illustrations. This means that the conclusions drawn are likely to be valid and reliable.

4.4 RESEARCH METHODOLOGY

Rajasekar, Philominathan and Chinnathambi (2013:5) view research methodology as a way to systematically solve the research problem. It may be understood as a science of studying how research is conducted. In it, one is enabled to explain the various steps that are generally adopted by a researcher in studying a research problem, along with the logic behind their choice. Nayak and Singh (2015:1) add that a research methodology does not only refer to research methods but also considers the logic behind the choice of the methods or techniques. This implies that, it encompasses all the procedures undertaken to obtain data from the chosen research participants in order to organise, analyse and interpret this evidence as per the purpose of the study. The following section outlines the research methods that were used to collect relevant data for this study.

4.4.1 Quantitative Methods

Quantitative research methods are characterised by the collection of research data which can be analysed numerically, and the results typically presented using statistics, tables and graphs (Allwood, 2012:1419). Several methods can be used to collect quantitative data, and these include questionnaires, checklists, registers and mark profiles. In this study, a self-designed questionnaire was adopted.

4.4.2 Qualitative Methods

Qualitative research methods follow an inductive research process and involve the collection and analysis of qualitative data to search for patterns, themes and holistic features (Allwood, 2012:1419). Qualitative data reflects the views, attitudes and opinions of participants on phenomena under study. Common qualitative research methods

include content analysis, focus group discussions (FGDs), observations (narrative, comments) and interviews. This study used interviews and documentary analysis to gather qualitative data.

4.5 SAMPLING

The sampling process that was adopted in this research involved selecting the population and determination of sampling procedures and samples.

4.5.1 Population

Pandey and Pandey (2015:40) define a population as a group of people with one or more characteristics that the researcher is interested in and from which a sample is drawn. The population for this study comprised mainstream primary school teachers, heads of schools, the DSI, DRT and district ECD trainer.

4.5.2 Sampling Procedures

According to Pandey and Pandey (2015:53), sampling procedures involve techniques that researchers use to select groups or a sample from the wider population. The choice of a research design determines the selection of sampling procedures to be used. Following are the sampling techniques that were used in the study:

4.5.2.1 Quantitative sampling procedures

Participants who responded to the self-designed questionnaire were identified through the adoption of the simple random sampling technique. Bryman (2012:190) contends that the simple random sampling technique gives every member of the chosen population an equal opportunity of participating in an empirical investigation. There are several methods available for selecting a simple-random sample. In this study, the 'hat' method was applied in all mainstream primary schools to select 1 teacher from each of the three chosen categories. These categories were composed of teachers that taught Grade 1

and those that taught Grade 3 classes. The other group was responsible for conducting clinical language remediation. In using the hat method, cards written a 'YES' or a 'NO' were put in a hat and shaken before teachers could pick a single one without directly looking at them. Those who picked cards written a 'YES' were then considered for participation. The Grade 1 level was selected on the basis that this is a stage where basic reading skills are introduced, and early intervention offered. Grade 3 was considered for being the transitional level from infant to junior primary school education. At the transitional stage, more complex reading activities are introduced. Clinical language remedial teachers were selected for the special role that they played in providing services to learners with severe to profound reading problems across all grade levels in schools.

4.5.2.2 Qualitative sampling procedures

Participants who participated in the interviews were purposively selected. Purposive sampling involves selecting a sample on the basis of the researcher's knowledge of the elements of the population and the purpose of the study (Burton, Brundrett & Jones, 2014:86). Purposive sampling allows a researcher to deliberately select small groups or individuals who are knowledgeable and informative about the phenomenon of interest (Gray, 2009:152). This technique was used to choose the DSI, the DRT, District ECD trainer and heads of schools. The DSI was considered for being at the apex of the district management. This officer supervised the DRT, District ECD trainer and heads of schools in their execution of duties. The DRT was chosen for representing the SPS/SNE department in the district and for monitoring the administration of intervention programmes for learners with dyslexia who are in Grades 3 to 7 in all schools. The District ECD trainer was selected for representing the infant category. This officer also facilitated and monitored the implementation of the ERI programme in schools. Lastly, heads of schools that were chosen manned schools that had both mainstream and special classes. Due to this fact, it was believed that they possessed extensive experience in managing individuals with severe to profound learning disabilities. The establishment of special classes, in specific schools, within the district of study was partly influenced by the low literacy levels amongst learners depicted in the poor overall pass rate of the district.

4.5.3 Samples of the Study

A sample is a subset of cases or individuals drawn from a population (Johnson & Christensen, 2008:223). It can also be viewed as a particular set of a population selected for measurement, observation or questioning to provide statistical information about the population. In this study, two samples were selected. One was considered to generate quantitative data and the other one qualitative data as pointed out in the following sections:

4.5.3.1 Quantitative sample

A quantitative sample was drawn from all the 50 mainstream primary schools found in Bubi District. It was made up of 150 participants. Of these, 50 represented the infant category and were Grade 1 teachers. The other 50 represented the transitional or intermediate phase and were Grade 3 teachers. The remaining 50 teachers were responsible for conducting the clinical language remedial programme in schools.

4.5.3.2 Qualitative sample

A qualitative sample was comprised of 1 DSI, 1 DRT, 1 District ECD trainer and 10 heads of schools.

4.6 INSTRUMENTATION

Instrumentation refers to the tools used by a researcher or an investigator in an attempt to measure variables or items of interest in data collection. It is related not only to instrument design, selection, and assessment, but also to the conditions under which the designated instruments are administered (Hsu & Sandford, 2012:2). Instrumentation can also be viewed as the use of, or work completed by planned instruments. This section discusses the instruments that were used to collect both quantitative and qualitative data. These include a self-designed questionnaire, self-designed interview schedules and document analysis guides.

4.6.1 A Questionnaire for Teachers' views on the Implementation of Intervention Programmes for Learners with Dyslexia

Quantitative data were collected through the administration of a self-designed questionnaire which sought to establish the views of teachers on the implementation of intervention programmes for learners with dyslexia (See Appendix A p.242). This was composed of two sections, that is, Section 1 and 2. Section 1 solicited biographical data while Section 2 was composed of closed-ended contextual questions. On biographical data, participants were expected to state their gender, age, grade level they were currently teaching as well as their highest professional qualification. The contextual research questions had a total of 17 items which were divided into 2 parts. The first part comprised statements that were based on the nature of intervention programmes that were available while the second part focused on the crucial factors to be considered in the implementation of those programmes. In responding to the contextual research questions, participants were required to indicate their responses on a 5 point Likert-type scale which contained *strongly disagree, disagree, undecided, agree and strongly agree.*

4.6.2 Self-designed Interview Schedules

The following self-designed interview schedules were utilised to solicit qualitative data:

- Interview schedule for heads of schools on the implementation of intervention programmes for learners with dyslexia (See Appendix B p.245).
- Interview schedule for the DSI on the implementation of intervention programmes for learners with dyslexia (See Appendix C p.247).
- Interview schedule for the DRT on the implementation of intervention programmes for learners with dyslexia (See Appendix D p.249).
- Interview schedule for the District ECD Trainer on the implementation of intervention programmes for learners with dyslexia (See Appendix E p.251).

4.6.2.1 Interview schedule for heads of schools on the implementation of intervention programmes for learners with dyslexia

The interview schedule used for heads of schools was divided into two parts, that is, Section 1 and 2 (See Appendix B p.245). Section 1 sought to gather the participants' biographical information which included gender, age, experience in the position held and highest professional qualification. Section 2 was composed of contextual questions that were derived from the research questions of the study. These demanded information on the available intervention programmes, guiding policies, roles assumed, competencies required by teachers, challenges faced by schools and suggestions to improve service provision.

4.6.2.2 Interview schedule for the DSI on the implementation of intervention programmes for learners with dyslexia

The interview schedule used for the DSI was divided into two parts, that is, section 1 and 2 (See Appendix C p.247). Section 1 sought to gather the participants' biographical information which included gender, age, experience in the position held and highest professional qualification. Section 2 was composed of contextual questions that were derived from the main research questions of the study. These demanded information on the nature of available intervention programmes, guiding policies, roles assumed, crucial factors to be considered in the implementation of the intervention programmes, challenges faced by the district and suggestions to improve service provision.

4.6.2.3 Interview schedule for the DRT on the implementation of intervention programmes for learners with dyslexia

The interview schedule used for the DRT was divided into two parts, that is, section 1 and 2 (See Appendix D p.249). Section 1 sought to gather the participants' biographical information which included gender, age, experience in the position held and highest professional qualification. Section 2 was composed of contextual questions that were derived from the research questions of the study. These demanded information on the available intervention programmes, guiding policies, roles assumed as an SPS/SNE representative at district level, crucial factors to be considered in the implementation of

the intervention programmes, CPDT for teachers, challenges faced by the district and suggestions to improve service delivery.

4.6.2.4 Interview schedule for the district ECD trainer on the implementation of intervention programmes for learners with dyslexia

The interview schedule used for the District ECD trainer was divided into two parts, that is, section 1 and 2 (See Appendix E p.251). Section 1 sought to gather the participants' biographical information which included gender, age, experience in the position held and highest professional qualification. Section 2 was composed of contextual questions that mainly focused on ERI and how it was administered in the district. The roles assumed by the ECD trainer were also solicited. The challenges faced by the district and suggestions to improve the implementation of the programmes in place were also included in this section.

4.6.3 Documentary Analysis on the Implementation of Intervention Programmes for Learners with Dyslexia

A documentary analysis involves a detailed examination of certain documents produced across a wide range of topics (Ahmed, 2010:2). These take a variety of forms, from the written word to the visual image. According to Bowen (2009:28), a variety of documents that include newspapers, journals, minutes of meetings, census data, official reports and private documents may be utilised in qualitative research. Such sources of data are informative, reliable and accessible for future reference. In this study, the researcher reviewed Bubi District policy on the educational provisions for learners with reading problems, WRAT 1 which was used to identify primary school learners with learning disabilities, schools' master timetables, lesson planning records for the programmes offered and 2015-2017 district staff development minutes' record book.

In scrutinising the district policy, focus was given to its relevancy in service provision. Furthermore, the suitability of WRAT 1 in the identification and placement of learners with dyslexia was verified. The basic aim of analysing the schools' master timetables was to

establish the suitability and adequacy of time that was allocated for the implementation of intervention programmes. The planning records that were scrutinised in this research were for all the four intervention programmes that were offered in the district. Focus was given to the relevancy of the topics, setting of objectives, time allocation, teaching instruction, learning activities, involvement of learners, use of media and evaluation of taught lessons. The district staff development minute record book was analysed so as to evaluate the adequacy and relevancy of CPDT programmes provided to teachers as a measure to improve their effectiveness in teaching learners with dyslexia in mainstream primary schools.

4.7 DATA GATHERING PROCEDURES

The researcher sought permission from the University of Venda to conduct a study and collect relevant data from Bubi District mainstream primary schools in Zimbabwe. This was granted through issuing of a clearance letter (See Appendix Q p.266). The researcher then made another request for field entry from the Ministry of Primary and Secondary Education in Zimbabwe. In possession of the letter confirming the granting of permission (See Appendix P p.265), participants' consent to take part in the study was also solicited. Questionnaires were physically distributed to all mainstream primary schools for completion by selected teachers. These were collected after two weeks for data analysis and interpretation. Interview appointments were made with selected heads of schools and district education officers before the initial interview sessions. Their convenient times were considered so as to avoid disrupting other schools' programmes. Data gathered through the interview sessions was tape recorded with the interviewees' consent. Document analysis was done after the interviews and findings gathered were recorded in written form.

4.8 DATA ANALYSIS

Two kinds of data analyses were conducted for the quantitative and qualitative data.

4.8.1 Quantitative Data

Quantitative data were analysed through the Statistical Package for Social Sciences (SPSS) Version 24. Landau and Everitt (2004:1) state that SPSS is a comprehensive statistical system or package of programmes used for manipulating, presenting and analysing data. According to Russell and Booth (2008:1), researchers employ the SPSS system to generate tabulated reports, charts and plots of distribution and trends. This package is also functional in editing data such as computing sums and means over columns or rows of data. SPSS further assists in running inferential statistics such as Analysis of Variance (ANOVA),regression and factor analysis (Landau & Everitt, 2004:26). In this study, the researcher first re-checked the logic of the data that had been collected. Data was then coded, and variables named. The next process was data entry into the SPSS statistical programme. This was closely followed by error checking and data cleaning. Frequency distribution of each emerging variable was calculated and presented on contingency tables and graphs. Detailed descriptions and analysis of collected data were done using figures and percentages obtained from frequency distributions.

4.8.2 Qualitative Data

Qualitative data were analysed through the use of thematic analysis. Thematic analysis is a qualitative analytic method for identifying, analysing and reporting patterns (themes) within the data. The researcher minimally organises and describes data infused with rich detail. However, the researcher may, frequently go further than this and interpret various aspects of the research topic. The process can begin with coding data, sorting different codes into potential themes and collating all the relevant coded data extracts within identified themes (Nowell, Norris, White & Moules, 2017:3). This process is subjective and interpretive (Blair, 2015:16). It is inductive in nature. This implies that thematic analysis strives to produce meanings from the available texts rather than trying to impose meanings on the collected data.

4.9 SUMMARY

The chapter presented the research paradigm, design and methodology which were adopted in the study. Data collection, analysis and interpretation processes were also described. The mixed methods design was adopted in this study. This design combines the use of both quantitative and qualitative methods, processes and perspectives in the same study. Pragmatism underpinned this study. This paradigm employs what works, as it allows for the use of subjective and objective philosophical variables to achieve practical outcomes. The sampling process which included the identification of the population, sampling procedures and sample were also discussed. The population included mainstream school teachers, DSI, DRT, District ECD trainer and heads of schools. Simple random sampling and purposive sampling techniques were used to select quantitative and qualitative participants respectively. A questionnaire schedule was employed to collect numerical data. Qualitative data were generated through the use of interview guides and documentary analysis. Quantitative data were analysed through the SPSS version 24 while qualitative data were analysed thematically. The next chapter presents, analyses and interprets the collected data.

CHAPTER FIVE

DATA ANALYSIS AND INTERPRETATION

5.1 INTRODUCTION

The focus of this chapter is to present, analyse and interpret gathered data based on the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream primary schools. Data were collected using both quantitative and qualitative methods for breadth and depth of understanding and corroboration.

5.2 ANALYSIS AND INTERPRETATION OF QUANTITATIVE DATA

A self-designed questionnaire that was used to gather quantitative data was comprised of two parts: Section 1 and 2. Section 1 solicited information pertaining to the biographical data of participants while Section 2 focused on statements relating to the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream primary schools. Participants had to express their opinions by making their choices on a Likert scale of ***strongly disagree, disagree, undecided, agree and strongly agree.***

5.2.1 Section 1: Biographical Data

This part analysed the characteristics of participants in terms of gender, age, the grade levels that they were teaching and their highest level of academic qualification.

Table 5.1: Distribution of Teachers by Gender

Gender	Frequency	Percent
Male	54	36
Female	96	64
Total	150	100

Table 5.1 shows that 150 teachers responded to the questionnaire items. This group was comprised of 54 (36%) males and 96 (64%) females. The high number of females in the study could have been influenced by the choice of the sample which involved teachers who taught Grade 1, Grade 3 and schools' clinical language remedial classes. It was established that most schools preferred allocating these academic levels to female teachers because some learners in these categories required more patience for them to grasp relevant content and this attribute was believed to be mostly possessed by female teachers.

Table 5.2: Distribution of Teachers by Age

Age Group	Frequency	Percent	Valid Percent
20-29	14	9.3	9.3
30-39	77	51.3	51.3
40-49	44	29.3	29.3
50 and above	15	10	10
Total	150	100	100

Table 5.2 shows the age range of teachers who participated in the study. Out of a total of 150, 14 (9.3%) were between 20 and 29 years of age, 77 (51.3%) were between 30 and 39 years old, 44 (29.3%) were in the range of 40 to 49 years of age while the remaining 15 (10%) were 50 years of age and above. The majority of the participants were between 30 and 39 years of age. This age group was suitable for this study because

it was comprised of teachers who were considered fairly mature and adequately experienced to manage the challenges often encountered in the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream primary schools. This view is supported by literature which states that effective teachers of reading must be knowledgeable, experienced, strategic, adaptive, and reflective, that is, they must understand both the science of reading and how to use engaging and motivating learning strategies (See Sub-section 2.3.1.3.p.40; 3.9.5 p.81).

Table 5.3: Distribution of Teachers by Grade Taught

Grade teaching	Frequency	Percent
1	50	33.3
2 plus remedial	1	0.7
3	50	33.3
4 plus remedial	9	6
5 plus remedial	12	8
6 plus remedial	25	16.7
7 plus remedial	3	2
Total	150	100

Table 5.3 shows that out of the 150 teachers who participated in the study, 50 (33.3%) taught Grade 1 classes. These were considered relevant in the study because of several responsibilities that they assumed when learners begun formal education. Some of these included teaching basic reading skills, early identification of learners with dyslexia and offering early intervention services. This position is supported by literature which states that early intervention in reading difficulties creates a significant difference in the long-term reading abilities of learners identified to be dyslexic. Without early intervention, the reading competence between struggling readers and their peers without a reading challenge continues to widen over time (See Sub-section 3.9.3 p.79).

Furthermore, the other 50 (33.3%) participants were teachers who taught Grade 3 classes. These were considered relevant in the study because they were mandated to facilitate smooth transition of learners from infant to junior primary schooling and offer intensive remedial services to those affected by related changes. Literature concurs that the third-grade marks transition from *"learning to read"* to *"reading to learn"* and learners who are behind at this level can only catch up with intensive intervention (See sub-section 3.9.3 p.79).

The other 50 participants who took part in the study had a dual role of teaching their own classes and manning the clinical language remedial programme in schools. This group consisted of 1(0.7%) Grade 2 teacher, 9 (6%) Grade 4 teachers, 12 (8%) Grade 5 teachers, 25 (16.7%) Grade 6 teachers and 3 (2%) Grade 7 teachers. The involvement of this group of teachers in the study was influenced by their knowledge and experiences as schools' resource persons who had a mandate to draw up an individualised educational schedule for specific learners. These also assumed a leadership role in the conduct of clinical remediation and other intervention programmes for learners with dyslexia.

Table 5.4: Distribution of Teachers by Qualification

Qualification	Frequency	Percent
Bachelor of Educ. Degree	21	14
BSc Journalism and media studies	1	0.7
BSc Special needs education	7	4.7
Certificate in Education	2	1.3
BED in English	1	0.7
Diploma in Education	118	78.6
Total	150	100

Table 5.4 shows that the 150 teachers who were involved in the study held highest qualifications that differed from one to another. 21 (14%) had a Bachelor of Education

degree, 1 (0.7%) held a Bachelor of Science degree in Journalism and Media studies, 7 (4.7%) were in possession of a Bachelor of Science degree in Special Needs Education, 2 (1.3%) held a Certificate in Education, 1 (0.7%) had a Bachelor of Education degree in English while the majority, 118 (78.6%) held a Diploma in Education. Whilst it was acknowledged that some teachers had improved their professional growth by studying other qualifications apart from the initial Diploma in Education which was a basic requisite in the teaching profession, it was noted that those who held a degree in Special Needs Education were still very few. In this regard, literature observes that the majority of teachers who are trained in regular class teaching may not struggle with identifying indicators of dyslexia, although what is required beyond this detection is more specialised training in the teaching of learners with this reading disorder (See sub-section 3.10.1 p.98).

5.3 QUANTITATIVE DATA ANALYSIS PER RESEARCH QUESTION

This section discusses the analysis of quantitative data in regard to the research questions which were raised in this study.

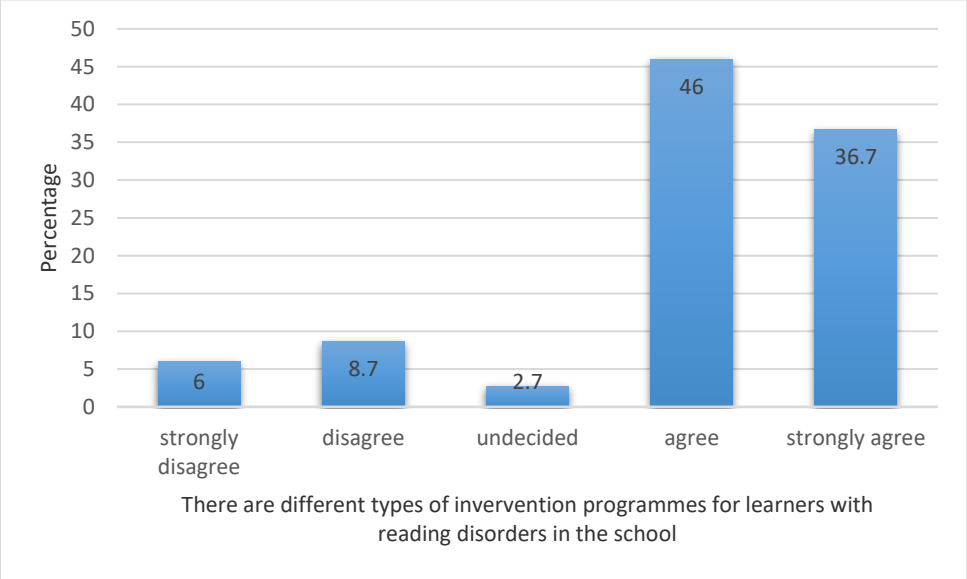
5.3.1 Research Question 1: What is the Nature of Intervention Programmes for Learners with Dyslexia in Mainstream Primary Schools?

This section of the questionnaire solicited the views of teachers on the nature of different intervention programmes that were available to enhance the inclusion of learners with dyslexia in mainstream primary schools. In this regard, it sought to establish their types, sensitivity to learners' needs and the extent to which there were learner-centred.

5.3.1.1 Availability of different types of intervention programmes

Out of the 150 teachers that participated in this study, 9 (6%) *strongly disagreed* that there were different types of intervention programmes for learners with dyslexia in their schools. Similarly, 13 (8.7%) participants *disagreed* and 4 (2.7%) were *undecided.* The *undecided* group showed that there were some teachers in schools who were unable to recognise

the differences in the availed intervention programmes. This could have been due to their limited involvement or reduced implementation levels of such programmes in certain schools. However, 69 (46%) *agreed* and 55 (36.7%) *strongly agreed* with this notion. Generally, the majority of participants opined that there were several intervention programmes that were administered for the benefit of the learning of individuals with dyslexia in mainstream primary schools. This is supported by literature which states that in Zimbabwe there are several intervention programmes for learners with dyslexia. These are administered either on a partial or full inclusion basis. Learners with mild reading disorders can benefit from assistance given on full inclusion basis while those with more serious problems might require withdrawal from a mainstream class for a specific period of time and be attended to individually (See Sub-section1.1 p.1). The views of the participants are presented in Graph 5.1.



Graph 5.1: Different Types of Intervention Programmes

5.3.1.2 Learner-centredness of the intervention programmes

Participants were asked to reveal their opinions on whether the intervention programmes available for learners with dyslexia were learner-centred or not. Their responses are shown in Table 5.5

Table 5.5: Learner-centredness of Intervention Programmes

Q2a	Frequency	Percent	Valid Percent
Strongly Disagree	1	0.7	0.7
Disagree	17	11.3	11.4
Undecided	12	8	8.1
Agree	106	70.7	71.1
Strongly Agree	13	8.7	8.7
Total	149	99.3	100
System	1	0.7	
Overall total	150	100	

Table 5.5 reveals that 1 (0.7%) participant *strongly disagreed* that the intervention programmes offered were learner-centred. Similarly, 17 (11.3%) *disagreed.* The other 12 (8%) were *undecided.* The responses revealed that there were some teachers who were not positive that the intervention programmes administered fully involved learners. On the other hand, the majority, 106 (70.6%) participants *agreed* while 13 (8.7%) *strongly agreed* and 1(0.7%) did not respond to this item. Generally, the study established that the majority of participants were satisfied with the involvement of learners in the implementation of intervention programmes that enhance their participation in the mainstream curriculum. Literature concurs with this finding as it espouses that the learner-centred learning approach helps to strengthen learner motivation, confidence and responsibility. It further promotes discovery or active learning (See sub-section 3.9.7.7 p.88).

5.3.1.3 Sensitivity of the intervention programmes to learner needs

Participants were requested to evaluate the extent to which the intervention programmes in place were sensitive to the specific needs of individual learners. Their responses are shown in Table 5.6.

Table 5.6: Sensitivity of the Intervention Programmes to Learner Needs

Q2b	Frequency	Percent	Valid Percent
Strongly Disagree	1	0.7	0.7
Disagree	18	12	12.1
Undecided	25	16.7	16.8
Agree	92	61.3	61.7
Strongly Agree	13	8.7	8.7
Total	149	99.3	100
System	1	0.7	
Overall Total	150	100	

Table 5.6 shows the responses of participants on the capacity of the intervention programmes to meet the specific individual needs of learners with dyslexia. I (0.7%) participant *strongly disagreed* that the intervention programmes offered met this requirement. 18 (12%) also *disagreed*. However, 25 (16,7%) were *undecided.* Being undecided could denote limited knowledge to evaluate the qualities of intervention programmes in relation to the requirements of learners with dyslexia. In contrast, 92 (61.3%) *agreed* while 13 (8.7%) *strongly agreed* and 1 (0.7%) did not respond to this item. This outcome shows that the majority, 115 (70%) of the participants felt that the intervention programmes administered were commensurate with the learners' specific academic needs. Literature supports this notion by emphasising that effective intervention for learners with dyslexia must meet their specific academic requirements through the adoption of multi-sensory, systematic, explicit, diagnostic, differentiated, synthetic, analytic as well as learner-centred instruction (See sub-section 3.9.7 p.84).

5.3.1.4 Ability of the intervention programmes to improve participation

This questionnaire item sought to establish the participants' views on the capacity of the intervention programmes to assist learners with dyslexia to participate in the academic activities that were offered in the mainstream curriculum. Table 5.7 represents their responses.

Table 5.7: Capacity of the Programmes to Enhance Inclusion

Q2c	Frequency	Percent
Strongly Disagree	3	2
Disagree	19	12.7
Undecided	48	32
Agree	60	40
Strongly Agree	20	13.3
Total	150	100

Table 5.7 shows the responses of participants on the capacity of the intervention programmes to enhance the smooth inclusion of learners with dyslexia in mainstream classes. In this regard, 3 (2%) *strongly disagreed* that these programmes met this requirement, 19 (12.7%) *disagreed,* 48 (32%) were *undecided,* 60 (40%) *agreed* and 20 (13.3%) *strongly agreed.* While this outcome reveals that the majority, 80 (53.3%) were content with the ability of these intervention programmes to facilitate inclusion, a significant number of those who were undecided on this aspect showed that some mainstream teachers were not aware of the extent to which the intervention programmes in place assisted learners with dyslexia to participate in the mainstream curriculum. Literature contends that the ultimate goal of the administered intervention programmes in Zimbabwean schools is to promote individual participation of learners with dyslexia in mainstream schools (See Sub-section 1.1 p.1).

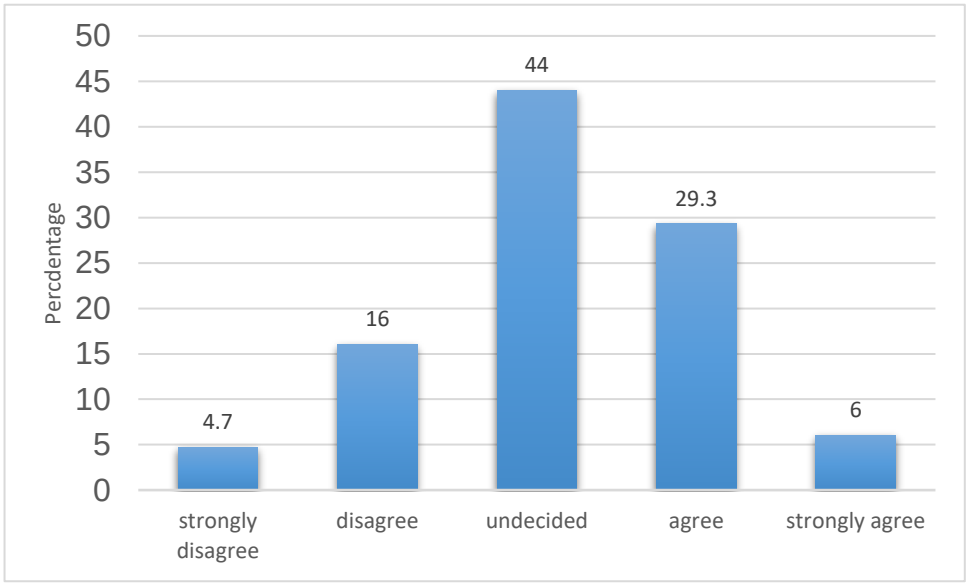
5.3.2 Research question 2: Which Factors are Crucial for the Successful Implementation of Intervention Programmes for Learners with Dyslexia?

This section solicited the views of participants on the factors that were considered pivotal for the implementation of intervention programmes that enhanced the inclusion of learners with dyslexia in mainstream primary schools. These included availability of policies, assessment procedures, utilisation of multi-disciplinary teams, use of efficient assessment tools, preferred individual learning styles, attitudes of teachers, use of multi-

sensory approaches, use of teaching media, adequacy of reading materials, teacher-learner ratio, time allocation, effectiveness of supervision and adequacy of CPDT programmes.

5.3.2.1 Specific educational policies

Participants were asked to provide their responses on the availability of educational policies to mediate the implementation of intervention programmes. Graph 5.2 shows that 7 (4.7%) *strongly disagreed* that there were policies pertaining to these programmes and 24 (16%) *disagreed* to the question item, constituting 31 (20.7%) of those who generally *disagreed.* 66 (44%) were *undecided.* This revealed that a significant number of participants were not aware of the existence or availability of policies that were used in the administration of intervention programmes for learners with dyslexia. On the other hand, 44 (29.3%) *agreed,* 9 (6%) *strongly agreed,* adding up to 53 (35.3%) participants that agreed. Literature states that individual countries have crafted or continue to design educational policies to support the enrolment and full participation of learners with disabilities in mainstream schools (See Sub-section 1.1 p.1). In fact, every official action of an organisation must be backed by a policy (See Sub-section 3.9.1 p.73).



Graph 5.2: Policies for Intervention Programmes

5.3.2.2 Conduction of an assessment procedure before service delivery

Participants were required to present their views on whether or not an assessment procedure was carried out before offering services to learners with dyslexia. Their views are shown in Table 5.8.

Table 5.8: Conduction of an Assessment Procedure

Q4	Frequency	Percent
Strongly Disagree	7	4.7
Disagree	25	16.7
Undecided	22	14.7
Agree	65	43.3
Strongly Agree	31	20.7
Total	150	100

Table 5.8 reveals the opinions of participants on whether or not an assessment procedure was conducted before the delivery of services to address reading problems of learners with dyslexia. 7 (4.7%) participants *strongly disagreed* to the questionnaire item and 25 (16.7%) *disagreed.* 22 (14.7%) remained *undecided.* The undecided group showed that, either there were limited assessment services rendered to mainstream primary schools or some teachers were exempted in such proceedings, therefore could not give meaningful responses in this regard. On the other hand, 65 (43.3%) *agreed* and 31 (20.7%) *strongly agreed*. In total, 96 (64%) confirmed the existence of assessment procedures before the execution of efforts to solve reading challenges experienced by learners. Literature concurs that learners with reading challenges get remedial assistance after being identified by their regular class teachers (See sub-section 1.1 p.1). This initial assessment is also employed before service provision to establish if the client could benefit from the planned programme (See Sub-section 3.9.2 p.76).

5.3.2.3 Use of a multi-disciplinary team in assessment

Participants were asked to present their responses in regard to the use of a multi-disciplinary team in conducting assessments to establish the reading disorders of learners with dyslexia. The responses are presented in Table 5.9.

Table 5.9: Use of a Multi-disciplinary Team in Assessment

Q5	Frequency	Percent	Valid Percent
Strongly Disagree	4	2.7	2.7
Disagree	37	24.7	24.8
Undecided	56	37.3	37.6
Agree	47	31.3	31.5
Strongly Agree	5	3.3	3.4
Total	149	99.3	100
System	1	0.7	
Overall Total	150	100	

Table 5.9 shows that 4 (2.7%) participants *strongly disagreed* and 37 (24.7%) *disagreed* that a multi-disciplinary team was used in the assessment of learners with dyslexia. This makes 41 (27.4%) participants that effectively *disagreed.* 47 (31.3%) participants *agreed* and 5 (3.3%) *strongly agreed* to the statement making a total of 52 (34.6%) that attested to the employment of a multi-disciplinary team in the assessment of learners with dyslexia. 56 (37.3%) were *undecided.* Only 1 (0.7%) did not respond to this question item. The significant number of participants who *disagreed* or were *undecided* on this aspect showed that most teachers in mainstream primary schools were either not satisfied or unaware of the composition of practitioners involved in the assessment process. Despite this situation, literature maintains that a multi-disciplinary approach should be considered when carrying out an assessment procedure for learners with dyslexia since the team members have different roles and capacities (See sub-section 3.9.2 p.76).

5.3.2.4 Use of efficient assessment tools for accurate diagnosis of problems

Participants were requested to provide their views on the ability of the assessment tools to afford an accurate diagnosis of the reading problems that bedevil learners with dyslexia. The responses are shown in Table 5.10.

Table 5.10: Use of Efficient Assessment Tools for Diagnosis

Q6	Frequency	Percent
Strongly Disagree	8	5.3
Disagree	36	24
Undecided	73	48.7
Agree	26	17.3
Strongly Agree	7	4.7
Total	150	100

Table 5.10 reveals that the majority of participants 76 (48.7%) were not sure of the efficiency of assessment tools in making an accurate diagnosis of reading difficulties experienced by learners with dyslexia. This indicated limited knowledge of the participants on the assessment instruments used. 8 (5.3%) participants *strongly disagreed* and 36 (24%) *disagreed*, giving a total of 44 (29.3%) that disagreed. 26 (17.3%) *agreed* and 7 (4.7%) participants *strongly agreed*. Literature contends that learners that are eligible to participate in an intervention programme should be selected through specially designed standardised diagnostic tests to locate their learning difficulties (See sub-section 2.3.1.5 p.43; 3.9.2 p.76). The assessment tools used need to have a capacity to detect the specific reading challenges faced by dyslexic learners (See sub-section 3.9.2 p.76).

5.3.2.5 Identification of learning styles through assessment

This questionnaire item sought to elicit the views of participants on the ability of the assessment process to identify the learning styles of individuals with dyslexia. The responses of participants are shown in Table 5.11.

Table 5.11: Identification of Learning Styles

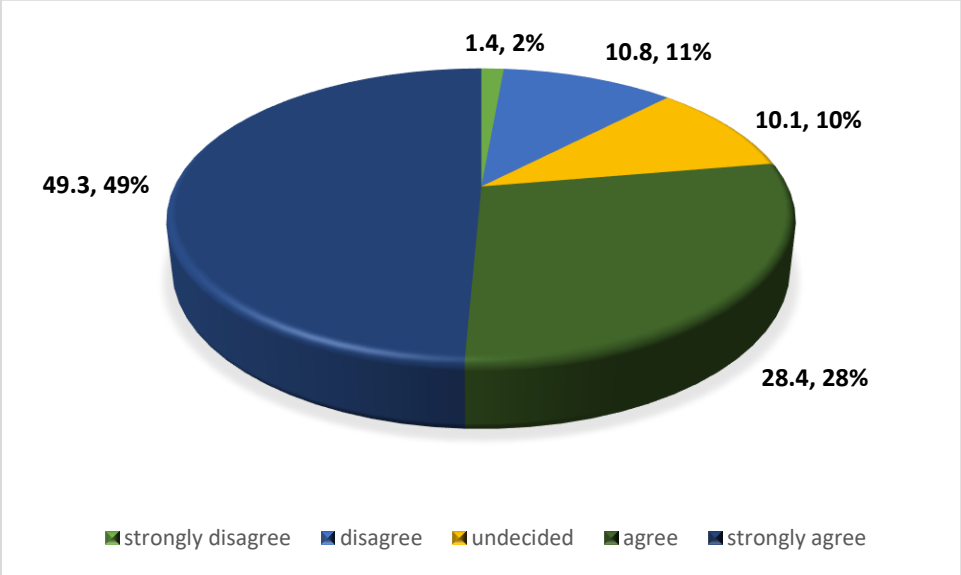
Q7	Frequency	Percent
Strongly Disagree	9	6
Disagree	75	50
Undecided	33	22
Agree	24	16
Strongly Agree	9	6
Total	150	100

The ability of the assessment procedure to identify the learning styles of individual learners is critical in regard to those with dyslexia. 9 (6%) participants *strongly disagreed* and 75 (50%) *disagreed* that the assessment procedure followed enabled the identification of preferred learning styles. In total, 84 (56%) participants *disagreed.* 24 (16%) participants *agreed* and 9 (6%) *strongly agreed,* constituting 33 (22%) participants that basically agreed. Those who were *undecided* numbered 33 (22%). The group that remained undecided showed that there were some teachers who possessed limited knowledge on the extent to which the assessment procedure conducted had a capacity to establish the learners' different ways of mastering content. Also, the views of the majority, 84 (56%) participants contradicted literature which advises that the preferred learning styles of individuals should be established through a logical assessment procedure (See Sub-section 3.9.2 p.76).

5.3.2.6 Attitudes of teachers towards learners with dyslexia

The attitudes of teachers towards learners with dyslexia can influence the implementation and success of intervention programmes in place. Graph 5.3 shows that 43 (28.4%) *agreed* with this notion and 74 (49.3%) *strongly agreed,* totaling 117 (77.7%) participants who were affirmative of the point. 2 (1.4%) *strongly disagreed* with the assertion and 16 (10.8%) *disagreed.* 15 (10.1%) were *undecided* while 2 (1.3%) did not respond to the survey item. Those who remained undecided on this aspect revealed that there were some teachers who were not aware of the impact that attitudes had on learning outcomes.

Less-than-positive attitudes and expectations of teachers can have lasting consequences on learners with dyslexia, especially in the way in which they see themselves and the amount of effort that they put in their academic work. The attitudes of teachers also determine how non-dyslexic learners perceive the academic capabilities of those learners with dyslexia (See Sub-section 3.9.6 p.83).



Graph 5.3: Attitude of Teachers towards Learners with Dyslexia

5.3.2.7 Multi-sensory approaches in teaching learners with dyslexia

This questionnaire item required participants to present their views pertaining to the use of multi-sensory approaches in the teaching of learners with dyslexia. The responses of participants are shown in Table 5.12.

Table 5.12: Use of Multi-sensory Approaches by Teachers

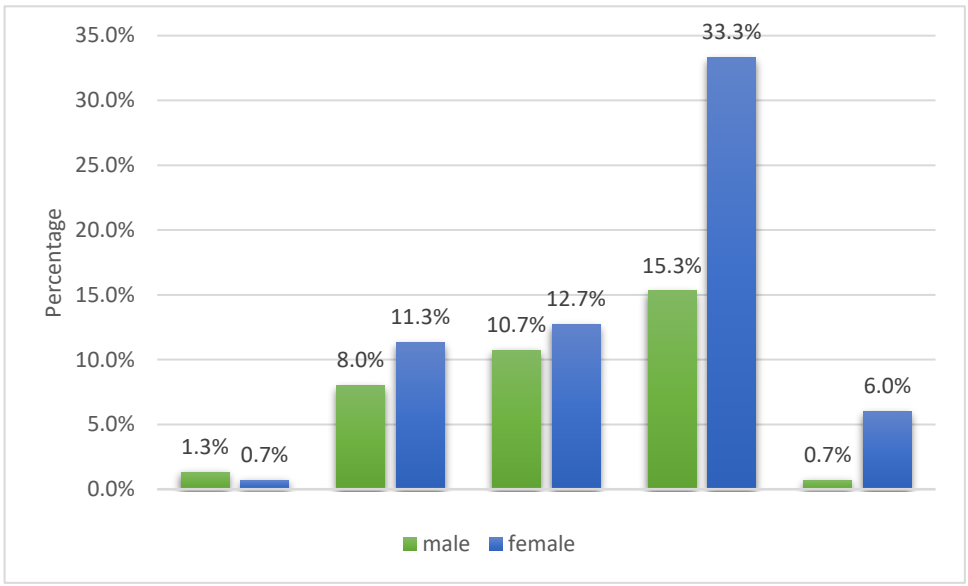
Q9	Frequency	Percent
Strongly Disagree	5	3
Disagree	15	10
Undecided	40	27
Agree	83	55.3
Strongly Agree	7	4.7
Total	150	100

Table 5.12 shows the responses of participants regarding the use of multi-sensory methods by teachers who taught learners with dyslexia. A total of 20 (13%) participants revealed that teachers did not use these. This comprised 15 (10%) participants who *disagreed* and 5 (3%) that *strongly disagreed* with the notion. On the other hand, 83 (55.3%) *agreed* and 7 (4.7%) *strongly agreed*. 40 (27%) remained *undecided.* This outcome generally showed that the majority of participants used multi-sensory approaches in assisting learners with dyslexia. However, the group that remained undecided on this aspect revealed that some teachers were not certain whether they adequately adopted this approach or not. The assertion that multi-sensory approaches are employed in teaching learners with dyslexia is supported by literature which states that in educating learners with dyslexia, multisensory connections between print, sound, movement should be emphasised as these supports the learning of reading and spelling skills (See sub-section 2.3.1.5 p.43).

5.3.2.8 Teaching and learning media for learners with dyslexia

The responses of participants were required on their use of a variety of teaching and learning media in implementing intervention programmes for learners with dyslexia. Graph 5.4 shows that 73 (48.7%) confirmed that they used different media when teaching such learners, 10 (6.7%) *strongly agreed,* constituting 83 (55.4%) participants that presented a positive view. 3 (2%) participants *strongly disagreed,* 29 (19.3%) *disagreed* while 35 (23.3%) were *undecided.* The group that remained undecided is a revelation

that there were some teachers in mainstream schools who were not confident about the extent to which they used varied media as was expected. Literature states that teaching media such as computers and teachers' guides provide assistance in the development of literary competencies for learners with special needs (See Sub-section 3.9.10 p.95).

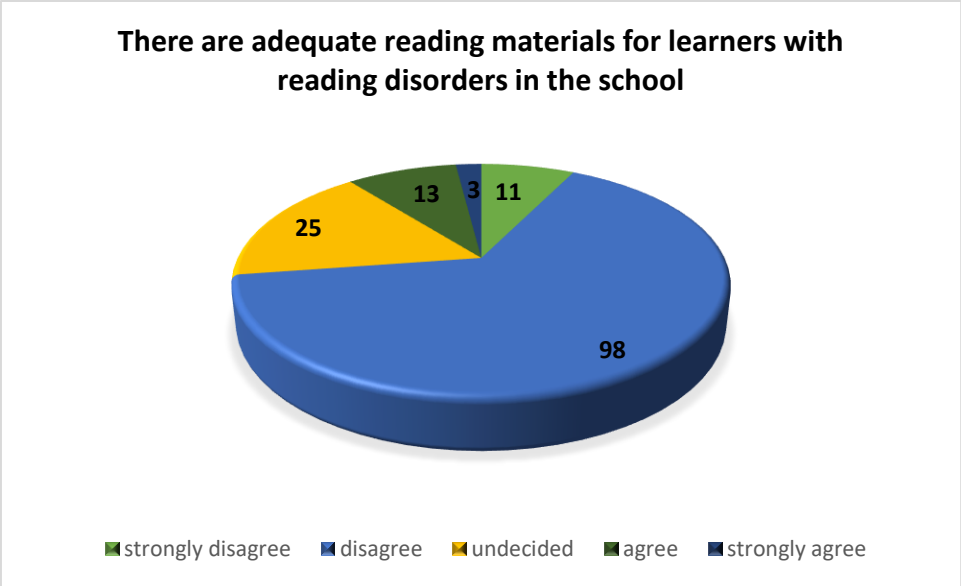


Graph 5.4: Use of a Variety of Teaching and Learning Media

5.3.2.9 Adequacy of reading materials for learners with dyslexia

This questionnaire item required participants to reflect on the adequacy of reading materials available for learners with dyslexia in schools. Graph 5.4 shows that, in total, 109 (72.6) participants *disagreed* that there were adequate resources. This included 11 (7.3%) participants that *strongly disagreed* and 98 (65.3%) that *disagreed.* 13 (8.7%) participants *agreed* and 3 (2%) *strongly agreed,* adding up to 16 (10.7%) participants who were generally in agreement with this notion. Those in the *undecided* bracket were 25 (16.7%). This group revealed that some teachers could not tell whether the reading resources that they had were adequate or not. This could be due to lack of clear policies on the learner-book ratio or lack of reading resources that were adequate and at the same time relevant. If reading resources are many but failing to meet the academic needs of all learners then they cease to be adequate. Literature states that, the use of adequate, specialised materials and resources inclusive of coloured chalks, markers and

technology, for learners with dyslexia is highly commended (See sub-section 3.9.10 p.94). More learners with dyslexia will learn to read with comprehension if materials for practice are supported by effective reading skills (See sub-section 3.9.10 p.95).



Graph 5.5 Adequacy of Reading Materials

5.3.2.10 Match between reading materials and academic levels of learners

The responses of participants were required to ascertain if the reading materials available met the reading levels of learners with dyslexia. The responses are shown in Table 5.13.

Table 5.13: Reading Materials and Reading Levels of Learners

Q12	Frequency	Percent
Strongly Disagree	23	15.3
Disagree	82	54.7
Undecided	22	14.7
Agree	21	14
Strongly Agree	2	1.3
Total	150	100

Table 5.13 reveals the responses of participants on the match between the reading materials available and the reading levels of learners with dyslexia. 23 (15.3%) *strongly disagreed* and 82 (54.7%) *disagreed.* In total, 105 (70%) participants remained on the negative view. 21 (14) *agreed,* 2 (1.3%) *strongly agreed* and 22 (14.7%) were *undecided* on the matter. The conclusion from such findings was that most reading materials were not linked to the reading levels of learners. This contradicts literature which states that the reading text must be carefully selected so that the learners are not frustrated by reading material that is more difficult than their abilities (See Sub-section 2.3.1.4 p.41; 3.9.10 p.95).

5.3.2.11 Teacher–learner ratio

This questionnaire item needed participants to reveal whether the teacher-learner ratio in their classes promoted individual attendance to learners with dyslexia. The responses are indicated in Table 5.14.

Table 5.14: Teacher-learner Ratio

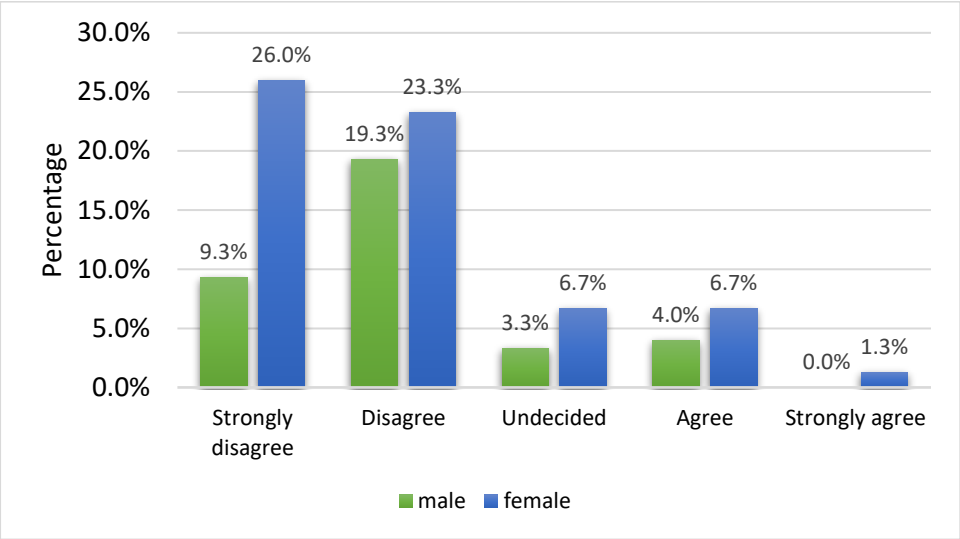
Q13	Frequency	Percent
Strongly Disagree	58	38.7
Disagree	64	42.7
Undecided	13	8.7
Agree	14	9.3
Strongly Agree	1	0.7
Total	150	100

Table 5.14 shows the views of participants on the efficiency of the teacher-learner ratio in most regular classes to promote individual attendance to learners with dyslexia. 58 (38.7%) *strongly disagreed* while 64 (42.7%) *disagreed.* Altogether, 122 (81.4%) participants generally *disagreed*to this notion. On the other hand, 14 (9.3%) and 1 (0.7%) participants*agreed* and *strongly agreed* respectively. 13 (8.7%) participants were *undecided.* This group of undecided individuals showed that some teachers were not sure whether the teacher-learner ratio had an impact on the administration of the intervention programmes in place or not. However, the general response of the majority of participants remained on the negative and this finding contradicts literature which states that learners with diverse needs require individual attention, support and guidance from their teacher and this may become impossible in large classes that have 38-40 learners (See sub-section 3.9.7.5 p.86).

5.3.2.12 Adequacy of time to administer intervention programmes

The questionnaire item solicited the views of participants regarding the adequacy of time that was allocated for the administration of intervention programmes for learners with dyslexia. 53 (35.3%) participants *strongly disagreed* to the notion and 64 (42.7%) *disagreed,* bringing the sum of those on the negative side to 117 (78%). 16 (10.7%) participants *agreed* to the statement, 2 (1.3%) *strongly agreed* while 15 (10%) were *undecided*. This revealed that the majority of participants felt that the time allocated for the implementation of intervention programmes was not adequate. Literature maintains

that some learners with dyslexia typically need more time than their peers to complete reading and other language tasks (See sub-section 2.3.1.4 p.41).



Graph 5.6 Adequacy of Time to Administer Programmes

5.3.2.13 Supervision of programmes for dyslexic learners

Participants were asked to respond on the effectiveness of supervision on the implementation of intervention programmes for learners with dyslexia. The views of participants are presented in Table 5.15.

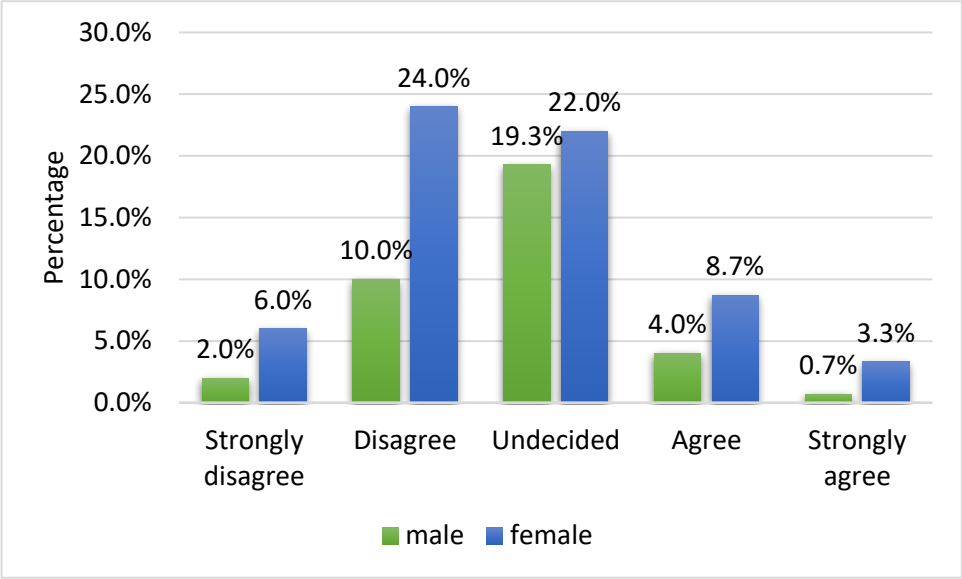
Table 5.15: Effectiveness of Supervision

Q15	Frequency	Percent
Strongly Disagree	11	7.3
Disagree	36	24
Undecided	69	46
Agree	27	18
Strongly Agree	7	4.7
Total	150	100

Table 5.15 shows that 11 (7.3%) participants *strongly disagreed* that the supervision provided for the intervention programmes for learners with dyslexia was effectively done and 36 (24%) *disagreed*. In total, 47 (31.3%) participants *disagreed*. A combination of 47 (31.3%) participants who disagreed and 69 (46%) who were *undecided* gives a total of 116 (77.3%) participants who were not positive to the questionnaire item. A significant number of participants who remained undecided could be an indicator that there were some teachers who were not able to evaluate the effectiveness of supervision services provided to them. This could be due to limited knowledge on what was required and what they received. On the other hand, 27 (18%) participants *agreed* and 7 (4.7%) *strongly agreed.* This position contradicts literature which states that supervision is critical as it guides and stimulates professional growth in teachers. In other words, it improves their quality of work output and learner achievement (See sub-section 3.9.12 p.97).

5.3.2.14 Adequacy of continuous professional development workshops

This questionnaire item requested participants to respond to the issue of adequacy of CPDT workshops aimed at improving the teaching and learning of learners with dyslexia. Graphs 5.4 shows that 12 (8%) *strongly disagreed* that these workshops were adequate. 51 (34%) *disagreed,* adding up to 63 (42%) participants in the negative bracket. 62 (41.3%) were *undecided*. This significant number of those who remained undecided could mean that there were some teachers who were not aware of the exact number of workshops to be attended within a specific period or were not satisfied with the quality of workshops conducted. 19 (12.3 %) however, *agreed* that these workshops were adequate and 6 (4%) *strongly agreed*. The views of the majority of participants contradicts literature which commends the exposure of teachers to CPDT workshops aimed at improving and sharpening skills for effective service delivery (See sub-section 3.9.9 p.90).



Graph 5.7: Adequacy of Professional Development Workshops

5.3.3 Research Question 3: What Challenges are Encountered by Mainstream Primary Schools in the Implementation of Intervention Programmes for Learners with Dyslexia?

This section sought to establish the perceptions of teachers on challenges that hindered the successful implementation of intervention programmes in place. Some of these challenges included limited knowledge that teachers had on the needs of learners with dyslexia, the large classes that they taught, and the time allocated for this service.

5.3.3.1 Limited knowledge of learners' various needs

Participants were required to reveal their opinions on whether the knowledge that they possessed as mainstream teachers pertaining to the needs of learners with dyslexia was a factor that hindered successful implementation of relevant intervention programmes. Their views are presented in Table 5.16.

Table 5.16: Limited Knowledge of Learners' Various Needs

Q17a	Frequency	Percent
Strongly Disagree	6	4
Disagree	25	16.7
Undecided	15	10
Agree	61	40.7
Strongly Agree	43	28.7
Total	150	100

Table 5.16 reveals that 6 (4%) participants *strongly disagreed* that the knowledge that they possessed about learners' various needs was a factor that affected their effective implementation of the existing intervention programmes. 25 (16.7%) *disagreed* , making up to 31 (20.7%) participants who generally *disagreed* with the questionnaire item. 15 (10%) participants were *undecided*. The group that remained undecided on this aspect could represent those teachers who were not fully aware of the relationship between knowledge and service delivery. On the other hand, 61 (40.7%) participants *agreed* and 43 (28.7%) *strongly agreed*. Altogether, 104 (69.3%) participants, which was the majority, confirmed their lack of adequate knowledge required in the teaching of such learners. Literature attests to this setback by expressing that most teachers do not know what to do to support learners with dyslexia as they do not have adequate training on this learning disability (See Sub-section 3.10.1 p.98).

5.3.3.2 Large class sizes

Participants were further requested to reveal their perceptions on whether the issue of large mainstream classes was posing any challenges with regard to the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream classes. Their views are presented in Table 5.16.

Table 5.17: Large Class Sizes

Q17b	Frequency	Percent
Strongly Disagree	5	3.3
Disagree	18	12
Undecided	8	5.3
Agree	52	34.7
Strongly Agree	67	44.7
Total	150	100

Table 5.17 shows that 5 (3.3%) participants *strongly disagreed* that the large classes taught in mainstream schools was a factor that impeded effective implementation of intervention programmes for learners with dyslexia. 18 (12%) participants also *disagreed*. 8 (5.3%) remained *undecided*. The group that remained undecided could represent teachers who were not sure of the relationship that existed between teacher-learner ratio and effective service delivery. Such teachers could have had limited experience in teaching classes with varied number of learners. On the contrary, 52 (34.7%) *agreed* that teaching large classes had a negative impact, 67 (44.7%) *strongly agreed.* In total 119 (79.4%) generally agreed. Literature supports this position by emphasising that learners with dyslexia demand more attention and individual assistance which generally lacks in large traditional classes (See Sub-section 3.10.6 p.101).

5.3.3.3 Time allocation

This questionnaire item solicited the responses of participants in relation to the adequacy of time allocated for the implementation of intervention programmes for learners with dyslexia. Their views are presented in Table 5.18.

Table 5.18: Time Allocation

Q17c	Frequency	Percent	Valid Percent
Strongly Disagree	17	11.3	11.3
Disagree	7	4.7	4.7
Undecided	11	7.3	7.3
Agree	67	44.7	44.7
Strongly Agree	48	32	32
Total	150	100	100

Table 5.18 reveals that 17 (11.3%) participants *strongly disagreed* that the time allocated for the implementation of intervention programmes for learners with dyslexia posed a challenge. 7 (4.7%) participants *disagreed,* constituting 24 (16%) who had a negative view. 11 (7.3%) participants were *undecided.* The group that remained undecided could represent those teachers who were not certain of the amount of time required to deliver this service. 67 (44.7%) *agreed* and 48 (32%) *strongly agreed* to this view. Altogether, 115 (76.3%) participants opined that the time allocated for intervention programmes had a negative impact on their success. This corroborates with literature which reveals that dyslexic learners in mainstream classes are not given adequate time to complete assigned activities and this impacts negatively on their overall performance. Limited time allocation in most regular classes in developing countries is sometimes due to the use of congested and rigid timetables (See Sub-section 3.10.7 p.102).

5.3.3.4 Measurement of the validity of quantitative data

The objectivity of categorical data which were collected in this study could be measured using chi-square tests. The two common ones relate to a chi-square test of homogeneity and a chi-square test for independence. The chi-square test of homgeneity is applied to a single categorical variable from two or more different populations. It determines whether frequency counts are distributed identically across different populations. The latter is used to test if there is or there is no significant relationship between two or more groups of categorical data from the same population. In this study, the use of any of these tests to

ascertain the validity of results was hindered by the fact that the gathered data were not collected from different populations, neither were it collected from groups that could be compared within the same population. The findings were more suggestive to warrant the calculations for statistical significance.

5.3.3.5 Summary of the general trend of quantitative data

The study showed that participants were generally aware of the different types of programmes which were meant to assist in the learning of individuals with dyslexia in mainstream classes. The programmes were revealed as fairly learner-centred, sensitive to the learners' diverse needs and having a capacity to enhance inclusion. It emerged that there were policies to support the implementation of the availed intervention programmes. Despite this, it was gathered that some participants were not aware of the existence of these policies while others felt there were not as specific as was expected. It was also established that placement into different programmes was largely dependent on both informal and formal assessment results. In most cases, multi-disciplinary teams were used in the assessment of learners with dyslexia. Some participants however expressed lack of knowledge of how assessment procedures were done in their schools. The study further discovered that the negative attitudes of some teachers hampered the progress of learners with dyslexia in understanding concepts. Inadequacy of reading materials, in the form of text books and computers also affected service provision. In situations where reading materials were available, these were found not to be matched with the reading levels of learners. The time allocated for remedial work was shown to be inadequate to successfully implement strategies that assist learners with dyslexia. Participants also disagreed that the supervision of service provision was effectively done. CPDT workshops aimed at improving the teaching of learners with dyslexia were identified as inadequate. It also emerged that limited knowledge that some teachers had on the diverse needs of learners and large classes which they taught also affected the inclusion of learners with dyslexia in mainstream schools.

5.4 ANALYSIS AND INTERPRETATION OF QUALITATIVE DATA

This section presents an analysis and interpretation of qualitative data. The first part focuses on thematic analysis of contextual data and the second part presents an analysis of documents that were related to the implementation of intervention programmes for learners with dyslexia.

5.4.1 Analysis and Interpretation of Contextual Questions

This section focuses on data that were generated from interviews conducted with heads of schools, the DSI, DRT and the District ECD trainer. Heads of schools were coded from Head1 to Head10. This was related to their positions on the interview list. The District Schools Inspector was coded as DSI, District Remedial Tutor as DRT and District ECD trainer as ECD. The analysis is guided by the questions that informed the conversations, the outcomes from the interactions, the purpose of the study and evidence from the review of related literature. Gathered data were grouped into themes, sub-themes and patterns that emerged from the collected data sets.

5.4.2 Theme 1: Background Information on Intervention Programmes

Theme 1 sought to establish background information on the intervention programmes that were in place. Focus was given to their nature, target groups and administration issues.

5.4.2.1 Nature of the intervention programmes

The study revealed that there were several types of intervention programmes that sought to enhance the inclusion of learners with dyslexia in mainstream primary schools. In this regard, participants mentioned ERI, PLAP, in-class and clinical remediation. Literature concurs that the intervention programmes offered in Zimbabwean primary schools include the WSRP, clinical remedial programme, PLAP and ERI (See Sub-section 3.8.2.4 p.70). Participants further opined that the activities that made up these programmes were fairly sensitive to the learners' academic needs. ERI however, was realised to be suitable for

only those with mild to moderate reading problems. Literature supports this by stating that effective intervention for learners with dyslexia must meet their specific academic requirements through the adoption of multi-sensory, systematic, explicit, diagnostic, differentiated, synthetic, analytic as well as learner-centred instruction (See sub-section 3.9.7 p.84). Two participants said:

> *Thank you very much! As a district, we have four programmes that are running, and these are generally composed of learning activities that are child centred. They include, the ERI which is administered from ECD A up to Grade 2, then we have the PLAP programme which is done by the grade 3s up to 7. We also have the in-class as well as the clinical remediation* **(DSI).**
>
> *We have the ERI, PLAP, clinical and in-class remediation* **(Head 6).**
>
> *We have ERI which provides early intervention but cannot assist those with serious reading problems.This means some will be left out since this is the only programme* in the infant department. *I am content with those for older scholars* **(Head 8).**

5.4.2.2 Target groups for specific intervention programmes

The study also found out that the availed intervention programmes mainly targeted specific groups of learners with dyslexia. ERI, which is an early intervention strategy, was meant for the infant department, that is, ECD A, B, Grades 1 and 2. Literature observes that without early intervention, the reading gap between struggling readers and their peers without a reading challenge continues to widen over time (See sub-section 3.9.3 p.79). It further emerged that PLAP, in-class and clinical remediation were interventions normally provided to learners who were doing Grades 3 up to 7. Literature reveals that PLAP was introduced by the government of Zimbabwe in 2012 as a measure of restoring the academic performance of learners which had declined due to the economic status of the country during the period of 2006 and 2009 (See Sub-section 1.1 p.1). The study further gathered that learners who hardly benefitted from PLAP required more individualised attention. Therefore, these were assisted through in-class remediation. Lastly most serious cases were considered for clinical remediation. Three participants said:

> *We have a couple of intervention programmes that are in place at our school. First we have ERI which targets the infant department. This programme enables learners to be assisted before their reading challenges worsen or become complicated* **(Head 8).**

….we have the PLAP programme which is done by the grade 3s up to 7. In PLAP children are grouped using their last points of success. For example, children may be at grade 5 level but performing at grade 2, 3 or 4 level so before any service is given there are put in their levels and the teacher is expected to plan for all the levels then implement the programme **(DSI).**

…those who would have failed to benefit from PLAP are further assisted individually by their teacher in a programme called in-class or whole school remediation. Those who do not make it even after this service are then considered for clinical remediation. Most of them will not be able to read or do simple mathematical calculations **(DRT).**

5.4.2.3 Administration of the intervention programmes

It was further gathered that the administration of the intervention programmes on offer was done, either on a full or partial-inclusion basis. ERI and PLAP were done during the normal teaching process while in-class and clinical remediation programmes were normally provided after a normal day's lessons. The implementation of ERI was enhanced through the use of teaching and learning modules that comprised activities relevant to each academic level. Participants further revealed that the suggested activities provided in these modules specifically assisted learners to develop visual, auditory, phonological, automatisation and kinaesthetic skills. This concurs with literature which emphasises that the basis of educating learners with dyslexia is to show links between print, sound, movement and meaning as these improve their reading competence (See Sub-section 2.3.1.5 p.43). Two participants said:

Some of these programmes like PLAP and ERI are conducted during the process of teaching whereas in-class and clinical remediation are done in the afternoon, after normal lessons **(DRT).**

… the programme has modules that help teachers and learners to adopt teaching and learning strategies that are effective in early reading. The modules are three and each one is specific to a certain level, for example ECD A, B and Grade 1 and 2. In these modules there are suggested activities that assist in visual, auditory and phonological processing of words and information **(ECDt).**

It further emerged that in the conduct of PLAP, learners were first assessed and grouped according to their levels of academic performance. From there, teachers were expected to design various lesson plans that were relevant for specific groups. Participants also revealed that the learning activities should assist learners to develop from their last point

of success to the levels they were expected to be in, considering their primary school grades. This implied giving different remedies that cater for diversity (See sub-section 2.3 p.35). It was also gathered that during the implementation of PLAP, teachers used a variety of teaching methods and media. Literature concurs that in situations where learners have a confusion in reading similar looking letters, such as *b* and *d*, they are encouraged to use all their learning modalities as well as concrete and abstract learning aids (See Sub-section 2.3.1.5 p.43). Two participants said:

> *PLAP is a new innovation in our Ministry and emphasises assisting learners from their last point of success to the level they are expected to be in. The child's release from this programme depends on his progress but teachers are often encouraged to do their best in the implementation of this programme so that learners do not stay long in it* **(Head 8).**

> *During the administration of PLAP learners are grouped in relation to their potentials then assisted from their last point of success to the level that they are expected to be operating at* **(Head 7).**

During in-class remediation learners with dyslexia were given more individualised instruction than in PLAP so as to enhance understanding of content taught. The class teachers personally offered this service or sought the expertise of other colleagues. It was also observed that participants had different views on the exact time in which in-class remediation was administered in schools. Some said that teachers offered this service during library periods while others said it was done during any spare period as long it was outside normal lessons. In this regard, two participants said:

> *In-class remediation is also given by the class teacher usually during break, lunch time or when others are doing other school activities* **(Head 2).**

> *In-class remediation is provided by the class teachers but not during the normal teaching and learning process. The teacher has to use his or her own spare time to administer the programme* **(Head 6).**

It also emerged that dyslexic learners who had more serious reading problems were placed in the clinical remediation programme. This programme was administered by school language remedial teachers. In this regard, literature concurs that this programme should be administered by two teachers in every school which has an enrolment of 500

or less learners. One is responsible for reading remediation while the other is for mathematics (See Sub-section1.1 p.1). Participants revealed different views on how school remedial teachers were selected. Some said that school heads used their own discretion in doing this while others said that interested teachers volunteered to take up these programmes. It was also revealed that programme implementation was done for two afternoons a week and each session lasted for thirty minutes. In addition, it was gathered that in some schools this programme was conducted at the same time as extra-curricular activities like sports. Three participants said:

> *Those who are assisted in the clinical remediation will be having more severe reading disorders and are attended to by designated remedial teachers who are periodically trained by the district office to do this duty in schools* **(Head 8).**
>
> *Clinical remediation is conducted in reading and mathematics twice a week by two teachers that I would have chosen based on their professional attributes. Learners are expected to graduate from these programmes and this is confirmed by both the school and the personnel from the district office* **(Head 7).**
>
> *Clinical remediation is done twice a week in the afternoon and at our school each session is one hour long. During the administration of this programme other learners who are not involved will be doing sporting activities or cleaning the school grounds* **(Head 3).**

5.4.3 Theme 2: Educational Considerations in the Implementation of Intervention Programmes for Learners with Dyslexia

Theme 2 sought to solicit some crucial factors in the implementation of intervention programmes for learners with dyslexia. These were identified as policies, assessment and placement, teacher attributes, teaching instruction, preferred learning styles, teaching and learning resources, class size, time allocation, supervision and continuous professional development.

5.4.3.1 Policies

The availability of policies was identified as one crucial factor in the implementation of intervention programmes for learners with dyslexia. This study established that Bubi District had a policy that guided the administration of educational provisions for such individuals. Provisions of this document were drawn from several Ministry of Primary and

Secondary Education policies which included the Education Act of 1987 as amended in 2006, the Constitution of the Republic of Zimbabwe (2013), the Secretary's Circular Minute Number 11 of 2015 and the CEO Circular Minute Number 12 of 1987. In relation to this, literature states that in Zimbabwe, the main law that gives guide to all activities in mainstream and Special Needs Education is the Education Act of 1987 as amended in 2006. It further reveals that ERI should follow the guidelines of the Secretary's Circular Minute Number 11 of 2015 while the CEO Minute Number 12 of 1987 is used for clinical remediation (See Sub-section 1.1 p.1). It was further observed that there were no specific Ministry policies for the implementation of PLAP and in-class remediation. Two participants said:

> *...we have a district policy document that provides guides for implementing these programmes. We also consult the Education Act of 1987 which states that all children should be given quality education. To me assisting learners through the administration of these programmes is an attempt towards the provision of quality education. We also have the Constitution of Zimbabwe which specifies that learners with disabilities should be provided necessary services. The ERI programme also has a Ministry policy that was released to the schools in 2015. Ummmmm.... I have forgotten the name of a policy for clinical remediation, but it is there* **(Head 3).**

> *We are normally guided by the circulars, that is, Directors' Secretary's and Provincial Education Directors' circulars. We have the Secretary's circular minute number 11 of 2015 which we use for the ERI programme and the Secretary's circular minute number 12 of 1987 and this is for clinical remediation. Above our district crafted a policy document that basically guides Bubi district on the administration of programmes for learners with reading problems* **(Head 5).**

5.4.3.2 Assessment of learners for placement into different programmes

The study recognised assessment as another crucial factor considering that placement of learners with dyslexia into different intervention programmes was determined by assessment results. An assessment procedure for learners with dyslexia precedes service provision (See sub-section 3.9.2 p.76). It was also revealed that assessment of these learners in the district of study utilised both formal and informal techniques. Those in the infant category were identified using informal methods like observations and written work. Learners in Grades 3 up to 7 were identified using both formal and informal methods. A single test called WRAT (1) was used for their selection and placement into PLAP. The SPS/SNE Department was mandated to administer this instrument and the

relevant team consisted of psychologists, the DRT and sometimes the speech therapist. Whilst this team was viewed as relevant in this endeavor, literature advocates for a much broader multi-disciplinary composition which considers the parents or caregivers of a learner, regular class teachers, school heads or principals and medical doctors in addition to the SPS/SNE personnel(See sub-section 3.9.2 p.76). One participant said:

> *… the teachers' own discretion is also used to identify candidates for placement into the ERI and the in-class remedial programme. Performance in reading and written tasks may suggest that the child needs help. In order to place learners in PLAP and clinical remediation, an assessment by the psychologists with the help of some teachers is conducted. They also graduate from these programmes if they show notable improvements* **(Head 1).**

5.4.3.3 Teacher attributes

The study established that, in order to effectively implement the intervention programmes, teachers' knowledge of the general signs and symptoms of dyslexia which include omission of letters when reading, substitution of certain letters, mirror reading and poor left to right orientation was viewed as a priority. Literature emphasises that, such awareness enhances the teachers' ability to accurately identify and assist learners with this condition (See sub-section 3.9.4 p.80). Furthermore, the study revealed that teachers also needed to know the causes of dyslexia, age of onset and learners' general background. Literature contends that teachers should have basic knowledge of the cognitive and biological causes of dyslexia as these may contribute towards the designing of relevant treatment (See sub-section 3.9.4 p.80). It was also established that a person may be born with dyslexia, acquire it during birth or later in life after attaining the basic reading skills. The condition may also be worsened by the living conditions at home. Two participants said:

> *...teachers must be aware of the signs of reading disorders which may include omitting letters when writing spellings, reading from right to left or reading English words in IsiNdebele* **(Head 4).**

> *Some learners may come from backgrounds that discourage learning and therefore may regularly fail to do their homework or absent themselves often from school. It is therefore, necessary for the teacher to gather all this information so that he may give relevant treatment* **(Head 6).**

It further emerged that teachers' knowledge of the subject matter was also viewed as crucial. In this regard, literature highlights that the learners' weak performance in literacy could be due to the deficiency in the teachers' skills to teach reading aspects. Teachers' deficiency was also reflected by their weak performance in oral reading; implying that they themselves would not have adequately mastered reading skills (See sub-section 3.10.3 p.99). Competence in reading assists teachers to be commendable role models to their learners. The study further opined that the teachers' awareness of the current trends and practices in the education of learners with dyslexia was also significant. This could be enhanced through doing thorough and constant research in the relevant area. Two participants said:

> *Teachers must always research on the content to be learnt by learners. My school has internet connections and we had to have this facility with the aim of assisting teachers to be knowledgeable about current teaching methods and practices* **(Head 8).**
>
> *Learners with reading disorders face different reading problems. Some can see the letter symbols, read the letters of the alphabet but fail read words built using letters. Other learners may read words correctly but cannot understand their meanings and in such a case they also fail to make sentences using read words. Teachers should know and understand the different challenges faced by different learners so that they assist them using different relevant methods and materials* **(Head 2).**

The study also established that good assessment skills were to be possessed by teachers of learners with dyslexia. Identification and differentiation of such learners from other special needs cases could be necessitated by effective assessment. It was also revealed that creativity was another skill that teachers needed. This attribute was viewed as essential both in the presentation of lessons as well as the construction of learning media that was effective for content acquisition. It also emerged that teachers had to have good collaboration skills. In this regard, the participants of the study felt that, teachers needed to collaborate with parents, the school administration as well as other professionals who could be their colleagues. Literature states that a productive teacher-parent relationship is crucial for learners with special needs and allows for the continuous educational development of the learner between home and school (See sub-section 3.10.9. p.104). Three participants said:

Teachers should also have good identification skills. By having these, it will help them to notice learners who face difficulties in reading. They should identify the exact area that challenges the learner **(Head 6)**

.

I also feel that teachers should be creative and resourceful. They should make class libraries with a variety of reading materials which could be reading cards, games, puzzles and booklets and encourage learners to utilise it even in the absence of the teacher. This will assist to create a reading culture in learners **(Head 7).**

…He or she must be patient and have a capacity to work with the parents of learners identified to be having reading disorders so that even when learners are at home they can continue learning being assisted by their parents **(Head 5).**

Positive attitudes of teachers towards learners with dyslexia were also identified as crucial. Literature states that teacher attitudes and expectations can have lasting consequences particularly in the case of a classroom teacher who holds a less-than-positive attitude towards learners with a disability (See sub-section 3.10.2 p.99). In relation to this, patience on the part of teachers was identified as one attribute that could facilitate the inclusion of learners who are slow readers in mainstream classes. Learners should be allowed to master concepts at their pace and the learning matter should be presented in a logical sequence. Literature emphasises that reading content must be presented as manageable units (See sub-section 2.3.1.4 p.41). Another attribute that is related to positive attitudes is determination. In this regard, the study gathered that some teachers generally perceived intervention programmes as a burden or work designed to frustrate them. If this view could change, then implementation levels were likely to be enhanced. Furthermore, the study revealed that teachers of learners with dyslexia needed to show appreciation of their achievement, no matter how little it could seem. This was believed to develop a positive self-esteem in learners and ultimately encourage academic improvement. Two participants said:

Patience on the part of teachers is another attribute that improves success of the intervention programmes for learners with dyslexia. Some learners with reading problems are slow in reading and may take time to make sense out of written symbols before reading aloud to the teacher or the class **(Head 3).**

Teachers should have a positive attitude towards their work. Some of them view these programmes as a burden or work designed to frustrate them so in some instances they would even produce fake records that reveal learners progress then

when learners write their final exams they would fail. This would then suggest that the intervention programmes were not done with utmost dedication **(Head 9).**

5.4.3.4 Teaching instruction

A clear understanding of the instructional options for specific groups of learners is crucial for a successful teaching experience. Participants of the study opined that one of the best qualities for teachers who taught learners with dyslexia was to gain an awareness of the teaching instruction that could be sensitive to individual differences. Literature confirms that knowledge of the type and severity of dyslexia in an individual further gives direction to the choice of a teaching instruction (See Sub-section 3.9.4 p.80). Literature further recommends systematic, explicit, diagnostic, differentiated, synthetic and analytic and learner-centred instruction as effective in teaching most learners with dyslexia (See sub-section 3.9.7 p.84). Two participants said:

Teachers should also adopt teaching methods that vary but at the same time allowing learners to develop gradually as they learn from simple to more complex concepts **(DSI).**

Teachers should use a variety of teaching methods in their teaching while attending to individual needs **(DRT).**

5.4.3.5 Preferred individual learning styles

Individual learning styles can influence the presentation of academic content to different learners with dyslexia. Participants suggested that teachers needed to be able to establish the preferred learning styles of individuals as these would suggest relevant instruction and suitable media. The study gathered that some learners with dyslexia would prefer to study in groups while others desired individual tuition. On the other hand, others depended on their sense of sight in learning when their counterparts resorted to other sensory modalities. In this regard, literature suggests that, learning content for those with dyslexia may be presented visually (visual modality), traced (kinetic and tactile) in their hands or plastic letters and the letter name or sounds can then be orally (auditory mode) presented (See Sub-section 2.3.1.5 p.43). Two participants said:

The way different learners learn must be highly valued because people are different and so is the way they learn **(ECDt).**

The ways in which learners learn should also be considered if these programmes are to be effective. Some prefer using their sense of sight, some hearing while others would also need to touch or learn from drawings **(DSI).**

5.4.3.6 Teaching and learning resources

Participants were vocal in identifying the centrality of teaching and learning resources for effective delivery of instruction. They further noted that these materials needed to be relevant to the requirements and level of learners. Printed resources were also said to be written in ways that matched the reading abilities of learners in terms of font size and the level at which the difficulty of content would be pegged. Literature concurs that materials and tools employed in the teaching of individuals with dyslexia should be aligned with the learners' needs, capabilities and learning objectives (See Sub-section 3.9.10 p.95). In addition, facilities like classrooms, libraries and requisite equipments also needed to be sensitive to the characteristics of learners. The availability of relevant materials and suitable infrastructure is one of the methods to delineate dyslexia-friendly practice (See sub-section 3.9.10 p.95). Two participants said:

I highly consider the availability of adequate as well as relevant human and material resources. Material resources that are crucial include books, pens, pencils, charts, libraries, computers and good infrastructure **(DSI).**

To enhance use of multiple senses teachers should also have a lot of media and learning resources **(DRT).**

5.4.3.7 Class Size

The study revealed that the size of the class is also pivotal in determining the implementation of intervention programmes for learners with dyslexia. The high number of learners in a class usually signals challenges in the management of the group and other related difficulties. On the other hand, the presence of few learners in a class was said to enable the teacher to study and understand each individual then deliver specific teaching skills. Literature contends that it may be impossible for teachers to offer individual attention and support to learners in the context of large classes (See sub-section 3.10.6 p.101). One participant said:

Also classes in mainstream schools must be manageable. Class sizes are a crucial factor when implementing intervention programmes for learners with reading problems **(ECDt).**

5.4.3.8 Time allocation

The amount of time that is provided for teaching a particular concept shapes the extent to which it is mastered. Participants revealed that time allocation for implementing intervention programmes for learners with dyslexia was crucial for the achievement of positive outcomes. Programmes that were given more time basically received increased concentration than those that were given a lesser period of time. Literature contends that some learners with dyslexia are not afforded adequate time to master certain reading skills due to the use of rigid timetables in schools (See Sub-section 3.10.7 p.102). Two participants said:

Quality time is also needed when assisting learners with reading disorders. Attendance to individual capabilities is also important because learners do not master concepts at the same time ***(DSI)***

Also, the time used in the teaching of learners with reading difficulties must be considered. This must be enough so that even those who are slow in competing reading tasks may be accommodated ***(DRT).***

5.4.3.9 Supervision

The study revealed that supervision was another pertinent factor that needed to be targeted at all educators who were involved in the execution of intervention programmes. This was particularly pronounced in the teacher group which was directly responsible for the provision of this service. It emerged that supervision by heads of schools was at times hampered by the load that they had. Some of them operated as teachers as well as administrators. However, supervision remains critical in mediating improved outcomes. Literature states that supervision is paramount for teachers to improve the quality of their work output and learner achievement (See sub-section 3.9.12 p.97). Two participants said:

Thorough supervision is also important, and this should involve supervision of teaching, programme implementation, evaluation and records involved **(DSI).**

I also think monitoring and supervision of programmes is also important because it assists us to correct and learn from one another **(DRT).**

5.4.3.10 Continuous professional development training

Participants indicated that CPDT was also crucial to educators who were engaged in the implementation of intervention programmes for learners with dyslexia. This was said to have the capacity to tool and re-tool teachers in the skills of implementing such activities. Literature advocates for the exposure of teachers to professional development workshops to improve and sharpen their skills for effective teaching of learners with dyslexia (See Sub-section 3.9.9 p.90). One participant said:

I also feel that teacher expertise is important when teaching learners with reading problems. And considering the changing systems in education, regular staff development programmes become a crucial factor when teaching learners like these **(ECDt).**

5.4.4 Theme 3: Roles of Stakeholders in Managing the Implementation of Intervention Programmes

Theme 3 sought to establish the perceptions of respondents on the specific roles assumed by different stakeholders involved in the implementation of intervention programmes for learners with dyslexia. Identified stakeholders included the school heads, the DRT, the district ECD trainer as well as the DSI.

5.4.4.1 Roles of school heads

The study established that heads of schools basically acted as representatives of the Ministry of Primary and Secondary Education in schools and communities. In this regard, they ensured that relevant educational policies were implemented in educational settings and appraised the Ministry of Primary and Secondary Education officials on the developments taking place in their schools. School heads also had a mandate to ensure the development of least-restrictive learning environments through facilitating the provision of physical and material resources that supported total development of learners with dyslexia. The availability of appropriate materials is one of the criteria for dyslexia-

friendly practice (See Sub-section 3.9.10 p.95). Heads of schools further ensured the designing of school rules that protected the rights of all learners inclusive of those with dyslexia. In addition, it was gathered that these officers assisted in the identification and placement of learners with dyslexia into suitable intervention programmes, afterwards, they delegated specific teachers to administer certain programmes like clinical remediation. Three participants said:

> *… I am also a mouthpiece of the Ministry at school and community level. I make sure that teachers know what is expected of them as educators of diverse learners. At the same time, I communicate the teachers' grievances with my supervisors in the education sector* **(Head 2).**
>
> *One of my basic responsibilities is to ensure the existence of a child-friendly learning environment in this school. I do this by making sure that no pupil is discriminated in all the activities conducted in the school. I also communicate with the School development committee so that the school's infrastructure is regularly attended to, necessary resources provided and maintained* **(Head 1).**
>
> *I encourage teachers to use various reading tasks and tests to identify learners who could be having various reading disorders then consider them for PLAP and in-class remediation. I also ask them to alert me on those with serious conditions so that I can invite the SPS/SNE to do further tests and make some recommendations* **(Head 8).**

The study also established that heads of schools supervised the teaching of learners with dyslexia. During lesson assessment, attention was given to the attainment of set objectives, suitability of the lesson content to the academic level of learners, logical presentation of content items, relevancy of teaching methods adopted, use of learning aids to enhance understanding, participation of learners in the designed activities and level of content mastery after teaching had been completed. The interviews revealed that heads of schools also checked ERI, PLAP, in-class and clinical remedial records then made recommendations for best practice. The exercise books of learners were also assessed to establish the amount of work given, its relevancy as well as the learners' academic progress. Through supervision a needs-analysis was conducted, and this assisted in planning on-going professional development programmes. The reviewed literature points out that education systems worldwide should seek to provide teachers with opportunities for in-service professional development as this facilitates the

maintenance of a high standard of teaching and retains a high-quality teacher workforce (See Sub-section 3.9.9 p.90). In the district under study, it was gathered that CPDT was usually provided in the form of workshops whereby school heads would do the facilitation or request the services of resource persons. In this regard, two participants said:

> *My role is to monitor and supervise teachers. I check the teachers' records and learners' exercise books to find out whether there are doing adequate language tasks that are related to reading. I also check whether teachers give learners reading homework* **(Head 8).**
>
> *The frequency of the workshops that we conduct at school level depends on the teachers' needs. We first have a needs analysis which I often do during observation of lessons as well as record book* **(Head 4).**

5.4.4.2 Roles of the District Remedial Tutor

The study established that, the remedial tutor represented the Department of SPS/SNE at district level and was responsible for monitoring the administration of some special needs education programmes available. Out of the four intervention programmes offered for learners with dyslexia in the district, the remedial tutor monitored three which were PLAP, in-class remediation and clinical remediation. Despite this, it emerged that the remedial tutor also empowered teachers and heads of schools with knowledge of using informal assessment techniques to identify and assist learners with dyslexia in mainstream classes. This officer also facilitated detailed assessment of learners with very serious reading challenges by the provincial SPS/SNE team. In this regard, literature contends that assessment of learners with dyslexia must adopt a multi-disciplinary approach. A multi- disciplinary team therefore may comprise the parents or caregivers of a student, teachers, school heads or principals, educational psychologists, speech therapists, medical doctors and other relevant stakeholders (See Sub-section 3.9.2 p.76). It was also gathered that when formal assessment had been completed, the remedial tutor distributed compiled results to the schools and explained how these had to be used for provision of relevant intervention. In this regard, a participant said:

> *One of my core duties is to advice the provincial office on schools to be provided formal assessment services in particular times then assist the psychologists and speech therapists in the actual assessment of learners with dyslexia. When the results have been compiled I physically take them to the schools and with the help*

of the school leadership, place learners in different programmes which could be PLAP or clinical remediation **(DRT).**

Another responsibility of the remedial tutor that was identified in the study was ensuring the provision of support documents like handouts, modules and other reading materials. This officer further conducted workshops with education supervisors and teachers. Workshops for supervisors usually aimed at equipping them with suitable skills of supervising the teaching of learners with dyslexia at different academic levels. Sessions for teachers were meant to assist them develop positive attitudes towards learners with dyslexia, identify these learners in mainstream classes, place them in different intervention programmes, recommend further assessment if needs-be and implement several intervention programmes. On this point, literature reveals a concern that some teachers located in remote schools are not receiving adequate training specific to the needs of varied groups of learners (See Sub-section 3.10.4 p.100). A participant said:

When I attend national and provincial workshops or meetings we are usually given policies for the administration of different programmes. It is my responsibility to distribute these to every primary and secondary school. I ask heads to collect circulars and other relevant materials from my office. I research on various intervention programmes, recommend some reading materials to improve the reading abilities of specific groups of learners. I plan workshops aimed at equipping heads, the district team and teachers with skills of doing their duties. I assist supervisors and help teachers to accept learners with reading disabilities and use a variety of teaching methods as they implement available intervention programmes for such learners **(DRT).**

5.4.4.3 Roles of the district Early Childhood Development trainer

The basic role of the ECD trainer that was revealed in this study was to ensure the establishment of the ERI programme in all mainstream primary schools, distribute modules and other reading materials that enhanced the administration of this programme. The ECD trainer further arranged and facilitated workshops that were held at district level. These focused on equipping relevant stakeholders with appropriate skills to identify learners who were at risk or had signs of dyslexia then offer early intervention through the implementation of ERI. Participants were normally the heads and deputy heads of schools who later conducted the same workshops at cluster level with TICs of the infant department in different schools. From the cluster level, the TICs were expected to train

other teachers at school level. It also emerged that at cluster workshops, the district ECD trainer usually, attended as a participant. Participation in these further enhanced sharing of knowledge as it afforded this education officer an opportunity to transfer and exchange ideas learnt from one cluster to another. Literature states that today's education systems encompass on-going professional training, addressing ever-increasing demands which are adopting evidence-based practices and remaining current in the increasing amount of pedagogical and content area research (See Sub-section 3.9.9 p.90).

> *I, with the assistance of the district team, make sure that every infant teacher in the district is staff developed. Training is done in different categories, which are, district, cluster and school level. Heads of schools and Deputy heads are given relevant training at least once a term at district level then they are expected to staff develop the Teachers in Charge (TICs) at cluster level. The TICs are further supposed to staff develop teachers in the infant department in their schools. When workshops are conducted in various clusters, I visit them as a participant or one of the facilitators then take the ideas to all the other clusters so that information is shared for improved learning outcomes in our district* **(ECDt).**

5.4.4.4 Roles of the District Schools Inspector

The study established that one of the major roles of the DSI was to ensure that the district crafted its own educational policies using ministerial policy documents. The DSI also supervised the DRT in the monitoring of PLAP, clinical and in-class remediation, the district ECD trainer in the monitoring of the ERI, heads of schools and sometimes the deputy heads as well. It was observed, however, that the DSI rarely supervised teachers as this was mostly done by the school administrators. The study also established that the DSI ensured there was adequate funding in the district to enable the provision of reading materials, on-going professional development training, supervision and monitoring of the intervention programmes. In addition, the DSI periodically evaluated the success and relevancy of the intervention programmes then compiled a detailed report for submission to the Ministry of Primary and Secondary Education head office. One participant said:

> *Firstly, let me bring it to your attention that it is the duty of the district to make sure that every we craft our own policies using the ones that we receive from the Ministry then we distribute these to every school and its contents explained to the schools' leadership which is also expected to do the same to its subordinates. The second duty is to supervise and monitor the implementation of policies as well as educational programmes in place. When we get funds from the government I also*

supervise the buying and distribution of reading materials to the schools. I also supervise teachers when implementing these programmes so that we realize some gaps, plan and conduct relevant workshops **(DSI).**

5.4.5 Theme 4: Challenges Faced in the Implementation of Intervention Programmes

The main thrust of Theme 4 was to analyse the responses of interviewees on the challenges that were encountered in the implementation of intervention programmes for learners with dyslexia. The challenges established included negative attitudes from stakeholders, inadequate policies, poor assessment techniques, lack of qualified teachers, large classes, limited material resources, inadequate time, limited supervision programmes, limited staff development workshops and limited parental support.

5.4.5.1 Negative attitude of stakeholders

The study revealed that one of the challenges faced was the negative attitude of some stakeholders. The analysed literature states that attitudes may determine teachers' commitment to shape the learning environment (See sub-section 3.9.6 p.82). When the environment is not conducive, learning becomes ineffective. It further emerged that, poor remuneration and working conditions were identified as some aspects that demotivated teachers from conducting activities related to their work. On poor working conditions, it was established that some schools had poor infrastructure, that is, dilapidated classrooms and teachers' cottages. In some cases, schools were said to be far from the main road, hospitals or shopping centres. All these factors were viewed as sources of negative attitudes revealed by some mainstream teachers who were expected to teach and assist learners with dyslexia. Two participants said:

Some teachers are demotivated to do their work because of poor remuneration and other poor working conditions. We are looked down upon by the larger society because nowadays we seem to be the least paid civil servants. No one cares about us. Most of our school buildings are old and dilapidated. Teachers always desire to transfer because of the leaking houses…ahh the situation needs attention **(Head 5).**

> *Teacher motivation seems to be low because of poor working conditions that we find ourselves in. My school has poor sanitation and we are using an unprotected well as our water source. It is also far from the main road that leads to town and the hospital and teachers are always complaining of these conditions. I think this affects their motivation in administering all these programmes that we are expected to do* **(Head 6).**

The study further revealed that some teachers had negative attitudes towards the teaching profession itself and therefore disliked the duties attached to it. On this observation, participants felt that most teachers who joined the profession because of lack of employment in their preferred fields generally lacked determination in their work. In contrast to this, the implementation of intervention programmes for learners with dyslexia requires a lot of dedication on the part of the teacher. Lack of this attribute in some teachers could be observed in their planning and record books which lacked detailed information and were below the required standards. Some teachers were said to be inconsistent in preparing for the implementation of intervention programmes while others did not evaluate covered work as regularly as expected. Two participants said:

> *… some of these teachers are naturally not in love with this profession…They went to college because they could not get the jobs that they wanted. So when implementing demanding programmes like PLAP they do put maximum effort. In such a situation you cannot expect it to be successful* **(Head 4).**

> *Teachers also lack seriousness, and this can be noted in their records which I regularly supervise. Some would not have prepared for PLAP exercises while some fail to evaluate their work as regularly as expected* **(Head 1).**

The study also revealed that negative attitudes that some mainstream teachers had towards the implementation of intervention programmes for learners with dyslexia emanated from their limited knowledge of dyslexia. Due to this, some of them were not adequately conversant with the teaching strategies, techniques and media that were relevant when teaching learners with this condition. Literature confirms that the majority of teachers do not know how to support individuals with dyslexia as they have had no training in dyslexia and as such lack understanding of the difficulties experienced by such learners (See sub-section 3.9.4 p.80). Furthermore, it was gathered that, some teachers generally viewed disability as inability therefore, hardly regarded interventions for learners with dyslexia as worthwhile. Two participants said:

> *Some teachers have negative attitudes towards the implementation of these programmes because they are not aware of dyslexia or reading disorders and therefore, fail to implement effective intervention programmes that directly suit the learners* **(Head 3).**
>
> *Others see disability as inability so with this view they do not put much effort to assist learners with dyslexia* **(Head 4).**

In addition, the study established that there was a co-relation between the teachers' and learners' attitudes. Therefore, the teachers' negative perceptions about learners with dyslexia compromised the learners' commitment towards their academic achievement (See sub-section 3.10.2 p.99). Lack of commitment further led to submission of incomplete tasks, late attendance to school and absenteeism. Other factors that also demotivated learners with dyslexia in their school participation included negative labels attached to them due to their disabilities, constant under-achievement in given reading tasks and the long distance travelled from home to school. In this regard, two participants said:

> *Most learners with reading problems at my school do not take learning seriously. This is because they have regarded themselves as failures and sometimes they feel teachers do not care much about them. When there are given homework, they tend to return from home the following day without writing or completing the given tasks* **(Head 1).**
>
> *Some learners are always late for school while others absent themselves regularly and this affects the success levels of these programmes* **(Head 10).**

It was also revealed in this study that the implementation and success of intervention programmes for learners with dyslexia was also determined by the attitudes of the school leadership. Participants said that if the head of a school had a belief that learners with dyslexia could learn effectively in mainstream classes, then he or she would give adequate support and needed supervision in the teaching of such learners. Literature suggests that the school management team plays a pivotal role in directing and managing inclusive schools to address barriers as well as develop learning (See sub-section 3.9.12 p.97). Negative attitudes of the school leadership also led to poor acknowledgement of the significance of parents' or community members' involvement in the implementation of relevant programmes. Another observation made was that, in some schools, teachers

had negative attitudes that they had adopted or emulated from their school heads who were, however, expected to be role models. One participant revealed that:

> *Some teachers have negative attitudes towards the learning of learners with special needs because it is within their school culture to view disability as inability. If school heads may all have positive attitudes towards these learners then higher are the chances of schools seeing the intervention programmes as rewarding* **(DRT).**

5.4.5.2 Inadequate policies

Participants felt that some programmes that were being implemented either did not have or were guided by unclear ministerial policies. As such the district policy on educational provisions for learners with reading problems was said to be inadequate. Out of the four intervention programmes administered in the district, only two had ministerial policies in place. These were clinical remediation and ERI. PLAP and in-class remediation were conducted with the aid of modules and handouts provided by the district office through the SPS/SNE department. The absence of adequate policies goes against literature which advocates for the formulation and implementation of policies that give guidance to all activities which are executed in the education system (See sub-section 3.9.1 p.73). Participants also felt that, lack of policies also compromised the teachers' commitment in conducting certain programmes. In this regard two participants said:

> *The Ministry's policy documents that we use to craft our own district policies are not adequate for all the programmes. This makes it very difficult for us to fully meet the expectations of the Ministry both in designing relevant district policies and implementing the intervention programmes. For instance, PLAP has no Ministry policy that guides its implementation and so is in-class remediation* **(DSI).**

> *Some of these programmes like PLAP have no legal instruments from the Ministry and the district policy on reading is not very clear. These programmes only have modules to support their administration. Teachers do not take serious programmes without policies* **(Head 9).**

5.4.5.3 Poor assessment techniques

This investigation established that in the district under study, there were no formal tests used to identify learners with dyslexia in the infant category and therefore teachers relied on informal methods like observations and written work to identify learners who needed particular assistance. It further emerged that WRAT 1 was the only standardised test that

was used to identify learners with dyslexia in mainstream classes of Grades 3 up to 7. The composition of this test included a number of language aspects except those that were concerned with the auditory processing of information. While some participants viewed this as a major weakness of WRAT 1, others felt that testing various language aspects in a single test as suggested in this instrument could compromise its effectiveness. Effective assessment is crucial to diagnose a disability, verify its severity, for placement and possible referrals (See sub-section 3.9.2 p.76). Two participants said:

> *… this district uses only the Wide Range Achievement Test to identify and place learners in PLAP and clinical remediation. The test however does not test competence in auditory processing of information* **(DRT).**
>
> *The test used for our learners with reading disorders is just one and it tests a variety of concepts all at the same time* **(Head 7).**

It also emerged that, the quantity of the test items of WRAT 1 was viewed as too high for attendance by most learners with dyslexia. Participants were also emphatic in revealing the fact that this test even seemed difficult to those who did not have serious reading challenges. Therefore, this compromised the relevancy of this instrument in assessing learners identified to be dyslexic. Some of these individuals lacked basic reading skills and this should indicate the starting point of any relevant assessment procedure. Furthermore, the time given to attend all items of this test was very limited considering that most individuals with dyslexia took much longer than expected to complete specific reading tasks. On the other hand, the study established that, in ascertaining learners' performance in WRAT 1, measurement of oral reading and spelling was done during the assessment process and the marking of written tasks was normally completed in the provincial office by the SPS/SNE personnel. Sometimes the assessment results took a long time to be released to the schools and this delayed provision of early intervention for the identified candidates. Two participants said:

> *… May I also say that I feel the test used to assess these learners is too difficult and the chances are high that misplacement of learners is bound to happen* **(Head 8).**

> *At times the results take long to reach to the schools as marking is done in the province then results sent to the district before they come to us in schools. Taking too much time to send us the results means that we will delay to assist these learners and this affects the effectiveness of the intervention programmes* **(Head 4).**

5.4.5.4 Lack of expert teachers

Another challenge that the study discovered in the implementation of intervention programmes for learners with dyslexia was shortage of qualified teachers in some mainstream schools. Participants revealed that while there was a clear policy and guiding modules for the implementation of ERI, there were very few teachers in this district who were qualified to teach ECD learners. Literature concurs that most teachers are not competent to teach learners with dyslexia as there is lack of teacher training on dyslexia creating confusion about the nature of learners and the difficulties they encounter (See Sub-section 3.10.1 p.98). Most practitioners who taught in this category were said to be para-professionals who had not received adequate professional training from teachers' colleges or universities. These only used knowledge gathered from workshops that were periodically conducted by the Ministry of Primary and Secondary Education. Participants further observed that, while conducting workshops was commendable, it did not offer para-professionals an opportunity to acquire all relevant skills necessary for effective implementation of ERI. Two participants revealed that:

> *Another major problem that we have in the district is that we have a shortage of teachers that are adequately qualified to teach the ECD learners….Imagine we have 3 qualified teachers for the whole district and others are para-professionals who have not yet trained in teachers' colleges. This situation affects the implementation of ERI. While I personally commend this programme but if there are no suitable practitioners to implement it then it is as good as it is not there* **(DSI).**

> *Most teachers who are teaching the ECD learners in most schools in this district are para-professionals who still need to receive professional training in the handling of these young learners* **(ECD t).**

The study also noted that shortage of expert teachers in reading was also a challenge in the middle and upper grades of most primary schools. While the district was mainly composed of qualified teachers, it was revealed that, most of them had been trained to implement the regular school curriculum which was designed for learners without or with minimal special needs. Participants further highlighted that some challenges

encountered by learners with dyslexia were so varied and complicated that their management demanded specific and relevant skills. Two participants said:

> *Ummmmm.... first the teachers that we have are general classroom practitioners, they are basically able to teach learners without special needs and therefore we have shortage of teachers with necessary skills. Also, some learners have reading disorders that differ from one to another and catering for individual needs seems to be a burden to our teachers. Let me also say that some learners again have multiple reading disorders that end up confusing the regular class teacher* **(Head 3).**
>
> *… learners in the category of reading disabilities have complicated challenges that the regular class teacher can hardly understand* **(Head 5).**

5.4.5.5 High workload

The study established that mainstream teachers had a lot of work that they were expected to do and this impeded effective implementation of intervention programmes for learners with dyslexia. In relation to this, most participants complained that the teacher-learner ratio in most primary schools was so high that teachers could hardly attend to individual needs of learners during the process of teaching and learning. Learners with diverse needs require individual attention, support and guidance from their teachers who also have the added burden of teaching very large classes (See Sub-section 3.10.6 p.101). Apart from having large classes, it was further observed that teachers were expected to teach twelve different subjects, mark assignments and keep up-to-date record books. It also emerged that while the duties assumed by mainstream teachers were viewed as many, participants had different perceptions on the number of programmes administered. Some felt that these were also too much and demanding while others said an increase in these, especially at infant level would improve the reading competence of learners with dyslexia. Two participants said:

> *Teachers have a lot of work that they do. The classes they teach are always large, the subjects taught are too many, the records that they keep are also too much and the demand for learning resources is rather too high. All these factors definitely affect the teachers' commitment in implementing intervention programmes that are many and demanding* **(Head 7).**
>
> *The intervention programmes are difficult to implement but I think we need more of these so that we manage to meet the needs of all learners with reading disorders. Current programmes leave out some learners especially those with multiple or many reading problems* **(DSI).**

5.4.5.6 Time constraints

The study revealed that the time allocated to administer some intervention programmes for learners with dyslexia was generally inadequate and this posed a challenge in obtaining positive outcomes in the implementation processes. In conducting PLAP, mainstream teachers were expected to group learners according to their capacities then assist them starting from their last point of success to the level where they were expected to be. Attention had to be given to the unique needs of individual learners even if they were learning in groups. In this regard, participants argued that the time given per lesson in PLAP was so limited that it did not allow teachers to fully attend to the individual needs of learners. Literature concurs that in most regular classes of developing countries, learners with dyslexia are not afforded adequate time to master certain reading skills due to the use of rigid timetables (See sub-section 3.10.7 p.102). The allocated time does not give them adequate opportunity to complete assignments and has a negative impact on their overall performance (See sub-section 3.10.7 p.102). One participant said:

> *To me programmes like PLAP demand a lot of time. Our lessons are 30 minutes a period and in PLAP you teach learners who are in groups formed according to level of performance. This means you will teach a single concept differently in four groups if there are four then given different tasks within the given time. This time is really short* **(Head 6).**

It was also revealed that learners who did not benefit from PLAP were further assisted through in-class remediation. This was a programme which demanded the class teacher to temporarily withdraw learners with more severe learning disabilities then attend to them for an extended period of time. Participants indicated that there was no stipulated time that all schools were expected to use when implementing this programme. In certain schools, this programme was not allocated time on the master timetable while in others, it was. Teachers generally used their spare time to attend to the needs of learners in schools where there was no clear time allocated. In both instances, however, participants revealed that the time availed for the in-class remedial programme was inadequate. Two participants said:

> *I also think that the time for doing some of these programmes is not clear even though the Ministry expects us to do them. Take for example that remediation which*

> *is done by all teachers…We do not know when to rightfully do it. My school just slotted it on Thursdays, but this is not the situation with other schools* **(Head 1).**
>
> *Another challenge is that the school timetable is congested with a lot of other activities and therefore inadequate time is allocated for the reading programmes* **(Head 2).**

It also emerged that, learners who did not benefit fully from PLAP or in-class remediation were further assisted through clinical remediation which was conducted by teachers who were selected by heads of schools or volunteered to administer this programme. It was discovered that in some schools this programme was conducted while other learners were doing extra-curricular activities like sports, drama and music amongst others. In this regard, participants felt that the time allocated was not suitable since it deprived those in the clinical remediation programme time to participate in extra-curricular activities. It was further observed that some learners with dyslexia who were gifted in some extra-curricular activities could not fully concentrate on programmes that clashed with their areas of interest as their attention would be divided. One participant said:

> *…it demands that we do this in the afternoons and during that time other learners would be on sports and other co-curricular activities. This means those on the remedial programme will not be given adequate time to participate in other non-academic activities. In some cases, they fail to concentrate on remedial activities since they will prefer to be on sports* **(Head 2).**

5.4.5.7 Limited material resources

It also emerged that the shortage of relevant reading materials in some schools hampered the implementation of intervention programmes for learners with dyslexia. Most participants revealed that their schools had adequate books but the content that was in them was too difficult for the abilities of most learners with this disability. In an effort to meet these learners' academic needs, some teachers in the upper grades often borrowed teaching materials like books from their colleagues who taught in the lower grades. This however, further created similar challenges in the lower grades. In addition to the shortage of relevant books, the study also established that other resources, like the ICT gadgets were also limited in schools. This scenario contradicts literature which emphasises that the availability of appropriate materials is one of the criteria of dyslexia-friendly practice (See Sub-section 3.9.10 p.95). In this regard, two participants said:

My school has adequate books but in my assessment these books have teaching and learning content that is of higher level than the abilities of some learners with reading disorders. This situation forces teachers who teach higher grades to borrow books from the lower grades. This inconveniences those classes in some way **(Head 3).**

Another challenge that we have at this school is on the shortage of ICT gadgets that can improve the general reading levels of learners. Remediation would also be more effective if done using some computer games and puzzles. ICT gadgets would also assist us to match with those who are in the global village **(Head 6).**

5.4.5.8 Limited supervision of programmes

The findings of the study further illustrated that the implementation of intervention programmes for learners with dyslexia in most mainstream primary schools within the district was not adequately supervised because of a number of reasons. One of these was that, some heads of schools assumed a dual role, that of being a teacher as well as an administrator. As teachers, the affected heads were assigned classes which they were expected to teach and manage like other general classroom teachers. Furthermore, they had to implement the intervention programmes for learners with dyslexia in their capacity as teachers then produce and maintain up-to-date class records. In addition, as administrators, they were supposed to diligently supervise teachers, plan professional development workshops at school level, attend heads' meetings regularly and be involved in school development programmes. In view of this, most participants felt that the large amount of work that was done by teaching heads of schools compromised their effectiveness and efficiency in supervising the administration of intervention programmes for learners with dyslexia. The inability to provide due supervision goes against the teaching profession's basic premise, which links effective management of teachers to their competency in instructional delivery and learners' subsequent academic improvement (See sub-section 3.9.12 p.97). Two participants said:

Heads of schools have a lot of duties assigned to them and therefore are unable to supervise teachers constantly. For instance, I wear two jackets in this school, one of being a teaching head and the other one of being an administrator. This is indeed a load **(Head 2).**

When it comes to the supervision of these programmes, I feel I am not satisfactorily doing this. I teach my own class, attend meetings, workshops and do administrative

> *duties. This is a lot and at times I end up relying on the supervision that teachers regularly offer to one another* **(Head 4).**

The study also gathered that effective supervision of intervention programmes for learners with dyslexia was also hampered by limited knowledge that some heads of schools had on the needs of such learners. In relation to this, some participants strongly opined that there was a co-relation between effective supervision of a lesson and knowledge of the specific needs of learners being taught. It was further established that, some teachers who administered intervention programmes for learners with dyslexia had undergone training in inclusive education and therefore possessed better knowledge than their supervisors in educating learners with special needs. In such situations, heads of schools tended to be reluctant to offer supervision services to these teachers. This situation suggests a potential to deprive teachers of their right to constant guidance in the implementation of relevant programmes. In order to be effective, supervisors need continuous and sufficient training to carry out their responsibilities (See sub-section 3.10.8 p.103). Two respondents said:

> *When it comes to supervision of teachers as they implement these programmes I also feel that I need more accurate supervision skills because when I went to college for initial teacher training I only did general teacher education. Therefore, am not a specialist in special needs education aspects. This impact on quality supervision* **(Head 3).**

> *The other problem is on supervision. I do not have adequate knowledge and time to do this, but I trust the teacher who is doing clinical remediation because she did a degree in Special Needs Education and knows what she is doing* **(Head 8).**

It also emerged that shortage of funds affected regular supervision of intervention programmes for learners with dyslexia, by the district officers. Participants pointed out that there was a wide distance between schools and the education offices where district supervisors were stationed. For them to do regular supervision as expected, a lot of funds for fuel and other consumables were required. These funds were sometimes unavailable. This is in harmony with literature which states that lack of adequate funds makes it impossible to run supervisory activities effectively (See sub-section 3.10.8 p.103). It was also noted that supervision services are given once or twice a term in each school and some participants queried the adequacy of this. In this regard one participant said:

…we are not supervising these programmes as we would like to because of limited funds to buy fuel and travel to our spaced schools around the district. Because of this, we go there once or twice a term which is not enough **(DSI).**

5.4.5.9 Limited continuous professional development training

Educators need to keep abreast with the current teaching methods since education is dynamic. The study results revealed that limited funds for the provision of continuous professional development also hindered effective delivery of services in teaching learners with dyslexia. In addition, some participants said that educators could not attend or hold continuous staff development workshops in their schools because of the congested timetables that they were using. Offering in-service professional development is crucial as this facilitates the maintenance of high standards of teaching and assists to retain a high quality teacher workforce (See sub-section 3.9.9 p.90). Two participants said:

The number of staff development workshops with the aim of improving the teachers' skills is very limited due to lack of funds to facilitate them. At the end of the day we do these basically at school level using the locally available resources which may not be adequate **(Head 3).**

Staff development sessions are also not enough because of the congested timetables that we are using **(Head 7).**

5.4.5.10 Limited support from home

It was also established that the success of intervention programmes for learners with dyslexia was at times hindered by limited support from parents or caregivers. If learners were not encouraged at home they could absent themselves from school or show less determination in learning tasks. Irregular attendance to school disturbed these learners' academic progress. In addition, it also emerged that some parents could not assist their children with homework because they were themselves, illiterate. This impeded progress and hampered continual learning from home to school (See sub-section 3.10.9 p.104). In the same vein, the low economic status of some families had a negative impact on the academic success of learners with dyslexia. Due to the low wages earned by their parents some learners failed to pay school levies, did not have reading materials at home, resided in homes without electricity or any form of lighting system, attended school hungry or walked long distances to and from school daily. All these factors somehow contributed to low academic performance. Two participants said:

Lastly let me state that, most learners at this school travel long distances from their homes to the school and some are always late for the lessons and this impacts on the success of some programmes especially those that are implemented within lessons like PLAP. The improvement of such learners through implementation of such programmes can hardly be noticed…. Some parents have attitudes towards disability and others cannot read therefore cannot assist in issues of reading **(Head 2).**

Due to non-payment of levies by some learners who come from low income families, the school often lacks adequate funds to purchase reading materials that may be useful in the implementation of relevant programmes. The poor homes of our children that usually have no electricity or any form of light limits them to keep practising reading at home. Some of these farms where children reside are too far from the school and because of this they come to school late, tired and sometimes hungry. All these conditions have an impact on the success of the intervention programmes for reading **(Head 7).**

5.4.6 Theme 5: Suggestions for Effective Implementation of Programmes

Theme 4 sought to establish the views of participants on how the challenges that hindered successful implementation of intervention programmes for learners with dyslexia could be solved. Suggestions included changing the attitudes of stakeholders, formulation of relevant policies, increasing the number of expert teachers, reducing the workload of teachers and increasing time allocation for the intervention programmes.

5.4.6.1 Changing the attitudes of stakeholders

The study established that in order to improve the implementation of intervention programmes for learners with dyslexia, there was a need for relevant stakeholders like teachers and parents to develop positive attitudes towards the learning and assistance given to learners with dyslexia. Teacher attitudes and expectations can have lasting consequences on learners with disabilities (See Sub-section 3.9.6 p.83). Participants also felt that educators needed to be motivated to develop desired attitudes. This could be achieved through improving the working conditions of teachers, especially those that worked in rural schools. Participants suggested the provision of well-built electrified school staff cottages, safe water sources and well-maintained roads as improvements that could motivate teachers at work. There was also an observation that teachers showed negative attitudes towards their work because they felt they had lost the dignity

that they once had in society and this could be restored through reviewing teachers' salaries, at least yearly. Two participants said that:

> *The teachers' status needs to be restored by improving their salaries and other working conditions* **(Head 6).**
>
> *Teachers' working conditions and salaries must be increased yearly. Schools want electrified and big cottages with tapped water. Also, the roads leading to our schools should be well maintained because during the rainy season some drivers refuse to reach to the nearest bus stops forcing teachers to walk to the schools. This demotivates teachers in their work* **(Head 8).**

It was further revealed that the attitudes of parents towards the administration of intervention programmes for learners with dyslexia could be improved by conducting dyslexia awareness campaigns and workshops within communities. These could be aimed at demystifying myths and beliefs associated with having dyslexia. Parents needed to be made aware of the role that they played in improving the reading competence of their children with dyslexia. Literature concurs that, if parents assisted their children with reading and writing problems at home, then, there would be a continual remedial process for these learners (See Sub-section 3.10.9 p.104). Participants further observed that some illiterate parents had negative attitudes because they were incapacitated to assist their children with homework. It was suggested that, this situation could be alleviated by intensifying adult literacy programmes offered in the district. Two participants said:

> *Over and above, awareness campaigns should be made in communities so that parents would realise the importance of playing an active role in the education of their children* **(Head 2).**
>
> *… most parents are not able to assist their children with reading at home because they themselves cannot read. If we encourage them to join adult literacy programmes that we offer maybe they may even develop love for the teaching of reading* **(DSI).**

5.4.6.2 Provision of policies

Participants of the study revealed that there was a need for the Ministry of Primary and Secondary Education to provide adequate and specific policies for all the availed intervention programmes. This could provide a base for districts to design their own

relevant policies as well. The formulation of clear educational policies would set the stage for successful service delivery (See sub-section 3.9.1 p.73). While there was an acknowledgement that ERI and clinical remediation had policies that guided their administration, PLAP and in-class remediation still required these. Participants also clarified that the ministerial policy on clinical remediation needed to be specific on certain issues which included selection criteria for remedial teachers as well as provision of resources that would aid content mastery. It also emerged that the learning time stipulated on this policy document was viewed by participants as inadequate, therefore, needed to be increased so that learners who took longer to complete given tasks could also be catered for (See sub-section 3.10.7 p.102). It was further suggested that educational policies needed to be reviewed and amended regularly so as to maintain their relevancy in a dynamic education system. Above all, participants felt that clinical remediation teachers had to be assigned to administer this programme using their credentials. Reliance on heads of schools' discretion was viewed as subject to criticism. In this regard two participants said:

> *I also feel that teachers who conduct clinical remediation should not be chosen by heads of schools but their experience and knowledge of handling such learners should count. At times we allocate teachers who are unsuitable…* **(Head 8).**
>
> *The policies and intervention programmes must be regularly reviewed to improve their relevancy and efficiency* **(Head 6).**

5.4.6.3 Assessment Issues

In order to gain a deeper insight into the problems experienced by learners with dyslexia and provide relevant services, participants suggested that, in conducting an assessment procedure, adoption of a variety of assessment instruments needed to be considered. These had to have a capacity to individually determine specific reading difficulties experienced by learners. It also emerged that, written tests needed to be culturally relevant to serve their intent (See Sub-section 3.9.2 p.76). Participants strongly felt that, adequate time allocation also had to be considered during the conduction of an assessment procedure so that all learners with dyslexia could be able to complete given tasks. Another suggestion was that, before assessing these learners, their readiness for examination needed to be established as this could assist in gathering true and reliable

information about a learner's learning needs. In addition to this, assessment candidates needed to be appraised of the importance of this exercise to their education. Participants also felt that the assessment environment must be conducive for this activity, hence, distractions around the environment needed to be removed. Two participants said:

> *Learners with dyslexia must be thoroughly assessed using a variety of tests before they are assisted. This will help in understanding the actual problem that a learner has* **(Head 4).**

> *Parents must also play an active role from the assessment of their children's reading disorders right through assisting and teaching them* **(Head 10).**

5.4.6.4 Provision of expert teachers

Interactions with participants revealed that there was an urgent need for the provision of expert teachers who were adequately skilled to administer the intervention programmes for learners with dyslexia. However, they had mixed feelings on how this could be achieved. Some suggested that, the teaching skills of teachers already in service needed to be improved so that they could be in a better position to offer relevant services. In this regard, more workshops were to be regularly conducted in provinces and districts. Teachers' training colleges were also cited as having a responsibility of providing induction seminars during the school holidays aimed at equipping qualified teachers with current educational practices in the administration of intervention programmes for learners with dyslexia. On the contrary, other participants strongly believed that, specialist teachers needed to be allocated to every school for the implementation of these programmes and general teaching of learners with dyslexia and other special needs. These teachers could act as resource persons in their schools. It was also suggested that, the government, through teachers' training colleges needed to train more ECD teachers who would be able to administer ERI in schools. Dependency on para-professionals had a negative impact on the success of this programme. Three participants said:

> *Provision of specialist teachers for the implementation of intervention programmes will go a long way in improving the implementation levels.These will act as resource persons in various schools* **(Head 3).**

> *I think the first thing is to empower the teachers effectively. They do not need these one day, one-week workshops but rather we need longer periods in the teaching of reading. If this is impossible then the government should allocate*

specialists teachers in every school who will focus on the reading aspects **(Head 2).**

I think first, and foremost teachers should have adequate skills of teaching reading. Colleges should prioritize this area as they train future teachers. Trained ECD teachers who are able to fully implement the ERI programme in ECD A and B must be adequate in all schools. At least two of them will be fine for every school. Presently my school has para-professionals in the ECD category and I don't expect much from them as I feel they do not have all the required skills to teach these children **(Head 4).**

5.4.6.5 Reducing the workload of teachers

Participants came up with the idea that one way of improving the implementation of intervention programmes for learners with dyslexia was to reduce the workload of teachers. Several strategies were proposed. One of these was the reduction of multi-grade classes in schools. Participants stressed that teaching such classes demanded a lot of commitment from the teacher and this had a negative impact on the effective implementation of intervention programmes for learners with dyslexia. Another idea on reducing the workload that teachers had was combining related subjects and record books, like the register and the child study record. Strongly emphasised was the point that, the teacher-learner ratio needed to be reduced so that programmes that demanded giving individual attention to learners could be effectively conducted. Two participants said:

The issue of composite classes or multi-grade teaching must be avoided because this is a burden to a teacher who might be failing to meet the needs of a single grade **(Head 8)**

The government must consider reducing the teaching workload of teachers by combining some record books like remedial and extension. The child study and attendance register have aspects that repeat one another. Scheming and planning must also be combined. The government must also increase number of teachers in schools. There must be teachers specific to areas like Music so that regular class teachers will not struggle to teach such areas. I am glad that for Physical Education, the government has considered the allocation of trained teachers to schools and clusters. The government must also reduce the teacher-pupil ratio **(Head 10).**

5.4.6.6 Increasing time allocation for intervention programmes

The study revealed that there was a need for allocating sufficient time for the administration of all intervention programmes for learners with dyslexia. Participants felt

that the schools' master timetables needed to reflect these programmes. Time for remediation lessons had to appear on the master timetable in the school head's office and remedial teachers had to be exempted from some, if not all extra-curricular activities.Two participants said:

> *Other activities in the school timetable may be given little time in favour of the reading programmes so that these are adequately administered* **(Head 4).**
>
> *The school timetables must prioritize the teaching of reading then it will be easier for children to handle other learning activities since reading is the basis for all learning* **(Head 6).**

5.4.6.7 Provision of adequate and relevant learning resources

It was also noted in the study that, in order to enhance the implementation of intervention programmes for learners with dyslexia there was a need for the government and other interested stakeholders to provide adequate and relevant material resources. Availability of appropriate materials is one of the criteria for dyslexia-friendly practice (See sub-section 3.9.10 p.95). Participants cited writing materials, textbooks, well-resourced libraries, computers, electrification of schools, as well as, internet connections as examples of requisite materials. Some participants also suggested that teachers needed to work with learners and improvise reading materials that could be useful in the implementation of relevant intervention programmes. Games, puzzles, picture books and reading cards could be made from the content learnt in lessons. In addition, it was suggested that, learners could make a collection of other reading materials from newspapers and magazines then keep these in their class libraries so as to use during reading for leisure time. Two participants said:

> *The government should also provide schools with ICT gadgets and other reading resources that match the learners' needs* **(Head 3).**
>
> *The government should also assist schools to build well-resourced libraries so as to create a reading culture in learners* **(Head 6).**

5.4.6.8 Monitoring and supervision issues

It also emerged that there was a need to improve the monitoring and supervision of the implementation of intervention programmes for learners with dyslexia. Heads of schools had to be oriented on supervising the programmes so that they could effectively offer the

required service to the teachers. Furthermore, it was identified that there was a need for the government to consider the workload of teaching heads and probably design a policy that stipulated how best they could handle supervision tasks as well. Another suggestion made was that teachers could also be urged to be self-supervisors. This could be achieved through stronger commitment to work, keeping up to date records and monitoring the progress of learners closely. Supervision is critical as it serves to guide and motivate the performance of teachers towards learner achievement (See Sub-section 3.9.12 p.97). Collegial supervision was cited as another way of improving the implementation of intervention programmes for learners with dyslexia. Through this, teachers could learn from each other and improve their professional skills accordingly. Participants also suggested that, for the district office to offer monitoring and supervision services that were constant, there was a need for the government to allocate more funds for such endeavors. Two participants said:

> *Teachers should also learn to be self-supervisors in the implementation of these programmes rather than waiting for the head or the district office personnel to come and do this in the school. In other words, they should be committed in their work, implement the programmes, keep the necessary records, change teaching strategies, research on how some concepts should be taught, collaborate with other teachers so that they learn from one another and monitor the learners' progress regularly. Ehnhhh... all this constitutes self-supervision* **(Head 2).**

> *I also feel that as the head of the school I also need to be assisted to understand the needs of learners with reading disabilities because basically in my studies general educational management* **(Head 9).**

5.4.6.9 Summary of the general trend of qualitative data gathered through interviews

Qualitative data revealed that the intervention programmes that were available for learners with dyslexia in Bubi district mainstream primary schools were ERI, PLAP, in-class and clinical remediation. ERI was the only programme offered at infant level and benefitted those with mild to moderate reading problems. The other programmes were for those at junior school levels and basically accommodated learners with different capabilities. The study further established that the availability of policies was pivotal in the implementation of intervention programmes that were in place. In this case, the district policy which was drawn from the Ministry circulars was utilised. Participants felt

that lack of clarity and inadequacy of the available ministerial circulars automatically affected the formulation of suitable district policies. It also emerged that learners with dyslexia were assessed before service provision. In this regard, the study established that there were no standardised instruments for use at the infant category and a single test which was used for junior school learners was also viewed as inefficient.

Attitudes of stakeholders were also cited as an important factor in the conduct of intervention programmes for learners with dyslexia. Most teachers had negative attitudes that emanated from lack of knowledge about dyslexia and poor working conditions. Some heads of schools could not fully support teachers because of the high workload assigned to them and the limited supervision skills that they possessed. Some parents had negative attitudes because they were illiterate and poor. It was also revealed that material resources were necessary for effective teaching of learners with dyslexia. Participants had different views on the availability of these in their schools. Some indicated that they had many textbooks which, however, had content which seemed too difficult for some learners with dyslexia. Others revealed a general lack of textbooks and other reading materials.

The study also contended that the teaching instruction adopted for learners with dyslexia was vital. Participants opined that lack of competent teachers affected the adoption of relevant instruction. It further emerged that supervision of the administration of the programmes in place was another important requirement. This was basically the responsibility of the DSI, DRT, district ECD trainer and heads of schools. Effective supervision was hampered by lack of funding, limited knowledge of supervisors on dyslexia and high workload. The teacher-learner ratio was also viewed as significant for it determined the extent to which teachers could attend to the needs of individual learners. However, it emerged that most teachers were assigned very large classes. CPDT programmes that could keep stakeholders abreast with the current trends in the education system were also affected by congested timetables and limited funds to facilitate their administration.

5.5 DOCUMENT ANALYSIS

This section reviews documents which were considered critical in the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream primary schools. The documents included Bubi District policy on the educational provisions for learners with reading problems, the WRAT 1, schools' master timetables, planning record books for the programmes offered and 2015 - 2017 district staff development minute record book.

5.5.1 Bubi District Policy on Educational Provisions for Learners with Reading Problems

Bubi District policy on educational provisions for learners with reading problems was crafted in 2015. The provisions of this document were drawn from the Education Act of 1987 as Amended in 2006, the CEO Circular Minute No 12 of 1987 and the Secretary's Circular Minute Number 11 of 2015. This policy stipulated that all mainstream primary schools within the district were required to administer four educational intervention programmes, namely, ERI, PLAP, in-class and clinical remediation. ERI was meant for the infant department and the other three programmes were administered to learners in Grades 3 to 7. According to this policy, the identification of learners with reading problems was the responsibility of class teachers. Learners with mild to moderate reading problems were to be assisted by regular teachers during the administration of in-class remediation or PLAP. Those with severe reading problems were supposed to be referred to the SPS/SNE Department for more detailed assessment and placement into the clinical remediation programme or special classes.

The district policy further stated that heads of schools were to allocate time for programmes that were done after the normal school lessons and assign suitable teachers for such programmes. Learners with reading problems who were, however, talented in other co-curricular activities needed to be afforded time to develop their talents but at the same time being assisted academically. The policy further stipulated that the district

education officers and heads of schools were expected to supervise the implementation of the reading programmes and ensure the availability of relevant up-to-date records. Also, for clinical remediation, it was a requirement that heads of schools were to termly submit reports indicating names of remedial teachers, dates for remedial classes, number of learners receiving remediation and the number of professional development courses attended. Clusters and schools within the district were also expected to regularly hold workshops on the implementation of the intervention programmes in place. Lastly, the policy stipulated that schools were supposed to involve parents in most of the learning activities provided for their children.

While the availability of this district policy could be recognised as a positive attempt towards the provision of an inclusive education system, the instrument did not specify the support services that were to be provided for specific programmes in place. These services included expert teachers, material resources and funding for the conduct of on-going professional development activities, to mention a few. The policy also lacked clarity on the exact records to be produced and kept in schools. Heads of schools were expected to keep written accounts and records of proceedings without indicating the precise nature and purpose of such records. The amount of time to be allocated to programmes that were offered outside the schools' master timetables was not clear on this policy. Another directive given in this policy was that heads of schools were expected to allocate teachers to administer the clinical remedial programme but the qualities to be considered were not specified.

5.5.2 Assessment Test

The only standardised instrument that was available for identifying learning challenges experienced by learners with dyslexia in mainstream primary schools was the WRAT 1. It was divided into subjects, that is, English language and Mathematics. English Language section covered various aspects which included reading, spelling, synonyms, prepositions, verbs, tenses, punctuation, sentence completion and answering of comprehension questions. Mathematics was divided into four areas which were addition,

subtraction, multiplication and division. The test was supposed to be completed within an hour which seemed inadequate considering the number of test items and the level of difficulty of the test. Initially, this test was meant to be used to identify candidates for clinical remediation but with the advent of PLAP, the test was now used to identify candidates for both programmes.

5.5.3 Master Timetables

The master timetables that were analysed were taken from the ten schools that participated in the interviews. The researcher observed that ERI and PLAP language activities were allocated time during normal lessons, that is, between 0700 and 1300 hrs. For ERI there were 6 periods a week and each lasted for 15 to 20 minutes whereas PLAP was allocated 4 periods a week and each lasted for 30 minutes. On the contrary, in-class remediation was either given 15 to 30 minutes in the afternoon, twice a week or was not allocated any time on the master timetables of most schools. Clinical remediation was allocated 2 hours a week and each session lasted for an hour. The researcher further observed that these two remedial programmes were offered at the same time as other extra-curricular activities which included, sports and clubs. This practice, therefore, excluded learners with dyslexia from participating in these activities.

5.5.4 Lesson Planning Records

The planning records that were analysed were for all the four intervention programmes in place. The researcher noted that the planning of lessons for the programmes offered on a full inclusion basis differed from that which was adopted for lessons conducted outside the normal teaching period. This means that ERI and PLAP had a similar planning format while in-class and clinical remediation were also planned for, in almost the same way.

The aspects that were considered when planning for ERI and PLAP included, week ending, date and time, names of learners (in groups), topic, content, objectives, source of matter, learning aids, teaching/learning activities and evaluation. It was gathered that

for week ending, teachers were expected to write the date of the last day of the week. For date and time, they were to write the actual date and the time frame for conducting the language lesson. This differed from one teacher to the other. The learners' names were to be written in groups that were related to their level of performance. The topic was usually the same for the whole class, but the content was expected to be at the level of the abilities of the grouped learners. Lesson objectives, source of matter and learning materials had to be related to the diverse needs of learners in various groups. Lastly, on evaluation, teachers were expected to comment on the suitability of the content, objectives, source of learning content, teaching instruction, learners' involvement and overall performance of learners.

The researcher observed that some learners constantly changed groups. This related to their progress. The setting of objectives varied in different planning records. Some teachers seemed to lack knowledge in formulating objectives that were achievable within a stated period of time. For the source of matter used, it was noted with concern that most teachers often used a specific textbook for lesson preparation, variation was minimal. Furthermore, it was gathered that the lesson plans for infant classes depicted more use of concrete media than junior grade classes. Differences between the reading activities that encompassed infant programmes and junior education ones were also noted. Those offered at infant level had more capacity to improve visual, auditory and phonological processing of information than those offered at junior level. This denoted the adoption of multi-sensory teaching approaches at the infant level. The development of automatic reading, fluency and articulation skills was also catered for. Evaluation of lessons was generally viewed as inadequate. In some lessons, teachers commented on the achievements of learners but were usually silent on the challenges encountered. Also, others were reluctant to give specific details on the effectiveness of the intervention strategies and learning media adopted to achieve the set objectives.

In planning for in-class and clinical remediation which was conducted twice a week, the pattern included week ending, date and time, names of learners, area of learning difficulty, objectives, sources of material, learning media, intervention strategies and evaluation.

The researcher observed that teachers basically did not face challenges in giving specifics for all these aspects except, identifying the exact problems encountered by individual learners, setting achievable objectives, adopting relevant intervention strategies and evaluating the implementation process. In identifying the learning difficulties faced by learners, some teachers failed to differentiate the strengths and weaknesses possessed by different learners. In setting objectives, it was observed that, some lacked clarity while others were unachievable in relation to time allocated and the abilities of the individual learners. Failure to identify individual needs subsequently led to the adoption of unsuitable Intervention strategies and an evaluation which was not reflective of actual learners' progress.

5.5.5 District Staff Development Minute Record Book

The minutes of staff development workshops that were analysed covered the period from January 2015 to May 2017. The researcher discovered that only a single workshop for the teaching of reading and implementation of related intervention programmes was held a team at district level. Facilitators of these were mainly the district or provincial personnel, although in some cases the heads and deputy heads were assigned this responsibility. Workshop participants were mainly the Grades 1, 3, 7 and remedial teachers. It was also observed that the activities involved in these workshops assisted teachers to acquire or improve their general teaching of reading. In other words, minimum focus was given to the specific issues that directly address the needs of learners with dyslexia. Furthermore, it was gathered that, very limited workshops based on the supervision of teachers who implemented intervention programmes for learners with dyslexia, were held at district level. This left heads of schools and other supervisors with limited skills of assisting teachers.

5.5.6 Summary of the General Trend of Qualitative Data Gathered through Document Analysis

Data gathered through document analysis revealed that stipulations of the district policy on educational provisions for learners with reading problems were drawn from several ministerial legal documents. This policy stated that the entire process of assessment and placement of learners into different programmes was the responsibility of a multi-disciplinary team. Heads of schools were to allocate relevant teachers and time for specific programmes. Learners with dyslexia who were talented in other co-curricular activities had to be well attended to. The policy document also contained recommendations on how the supervision of the programmes could be done. The significance of parental involvement in the academic growth of their children was also emphasised. Inspite of this, the instrument did not specify the support services that were to be provided for specific programmes. A lack of clarity on the exact records to be produced and kept in schools was also noted. The amount of time to be allocated to programmes that were offered outside the schools' master timetable was also not clear. This also applied to the lack of specification on the qualities which were to be considered in teachers who administered more intensive programmes.

WRAT 1 was the only standardised instrument that was available for identifying learning challenges experienced by learners with dyslexia. This test was composed of many difficult items that were to be completed within an hour. The master timetables used in schools showed that ERI and PLAP language activities were allocated time during normal lessons. In-class and clinical remedial programmes were offered at the same time with extra-curricular activities. Learners with dyslexia, therefore, were not fully included in these activities. It emerged that the planning of lessons for the programmes offered on a full inclusion basis differed from those done outside the normal teaching periods. The set objectives varied according to the different planning records. Some teachers lacked knowledge of dealing with learners with dyslexia, such as planning, formulating objectives, identifying problems of individual learners and evaluating the implementation process. The minutes of staff development workshops revealed that workshops for the

teaching of reading and implementation of related intervention programmes were inadequate. Only a single workshop was held, per term, at the district level. The district or provincial personnel mainly facilitated these workshops although in some cases the heads and deputy heads were assigned this responsibility. These workshops focused on supervision skills and assisted teachers to acquire or improve their general teaching of reading.

5.6 INTEGRATION OF QUANTITATIVE AND QUALITATIVE DATA

This section focuses on the integration of findings obtained from the use of quantitative and qualitative data collection methods. According to Bryman (2007:8), integration relates to the process in which quantitative and qualitative components of data are interpreted, analysed, and presented in a form that is mutually enlightening.This is employed in order to achieve an outcome which is more comprehensive than the sum of each method (Guetterman, Fetters & Cresswell, 2015:555). Integration involves aspects of corroboration and confirmation. Bowen (2009:30) observes that corroboration is a strategy to ensure findings of a study reflect accurately the perceptions of participants to make them worthy to be considered by others. Confirmation is concerned with establishing whether perceptions of people are true or accurate reflections of a situation. Corroboration serves to verify findings in order to check the level of convergence of information. Convergence works to increase confidence in the results as opposed to contradictory evidence which reduces credibility of research outcomes. This study combined information which was collected through a questionnaire of teachers, interviews with heads of schools, the DRT, district ECD trainer and the DSI as well as document analysis on the intervention programmes available to enhance the inclusion of learners with dyslexia in mainstream primary schools.

5.6.1 Nature of Intervention Programmes for Learners with Dyslexia

Quantitative data gathered through the administration of a questionnaire revealed that there were different types of intervention programmes that were implemented in order to

enhance the inclusion of learners with dyslexia in mainstream primary schools. Participants felt that these programmes were fairly learner-centred, sensitive to individual academic needs and had a capacity to improve participation of these learners in mainstream curriculum activities. In corroboration with this, data gathered through interviews specified that the different intervention programmes that were in place included ERI, PLAP, in-class and clinical remediation. ERI was meant for learners in the infant category while the other three programmes were meant for those in junior primary school. ERI and PLAP were administered on full inclusion basis and benefitted learners with mild to moderate reading challenges. In-class and clinical remediation assisted those with severe to profound reading problems. While participants who responded to the questionnaire items were content with the ability of the availed programmes in meeting the specific needs of learners with dyslexia, interviews revealed that ERI, which was the only programme for infant learners, did not sufficiently cater for those with severe to profound reading challenges.

5.6.2 Crucial Factors for the Successful Implementation of Intervention Programmes

Quantitative data showed that the availability of relevant policies was crucial in the implementation of intervention programmes for learners with dyslexia. However, a significant number of participants, that is, 66 (44%) were undecided on whether these were available or not. This reaction suggested that there were some teachers in schools who were unaware of the existence of some legal documents that directed service provision for learners with dyslexia. Qualitative data attested to the use of a district policy which was designed based on the provisions of the Constitution of Zimbabwe (2013), the CEO Circular Minute No. 12 of 1987 and the Secretary's Circular Minute Number 11 of 2015. Literature contends that individual countries have crafted or continue to design educational policies to support the enrolment and full participation of learners with disabilities in mainstream schools (See Sub-section 1.1 p.1).

Quantitative data further revealed that assessment was crucial in the education of learners with dyslexia. A total of 96 (64%) participants who responded to questionnaire items attested that assessment procedures were conducted by multi-disciplinary teams before attending to the individual needs of learners. Findings from the conducted interviews corroborated with this practice adding that assessments were to be conducted by parents and specialists, both in the health and education sector. An analysis of the district policy confirmed that schools were expected to refer learners with severe reading problems to the SPS/SNE Department for more detailed assessment. Literature maintains that a diagnosis of dyslexia should include informal and formal testing of learners (See Sub-section 3.9.2 p.76).

Findings from the quantitative analysis of data also revealed that a significant number of participants were not sure of the efficiency of standardised assessment tools (tests) used to diagnose the strengths and reading difficulties exhibited by some individual learners with dyslexia. This finding meant that there were some teachers who had limited knowledge of the effectiveness of the tools in use. On the other hand, data collected through Interviews revealed there were no standardised instruments that were used to assess learners with dyslexia at infant level and that WRAT 1 was adopted for those at junior level. An analysis of WRAT 1, which was the only standardised test in use, confirmed this finding.

The majority of participants who responded to the questionnaire items further affirmed that the attitude of teachers was also crucial in the implementation of intervention programmes for learners with dyslexia. In corroboration with this view, qualitative data emphasised that positive attitudes from teachers encouraged learner acceptance, motivation and participation while negative attitudes influenced the level of determination that teachers showed towards their work. Quantitative data further demonstrated that a variety of teaching methods which infused multiple sensory approaches were adopted in schools. 90 (60%) participants agreed to this view. The interviews conducted emphasised that the adoption of a variety of teaching methods accommodated learners with different styles of learning. An analysis of lesson plan documents revealed that, the

teaching instruction adopted at infant level had more capacity to improve visual, auditory and phonological processing of information than those used for learners receiving junior primary school education.

Outcomes from questionnaires also confirmed that teachers used different media when teaching learners with dyslexia. This corroborated the findings from the interviews that suggested that one of the qualities of good teachers was their ability to employ a variety of learning aids in teaching. However, an analysis of lesson planning documents revealed that infant teachers preferred concrete media than those teaching upper grades. Literature states that teaching media should vary and ICT gadgets like computers should be used to provide guidance in the development of literary competencies for learners with special needs (See Sub-section 3.9.10 p.95). Findings from both quantitative and qualitative data further converged in indicating that a manageable teacher-learner ratio was a crucial factor in the implementation of intervention programmes for learners with dyslexia. This was so because learners with diverse needs required individual attention, support and guidance from their teacher and this was believed to be impossible in large classes. Effective supervision and continuous professional development were also revealed as other crucial factors in the implementation of intervention programmes for learners with dyslexia.

5.6.3 Challenges Encountered by Mainstream Primary School Teachers in the Implementation of Intervention Programmes for Learners with Dyslexia

The significance of the availability of legal frameworks in the conduct of intervention programmes for learners with dyslexia emerged from both quantitative and qualitative data. Interviews with heads of schools, however, established that out of the four programmes administered in the district, only clinical remediation and ERI had ministerial policies in place. The document for ERI was more specific than that for clinical remediation. The grey areas in the ministerial policy on clinical remediation included, undue reliance on the school heads to select remedial teachers. The ministerial policies which were not clear made it difficult for the provinces and districts to formulate their own

which would ultimately meet the ministerial goals. Inadequate policies also compromised the teachers' commitment in conducting the programmes in place.

There was convergence in both qualitative and quantitative data pertaining to the failure of participants to clearly confirm the effectiveness and efficiency of the standardised instruments that were used to assess learners with dyslexia. Findings obtained through interviews concluded that WRAT 1 was the only standardised test that was used to identify learners with dyslexia in mainstream classes. Participants felt that the use of a variety of instruments could be more effective. One of them said:

> *Learners with dyslexia must be thoroughly assessed using a variety of tests before they are assisted. This will help in understanding the actual problem that a learner has* ***(*Head 4).**

An analysis of WRAT 1 document also confirmed that the test hardly identified the learning styles of individual learners, had test items that were too difficult for most learners with dyslexia and the period expected for one to complete the test was short. Quantitative data also revealed that mainstream teachers had limited knowledge on the needs of learners with dyslexia which hindered the successful implementation of relevant intervention programmes. Interview findings corroborated this view, indicating that most teachers of learners with dyslexia lacked requisite knowledge in the field as they were either trained to teach general classes or were para-professionals.

Findings from quantitative data showed the importance of attitudes of relevant stakeholders towards the teaching of learners with dyslexia in mainstream primary schools. Document analysis corroborated this view, revealing that lesson preparation of some teachers lacked detail which could be indicative of negative attitudes or lack of competence in this task. Negative attitudes about learners with dyslexia may lead to lack of acceptance of these learners both by themselves and other learners within the school setting (See sub-section 3.9.6 p.83). Poor remuneration and working conditions and limited knowledge about dyslexia were identified as some factors that demotivated teachers in conducting activities related to the programme. The attitudes of the school

leadership and the nature of the involvement of parents or community in the implementation of relevant programmes were also important to the academic growth of learners with dyslexia. Both quantitative and qualitative data indicated that the teacher-learner ratio was high, and this did not promote attendance to learners' individual needs in most schools.

Quantitative data revealed that time allocated for the implementation of intervention programmes for learners with dyslexia was not adequate. Altogether, 115 (76.3%) had this view. This corroborates findings from interviews with heads of schools which indicated that time was inadequate to implement intervention programmes for learners with dyslexia. The school timetables analysed also revealed that intervention programmes like in-class and clinical remediation were not given suitable time. Quantitative data showed that shortage of relevant reading materials in some schools hampered the implementation of intervention programmes for learners with dyslexia. On the contrary, most participants who participated in the interviews were satisfied with the quantity of books in their schools but felt that the content in them was too difficult for the abilities of most learners with dyslexia. Analysis of lesson plans in various grade levels also confirmed the shortage of books and other reading materials as teachers basically used a single type of a text book to teach in schools.

Findings from the questionnaires revealed that the supervision of the implementation of intervention programmes for learners with dyslexia was not as effectively done as was expected. Interviews conducted with different supervisors corroborated the results of quantitative data revealing several reasons for lack of effective supervision which included the limited knowledge of heads, shortage of funds and the dual roles of teaching and administration that heads assumed. One of them clearly elaborated:

> *Heads of schools have a lot of duties assigned to them and therefore are unable to supervise teachers constantly. For instance, I wear two jackets in this school, one of being a teaching head and the other one of being an administrator. This is indeed a load* **(Head 2).**

Document analysis also confirmed that there were very limited workshops conducted in the district to empower supervisors with skills of adequately supervising the administration of intervention programmes in place. Quantitative data analysis showed that CPDT workshops aimed at improving the teaching and learning of learners with dyslexia were inadequate. An analysis of district staff development minutes' record also confirmed the inadequacy of such workshops. This position contradicts literature which commends the exposure of teachers to professional development workshops to improve and sharpen their skills for effective teaching of learners with reading disorders (See sub-section 3.9.9 p.89). The district policy corroborated this position as it indicated the need for teachers to attend in-service workshops to master the remediation techniques to effectively assist learners with dyslexia.

5.7 SUMMARY

This chapter analysed and interpreted data that were obtained through the use of a questionnaire, interviews and document analysis. The questionnaire was divided into two sections comprising bio-data and contextual items. The interview schedule consisted of items which solicited the views of participants on the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream primary schools. Documents related were also reviewed. The study revealed that there were various intervention programmes for learners with dyslexia. These were considered by some participants to be learner-centred, sensitivity to individual needs of learners and having a fair capacity to enhance inclusion to the mainstream school curriculum. On factors that were crucial in-service provision, the study focused on educational policies, use of multi-disciplinary teams, assessment tools, attitude of teachers, use of multi-sensory approaches, teaching media, teacher-learner ratio, time allocation for related activities and continuous professional development for teachers. It was also established that the learning media for learners with dyslexia was inadequate. The intervention programmes were not properly allocated on the master schools' timetables as some were administered in the afternoons. A host of challenges that impeded successful implementation of remedial activities of learners with dyslexia were also discussed.

Teachers were shown to possess inadequate knowledge in regard to the teaching of learners with dyslexia. Large classes, negative attitudes of stakeholders, inadequate policies were also cited as contributing negatively to the implementation of intervention programmes offered. Among these challenges also occurred poor assessment techniques, limited material resources, low socio-economic status of learners and their parents, inadequate supervision of teachers and high staff turnover. The next chapter focuses on the summary, limitations, conclusion, recommendations and suggestions for further research

CHAPTER 6

SUMMARY, LIMITATIONS, CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER STUDY

6.1 INTRODUCTION

The chapter provides a summary, limitations, conclusion, recommendations and suggestions for further study. This is guided by the research questions, literature review and the empirical investigation. The conclusion drawn from the findings of the study enabled recommendations and suggestions for future studies to be made.

6.2 SUMMARY OF THE RESEARCH STUDY

The summary of the study was informed by the research questions, literature review and empirical findings.

6.2.1 How the Study Responded to the Research Questions

The study was guided by the following main research question: *To what extent is the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream primary schools of Bubi district effective?* The following subsidiary questions were raised:

Research Question 1: What is the Nature of Intervention Programmes for Learners with Dyslexia in Mainstream Primary Schools?

The study established that there were different types of intervention programmes that were administered in Bubi District in order to enhance the inclusion of learners with dyslexia in mainstream primary schools. These programmes included ERI, PLAP, in-class and clinical remediation. ERI was meant to improve the reading potentials of

learners in the infant category while the other three were for learners who were doing Grades 3 up to 7. There were detailed modules composed of suggested learning activities used in the administration of ERI. Similarly, clinical remediation had a guiding booklet which suggested how the programme could be administered. PLAP and in-class remediation were administered using handouts provided by the district office. ERI and PLAP were said to be administered during the lessons while in-class and clinical remediation were done after a normal day's lessons. It was also gathered that the programmes administered after normal lessons were basically meant for learners with severe to profound reading problems. Most participants who responded to the questionnaire items felt that all the intervention programmes in place were fairly learner-centred, sensitive to the needs of individual learners with dyslexia and could facilitate their inclusion into mainstream classes. On the other hand, interviews revealed that the programmes provided had fewer activities that improved auditory processing of information than other sensory modalities.

Research Question 2: Which Factors are Crucial in the Implementation of Intervention Programmes for Learners with Dyslexia in Mainstream Primary Schools?

The availability of relevant policies was identified as one of the crucial factors in the implementation of intervention programmes for learners with dyslexia. In this regard, participants revealed that the district policy on reading, drawn from the ministerial policy documents was utilised. Before service provision, an assessment procedure was conducted, and results determined placement into the availed programmes. Regular class teachers used observations and learners' written work to identify learners with dyslexia and referred severe cases to the SPS/SNE Department for more detailed assessments.

It was also revealed that the attitudes of different stakeholders towards learners with dyslexia were influential in the implementation of relevant intervention programmes. Teachers and parents with positive attitudes were more determined to improve the

reading potentials of such individuals than those with negative attitudes. Participants also felt that negative attitudes from teachers discouraged the reading development of learners with dyslexia. In addition, non-dyslexic individuals tended to emulate teachers since they were role models in the education system. The study identified lack of awareness of dyslexia and other disabilities as major causes of negative attitudes towards the administration of intervention programmes in place.

Participants of the study also opined that a variety of teaching and learning methods were important in the implementation of intervention programmes for learners with dyslexia. The use of multi-sensory approaches emerged as pivotal. A strong point was also made that the teaching instruction for learners with dyslexia had to be systematic, diagnostic, synthetic and directive, amongst others. To enhance content mastery, the adoption of various concrete and abstract media was also emphasised. Adequate time to administer the intervention programmes in place was also viewed as crucial. Some learners with dyslexia needed more time to complete learning tasks and this had to be taken into account during the teaching and learning process. A manageable teacher-learner ratio was also required as it could foster individual support and attention. Effective supervision was also cited as an important variable which had to be understood in the context of vibrant CPDT processes for both teachers and administrators.

Research Question 3: What Challenges are Encountered by Mainstream Primary School Teachers in the Implementation of Intervention Programmes for Learners with Dyslexia?

The study discovered that the ministerial legal frameworks which the district of study used to formulate its own policies were inadequate. Out of the four intervention programmes administered, only clinical remediation and ERI had Ministry circulars in place and the document for ERI was more specific than that for clinical remediation. It also emerged that the formal assessment test (WRAT 1) used to measure the reading potentials of learners with dyslexia was viewed as inadequate. This test consisted of a number of language aspects except questions for the auditory processing of information.

Participants of the study also felt that the level of difficulty of the test items was too high, the period expected for one to complete the test was also short and above all, this instrument hardly identified the learning styles of individual learners with dyslexia.

It was also established that the limited knowledge of mainstream teachers on dyslexia had a negative impact on the learners' academic progress. Most of these teachers could identify learners with dyslexia in a class, but their challenges were in the delivery of relevant content. The study further revealed that negative attitudes of relevant stakeholders towards the teaching of learners with dyslexia in mainstream primary schools also affected successful roll out of intervention programmes in place. Poor remuneration and working conditions were cited as some of the factors that demotivated teachers in conducting activities related to learners with dyslexia. The attitudes of the school leadership and the nature of the involvement of parents or community in the implementation of relevant programmes were also paramount in the process.

It also emerged that shortage of relevant reading materials in some schools hampered effective delivery of services. On the contrary, most interviewees were satisfied with the quantity of books in their schools but indicated that the content in them was too difficult for the abilities of most learners with dyslexia. The research further established that the teacher-learner ratio in most classes was too high to promote individual learner attendance. Time allocated for the programmes in place was also seen as being inadequate.

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The investigation also gathered that the supervision of the implementation of intervention programmes for learners with dyslexia was not as effective as was expected. Findings from the interviews with different education supervisors revealed several reasons to this effect. Supervisors lacked continuous and sufficient training to carry out this responsibility effectively. It also emerged that the shortage of funds affected regular supervision by the district officers. Heads of schools who also served as teachers were overloaded with work which further compromised their effectiveness as supervisors of intervention

programmes. The study also demonstrated that CPDT workshops aimed at improving the teaching and learning of learners with dyslexia were also inadequate.

6.2.2 Summary of the Literature Review

Literature review revealed the existence of different types of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream primary schools of Zimbabwe. The programmes included ERI, PLAP, in-class and clinical remediation. These are administered either on partial or full inclusion basis (See sub-section 3.8.2.4 p.70). Learners with mild reading disorders may benefit from assistance given on full inclusion basis while those with more serious reading disorders require withdrawal from mainstream classes for a specific period of time so as to be attended to individually (See sub-section 1.1 p.1). There are detailed modules suggesting learning activities to be used in the administration of ERI. Similarly, clinical remediation has a guiding booklet which suggests how the programme has to be administered. PLAP and in-class remediation are administered using handouts provided by the district office. The activities for learners with dyslexia should be learner-centred and this learning approach helps to strengthen learner motivation, confidence and responsibility, while further promoting discovery or active learning (See sub-section 3.9.7.7 p.88). The ultimate goal of implementing intervention activities in Zimbabwean schools is to promote individual participation of learners with dyslexia in mainstream primary schools (See sub-section 1.1 p.1).

The availability of relevant policies cannot be over-emphasised in the successful implementation of intervention programmes for learners with dyslexia. Literature states that the formulation and implementation of policies that give guidance on activities which are executed in the education system are high on the agenda of governments across the world (See sub-section 3.9.1 p.73). Individual countries have crafted or continue to design educational policies to support the enrolment and full participation of learners with disabilities in mainstream schools (See sub-section 1.1 p.1; 3.9.1 p.73).

An assessment procedure for learners with dyslexia is crucial as it helps to diagnose a disability, verify its severity, and identify preferred learning styles for placement and possible referrals (See sub-section 3.9.2 p.76). Learners with mild reading challenges should get remediation assistance after being identified by their regular teachers (See sub-section 1.1 p.1). It is ideal that a multi-disciplinary approach be considered when conducting more detailed assessments for learners with dyslexia (See sub-section 3.9.2 p.76). The assessment tools used also need to have a capacity to detect the specific reading challenges faced by individual learners (See sub-section 2.3.1.5 p.43; 3.9.2 p.76). This enables relevant instruction to be given to needy learners.

The attitudes of teachers and other relevant stakeholders are also central in the implementation of intervention programmes. These affect learners with dyslexia directly as well as the way in which other non-dyslexic learners value their learning potentials. Literature pinpoints that negative attitudes about learners with dyslexia leads to lack of acceptance both by themselves and other learners within the school setting (See sub-section 3.9.6 p.83). Negative attitudes in some teachers are caused by limited knowledge about dyslexia, poor perceptions about disability in general and poor working conditions (See sub-section 3.9.6 p.83).

Teachers require appropriate knowledge to manage learners with dyslexia. Literature states that the majority of teachers do not know how to support learners with dyslexia as they lack understanding of the difficulties experienced by such learners (See sub-section 2.3.1.3 p.40; 3.10.1 p.98). Learners with diverse needs specifically require individual attention, support and guidance in small groups (See sub-section 3.10.6 p.101). The instruction needs to be more personal, pro-active and inclusive of a variety of learner abilities (See sub-section 3.9.7.5 p.86). Literature however, reveals that learners with dyslexia in mainstream classes are not allocated adequate time to complete assigned activities, which impacts negatively on their overall performance (See sub-section 3.10.7 p.102).

Literature also posits that in the implementation of intervention programmes for learners with dyslexia, a variety of teaching methods must be adopted, hence, multi-sensory approaches are emphasised. These assist learners to develop a mind's eye and master content in the form of symbols, concepts and other information (See sub-section 3.9.7.1 p.84). Multisensory connections between print, sound and movement should also be highly regarded for their contribution to the learning of reading and spelling skills (See sub-section 2.3.1.5 p.43). In addition, the adoption of systematic, explicit, diagnostic, differentiated, synthetic and analytic as well as learner-centered instruction must be considered in the teaching of such learners (See sub-section 3.9.7 p.84).

The availability of suitable materials is one of the criteria of dyslexia-friendly practice (See sub-section 3.9.10 p.95). Literature states that reading content should be carefully selected so that the learner is not frustrated by reading material that is too difficult for them (See sub-section 2.3.1.4 p.41). Teaching media such as computers and teachers' guides provide support in the development of literary competencies for learners with special needs (See sub-section 3.9.10 p.95). This allows for the selection and use of media as well as materials for a specified group of learners.

Supervision is paramount for teachers to improve the quality of their work output and learner achievement. Supervision is intended to help, guide, advise and develop teachers to enhance the quality of their work (See sub-section 3.9.12 p.97). Supervision also works well in the context of effective professional development efforts for teachers. Literature states that professional development facilitates the maintenance of a high standard of teaching and retains a high-quality teacher workforce (See sub-section 3.9.12 p.97).

6.2.3 Summary of the Empirical Findings

The study established that the intervention programmes that were implemented in order to enhance the inclusion of learners with dyslexia in Bubi District mainstream primary schools included ERI, PLAP, in-class and clinical remediation. ERI was meant for learners in the infant department while the other three assisted those in junior classes. ERI and

PLAP benefitted learners with mild to moderate reading challenges and were administered during the normal teaching periods. In-class and clinical remediation basically assisted those with severe to profound problems and were administered on partial inclusion basis. It further emerged that there were detailed teaching guides for the administration of ERI and in-class remediation while PLAP and in-class remediation depended on handouts provided by the district office. Participants who responded to the questionnaire items basically viewed the availed programmes as learner-centred, sensitive to the learners' needs and capable of enhancing effective inclusion into mainstream classes.

The availability of policies was viewed as crucial in the implementation of the available intervention programmes. In this regard, a district policy on the educational provisions for learners with reading disorders was utilised. This was formulated using specific legal instruments from the Ministry of Primary and Secondary Education. Assessment was also viewed as another important factor in the implementation of intervention programmes for learners with dyslexia. Participants attested to the use of both informal and formal methods of assessment. The study further confirmed that the attitudes of relevant stakeholders also determined the academic achievement of learners with dyslexia. Positive attitudes were viewed as more encouraging than negative ones. It also emerged that teachers' awareness and knowledge of dyslexia was perceived as crucial in meeting the needs of learners with this disability. A close relationship between teachers' attitudes and knowledge of dyslexia was also established.

The provision of relevant teaching instruction was also considered as beneficial to learners with dyslexia. This approach needed to consider the preferred individual learning styles. In this regard, the majority of participants acknowledged that multi-sensory approaches were used in the implementation of intervention programmes in place. To enhance understanding of the concept taught, the study further acknowledged the significance of the provision of reading materials that were adequate and relevant. The teacher-learner ratio also emerged as another important factor. Participants felt this determined the extent to which teachers could attend to the unique needs of individual

learners with dyslexia. Effective supervision of service delivery was also viewed as critical in giving proper guidance to teachers. To further enhance this, continuous professional development training was also identified as significant. Parental involvement was identified as crucial as this could facilitate continual learning from school to home.

The study further established that several challenges impeded the successful implementation of intervention programmes in place. In this regard, inadequacy of relevant ministerial policies was noted. This further affected formulation of clear provincial and district policies. A shortage of efficient, effective standardised instruments to diagnose specific reading problems of learners with dyslexia was also observed. Negative attitudes of some teachers, heads and parents were further viewed as influential. Lack of adequate and relevant learning resources in some schools also limited the academic development of learners with dyslexia. Shortage of expert reading and ECD teachers further emerged as another impediment in the success of the available intervention programmes. Participants also felt that the workload assigned to teachers was so high that their determination in assisting learners with dyslexia was compromised. This was further worsened by the high teacher-learner ratio in most regular classes.

It emerged that the time given to attend to the individual needs of learners with dyslexia was very limited. Supervision of teachers also was not as effective as expected. The outcome from the interviews suggested several reasons to this effect and these included, limited knowledge of heads about dyslexia, high workload and shortage of funds to attend to all schools regularly by the district office. The study further established that limited funds received from the government further hindered the conduction of adequate continuous professional development workshops aimed at empowering teachers with requisite skills necessary for meeting the diverse needs of learners with dyslexia. Above all, it was gathered that parents were not effectively involved in the implementation of intervention programmes in place. This was mainly due to negative attitudes and low literacy levels, to mention but a few.

6.3 LIMITATIONS OF THE STUDY

The researcher experienced some limitations that are outlined as follows:

- The ensuing distances were costly for the researcher to travel to all the 50 schools to administer questionnaires and conduct face-to-face interviews.
- Parents were not included in this study therefore their opinions regarding the implementation of intervention programmes for learners with dyslexia could not be gathered.
- Staff members of non-governmental organisations which fund some of the programmes that are discussed in the study were not included as participants.

6.4 CONCLUSION

This study examined the implementation of intervention programmes that enhanced the inclusion of learners with dyslexia in mainstream primary schools. Based on the findings of the study, the following conclusion was made:

6.4.1 Nature of the Intervention Programmes

There were four different types of intervention programmes that were implemented to enhance the inclusion of learners with dyslexia in Bubi District mainstream primary schools. Of these, the infant department had a single one, ERI and this denoted the availability of very limited services for learners with dyslexia in this category as compared to their counterparts in the upper grades. Both class teachers and clinical language remedial teachers were involved in service provision. Class teachers were responsible for those learners who did not demand much specialised attention while clinical language remedial teachers were assigned more intensive tasks. All the programmes in place were relevant because they fairly had a capacity to enhance participation of learners with dyslexia in the mainstream curriculum.

6.4.2 Crucial Factors in the Implementation of Intervention Programmes

Several factors were considered crucial in the implementation of intervention programmes for learners with dyslexia. The provision of adequate, relevant policies was revealed. In the district of study, a policy which focused on the administration of educational provisions for learners with reading disorders complemented the Ministry's policies in place. The significance of assessment was also observed. Assessment results determined the placement of learners into different programmes for service provision. The attitudes of relevant stakeholders were also recognised as vital. These could influence the level of acceptance that learners gained in the schools. Furthermore, teachers' awareness and knowledge of dyslexia also determined their competence in handling learners with this disability. The availability of adequate and relevant reading resources was also strongly emphasised. Class sizes and time allocation for the programmes were also identified as critical in attending to the individual needs of learners. Effective supervision and continuous professional development of stakeholders were regarded as other determinants of effective service delivery.

6.4.3 Challenges in the Implementation of Intervention Programmes

The implementation of intervention programmes for learners with dyslexia was hampered by a number of challenges. Lack of adequate and clear policies was identified as one of them. Furthermore, an absence of efficient and reliable assessment instruments was also established. Some stakeholders had negative attitudes towards learners with dyslexia and this further hindered effective teaching, resource mobilisation, supervision and parental involvement. Shortage of expert reading and ECD teachers also impeded effective service delivery. Lack of relevant reading materials was also a serious challenge in some schools. Furthermore, the workload assigned to regular class teachers was so high that it negatively affected their determination in the implementation of intervention programmes. This was worsened by the high teacher-learner ratio in mainstream classes. Limited time allocation also discouraged individual teaching. Effective supervision of the programmes was not afforded due to high workload and

limited knowledge that some heads of schools had about dyslexia. There were very limited continuous professional development workshops for stakeholders due to limited funds and congested school timetables. Above all, poor parental involvement further hindered continued learning between home and school.

6.5 IMPLICATIONS OF THE STUDY

This section discusses the practical, contextual and theoretical implications of the study that are drawn from the major findings.

6.5.1 Practical Implications

The results of the study imply that the district SPS/SNE and ECD department through MoPSE need to develop more intervention programmes for learners with dyslexia which are found at the infant level. These should be sensitive to the diversity of learner needs. In other words, in programme designing, various types of dyslexia and their severities must be highly considered. The findings of the study further expose the need for policy makers in education to provide adequate, specific and constantly reviewed policies that are aligned to the dynamic educational provisions for learners with dyslexia. Furthermore, the need for the SPS/SNE department to design a variety of culturally sensitive assessment instruments to identify the needs of learners with dyslexia both at infant and junior education level was revealed. These must also be reviewed regularly to ensure their fitness for purpose. The study also advocates for extensive collaboration in the entire service delivery system. Schools must collaborate with communities, and so should government ministries that play a significant role in the education of learners with dyslexia.

6.5.2 Contextual Implications

The study exposed the importance of developing dyslexia-friendly learning environments by relevant stakeholders that include the entire school staff and school development

commitees. In order to achieve this, the enactment of relevant school policies that encourage acceptance and participation of learners with dyslexia may form the basis of other provisions. School and classroom libraries may be furnished with reading and learning materials that have a capacity to improve the reading abilities of all learners. The home environment must also be supportive so that there is continued learning from home to school. This may be achieved through regularly holding disability-awareness campaigns in communities so that caregivers may realise their crucial role in the emancipation of those with dyslexia. Such services may be provided by the SPS/SNE department as well as the social services personnel or department.

6.5.3 Theoretical Implications

The study broadened insights on the knowledge of dyslexia. This included its etiology, types, challenges experienced, and diverse needs of individuals affected. Focus was also given to the historical and current perspectives of this condition. While the historical approach could be accredited for identifying the origins of dyslexia, its bias to the medical model of disability was viewed as a limitation. In this regard, the understanding of dyslexia could be widened through combining the medical, educational, psychological and social perspectives. Furthermore, the findings gathered further imply that the teaching model that was utilised in meeting the needs of learners with dyslexia could be used as a basis for the development of an improved framework for service provision.

6.6 RECOMMENDATIONS

The Ministry of Primary and Secondary Education may:

- facilitate the provision of adequate and specific legal instruments that guide the implementation of all the intervention programmes meant for learners with dyslexia. The formulation of these should be considerate of the views of relevant stakeholders. Provinces, districts and schools should such frameworks as a

baseline to draw policies that are relevant to their own settings but ultimately ensure the attainment of national goals.

- regularly review the availed policies to ensure their relevancy in a dynamic education system.
- consider close collaboration with the Ministry of Higher and Tertiary Education to ensure the training of more teachers with adequate skills to teach learners with dyslexia across all academic levels found at a primary school.
- ensure the provision of detailed teaching guides and relevant learning resources for the administration of all the intervention programmes in place.
- improve the workload of teachers by reducing the teacher-learner ratio, combining related subjects and records.

SPS/SNE Department may:

- design a variety of culturally-relevant assessment instruments for diagnosing the strengths, diverse reading challenges and preferred learning styles of learners with dyslexia both in the infant and junior category.
- facilitate early diagnosis of reading problems in learners so as to enable the provision of early intervention.
- constantly review available programmes for learners with dyslexia to ensure their fitness for purpose.
- periodically hold dyslexia awareness campaigns so as to enhance acceptance of learners with this disability both in schools and communities.

The District may:

- consider the adoption of more individualised support programmes like in-class and clinical remediation at infant level so as to complement ERI in meeting the academic needs of learners who have or are at risk of acquiring more serious reading challenges in future.

- enhance effective supervision of the intervention programmes by providing adequate supervision training programmes for all supervisors, reducing the workload of heads of schools and encouraging collegial supervision within schools.
- ensure that continuous professional development services are informed by the identified needs of teachers, heads of schools and other relevant stakeholders.
- intensify adult literacy programmes so as to empower parents and caregivers with requisite skills to assist their children with dyslexia at home.

Heads of schools may:

- encourage teachers to closely monitor the reading competence of learners, identify and report cases that need more detailed assessment and intensive intervention.
- ensure that teachers who administer more intensive intervention programmes have the required skills to assume this responsibility.
- allocate adequate and suitable time for the administration of all the intervention programmes in place.
- facilitate the construction of school libraries and equip them with improvised relevant teaching materials that cater for the diverse needs of learners with dyslexia in different classes
- regularly supervise the administration of the intervention programmes so as to identify areas that need immediate attention.

Teachers may:

- enhance their knowledge of dyslexia through improved research.
- use the preferred learning styles of individuals as a basis to offer relevant instruction.
- adopt a variety of teaching and learning media that accommodates the use of multiple-sensory modalities.
- develop a reading culture in learners through giving them interesting reading activities, quality time to practice reading and text that matches their reading capacities.

6.7 RECOMMENDED MODEL FOR THE IMPLEMENTATION OF INTERVENTION PROGRAMMES FOR LEARNERS WITH DYSLEXIA

This section presents a proposed model for effective implementation of intervention programmes for learners with dyslexia.

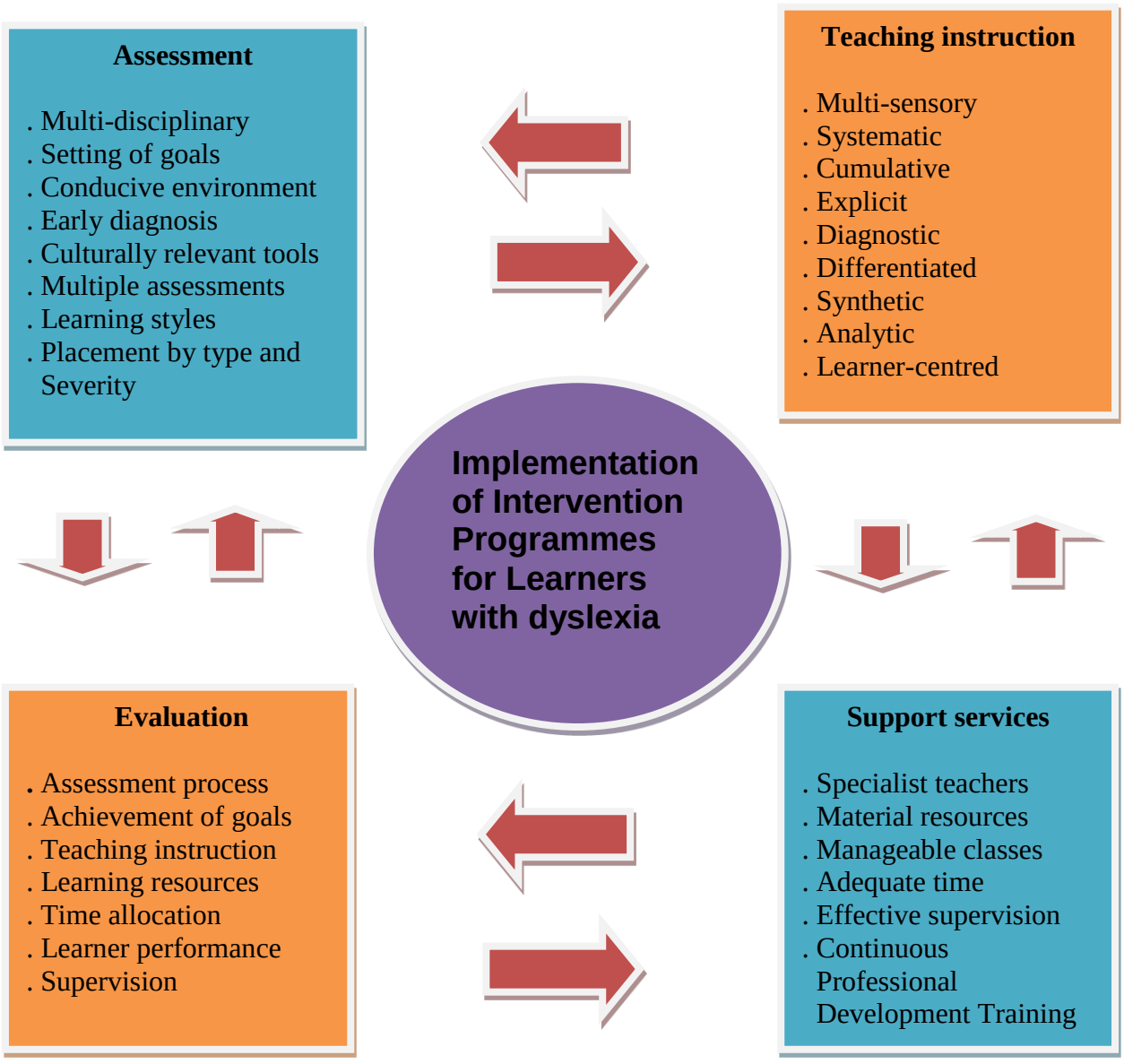

Figure 6.1: Recommended Model for the implementation of Intervention Programmes for Learners with Dyslexia.

Figure 6.1 shows the features that are crucial for effective implementation of intervention programmes to enhance the inclusion of learners with dyslexia in mainstream primary schools. It should be understood that all the activities and processes in the intervention experience hinge on policies existing in the teaching and learning environment.

6.7.1 Assessment

Assessment may be the first stage in service provision.It requires a complete process of reviewing the elements which mediate the academic performance of learners with dyslexia.

The expertise of a multi-disciplinary team which includes parents, teachers, school administrators, the SPS/SNE personnel and other interested stakeholders may be utilised as this might influence gathering of reliable information.

The role of parents or guardiansmightbe to give the background information about their children as this may suggest possible causes of reading challenges faced. Class teachers may provide information pertaining to the academic development of learners. The school administrators may facilitate referral of learners with more serious cases to the SPS/SNE Department for more advanced formal assessment procedures.

Before the commencement of assessment, goals of the entire process must be clearly set byallmembers of the multi-disciplinary team.

A least-restrictive assessment environment is desirable to avoid disruptions that may influence the outcomes. Also, the learners' readiness for assessment must be established prior to this endeavor.

Early detection and diagnosis of reading problems is desired as this affords an opportunity for remedial measures to be timely implemented.

Assessment instruments used must be culturally relevant. For instance, the instruments adopted in developed countries may not be suitable for learners who receive education in developing and underdeveloped countries.

Multiple assessment procedures maybe conducted in different environments and times as this may assist in gathering the most accurate and reliable results.

The preferred learning styles and strengths of individuals with dyslexia also have to be established as these may form the basis for intervention.

Assessment should also suggest placement options for learners with dyslexia. This should depend on the type and severity of the reading challenges encountered.

6.7.2 Teaching Instruction

After learners have been placed in different intervention programmes, relevant teaching instruction must be employed by teachers with requisite knowledge in the field.

Instruction should be multi-sensory to allow weaker senses to be compensated by stronger ones.

Academic content may be presented in a systematic way. This denotes breaking down concepts into manageable units then teaching them gradually from simple to complex to enhance understanding.

Instruction must also be cumulative, that is, there should be a close link between what learners already know and what they are taught.

The use of explicit instruction which includes detailed teacher explanations, modeling and demonstrations may be employed as this assist learners to emulate desired behavior.

Use of diagnostic instruction must also be adopted so that the specific individual learner needs are met. This type of instruction is sometimes referred to as 'individualised instruction'.

Differentiated instruction, a flexible approach which recognises the diversity of individuals in an inclusive setting must also be prioritised.

The adoption of synthetic instruction may also be considered. This involves guiding learners to segment sounds presented by each letter of a word then gradually blending those sounds to form meaningful words, for example, *CAT to /k/ae/t/*. After combining these, the complete word becomes*/kaet/*.

Use of analytic instruction which denotes teaching learners 'whole words' and how there are broken down into component parts may also be considered. This approach focuses on the base word, root, prefix and suffix.

Learner-centred instruction must also be intensified as this encourages active participation, group work, confidence and the development of a positive self-esteem.

6.7.3 Support Services

The support services required constitute human and material resources, amongst other aspects.

Specialist teachers in language teaching and inclusive education may be given active roles so that the improvement of learners with dyslexia may be significant.

The material resources used in schools must be adequate and relevant to different groups of learners with dyslexia. Teachers must improvise reading materials, if needs be.

ICT gadgets may be provided in schools so that learners with dyslexia may access reading games and activities that have a capacity to improve their reading potentials.

The teacher- learner ratio must encourage individualised teaching.

Teachers should afford learners adequate time to perform required activities. Learners with dyslexia, for instance, may require more time than non-dyslexics to complete given tasks.

The SPS/SNE Department, DSI and heads of schools have to sharpen and co-ordinate well their supervision functions to make sure programmes are administered as expected.

CPDT must be afforded so as to keep teachers abreast of the current educational trends.

6.7.4 Evaluation

Evaluation must be done by members of the multi-disciplinary team which would have been involved in the entire implementation process.

The first stage in this case may be to verify the extent to which set goals might have been achieved

The entire assessment procedure must be evaluated to ascertain the extent to which the multi-disciplinary team was utilised. The efficiency of the assessment instruments to diagnose the specific reading challenges as well as the strengths of learners with dyslexia must also be evaluated.

The effectiveness of the employed teaching instruction must also be put to test so that needed reviews can be effected.

Time allocated to the various activities and stages of the programmes need to be evaluated in items of its adequacy and suitability.

The personnel engaged in the implementation process, the resources used, as well as the supervision of the activities must also be evaluated so that flaws may be identified and addressed.

6.8 SUGGESTIONS FOR FURTHER STUDY

This study on the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream primary schools creates fertile ground for further research in the field. Other studies might focus on:

- Challenges faced by learners with dyslexia in their transition from primary to secondary school education.
- Asset-based counseling therapy as a measure to restore full development of learners with dyslexia.
- Enhancing parental involvement in the education of learners with dyslexia through adult literacy programmes.
- Effects of dyslexia on social and emotional development of primary school learners.
- The inclusion of learners with dyslexia in mainstream primary schools of selected African countries in the southern region.

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APPENDICES

APPENDIX A

A QUESTIONNAIRE FOR TEACHERS' VIEWS ON THE IMPLEMENTATION OF INTERVENTION PROGRAMMES FOR LEARNERS WITH DYSLEXIA

SECTION 1: BIOGRAPHICAL DATA

Kindly complete each item below by providing the required information:

1.1 Gender: Male ☐ Female ☐

1.2 Age (in years): .....

1.3 Grade currently teaching: …….....

1.4 Highest Professional Qualification: …….

SECTION 2: STATEMENTS THAT RELATE TO THE IMPLEMENTATION OF INTERVENTION PROGRAMMES FOR LEARNERS WITH DYSLEXIA (READING DISORDERS)

Choose a category that closely represents your understanding or perception with regard to the intervention pro grammes for learners with dyslexia (reading disorders) by marking with an X in the appropriate space from strongly disagree, disagree, undecided, agree to strongly agree.

	Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
Statements based on the nature of intervention programmes					
1. There are different types of intervention programmes for learners with dyslexia in my school.					
2. The intervention programmes available:					
a) are child centred					
b) are sensitive to the learners' individual needs					
c) assist learners to participate in the academic activities available in the mainstream curriculum					
Statements based on crucial factors in the implementation of intervention programmes.					
3. Implementation of intervention programmes is guided by specific educational policies.					
4. An assessment procedure is conducted before offering services to learners with dyslexia.					
5. A multi-disciplinary team conducts assessment of learners with dyslexia.					
6. Assessment tools (tests) used enable an accurate diagnosis of reading difficulties experienced by individual learners.					
7. Preferred learning styles of individuals with dyslexia are identified through assessment.					
8. Attitudes of teachers towards learners with dyslexia influence the implementation of intervention programmes.					

9. I use multi-sensory approaches in teaching learners with dyslexia in my class.					
10. I use a variety of teaching and learning media in the implementation of intervention programmes for learners with dyslexia.					
11. There are adequate reading materials for learners with dyslexia in my school.					
12. The reading materials used match the academic levels of learners with reading disorders.					
13. The teacher–learner ratio in my class promotes individual attendance to learners with dyslexia.					
14. Adequate time is allocated for the administration of intervention programmes.					
15. I am effectively supervised in the implementation of intervention programmes for learners with dyslexia.					
16. Adequate continuous teacher professional development workshops that improve the teaching and learning of learners with dyslexia are held.					
17. The following factors affect my ability to successfully implement intervention programmes for learners with dyslexia:					
a) limited knowledge of learners' diverse needs					
b) teaching work load					
c) limited parental support					

Thank you for your co-operation

APPENDIX B

INTERVIEW SCHEDULE FOR HEADS OF SCHOOLS ON THE IMPLEMENTATION OF INTERVENTION PROGRAMMES FOR LEARNERS WITH DYSLEXIA.

1. BIOGRAPHICAL INFORMATION

1.1 Gender: Male ☐ Female ☐

1.2 Age (in years): .....

1.3 Period of time as a head of a school ……...

1.4 Highest Professional Qualification: …….

2. CONTEXTUAL RESEARCH QUESTIONS

2.1 ***Learners with dyslexia may experience difficulties in accessing the regular school curriculum****.* What intervention programmes are provided for such learners at your school to facilitate their effective inclusion in mainstream classes?

2.2 ***Educational policies give guide to the administration of various programmes offered in learning centres****.* Which policies guide the implementation of intervention programmes for learners with dyslexia at your school?

2.3 ***Heads of schools have a mandate to create least-restrictive teaching and learning environments.*** **What major role do you play in the implementation of** intervention programmes for learners with dyslexia?

2.4 ***Teachers' attributes may determine the success of an educational strategy adopted****.* What competencies do you think teachers should possess to implement intervention programmes for learners with dyslexia in your school?

2.5 ***Meeting the needs of learners with dyslexia in mainstream classes can be hindered by a number of factors*****.** What major challenges is your school facing in the implementation of intervention programmes meant to assist learners with dyslexia?

2.6 ***Educational programmes for learners with special needs are constantly reviewed to improve their efficiency and effectiveness*****.** How best do you think the implementation of intervention programmes for learners with dyslexia may be improved?

APPENDIX C

INTERVIEW SCHEDULE FOR THE DISTRICT SCHOOLS INSPECTOR ON THE IMPLEMENTATION OF THE INTERVENTION PROGRAMMES FOR LEARNERS WITH DYSLEXIA

1. BIOGRAPHICAL INFORMATION

1.1 Gender: Male ☐ Female ☐

1.2 Age (in years): .....

1.3 Period of time as a District Education Officer…….....

1.4 Highest Professional Qualification: …….

2. CONTEXTUAL RESEARCH QUESTIONS

2.1 ***There are several strategies that can be adopted in mainstream schools to maximise the potential of individuals with special needs***. What intervention programmes are available for learners with dyslexia in your district?

2.2 ***Educational policies guide the administration of available programmes in schools.***Which policies does your district use to implement intervention programmes for learners with dyslexia?

2.3 ***Different stakeholders contribute towards the implementation of intervention programmes for learners with dyslexia***. In this regard, what major roles do you play?

2.4***Continuous professional development training keeps educators updated of the current practices in a constantly changing educational system***. How often does your district provide continuous professional development training

workshops to teachers and heads so as to improve the implementation of intervention programmes for learners with dyslexia in mainstream schools?

2.5 ***There are certain aspects that determine the success of any educational programme*.** What factors do you consider as crucial in the implementation of intervention programmes meant for learners with dyslexia in your district?

2.6 ***Meeting the specific individual needs of learners with dyslexia in mainstream classes may pose challenges to interested stakeholders***. What major challenges are you facing as a district in the implementation of intervention programmes for such learners?

2.7 ***In view of the challenges that may be encountered in the implementation of intervention programmes for learners with dyslexia***;How do you think these can be solved?

APPENDIX D

INTERVIEW SCHEDULE FOR THE DISTRICT REMEDIAL TUTOR ON THE IMPLEMENTATION OF INTERVENTION PROGRAMMES FOR LEARNERS WITH DYSLEXIA

1. BIOGRAPHICAL INFORMATION

1.1 Gender: Male ☐ Female ☐

1.2 Age (in years): .....

1.3 Period of time as a District Remedial Tutor…….....

1.4 Highest Professional Qualification: …….

2. CONTEXTUAL RESEARCH QUESTIONS

2.1 ***There are several strategies that can be adopted to facilitate the inclusion of learners with dyslexia in mainstream classes*.** What intervention programmes are administered for learners with dyslexia in your district?

2.2 ***In order for the availed programmes to be effectively implemented, there are legal frameworks that may be put in place.***Which policies does your district use to implement intervention programmes for learners with dyslexia?

2.3 ***Special Needs Education officers have a mandate to facilitate the inclusion of vulnerable learners in mainstream schools***. What major roles do you play in the implementation of intervention programmes for learners with dyslexia?

2.4 ***Professional development workshops are crucial the implementation if various educational programmes available in schools*.** How often does your district provide continuous professional development training workshops to

teachers and heads so as to improve the inclusion and learning of learners with dyslexia in mainstream schools?

2.5 ***There are several aspects that necessitate the effective learning of individuals with special needs*.** What factors do you consider as important in the implementation of intervention programmes meant for learners with dyslexia in your district?

2.6 ***Meeting specific needs of learners with dyslexia can pose challenges to mainstream school educators*.** What major challenges is Bubi district facing in the implementation of intervention programmes for learners with this disability?

2.7 ***In view of improving the implementation of intervention programmes for learners with dyslexia*,** how do you think the challenges faced may be solved?

APPENDIX E

INTERVIEW SCHEDULE FOR THE DISTRICT ECD TRAINER ON THE IMPLEMENTATION OF INTERVENTION PROGRAMMES FOR LEARNERS WITH DYSLEXIA

1. BIOGRAPHICAL INFORMATION

1.1 Gender: Male ☐ Female ☐

1.2 Age (in years): .....

1.3 Period of time as a District Remedial Tutor…….....

1.4 Highest Professional Qualification: ……..

2. CONTEXTUAL RESEARCH QUESTIONS

2.1 ***There are several strategies that can be adopted to facilitate the inclusion of learners with dyslexia in mainstream classes***. What intervention programmes are administered for learners with dyslexia at Infant department in your district?

2.2 ***In order for the availed programmes to be effectively implemented, there are legal frameworks that may be put in place***. Which policies does your district use to implement the Early Reading Initiative and other intervention programmes?

2.3 ***Special Needs Education officers have a mandate to facilitate the inclusion of vulnerable learners in mainstream schools*.** What major roles do you play in the implementation of the Early Reading Initiative and other reading programmes?

2.4 ***Professional development workshops are crucial the implementation if various educational programmes available in schools***. How often does your district provide continuous professional development training workshops to teachers and

heads so as to improve the inclusion and learning of learners with dyslexia in mainstream schools?

2.5 ***There are several aspects that necessitate the effective learning of individuals with special needs*.** What factors do you consider as important in the implementation of intervention programmes meant for learners with dyslexia at Infant level in your district?

2.6 ***Meeting specific needs of learners with dyslexia can pose challenges to mainstream school educators***. What major challenges is Bubi district facing in the implementation of intervention programmes for learners with this disability?

2.7 ***In view of improving the implementation of intervention programmes for learners with dyslexia*,** how do you think the challenges faced may be solved?

APPENDIX F

ANALYSIS OF POLICY DOCUMENT ON THE IMPLEMENTATION OF INTERVENTION PROGRAMMES FOR LEARNERS WITH DYSLEXIA

This instrument serves to review the policy on the implementation of intervention programmes for learners with dyslexia (reading disorders).

NAME OF THE POLICY: ……

Item	Comments
1.	Background information on the origins of the policy …….. …….. …….. …….. ……..
2.	Identification of learners with dyslexia …… …… …… …… ……
3.	Detailed assessment and placement into different intervention programmes …… …… …… ……

	……
4.	Roles of different stakeholders involved …… …… …… ……
5.	Skills to be possessed by the implementers of the intervention programmes …… …… …… ……
6.	Time allocation for the implementation of intervention programmes …… …… …… ……
7.	Provision of support services …… …… …… …… ……
8.	Parental involvement …… …… …… …… ……

APPENDIX G

ANALYSIS OF A SCHOOL MASTER TIMETABLE

This instrument serves to review time allocation for the implementation of intervention programmes for learners with dyslexia.

Item	Comments
1.	Early Reading Initiative …….. …….. …….. …….. ……..
2.	Performance Lag Address Programme …… …… …… …… ……
3.	In-class remediation …… …… …….. …… ……
4.	Clinical remediation …… …… ……

APPENDIX H

DOCUMENT ANALYSIS FOR LESSON PLANNING

This instrument serves to review procedures undertaken when preparing and planning lessons that are done during the implementation of an intervention programme.

NAME OF AN INTERVENTION PROGRAMME ……

Item	Comments
1.	Topic (formulation) …… …… …… ……
2.	Learning content (link with the topic , relevancy) …… …… …… ……
3.	Setting of objectives (clarity, adequacy, achievability within the allocated time) …… …… …… ……
4.	Source of learning content / Reference (relevancy, variety) …… ……

	…… ……
5.	Learning aids/media (relevancy, variety, adequacy) …… …… …… ……
6.	Teaching and learning activities (sensitivity to individual needs, involvement of learners variety) …… …… …… ……
7.	Time allocation (adequacy) …… …… …… ……
8.	Lesson evaluation (relevancy of the learning content, adequacy and effectiveness of learning media, relevancy of teaching and learning activities, pacing of lessons,time allocation, learners' participation, challenges and achievements of learners, achievement of objectives). …… …… …… ……

APPENDIX I

ANALYSIS OF DISTRICT MINUTES ON READING STAFF DEVELOPMENT WORKSHOPS

Item	Comments
1.	Adequacy of the workshops …… …… …… …… ……
2.	Facilitators and Target groups …… …… …… …… ……
3.	General trend of the duration of workshops …… …… …… …… ……
4.	Reading concepts covered …… …… …… ……

APPENDIX J

TEACHER: CONSENT FORM

CONSENT FORM FOR THE QUESTIONNAIRE

I....., consent to participate in the interview designed by Duduzile Nkomo for his study on: The Implementation of Intervention Programmes that Enhance the Inclusion of Learners with Dyslexia in Mainstream Primary Schools: A Zimbabwean Context.

I understand that:

- Participation is voluntary
- As an individual, I may withdraw from the study at any time.
- No information containing my identity will be included in this research report, and my responses will remain confidential.

Signed:.....

Date:.....

APPENDIX K

HEAD OF A SCHOOL: CONSENT FORM

CONSENT FORM FOR THE INTERVIEW

I....., consent to participation in interviews designed by Duduzile Nkomo for his study on: The Implementation of Intervention Programmes that Enhance the Inclusion of Learners with Dyslexia in Mainstream Primary Schools: A Zimbabwean Context.

I understand that:

- Participation is voluntary
- As an individual, I may withdraw from the study at anytime.
- No information containing my identity will be included in this research report, and my responses will remain confidential.

Signed:.....

Date:.....

APPENDIX L

DISTRICT SCHOOLS INSPECTOR: CONSENT FORM

CONSENT FORM FOR THE INTERVIEW

I....., consent to participate in the interview designed by Duduzile Nkomo for his study on: The Implementation of Intervention Programmes that Enhance the Inclusion of Learners with Dyslexia in Mainstream Primary Schools: A Zimbabwean Context.

I understand that:

- Participation is voluntary
- As an individual, I may withdraw from the study at any time.
- No information containing my identity will be included in this research report, and my responses will remain confidential.

Signed:.....

Date:.....

APPENDIX M

DISTRICT REMEDIAL TUTOR: CONSENT FORM

CONSENT FORM FOR THE INTERVIEW

I....., consent to participate in the interview designed by Duduzile Nkomo for his study on: The Implementation of Intervention Programmes that Enhance the Inclusion of Learners with Dyslexia in Mainstream Primary Schools: A Zimbabwean Context.

I understand that:

- Participation is voluntary
- As an individual, I may withdraw from the study at any time.
- No information containing my identity will be included in this research report, and my responses will remain confidential.

Signed:.....

Date:.....

APPENDIX N

DISTRICT ECD TRAINER : CONSENT FORM

CONSENT FORM FOR THE INTERVIEW

I....., consent to participate in the interview designed by Duduzile Nkomo for his study on: The Implementation of Intervention Programmes that Enhance the Inclusion of Learners with Dyslexia in Mainstream Primary Schools: A Zimbabwean Context.

I understand that:

- Participation is voluntary
- As an individual, I may withdraw from the study at any time.
- No information containing my identity will be included in this research report, and my responses will remain confidential.

Signed:.....

Date:.....

APPENDIX O

LETTER OF INTRODUCTION

University of Venda
School of Education
Private Bag X5050
Thohoyandou, 0950

My name is Duduzile, a registered Doctor of Education student in the Department of Curriculum Studies at the University of Venda. My area of study is on the implementation of intervention programmes that enhance the inclusion of learners with dyslexia in mainstream primary schools in Bubi District. This study was motivated by the continued low academic performance of learners with dyslexia as compared to their non-dyslexic counterparts.

Participation in this study would include teachers, heads of schools, District schools Inspector, District Remedial Tutor, and the District ECD Trainer. The questionnaire schedule was administered to 150 teachers who were selected in the 50 mainstream schools. Interviews which are anticipated to last 25 minutes would be conducted with the Heads of Schools, District Schools Inspector, District Remedial Tutor and the District ECD Trainer. Documentary analysis would focus on School-based Ministry policy, Wide Range Assessment Test 1 and the Reading Remedial Programme.

You are guaranteed that participation in this study is voluntary and that information generated in the process would be confidential and used only for the purposes of the study.

Yours Sincerely

.....
Duduzile Nkomo

APPENDIX P

REQUEST FOR PERMISSION TO CONDUCT RESEACH PROJECT: BUBI DISTRICT

All communications should be addressed to
"The Provincial Education Director"
Tele-Fax: 67574
E-mail: matnorth12@gmail.com

Ministry of Primary and Secondary Education
Matabeleland North Province
P O Box 555
Bulawayo
Zimbabwe

19 May 2017

University of Venda
Private Bag X5050
Thohoyandou 0950
Limpopo
South Africa

Attention: **Nkomo Duduzile (Miss) (Student Number 16023534)**

REQUEST FOR PERMISSION TO CARRYOUT A RESEARCH PROJECT: BUBI DISTRICT: MATABELELAND NORTH PROVINCE

Reference is made to your letter dated 10 May 2017, requesting for permission to carry out a research project entitled: ***"The Implementation of Intervention Programmes that Enhance the Inclusion of Learners with Dyslexia in Mainstream Primary Schools: A Zimbabwean Context*** at Primary schools in Bubi District, Matabeleland North Province.

You are hereby granted permission to conduct your research in the above mentioned district. However, your research should not in any way disturb the smooth running of teaching and learning activities in schools.

You will be required to furnish the Province with a copy of your findings after the research.

NB: Before proceeding into schools, please ensure that you pass through the District Schools Inspector – Bubi.

Mpofu J.A. (Mrs.)
Deputy Provincial Education Director – SECNFE
For the Provincial Education Director – Matabeleland North.

cc District Schools Inspector - Bubi

APPENDIX Q

UNIVERSITY OF VENDA ETHICAL CLEARANCE

RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:
Ms D Nkomo

Student No:
16023534

PROJECT TITLE: **The implementation of inclusionary programmes for the learners with dyslexia in Bubi District Primary schools, Matabeleland North Province, Zimbabwe.**

PROJECT NO: SEDU/16/CSEM/08/1710

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr MP Mulaudzi	University of Venda	Promoter
Dr SK Muthambi	University of Venda	Co-Promoter
Ms D Nkomo	University of Venda	Investigator - Student

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: October 2016
Decision by Ethical Clearance Committee Granted
Signature of Chairperson of the Committee: .....
Name of the Chairperson of the Committee: Prof. G.E. Ekosse

UNIVERSITY OF VENDA
DIRECTOR
RESEARCH AND INNOVATION
2016 -10- 18
Private Bag X5050
Thohoyandou 0950

University of Venda
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