

**IMPLICATIONS OF PEER TUTORING AS A MULTI-GRADE TEACHING AND
LEARNING STRATEGY FOR LEARNER PERFORMANCE IN SELECTED
MULTI-GRADE SCHOOLS**

by

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DECLARATION

I, Salome Kolobe Muthambi, hereby declare that:

IMPLICATIONS OF PEER TUTORING AS A MULTIGRADE TEACHING AND LEARNING STRATEGY FOR LEARNER PERFORMANCE IN SELECTED MULTI-GRADE PRIMARY SCHOOLS

is my own work and that it has not been submitted for any degree or examination purpose in any other institution or university, and that all the sources I have used and quoted have been indicated and acknowledged by means of complete references.

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S. K Muthambi

.....

Date

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DEDICATION

This thesis is dedicated to:

My parents, Philip Tlou Mpai and my mother, Quebes, Lepamo Mpai who laid the foundation of my education, nurtured it and taught me to work hard and persevere.

My husband Mukonḡeleli, my son Unariḡe Philip and daughter Muelelwa Ethel for their support and encouragement throughout this study.

Thank you for believing in me. God bless you abundantly.

ABSTRACT

Multi-grade teaching is a situation where one teacher teaches several grades together in one class. This phenomenon is common in both developed and developing countries. However, the problem is, in South Africa there is no multi-grade policy in place, curriculum and materials are written for mono-grade schools, pre-service and in-service training for teachers are geared at a mono-grade classroom. Consequently, teachers are not trained in appropriate multi-grade teaching and learning strategies; this may affect learner performance at such schools. It has been indicated that there is a dearth of research in the teaching and assessment practices in multi-grade setting in the literature, especially in Africa.

This mixed methods study is based on the implications of peer tutoring as a teaching and learning strategy in English First Additional Language (FAL) for Grade 5 multi-grade learners' performance. The purpose of this study was to determine implications of peer tutoring as a multi-grade teaching and learning strategy on Grade 5 learner performance in Vhembe District in Limpopo Province of South Africa.

The study used mixed-methods design and concurrent Triangulation approach where both qualitative and quantitative approaches were used to collect data concurrently. Quantitative data were collected through quasi experimental design and surveys while qualitative data were collected using scheduled interviews. The six week one-on-one peer tutoring programme was designed to assist grade 5 learners to read and spell proficiently as a supplemental instruction. The literature review revealed that peer tutoring as a teaching and learning strategy has been effectively used mostly in mono-grade schools. The study sample consisted of 77 grade 5 learners from four random sampled multi-grade schools whose first language (L1) or home language (HL) is Tshivenda but learnt through English as a Second language (L2) or First Additional Language (FAL), 4 teachers and 4 principals. Two schools served as treatment group

while two served as control group. Both groups took a pre-test and post-test; only the treatment group received peer tutoring intervention.

The mixed method approach involved collected quantitative data through learners' pre-tests, post-tests and spelling activities during the peer tutoring intervention. This was to compare the grade 5 learners' results of those who had participated in the peer tutoring intervention with those in the control group. Both teachers and principals and learners completed a questionnaire on multi-grade teaching and peer tutoring.

The findings revealed that:

1. The peer tutoring group performed better than the control group.
2. Peer tutoring might possibly be an effective teaching and learning strategy for multi-grade teaching.
3. Both teachers and principals expressed the need for in-service training workshops in teaching and learning strategies specifically for multi-grade teaching.
4. They also revealed that pre-service training should provide training courses on multi-grade teaching to prepare prospective teachers.

The study recommended the following:

The Department of Education should develop a multi-grade policy. In-service training workshops should train multi-grade teachers in appropriate multi-grade teaching and learning strategies. Institutions of higher learning should provide pre-service training in multi-grade strategies, infuse some multi-grade modules into their teacher training programmes and provide short courses on multi-grade teaching.

Key concepts:

Multi-grade teaching; teaching and learning strategies; peer tutoring; zone of proximal development (ZPD); scaffolding.

LIST OF ACRONYMS

ANA	Annual National Assessment
ACE	Advanced Certificate
AOL	African Oxygen Limited
CAPS	Curriculum and Assessment Policy Statement
CI	Comprehensible Input
CMGE	Centre for Multi-grade Education
CWPT	Class Wide Peer Tutoring
DBE	Department of Basic Education
DET	Department of Education and Training
ES	Effect Size
ESL	English Second Language
FAL	First Additional Language
HL	Home Language
KZN	Kwa- Zulu Natal
L1	First Language
L2	Second language
LAD	Language Acquisition Device
LOLT	Language of Learning and Teaching
MDG	Millennium Development Goal
MUSE	Multi-grade School Education
NCS	National Curriculum Statement
OBE	Outcomes Based Education
PIRLS	Progress in International Reading Literacy Study
PR	Paired Reading
PT	Peer Tutoring
RPT	Reciprocal Peer Tutoring

SGB	School Governing Body
SLA	Second Language Acquisition
SMT	School Management Team
SPSS	Statistical Package for Social Sciences
UN	United Nations
UNESCO	United Nations Educational Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UPE	Universal Primary Education
ZAD	Zone Actual Development
ZPD	Zone of Proximal Development

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CHAPTER 1

INTRODUCTION AND BACKGROUND OF THE STUDY

1.1 INTRODUCTION

In most developed and developing countries, education systems have organized their schools in terms of mono-grade or single grade; learners' enrolment numbers are high enough to be grouped in terms of same age group and taught together in one class by one teacher. In such cases, both curricula and textbooks are also mono-graded. Yet, there are children all over the world living in sparsely populated, mountainous and remote areas which are hard to reach; who do not have access to basic education. This is despite the fact that education is a basic right and countries have to achieve both Universal Primary Education (UPE) and realize Millennium Development Goals (MDGs) particularly goal number 2 by 2015. Children in remote areas are few; enrolments are low; consequently, several grades have to be grouped into one class and taught by one teacher; these are multi-grade classes (Little, 1995:1) The term multi-grade is also referred to as: 'multilevel', 'multiple class', 'composite class', 'vertical group' in some countries (Little, 1995:1).

The term "multi-grade teaching" is not universal, but the practice is widespread and it has arisen from necessity in most developing countries while in some developed countries it is a pedagogical choice. It refers to settings where the teacher is responsible for teaching learners of different grade levels at the same time. Although it is not a new idea, it now calls for a much broader operational and technical definition to address problems and issues facing most educational systems especially in Africa (Birch and Lally, 1995:67).

Research on multi-grade teaching has focused on cognitive and non-cognitive outcomes. What is lacking in the research literature is a focus on teaching and learning processes;

the strategies that teachers use and the ways teachers cope with classroom complexities and challenges of the multi-grade teaching and learning strategies (Mulryan-Kyne, 2004:3; Brown, 2010:30). This is confirmed by Blum and Diwan (2007:4) who attest that the bulk of existing research on small government primary schools consists of national quantitative data sets which measure some of the characteristics of small schools and the geographical extent of the problem. Referring to South Africa, Brown (2010: 193) indicates, "multi-grade teaching is an under-researched area in South Africa and as such the number of schools with this practice nationwide is unknown." Brown (2010:32) further supports Mulryan-Kyne (2005) by stating that; there is a dearth of research in the teaching and assessment practices in multi-grade setting in the literature, especially in Africa. This might mean that sufficient research has not been done on the use of teaching and learning strategies by teachers in multi-grade classrooms.

1.2 RATIONALE: WHY MULTI-GRADE TEACHING?

According to Little (2006:4), Multi-grade schools, teachers and learners operate at the margins of education systems and are largely invisible to those who plan, manage and fund education systems; yet, they persist. Reasons why multi-grade teaching takes place vary from country to country. However, some of them are the following:

Multi-grade teaching is necessary to provide access to education to children who live in remote, rural and sparsely populated areas in any country. It is an appropriate way to help nations reach their internationally-mandated Education for All (EFA) targets and national Millennium Development Goals (MDGs), by providing good quality education to children who are often neglected by their education systems because they live in small, poor and remote communities (UNESCO 2013:1). Multi-grade teaching is necessary in areas where there are few teachers and learners to justify the allocation of one teacher per grade; thus they are a response to uneven student enrolments. Multi-grade schools have the potential to increase primary school participation rates. By bringing the school closer to the community, they encourage more children, especially girls into schools.

These schools are a cost-effective means to providing quality education in hard-to-reach areas. In countries where teacher absenteeism is high and there is no cover, grades may be combined to avoid having a class without a teacher (Berry...p.7 <http://www.ioe.ac.uk/multigrade>). Finally, it is difficult to establish the correct numbers of multi-grade schools in different countries as statistics on these schools are not taken regularly. However, according to Little (2005:3-4) and Pincas (2007:3) some of the statistics of multi-grade schools around the world are as follows:

- Australia in 2005-6, 70% of all primary schools had 3 or fewer teachers.
- Burkina Faso, 2000, 36% schools, 20% classes, 18% pupils multi-graded.
- England in 2000, 25.4% of primary classes were mixed years.
- Laos, 24.3% of all primary school classes multi-graded.
- Mauritania 2002-3, 30% of all pupils are in multi-grade classes 82% of these are in rural areas.
- In Nepal in 1998 teacher primary school ratio was 3.8. Primary schools comprised of five grades. If learners were on task for most of the school day, it means most teachers must be responsible for more grades for some parts of the day.
- In New Brunswick Canada, 13/4% of classes in elementary schools were combined schools.
- In Northern Ireland in 2002/3, 21.6% of all classes (years 1-7) were composite classes; two or more grades were taught together.
- In Peru in 1998 78% of all public schools were multi-grade; 41% were one teacher schools.
- In Sri Lanka in 1999 63% of all public schools had four or fewer teachers.

According to DBE's report of (2012:9), South Africa had 25,6% multi-grade schools. These numbers reflected from a few countries, indicate that multi-grade is a serious issue that needs to be considered by education systems.

1.3 STATEMENT OF THE PROBLEM

The intention of the study was to investigate peer tutoring as a teaching and learning strategy for learner performance at Grade 5 in multi-grade schools. In countries where policies of education accommodate and provide for multi-grade schools, there is a specific curriculum, and teachers are trained appropriately. In their classrooms, teaching and learning materials are available, schools are well resourced and maintained and learners perform well academically. This scenario is found mostly in developed countries such as Scotland, Greece, Switzerland, England, Finland and Austria (Kamel, 2010:3).

Contrary to the above, in most developing countries such as Ethiopia, Tanzania, Namibia, Lesotho and South Africa multi-grade school teachers face several challenges such as: dilapidated school buildings with no basic services, for example, water, toilets and electricity supply (Higgins, 2007:1). Given that South Africa has approximately 30% of its schools as multi-grade (Joubert, 2006:10) which were located on farms, mines and remote areas, it is imperative that multi-grade teachers be trained in appropriate multi-grade teaching and learning skills so that learners can improve their performance.

Multi-grade learners also face certain challenges such as, poverty, malnutrition, attitudes shown by non-marginalised groups and a high illiteracy rate among parents (EFA, 2008:7; Pridmore, 1999:1-2). In addition, the majority of learners drop out before the seventh grade. This defeats the aim of MDGs and Education for All; that every child should at least complete primary schooling. The new development in some multi-grade schools is the diversity of learners who speak languages which teachers do not speak. This is prevalent in Vietnam, (Pridmore 1999:2) and in Peru (Vincent and Susan, 1999:28).

1.4 PURPOSE OF THE STUDY

The purpose of this study was to determine the implications of peer tutoring as a multi-grade teaching and learning strategy on Grade 5 learners' performance in Vhembe District.

The following objectives were developed:

- To examine how peer tutoring as a multi-grade teaching and learning strategy is implemented.
- To investigate the implications of peer tutoring as a teaching and learning strategy in multi-grade classrooms.
- To investigate principals' and teachers' knowledge on multi-grade teaching and learning strategies.
- To measure the effects of learner performance in a peer tutoring situation.

1.5 CRITICAL RESEARCH QUESTIONS

The primary research question was: What are the implications of peer tutoring as a multi-grade teaching and learning strategy on Grade 5 learners' performance?

In order to answer this main question, the following subsidiary questions were formulated:

- How do multi-grade teachers implement peer tutoring in their classrooms?
- What are implications of peer tutoring as a teaching and learning strategy?
- What do principals and teachers understand by peer tutoring in multi-grade classrooms?
- How do multi-grade learners who participate in peer tutoring intervention perform?

1.6 RESEARCH HYPOTHESIS

- There will be no significant difference in performance between learners who participate in peer tutoring intervention and those who do not.

1.7 THEORETICAL FRAMEWORK

Multi-grade teaching and learning is based on the theory of cognitive development, particularly social cultural theory of Vygotsky and the input hypothesis by Krashen.

1.7.1 The Socio-cultural Context and Thinking

Socio-cultural approaches to learning were first systematized and applied by Vygotsky and his collaborators in Russia in the 1920s and 1930s. Their idea was based on the concept that human activity occurs in cultural contexts and are mediated by language and other systems, and can be understood when investigated in their historical development (Vera et al., 1996:191). This is supported by Criticos et al., 2012:53) who indicate that Vygotsky investigated child development and its effect on culture and interpersonal communication. He observed how higher mental functions developed within particular cultural groups as well as individually through social interactions with significant people in a child's life, particularly parents, but also others. Vygotsky stated that "learning is embedded within social events and occurred as a child interacts with people, objects and events in the environment" (Vygotsky 1986:287). He believed that children's language was social in origin because it arose in interaction between the child and others, especially adults and more knowledgeable others. In other words, human development is the ultimate product of socialization and he added that

“cognitive processes are a result of social and cultural interactions” (Vygotsky 1978: 84). He further went on to define the word “social” as “the word social when applied to our subject has great significance. Above all, in the widest sense of the word, it means that everything that is cultural is social. Culture is the product of social life and human social activity. That is why just by raising the question of cultural development of human behaviour we are directly introducing a social plane of development” (Vygotsky 1981:164)

The child’s language both results from and is part of social interaction. For Vygotsky, development or human consciousness is fundamentally a mediated mental activity.

1.7.2 Language and Thinking

Perhaps Vygotsky’s most important contribution concerns the relationship of language development and thought. He highlights the explicit and profound relationship between speech; inner and oral and the development of mental concepts and cognitive awareness. Vygotsky (1978:84) believed that children’s learning begins long before they attend school; that any formal learning they engage in at school is linked to a previous history. For example, children begin to study arithmetic in school, but long beforehand they have had some experience with quantity. Besides this, a child also assimilates the names of objects in her environment; all that is learning. Language and cognition are interdependent processes; and linguistic activity is a means through which the human mind is organized and functions. The human being uses both cognition and language as tools to regulate the world around him and his behaviour. Vygotsky believed that talking is necessary to clarify important points but also that talking with others helps us to learn more about communication (Pound, 2008:40). The more a child is spoken with, the more he learns and responds appropriately.

1.7.3 Zone of Proximal Development (ZPD)

Vygotsky (1978:86) also developed a concept called the zone of proximal development (ZPD), which he described as the gap between what a child can do alone and what he can do with the help of someone more skilled or experienced, who could be an adult or another child. ZPD is viewed as something that emerges through participation in collaborative activities. Children's cognitive development occurs through guided participation in social interactions with more experienced persons. In Vygotsky's view, interaction benefits a child when they are helped by another child who knows more about the task. The more knowledgeable child benefits too, as the process of making their ideas more explicit renders the grasp of what they know clearer and more objective. The shift of control within activities from the social to the individual ones happens by means of expanding the learner's ZPD.

1.7.4 Krashen's Five Hypotheses to Second Language Acquisition (SLA)

The second theory that is linked to this study is Steven Krashen's five Input hypotheses to Second Language Acquisition (SLA); these were initially developed as the Monitor model in the 1970s. This study focuses on peer tutoring where second language learners read and spell in English First Additional language. There is a link between language acquisition and Vygotsky's Socio-cultural theory in certain aspects. The study will attempt to explain these as they appear during this discussion. Briefly, Krashen's theory states that:

There is a natural order for learning the structure of a second language. What it means is that learning follows a specific path, which is orderly so that it can arrive at a specific point. There is a distinction between language acquisition and language learning. Acquisition is subconscious and informal learning while learning is conscious and occurs mostly in a formal situation (Krashen, 2009:10). This is similar to Socio-cultural theory where a young learner initially starts to learn to speak, he speaks aloud, to himself which assists him to eventually internalise the language. Speaking aloud is done subconsciously and silent talk after internalisation is more like learning a language.

There is a function for a 'monitor' or 'editor' in the production of second language. During language acquisition, the learner acquires fluent, correct speech in the natural order and applies the speech unconsciously. When certain grammar or spelling rules are consciously learned, then the 'monitor' or 'editor' appears and corrects speech that is inappropriate in second language (Krashen, 2009:15). In Socio-cultural theory, a learner learns from parents, siblings, adults and the community around him. All these people do not correct him. They keep on repeating what he says to confirm his language and subconsciously, acquisition occurs.

The necessary and sufficient cause of second language acquisition is 'comprehensible input.' It means that, not only is meaningful input needed in second language acquisition, it is all that is needed. If a learner constantly receives comprehensible input that is slightly higher than what he already knows ($i+1$), he will learn to understand and speak the second language.

"We acquire language by understanding messages, that 'comprehensible input' (CI) is the essential environmental ingredient in language acquisition. Comprehensible input is necessary for language acquisition, but is not sufficient. The acquirer must be 'open' to the input, i.e. have a low Affective Filter ... Also, the input needs to contain ' $i+1$ ', an aspect of language that the acquirer has not yet acquired but that he or she is ready to acquire" (Krashen, 1991:409). Comprehensible input can be in the form of stories that learners read, if the story is too easy, the learner will not be challenged to learn. This can be linked to Vygotsky's Zone of Actual Development (ZAD); where it is indicated that a learner can accomplish tasks with the assistance of a peer or knowledgeable one. In language learning, the learner is initially at ZAD, with $i + 1$, then he rises to ZPD to achieve learning.

According to Krashen's theory, an 'affective filter' plays a critical role in how well and how fast a second language is acquired. The affective filter refers to the emotions and

feelings of the learner in the second language process. If the learning process causes anxiety, fear, then less comprehensible input will pass through the language acquisition device, and very little second language will be acquired or learnt.

A child acquires his first language from parents, siblings, peers and the community through various symbols such as pictures, artefacts and real objects. The same thing happens in Vygotsky's Zone of Actual Development (ZAD); children learn with symbols which can be words or numbers and from society they live in. Through language a child also acquires cultural norms, skills and values. A child, who speaks his first language fluently, tends to learn the second language with ease as he transfers the same learning skills he used in the acquisition of the first language. During second language learning, comprehensible input +1 is provided by the teacher, it comes in the form of text, spoken words, pictures, videos and many other objects. Even though the learning situation is formal, second language learning travels in the same way as first language, the teacher has to provide scaffolding and a peer to assist the learner to learn. If the learner is not stressed, the affective filter is low, ready to learn, the classroom atmosphere is accommodating, and then learner and peer will work together amicably for learning to take place. The Language Acquisition Device (LAD) will allow more comprehensible input to pass through. The teacher has to provide the motivation and assistance for the learner to move from the ZAD to learning, ZPD.

In this case, in a tutoring process, both tutor and tutee benefit from the tutoring session. The role of educators is to guide learners to think and act like experts in making decisions about reading and then selecting learning strategies for appropriate use, structuring learning activities and employing sound pedagogical strategies in real life contexts.

Teachers are viewed as important agents of change in education and thus are expected to play a key role in changing schools and classrooms, particularly multi-grade classrooms. The present education system in South Africa implements a learner centred

approach where the educator is a facilitator who needs to tap into learners' prior knowledge, develop creativity and critical thinking. Learners are supposed to work either in pairs for peer tutoring; or group work which is one of the most important techniques a multi-grade educator has to master and frequently use.

Cognitively, peer tutoring involves conflict and challenge. It also involves support and scaffolding from a more competent other, necessitating management of activities to be within the zone of proximal development of both parties that is the tutor and tutee; reflecting Vygotskian school of thought, and necessity to balance any damaging excess of challenge. It is assumed from the above arguments that the theory of Vygotsky is closely related to peer tutoring. For Vygotsky emphasized the importance of families, communities and other children in a learner's life. His theories changed the way educators think about children's interactions with others, and led to peer tutoring approaches and to apprenticeship views of learning (Pound, 2008:41).

1.7.5 Relationship of Socio-Cultural Theory and Input Hypothesis to this Study

Although Vygotsky and Krashen come from two different eras, one can establish similarities between the two related to language acquisition. Krashen's input hypotheses are similar to Vygotsky's concept of ZPD. According to Krashen, language acquisition occurs when the learner in a conducive environment, where the affective filter is low, receives comprehensible input which is +1, that is, one level above where he is, Vygotsky refers to the level where the learner knows and can do tasks unaided as ZAD. Once the learner receives input+1, with the aid of a peer, or knowledgeable one, he can rise to ZPD, where he is assisted to complete tasks acquisition or internalisation of the language. These two concepts are similar in the sense that they both refer as they are based on the assumption of interaction with others. Concepts in Vygotsky's Socio-cultural theory and Krashen's Input hypotheses complement one another.

In teaching and learning, learners interpret their world from the input they get from their teachers who clarify their learners' interpretations of the world. When a learner who is working with a peer comes up with an idea, the peer needs to elaborate, correct and clarify why certain things happen the way they do. The learner comes to school with prior knowledge which is organized in his own mind which he acquired from interacting with parents, siblings, and members of the community. The educator or the peer, a knowledgeable other has to help him to reorganize and structure it; move from what he can do which is in the level of Zone of Actual Development (ZAD) to ZPD, by accomplishing a task with the assistance of a knowledgeable other. The tasks given to the learner should be slightly above the learner's actual development; what the researcher would refer to as input+1. This means that input is comprehensible for the learner, it is challenging enough and not too difficult and frustrating and allows learning to occur (from Professional Development and resources materials for ESL (<http://golum.riv.csu.edu.au/~sself/SOTE/EEL403/2HDT.htm#Sociocultural>) accessed on 01.09.2015). There is a strong link between Vygotsky's scaffolding and Krashen's language acquisition. In teaching and learning, instructional scaffolding is a temporary support as it aids learner assisted by peer as they construct meaning and progress from being unable to being able to, that is on the way to internalisation or acquisition. They

1.8 DEFINITIONS OF KEY TERMS

In this section, key terms are defined for the purpose of common understanding.

1.8.1 Multi-grade Teaching

Multi-grade teaching is a situation where "a single teacher is responsible for a class formed of children from two or more year grades" (Little, 2006:3, 2010:1 Policy brief Indonesia, Little, 2005:2, Mulryan-Kyne, 2004:5, Cornish, 2009:118, Juvane, 2005:4, and Higgins, 2008:1). In multi-grade, one teacher assumes responsibility for one or

more classes in the same room at the same time. In this study, multi-grade teaching refers to a situation where one teacher teaches two or more grades at the same time and in the same classroom. A variety of names are given to multi-grade situations such as 'combination classes', 'forced mixed age classes', 'forced mixed grade', 'consecutive class', multilevel, multiple class, composite class, vertical group, family class, combination class, split class, and in the case of one-teacher schools, it is termed as unitary schools (Wangmo, 2005:5 and Cornish, 2009:118). In this study, multi-grade teaching refers to a situation where one teacher teaches several grades together in one class on a daily basis.

1.8.2 Teaching and Learning Strategies

According to Birch and Lally (1995:25) teaching and learning strategies may best be described as the methods, techniques or devices used to enhance teaching and to facilitate learning. In this study, the researcher would define teaching and learning as ways and ideas that assist a teacher to teach effectively and enable a learner to learn.

1.8.3 Peer Tutoring

Peer tutoring has been defined by some researchers as: cooperation between two or more learners, where one individual imparts knowledge to the other(s). This occurs between learners of the same age or grade (same-age tutoring) or between learners of different ages or grades (cross-age tutoring). This may be a sixth grade learner helping a first grader or two first graders tutoring each other (Ley and Vincent 1999: 1; Cassidy and Richardson 2008:2; Hock et al., 2001:173). The two types of tutoring can complement each other and yield positive results in their application in multi-grade classroom practice. Academically-orientated peer tutoring programmes were characterized as including "a system of instruction in which learners help each other and learn by teaching" (Goodlad and Hirst, 1989:13) or "a more able child helping a

less able child in a cooperative working pair carefully organized by a teacher". Topping (1996:322) further defines tutoring as "people of same social groupings who are not professional teachers helping each other to learn and learning themselves by teaching." In this study, peer tutoring refers to a one-on-one type of learning where an able grade 5 learner assists another grade 5 learner to learn content he did not know.

1.8.4 The Zone of Proximal Development (ZPD)

This is defined as "the distance between the actual developmental level of determined through problem solving under adult guidance or in collaboration with more capable peers (Vygotsky, 1978:86). ZPD can be regarded as the difference between what a child can do independently and what he capable of doing with targeted assistance. In peer tutoring, ZPD could be referred to as that area where the learner is able to learn being assisted by a tutor. This term was coined by Lev Vygotsky in the twentieth century to describe the sweet spot where teaching and learning is most beneficial for each learner- just beyond his current level of independent capability (Lui, 2012:2).

1.8.5 Scaffolding

Scaffolding is a term that refers to the instructionally supportive activities and social interactions that occur between the learner and individuals as they guide effective learning and development in the ZPD (Lui, 2012:3). Instructional scaffolding may include skill modelling, initializing and maintaining interest and motivation and simplifying problems to a level that a learner understands. Morrissey and Brown, 2009:107) state "the aim of scaffolding is the ultimate transfer of responsibility for the task to the learner as tutor or peer support decreases and learner capability increases." As the learner's ability in completing a task increases, the more the peer's support decreases.

1.9 RESEARCH DESIGN AND METHODOLOGY

This section introduces the research design and research methodology that were utilised in this study. This study used the mixed methods design.

1.9.1 Mixed Methods Design

Mixed methods design is an approach to inquiry that combines or associates both qualitative and quantitative forms. It is more than simply collecting and analysing both kinds of data; it involves the use of both approaches in tandem so that the overall strength of the study is greater than either qualitative or quantitative (Creswell, 2009:4).

1.9.2 Research Methodology

The study employed Concurrent Triangulation Strategy. In this strategy, both the weighting of qualitative and quantitative approaches are equal, data were collected concurrently at the research site. These were then compared to determine if there was any convergence, differences or a combination.

In this strategy qualitative and quantitative approaches were used as a means to offset the weaknesses inherent within one approach with the strength of the other, or strength of one adds to the strengths of the other. The mixing during this strategy took place at the data interpretation, where the two were merged. There was integration and comparison of the results. This traditional mixed method model is advantageous because it results in well validated and substantiated findings (Creswell, 2009:213-214).

Quasi-experiment involves the random selection of two groups. Both of these groups are administered a pre-test on the independent variable. One of the two groups receives a new treatment while the other is kept as the control group. Both groups are post-tested. After the post-test, a determination is made on whether there was any difference on the outcome of the experimental group (Gay, 1992:324).

1.9.3 Population

Creswell (2012:142) and Strydom et al., (1998:190) define a population as a group of individuals who have the same characteristics or properties. It is a term that sets boundaries on the study units. For example, it might refer to all primary school teachers in a particular district. A population represents a set of entities for which all the measurements of interest to the practitioner or researcher are represented.

In this study, the population was constituted by all multi-grade schools in the Vhembe District of the Limpopo Province which have combinations of either Grades 4 and 5 or Grades 5 and 6 in the classrooms.

1.9.4 Sampling Procedures

Two sampling procedures were used to determine the samples. For qualitative sample a purposive sampling procedure was used to identify teachers and principals who work in multi-grade schools and as such would have insightful understanding of multi-grade teaching and learning and peer tutoring.

Purposive sampling is a type of sampling that allows the researcher to deliberately select small groups or individuals who are knowledgeable and informative about the phenomenon of interest; selecting cases without needing or desiring to generalize to all

such cases (Gray, 2009:152 and McMillan and Schumacher, (2006:475). Here the subjects have one or more trait to give what is believed to be a representative sample.

Random sampling is a procedure of selecting subjects from a population such that each member has an equal chance of being selected McMillan and Schumacher (2006:476). Firstly in this study, schools that have multi-grade classes were identified and then randomly selected to reduce them to manageable number.

This study used purposive sampling to select schools that comprised of grade5 learners with another grade and used the classes available. It was not educationally sound to random sample learners as this would disadvantage learners who are in same class but cannot use peer tutoring. At the same time, it was also very difficult to random sample learners in a multi-grade classroom, as this class is already a combination of two grades.

1.9.5 Sample

Creswell (2012:142) and Strydom et al., (1998:191) define a sample as a subgroup or element of the target population that the researcher plans to study for generalizing about the target population. A sample is studied in order to understand the population from which it has been drawn.

In this study two types of samples were used, purposive and random, to suite both methods of data collection. For qualitative method, **4 school principals** were purposively identified to participate in the interview schedule due to the lengthy period of 10 years existence as multi-grade sites.

For the quantitative data, random sampling was used to sample 4 multi-grade schools whose learners were used in the study. The sample consisted of **8 Grade 4 teachers** and only grade 5 learners. Learners of other grade combinations were excluded in order

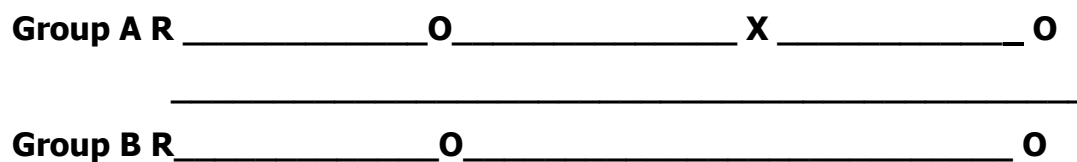
to adhere to the principle of peer tutoring. A total of **77 learners** constituted the sample.

Each experimental school had 19 learners which came a total of 38 learners while with control schools one had 23 learners and the other 16 which was 39 learners in total.

1.10 QUASI-EXPERIMENT: PRE-TEST, POST-TEST, CONTROL GROUP DESIGN

Quasi-experiments are those research designs in which there is no random assignment of subjects; rather, cause-and-effect relationships are examined by manipulating the independent variable (McMillan and Schumacher, 2006:475).

The researcher used a quasi-experimental design called: Pre-test-post-test control group design. The reason for the choice of this design was because the random sampling was done to select the schools and learners were not matched. The procedure involved a random assignment to two groups, the experimental group A and control group B. Both experimental and control groups wrote the pre-test and post-test. Experimental group A underwent peer tutoring intervention (X) while control group B did not. The experimental design is represented as follows:



1.11 DATA COLLECTION INSTRUMENTS

Since this is a mixed methods research, the data for both qualitative and quantitative were collected concurrently, that is simultaneously. Questionnaires and interview

schedule were used for data collection; while during the peer tutoring intervention, learners wrote pre-test and post-test, read and spelt and spelling activities were recorded.

Three types of instruments were used to collect data for the study: the interview schedule, the self-designed questionnaire for teachers' and principals' and another questionnaire for learners' and a Twenty-Word Spelling experiment as follows:

Both principals and teachers from the four multi-grade schools responded to the interview schedule which was divided into the following sections: the biographical data, classroom organization, school management, work allocation, teaching and learning strategies used, knowledge about peer tutoring, training in multi-grade pedagogy.

The self-designed questionnaire for both teachers and principals was also divided into the following sections: biographical data, Likert scale on multi-grade teaching and learning, the use of teaching and learning strategies and peer tutoring for spelling.

Learners also completed a self-designed questionnaire on multi-grade and peer tutoring and the questions focused on these aspects: Whether learners liked being taught with another grade in the same class, what learners were able to do in terms of reading and spelling before peer tutoring, and after peer tutoring, what were they able to do, learners were asked what they liked and disliked in peer tutoring as well as what they liked about working with another learner.

The Twenty-Word Spelling Test

In order to assess learners before and after the peer tutoring intervention for both experimental and control groups, the researcher developed a Twenty-word-spelling test. The selected reading materials for the peer tutoring intervention were based on a reader for Grade 2. The reasons for this choice have been stated in the pilot study. The researcher developed a story based on one of the characters the learners had read about in the reader using the twenty words from the whole reader. All reading and

spelling activities that were used for the peer tutoring intervention were developed from the same reader.

1.12 TECHNIQUES AND PROCEDURES OF DATA COLLECTION

The researcher sought permission from the District Senior Manager for Vhembe District to conduct research in multi-grade schools. After that permission was sought from circuit managers and principals to enter the schools. The researcher managed to secure appointments with both principals and teachers; the researcher explained what the research was about and why the researcher was doing it. The researcher asked both the principals and teachers to facilitate the signing of learners' and parents' or guardians' consent and assent forms before the researcher undertook the research on specific, agreed upon days.

1.13 TRUSTWORTHINESS

Trustworthiness indicates that the findings are worth paying attention to (Lincoln and Guba 1985:290). This is the extent to which data and data analysis are believable and trustworthy. Trustworthiness of qualitative research can be established by using four strategies which will be discussed below:

Credibility: this is similar to internal validity, that is, how do the research findings match realities. Researchers argue on the concept 'reality' as it can be interpreted by researchers in many different ways; thus it is subject to many meanings. This is an evaluation of whether or not the research findings represent a credible conceptual interpretation of the data drawn from the participants' original data. After transcribing the interviews, the researcher went to all participants to verify what the researcher had transcribed with them that it was what they had said or meant; this is member checking in this way credibility was established in the study. Lincoln and Guba (1985:314)

consider member checking as one of the most critical technique for establishing credibility.”

Transferability: This is a degree to which the findings of the inquiry can apply or transfer beyond the project. This concept is similar to external validity, this is the extent to which findings can be generalised. This is a way the results of the study can be applied in other similar contexts. I ensured transferability by writing rich descriptions about the settings and participants studied to provide the reader with sufficient information to enable him to judge the applicability of the research findings to other research findings (Seale, 1999:45). This concept is difficult to ensure in a qualitative study particularly because the researcher is the main instrument.

Dependability: this is similar to reliability which explains the consistency of observing the same finding under the similar contexts. It refers to an assessment of the quality of the integrated processes of data collection, data analysis and theory generation. To achieve dependability, triangulation of approaches and research instruments was done, member checks were done and data was taken back to participants to verify its authenticity. At the end of data analysis, there is a section that deals with integration, corroboration of theory and data.

Conformability: this concept is similar to reliability; that is; the consistency of observing the same finding under similar contexts. Dependability relates to the way research findings can be replicated in similar contexts and subjects. It is a measure of how well the inquiry’s findings are supported by the data collected. According to Seale, (1999:45) conformability can be established by the researcher making provision for an audit of the materials used in the study by archiving collected data used in the study.

To achieve dependability, triangulation of approaches and data instruments was used member checks; data was taken back to participants to verify its authenticity. Materials of the study have been archived in order to allow verification later in case there are inconsistencies in the study. The findings of this study were supported by the data from the literature review that explained that multi-grade was not supported by departments

of education in many countries in terms of policy, curricula, pre-service and in-service training.

1.14 TRIANGULATION

Triangulation is used in research in order to overcome problems of subjectivity or bias. The idea of its use is that; the weaknesses of the one approach or method, or research instrument may be cancelled by the other. Triangulation employs multiple data sources. According to Gray, (2009:582) triangulation is referred to the use of a variety of methods or data sources to examine a specific phenomenon either simultaneously or sequentially in order to improve reliability of data. He further added that “two or more independent measurement processes greatly reduced the uncertainty in interpreting data” (Gray, 2009:204). Gray distinguished between within-methods triangulation using multiple qualitative or multiple quantitative methods, and between methods triangulation which involves both qualitative and quantitative methods. He further argued that the between methods triangulation was potentially powerful because the bias of methods from one paradigm could be balanced by the methods from the other (Gray 2009:205). The study is a mixed methods design that employed concurrent triangulation strategy; which used both qualitative and quantitative methods. Furthermore, the study utilised three data sets to triangulate as; the interviews and questionnaires. The answers from both data sets were combined and compared (Gray 2009:213).

1.15 DATA ANALYSIS AND INTERPRETATION

For the quantitative analysis, the following descriptive statistics were calculated: means, standard deviations, standard error for both pre-test and post-test. Further inferential statistical tests to examine hypothesis in the study were: probability, Independent t -test, confidence interval, Effect size, Cohen’s d and correlations. Software called Statistical Package for Social Sciences SPSS version 22 was used to analyse all quantitative data. Qualitative data analysis were analysed by examining presence and

repetitions of ideas, words and phrases and then grouping similar ideas under themes which related to the literature review and research questions. Finally, both quantitative and qualitative data analysis were integrated to establish consistency, corroboration and to disconfirm any contradicting results.

1.16 DELIMITATION

The study was confined to multi-grade schools in one district in Limpopo Province, namely Vhembe. Limpopo Province has multi-grade schools in all its districts. Due to logistics, the researcher selected one district for the purpose of this study. This was an intervention study where the researcher spent six weeks in multi-grade classrooms working closely with both teachers and learners in tutorial sessions.

1.17 ETHICAL CONSIDERATIONS

The purpose of ethical considerations is to explain general agreements among researchers about what is proper and improper in the conduct of scientific inquiry. The researcher sought permission from the district senior manager to conduct the study. In possession of the letter from the district senior manager, the researcher visited the four multi-grade school principals and participants before embarking on the research. Permission was also sought from Grade 5 learners and their parents for their participation in the study. All participants were asked to sign a form to grant the researcher permission to involve them in the data collection process. The researcher then introduced myself and explained the purpose of the research.

1.17.1 Voluntary Participation

All participants were informed of their voluntary participation. The researcher also explained to them that they were free to stop from participating in the research if they

felt uncomfortable to participate further. The researcher also sought permission from all participants to use a tape recorder to record all conversations during data collection.

1.17.2 Anonymity and Confidentiality

In this study, all participants were guaranteed both anonymity and confidentiality. It was explained to them in no uncertain terms that no names would be revealed and no content in the study would be linked to a specific participant.

1.17.3 Deceiving Subjects

The researcher introduced themselves to all participants and explained the purpose of conducting the research. A letter of permission from the district was given to the principals. Letters of parents' consent for their children to participate in the research were submitted. Learners were asked to sign assent letters in order to participate in the research.

1.18 SIGNIFICANCE OF THE STUDY

The significance of the study can be located in the fact that it would assist multi-grade teachers with knowledge about multi-grade teaching and learning strategies which can be applied in their practice. Furthermore, multi-grade teachers might be trained on peer tutoring as a teaching and learning strategy and this might help them to improve their classroom practice and learner performance; thus both learners and teachers will gain considerably from the study. At the end of the study, a model on peer tutoring was suggested which teachers could implement in multi-grade classrooms; this would allow multi-grade teachers to focus on individual learners while the class focused on peer tutoring. Institutions of higher learning might demonstrate the peer tutoring model in pre-service teacher training modules to prepare student teachers who might teach in

multi-grade schools. The study will benefit the department of education, curriculum advisers and policy makers to assist them in developing and designing suitable curriculum and support materials for multi-grade classes. It would also reveal to both district and circuit managers, the situations and challenges faced by both teachers and learners in multi-grade classrooms.

1.19 OUTLINE OF CHAPTERS

Chapter 1 of this study comprised of the background to the study, statement of the problem, research question, purpose of the study, initial assumptions, preliminary literature review, theoretical framework, research design and methodology, data collection procedures, data analysis, delimitation, ethical considerations and significance of the study.

The rest of the study has been divided as follows:

Chapter 2 focuses on theoretical framework: Sociocultural theory of Vygotsky and Krashen's five hypotheses

Chapter 3 comprises the literature review which will examine the following: peer tutoring, its history, objectives selection of tutors and tutees, training, actual peer tutoring sessions and evaluation of the cycle.

Chapter 4 outlines the research design which will include the following subheadings: methodology, population, sampling sample experimental design, validity and reliability, data collection instruments, data analysis and ethical considerations.

Chapter 5 features an analysis of quantitative and qualitative data

Chapter 6 will entail the study conclusions, recommendations and findings: these will emanate from the data interpretations and a suggested model of peer tutoring is given.

1.20 CONCLUSION

The chapter addressed implications on peer tutoring as a teaching and learning strategy in multi-grade classrooms and how this affected learner performance. Multi-grade schools have emerged out of necessity and they are a unique education situation that has assisted children's access to education to enable countries to achieve Education for All and Millennium Development Goals. Peer tutoring is one teaching and learning strategy that multi-grade teachers could use to improve their teaching and learner performance. The chapter further examined the following: background, statement of the problem, purpose of the study, research question, initial assumptions, preliminary literature, theoretical framework, research design, methodology, sampling, instrumentation, data collection methods, data analysis, rigour in the research, delimitations, significance of the study and ethical considerations. In Chapter Two, the theoretical framework will be elaborated.

CHAPTER TWO

THEORETICAL FRAMEWORK

2.1 INTRODUCTION

The study investigated peer tutoring as a multi-grade teaching and learning strategy for Grade 5 learner performance. In this chapter, the theoretical framework of this study is explained. Children are social beings who are born into families and communities. They learn to communicate and understand the world around them by using a language. This time they use English first additional language (FAL) or English as a Second language (ESL) to learn to acquire knowledge at school. According to Topping (1996:324), peer tutoring is fully understood through socio-cultural view of cognitive development. This is supported by scaffolded exploration through social and cognitive interaction with a more experienced peer in relation to a task of a level of difficulty within the learner's "zone of proximal development" (ZPD). Teachers have realised that for learners to succeed in their learning, they have to work in pairs and small groups in order to share and assist each other to accomplish given tasks. Multi-grade classes are organised in small groups most of the time because of the different grades and activities learners have to perform (Pincas 2007:2). For a structured peer tutoring activity and effective classroom management, the multi-grade teacher pairs one able learner with one that is not so knowledgeable so that they can complete a task. Peer tutoring is elevated on the grounds that for the tutors, it is "Learning by Teaching" in other words, when the tutor teaches a tutee, he learns twice in the sense that he was taught initially by the teacher, now he teaches a tutee.

2.2 THEORETICAL FRAMEWORK UNDERPINNING MULTI-GRADE AND PEER TUTORING

The study is informed by two theoretical lenses: the socio-cultural theory by Vygotsky and the Input hypothesis by Krashen. The interdependence of individual- internal and social- external processes in learning and development is the cornerstone of Vygotsky's theory. He viewed interdependence "as a process that is characterized by a unity of material and mental aspects, a unity on the social and personal" (Vygotsky 1998:190). Vygotsky places more emphasis on the social environment as a facilitator of development of learning (Schunk, 2012:241). He contended that the socio-cultural environment is critical for cognitive development. His work emphasized the roles of social interaction and instruction (Blake and Pope, 2008:60). It is through social interaction that learners learn from each other and adults. What this means is that, we learn first through person to person interactions and then individually through an internalization process that leads to deep understanding (Blake and Pope, 2008:61). Vygotsky assumed that social structures and social relations lead to the development of mental functions. This means that a child first has to interact with people around him and his surroundings before he can develop his mental functions which would serve as a source of reference that will assist him to think and take responsibility for his thoughts and actions. Vygotsky viewed learning as a socio-cultural process. His theories include the view that a child's cognitive skills and patterns of thinking are the outcome of interactions with his immediate social and cultural environments. This view is supported by Brown (2010:20) who asserts that learning is social and hence a language-based activity. Learning happens mostly by communication of the child with other people.

Vygotsky theorized that cognitive development is interwoven with language development; active use of language changes thinking and thinking and actions change language. According to John-Steiner and Mahn (1996:191), Vygotsky and his collaborators argue that human activities take place in cultural contexts, are mediated

by language and other symbol systems, and can best be understood when investigated in their historical development. In language learning it means that for a learner to develop, he must interact culturally with other people; adults, particularly parents and peers, in an environment using language or other language symbols. Language symbols refer to tools such as numbers, signs, notations, plans, graphs and diagrams. To Vygotsky, this interaction is necessary for the child to form concepts. He further sees talking with adults on familiar concepts as crucial to build up knowledge of language, for an awareness of particular thinking and interpreting their own experiences. Language plays an important role in determining how a child learns to think because advanced forms of thought are transmitted to the child through words (Jennings, 2004:18). The power of Vygotsky's ideas lies in his explanation of the dynamic interdependence of social and individual processes. According to this explanation, children solve practical tasks with the help of speech as well as eyes and hands. They make sense of situations through observing conversations: a combination of speech, perception and actions. They find more meaning in interpreting words through facial expressions, context and body language.

Young children talk to themselves through language to regulate their actions. For example, the toddler that shouts "up step" as they climb stairs or a four year old explaining the story as he draws or paints a picture (Pound, 2008:40). When beginning an activity, learners depend on others with more knowledge and experience in order to learn. The more knowledgeable other provides scaffolding to the learner, this is a temporary support. Over time, as the learner takes on increasing responsibility for their own learning and participation in joint activities, the scaffolding is withdrawn. This can only be possible when the learner and the helper work together interdependently with each other. Learners also learn from other members of the community especially parents. To this, (John-Steiner and Mahn, 1996:192) elucidated this about Mayan mothers:

"The routine and interactions between children and their caregivers and companions, provide children with thousands of opportunities to observe

and participate in the skilled activities of their cultures. Through repeated and varied experience in supported routine and challenging situations; children become skilled practitioners in the specific cognitive activities in their communities. So the various activities assist the learner to develop cultural norms and values of his society.” John-Steiner and Mahn, (1996:192).

Children learn by observation and participation in repeated cultural activities provided by their caregivers. They acquire a variety of skills, norms and values that are acceptable to society. The caregivers provide challenging learning contexts with support for the child to learn from.

2.2.1 Language and Thinking

One of Vygotsky's contribution concerns the interrelationship of language and thought. Vygotsky (1978:90) attested that "learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in co-operation with his peers" . He emphasises the explicit and profound connection between speech (both silent inner speech and oral language) and the development of mental concepts and cognitive awareness (Criticos et al,, 201253). Vygotsky drew attention to the importance of language in the context of learning. In addition, he indicated that learning is a process of active construction of meaning. Moreover, he emphasised that this process works best in social settings in which two or more individuals engage in discussion. The teacher can engage learners in discussions between themselves to advance learning. Listening to input, that is speech or text from others makes a learner aware of things that they did not know and leads to expansion of their knowledge networks. Listening to ideas that contradict their own beliefs may cause learners to examine their own beliefs and possibly restructure them. The need to communicate their ideas to others forces them to clarify those ideas. This can lead to the recognition of new connections and further learning (Commonwealth Secretariat, 2005:2).

2.2.2 The Zone of Proximal Development (ZPD)

Vygotsky has developed a theory called the Zone of Proximal Development (ZPD) which he described as:

"...those functions that have not matured but are in the process of maturation, functions that will mature tomorrow but are currently in the embryonic state. These functions could be termed as "buds" or "flowers" of development rather than the "fruits" of development. The actual developmental level characterizes mental development retrospectively, while the ZPD characterizes mental development prospectively (Vygotsky, 1978:87)"

ZPD is described as the gap between what a given learner can achieve, what he is capable of learning alone; given the proper teaching and what he can achieve through problem solving in collaboration with more capable peers Schunk (2012:243), Pridmore (2007:7 and 8), Carr (2003:35) and Pound (2008:40). It is a learner's test of his developmental readiness or intellectual level in a specific domain; this shows how learning and development are related. ZPD uses social interaction with knowledgeable others to move development forward. The lower limit of the ZPD is called the Zone of Actual Development (ZAD) which is the level of skill reached by learner working on his own; unassisted. At this level, the learner has nothing new to learn and independently.

The upper limit of the ZPD is the level of additional responsibility the learner can accept with the assistance of a more skilled person. According to Vygotsky ZPD helps in determining a child's mental functions that have not yet matured but are in the process of maturation, functions that are still in the developmental state but will mature shortly (Turuk, 2008:249). The learner is able to attempt a particular task if there is someone, a tutor to help him to accomplish it. Where adults help a child to learn, they are fostering the development of knowledge and ability. Teaching and learning occurs in this level and learners can be successful through assistance. In the ZPD, a teacher and learner work together on a task that the learner could not perform on his own because

of its level of difficulty. Cognitive change occurs in the ZPD as teacher and learner in a culturally mediated interaction produce a change that the learner internalizes. During the interaction both the teacher and learner bring into the activity their own understandings which will enhance one another but more the learner's (Schunk, 2012:244). Closely linked to ZPD, are the concepts of mediation; which is central to socio-cultural theory and scaffolding which refers to a temporary support lent to the learner to master a task that he is currently unable to complete on his own.

2.2.3 Mediation

According to Vygotsky (1998:215) "the first contact of the child with reality even in carrying out the most biological functions, is wholly and completely socially mediated." All psychological processes are mediated by tools such as language, signs and symbols which are transmitted by adults to their children during their collaborative activities. After children have internalized these tools, they function as mediators of the children's more advanced psychological processes. Mediation refers to the part played by the significant others like parents, siblings or peers in the learner's life to enhance their understanding by selecting and shaping their learning experiences. For Lantolf (1994:418), mediation is understood to be the introduction of an auxiliary device into an activity that then links humans to the world of objects or to the world of mental behaviour. The device can be an appliance or a machine that allows humans to do tasks better and thus improves their lives and their communities. This symbolic tool empowers humans to organize and control mental processes like voluntary attention, logical problem-solving, planning and evaluation, voluntary memory and intentional learning.

Both John-Steiner and Mahn (1996:193) and Lantolf (1994:418) have mentioned the following tools: mnemonic device, diagrams, graphs, algebraic symbols and importantly, language as part of a learning process. To Vygotsky, the secret of effective learning lies in the nature of the social interaction between two or more people with different levels

of skills and knowledge (Turuk, 2008:251). Language, which is an important symbolic tool in socio-cultural theory, is used to assist teachers to move learners into and through their ZPD. There are two types of mediators: namely a human and symbolic. The human mediator answers the question: what kind of involvement on the part of the adult is effective in enhancing the learner's performance, meaning, what is it that the teacher can do to make learners learn effectively? The symbolic mediator deals with what changes can be brought about by the introduction of the learner to the symbolic tools: meaning, what effect would the learner have if introduced to a particular language? Teachers should prepare learners to learn by teaching them the tools and then providing opportunities for learning (Schunk, 2012:254).

2.2.4 Scaffolding

Scaffolding is a concept that was developed in psychology and L1 research. Scaffolding refers to the process of controlling task elements that are beyond the learners' capabilities so that they can focus on and master those features of the task that they can grasp quickly (Schunk, 2012:245). In a social interaction, a knowledgeable participant can create a means of speech and supportive conditions, under which a learner (novice) can participate, learn and extend current skills and knowledge to high level of competence. In an educational context, scaffolding is an instructional structure whereby the teacher models the desired learning strategy or task then gradually shifts responsibility to the learners as they show mastery of the activity.

The advantages of scaffolding are that it provides clear directions to learners, it clarifies the purpose of the task, it keeps learners on task, it offers assessment to clarify expectations, it directs learners to the relevant sources, it reduces uncertainty, surprise and disappointment and it delivers efficiency and creates momentum thus assisting learners to complete tasks on time (Turuk, 2008:253). During scaffolding, the teacher has to keep on adjusting the scaffold depending on the skills, capabilities and progress

made by learners. Scaffolding promotes learners' internalization of knowledge co-constructed in a shared activity.

In an L2 classroom, collaborative work among language learners provides the same opportunity for scaffold help as in expert-novice relationships in everyday settings. As the learner takes more responsibility for his learning, the teacher dismantles the scaffold to show that the learner has benefitted from the assisted performance and internalized the problem-solving processes provided by the scaffolded situation (Schunk, 2012:246). The learner understands the new information better, is able to apply it in his life and adds personal values to it. Socio-cultural theory believes that true learning takes place when the learner transforms the learning and does not merely conform to it. It focuses on how the learner accomplishes a task and how interaction between learners can scaffold and assist a L2 learner's acquisition process. Collaboration and interaction among peers create a collective ZPD from which both teachers and learners can draw from. Learners' tasks should be sequenced in a suitable manner so that the demands of language can be compatible with the learners' language proficiency. Interaction between the teacher and learner can assist the teacher to determine how far the learner has internalized knowledge and how much assistance learners still need.

In L2 language context there is still a need to grade and sequence learning activities to facilitate easy understanding and for a knowledgeable person, to take L2 learners through different layers of knowledge and understanding before they are left on their own. These are tasks which learners cannot successfully handle on their own particularly at the early stages of their learning.

Topping (1996:324) supports this idea by indicating that peer tutoring is more fully understood through the social interactionist (or socio-cultural or social constructivist) view of cognitive development. Supported (or "scaffolded") exploration through social and cognitive interaction with a more experienced peer in relation to a task of a level of

difficulty within the tutee's "zone of proximal development" remains a theoretical cornerstone of peer assisted learning.

Vygotsky's theories changed the way educators think about children's interactions with others and led to peer tutoring approaches and to apprenticeship views of learning. Peer tutoring is regarded as one of the collaborative teaching and learning strategies and they are informed by Vygotsky's social cultural theory of learning which views cognitive development as a linguistic dialectical process where the learner learns through shared problem solving experiences with a skilled peer. What it means is that, learning in this theory occurs successfully in situations where learners work together on a problem, assisting each other to solve it. Thus, these types of teaching and learning strategies believe in the idea that a learner learns effectively by interacting through language and sharing ideas with others.

2.3 HOW LEARNERS ACQUIRE SECOND LANGUAGE

Children are social beings by virtue of being born by parents in a human society. Consequently, they learn a language by interacting with their parents, siblings and other members of the community. Krashen, a Second Language Acquisition linguist, has developed five hypotheses in order to explain how children acquire second language. These hypotheses are discussed here-under:

2.3.1 Acquisition-Learning Theory

In this theory, Krashen (2009:10) posits that there are two independent ways of developing competence in a second language, namely: language acquisition and language learning. Language acquisition is a process similar to the way children learn their first language. It is a subconscious and informal process where learners are not aware of the fact that they are acquiring a language but are aware that they are able to use the language to communicate. As acquisition is subconscious, learners are not

aware of the rules of that language instead they have a “feel” for correctness. Grammatical sentences “sound” right, or “feel” right, and errors feel wrong, even if they do not consciously know what rule was violated.

This is because acquisition is informal; a child learns the language by interacting with adults and siblings. Adults do not formally teach the language to the child or even correct him when he makes mistakes. Acquisition is also described as implicit learning, informal learning and natural learning, in lay man’s terms acquisition is referred to as “picking- up” the language. A good example can be a Venda child who plays with a next door Zulu child; the Venda child will acquire IsiZulu and the Zulu child will also acquire Tshivenda. In contrast to language acquisition is language learning, which is a conscious and formal process. Language learning involves learning the rules and grammar of a language. This situation occurs formally in a classroom during language teaching.

2.3.2 The Natural Order

This is Krashen’s (1985:1; 2009:12) second hypothesis in which he explains that second language acquisition of grammatical structures proceeds in a predictable order with some easy structures being acquired early while difficult ones are acquired later. This process of acquisition cannot be changed, or altered through drills, explanations or practice exercises. For example, the acquisition of the third person singular, “He watches a soccer match” is one of the grammatical structures that are acquired much later. Many learners of English as a second language have had problems acquiring or leaning this structure.

2.3.3 The Monitor Hypothesis

This is Krashen’s (1985:1; 2009:15) third hypothesis in which he explains how acquisition and learning are used in language production; that is in speaking and

writing. We are able to produce speech from our acquired competence, from our subconscious knowledge. Learning, as a conscious knowledge, serves as an editor, or Monitor. In order to make corrections, we appeal to learning, to change the output of the acquired system before we speak or write. In order to use the Monitor, the speaker should be consciously concerned with correctness and must know the rules Krashen (1985:2). The Monitor is used in various ways by performers. Over users constantly use Monitor; one can identify such speakers by their hesitant speech; such learners are mainly introverts, who are shy and do not want to make mistakes and thus would rather not take a risk to use a word they are not sure of. Under users do not use the Monitor and optimal users use the Monitor appropriately and when necessary; these are extroverts, they are ready to take risks in using the language.

2.3.4 Input Hypothesis

This is Krashen's very important hypothesis and he makes the following claim: The input hypothesis relates to acquisition, not learning. We acquire by understanding language that contains structure that is beyond our current level of competence ($i+1$); where "understand" means that the acquirer is focussed on the meaning and not the form of the message. This is done with the help of context or extra-linguistic information. Only when we understand language that contains structure that is "a little beyond" where we are now can acquisition occur. We use our linguistic competence; context, our knowledge of the world and our extra-linguistic information to help us understand language directed at us (Krashen, 1985:2; 2009:21).

Input can come in two different forms; as written text and or as the spoken word. Thus, reading and listening provide input which our brains utilise to build language competence. Comprehensible input is necessary for language acquisition, but it is not sufficient on its own as an essential ingredient. Input should be relevant and slightly higher than the level of competence we are currently at. What Krashen calls input $i+1$; i is the level of acquisition where the learner is while 1 is an aspect of language that the

acquirer has not yet acquired but that he or she is ready to acquire; what in Vygotskian terms would be ZPD. The learner cannot complete the task unless it is just above his level of present knowledge. The learner should be open to input, meaning that the affective filter should be low in order for acquisition to take place. For instance, the new language teacher provides input through text supplemented by pictures, objects and discussion of familiar topics.

Input should not be too difficult, because if it is then the learner will be frustrated as it would be difficult to comprehend and no learning will occur. On the other hand, input should not be too easy, as this will not challenge the learner to learn. Input hypothesis has two corollaries which are speaking: this comes due to acquisition. If sufficient input is provided, the learner acquires grammatical structures (Krashen, 1985:2). The amount of input acquired depends upon how much comprehensible input reaches and passes through the Language Acquisition Device (LAD). Not all the input the acquirer hears is processed for acquisition and the LAD itself generates rules according to innate procedures. Finally, LAD operates in fundamentally the same way in everyone (Krashen, 1985:3).

2.3.5 The Affective Filter Hypothesis

Krashen's fifth hypothesis is premised on the notion that comprehensible input is necessary for acquisition to take place, but it is insufficient on its own. The acquirer needs to be open to the input. The affective filter is a mental block that prevents input from passing through to LAD. When the affective filter is up, the learner can understand what he hears and reads but the input will not reach LAD due to some emotional variables such as motivation, anxiety and lack of self-confidence. When these variables rise, they create a mental block and the learner cannot learn. What it means is that, the input does not reach or pass through to LAD. But, when the learner is motivated, his self confidence is high, the affective filter is low and allows input through LAD and acquisition takes place.

2.4 THE ROLE OF SOCIOCULTURAL THEORY AND KRASHEN'S FIVE HYPOTHESES

The role of Vygotsky's ZPD is linked with Krashen's input hypothesis through $i+1$. Where the i input is regarded as the Zone of Actual Development (ZAD), the level where the learner is and able to accomplish tasks on his own, unassisted by a peer, or adult. The 1 for $+1$ is the Zone of Proximal Development; this is the level the learner has to reach to accomplish the task, through the assistance of a peer. This is the area in which teaching and learning take place, where there is comprehensible input for the two people to interact with, to achieve acquisition. Learners benefit from these interactions because they are able to accomplish tasks that would otherwise go beyond their cognitive abilities (Jennings, 2004:18). Learning occurs through interdependence of the learner and the peer. At this stage, input in the form of new content that learners have to learn, may be in the form of reading material. The two learners read together to assist each other. They discuss the pictures and what the story could be about. If at the outset both learners were at level ZAD, by interacting with content which is input, they move from ZAD to ZAPD, which is the level of acquisition.

In a peer tutoring situation, a learner that does not know much, learns from a knowledgeable one. It is an opportunity where learners learn various skills from other learners. This form of teaching strategy can be effectively utilized in a multi-grade classroom because a multi-grade teacher teaches several grades in one class at the same time. In any teaching and learning situation, learners require some individual attention from the teacher; thus, in a multi-grade class the teacher can use peer tutoring for one grade; where these learners can teach one another, while he pays individual attention to another grade. It is believed that through peer tutoring learners in a multi-grade class can achieve optimum learning and this is confirmed by the report below. According to Carr (2007:17), the extent to which pupils retain what they learn depends on the approach taken to their learning. The percentage of learning retained

through various approaches is as follows: 5% lecture, 10% reading, 15% visual arts, 30% demonstrations, 50% small group work, 75% experimental work and 90% peer tutoring.

It is evident that the more collaborative methods of teaching and learning are utilized particularly peer tutoring; the most effective learning occurs. Learners also need to develop personal and group skills so that they may cope with the social context for learning, and in order to retain knowledge most effectively. Peer tutoring is not just pairing learners together and expecting learning to occur; it is essential for one to plan, have a structured method, train teachers, tutors and tutees and evaluate the tutoring programme. Within the tutorial programme in this study, tutors and tutees will utilise paired reading to enable them to read English and spell words in order to increase their vocabulary.

2.5 CONCLUSION

This chapter explained two theoretical frameworks underpinning peer tutoring; namely Vygotsky's socio-cultural theory and Krashen's five hypotheses to second language acquisition. Vygotsky believed that children learnt language from the people they interacted with in the environment. The language learnt can be in the form of symbols or pictures. He emphasized that a child learns this knowledge from a peer who can be siblings, parents or other people from the community. On the other hand, Krashen mentions that a child acquires second language by receiving comprehensible input that is at a level higher than his present ability. Second language learning occurs subconsciously through acquisition and through learning which is conscious like in class. In peer tutoring, a learner that does not know much is assisted by one that knows more to move from his present level of knowledge with appropriate comprehensible input to the zone of proximal development.

Teachers need to know their learners' abilities in order to select and provide suitable input and a conducive atmosphere for learning, in order for learners to achieve optimal learning. Chapter three explained the literature review on multi-grade and peer

tutoring. The next chapter outlines the various features, strategies and implications of peer tutoring from both a national and international perspective.

CHAPTER 3

PEER TUTORING AS A STRATEGY OF MULTI-GRADE TEACHING

3.1 INTRODUCTION

This study examined the implications of peer tutoring as a multi-grade teaching and learning strategy, paying special attention to spelling in English as First Additional Language (FAL) among Grade 5 multi-grade learners. The chapter examined among others the following sub-topics: definition of multi-grade settings, the importance of multi-grade teaching and learning, conditions under which multi-grade teaching and learning take place, prevalence of multi-grade education internationally and in South Africa, academic achievement, the historical context of multi-grade in South Africa, advantages and disadvantages of multi-grade education, characteristics of successful and unsuccessful multi-grade classes, implications of peer tutoring on learner performance and aspects of peer tutoring.

3.2 THE HISTORICAL CONTEXT OF EDUCATION AND MULTI-GRADE SCHOOLS IN SOUTH AFRICA

According to the Hunter Report of 1995 (CEPD, 2011:8), when South Africa became democratically independent in 1994, there were about 6 884 farm/state aided schools. Most of these schools were poorly provided for in terms of infrastructure, teachers and resources; this was due to the fact that their existence was bound in complex and contentious ways with agricultural production. Multi-grade schools on farms were owned by farmers who controlled many aspects of their daily running among which were: teachers' appointments, what grade levels the school should offer, which learners were allowed to attend that school, the power to open or shut it. Most of them offered education up to Grade 4. Half of the farm children did not attend school: due to either having passed Grade 4, or having dropped out. Very few multi-grade schools offered

secondary education, the figure stood at about 1.7% in 1984. Parents staying on farms whose children had passed Grade 4 could not afford to send them faraway; to boarding schools as children were young. The result was, to compensate for the meagre salaries of parents; such children were expected to assist on farms. In a way parents had no say on the education of their children, it was like farm families were owned by the farmer.

To support this, Christie and Gaganakis (1989:84) had this to say; that considering the general expansion of black secondary education, farm school pupils were disadvantaged by structural lack of provision, which entrenched their position as a rural proletariat. What this means is that, multi-grade learners who wanted to continue to senior phase and secondary schools were not provided this opportunity because the state did not build sufficient multi-grade secondary schools. The result was most learners from multi-grade schools could not progress to secondary schools and this system perpetuated what the South African apartheid state wanted: that blacks should stay in rural areas and work on farms rather than move to urban areas. At the same time, it was a political ploy to keep farmers supplied with a constant cheap labour market.

Although South Africa is now a democratic country, the situation on farms has only improved ever so slightly, as there are a few multi-grade schools that have been upgraded to offer classes up to Grade 9. In this respect, it is necessary to find out how many multi-grade schools offer the whole basic education curriculum, from Grade R to 12. The fact of the matter is, those multi-grade schools which have been upgraded still do not afford access to the full basic education curriculum but stop at grade 9, which is the minimum level where compulsory education ends. Most learners on farms are forced either to enter the labour market young, or remain on the same farms where their parents are and this system is perpetuated from one generation to another. This is an unfair situation that is still oppressive and deplorable in a liberated country like ours.

Table 3.1: Number and Percentage of Ordinary Schools with Multi-grade Classes by Province: 2008-2009

Province	2008		2009	
	Number of Schools	% of Schools	Number of Schools	% of Schools
Eastern Cape	2 066	36.0	2 132	37.3
Free state	965	51.2	863	48.7
Gauteng	228	9.5	226	9.5
Kwa-Zulu Natal	1 225	20.8	1 346	22.4
Limpopo	629	15.3	665	16.2
Mpumalanga	431	22.4	448	23.2
Northern Cape	209	33.8	187	31.6
North West	357	20.7	366	20.7
Western Cape	312	19.8	386	24.8
South Africa	6 432	24.8	6 619	25.6

Source: Report on the 2008 and 2009 Yearly Surveys for Ordinary Schools (DBE 2012:9)

Table 3.1 above reflects that out of the nine provinces of South Africa, six of them, namely Limpopo, Mpumalanga, Western Cape, North West, Eastern Cape and Kwa-Zulu Natal have increased number of multi-grade schools. While there is a decrease in such schools in three provinces: Free State, Gauteng and Northern Cape, the actual numbers of schools that have decreased are very small for example in Gauteng the decrease is only two. What this indicates is that there are still many multi-grade schools, slightly above a quarter of the total schools in South Africa.

Several push factors cause the rise of multi-grade schools in some provinces, some are the following:

In some villages, parents bus their children to better performing schools in other areas; as a result, the enrolment number of learners remaining in the village school decreases, resulting in teachers being transferred to schools with high enrolments.

Furthermore, in the villages, young people move away with their families to go and live either in towns or near accessible roads; the result is, learners who remain in the villages are few thus causing the local school to lose teachers and become a multi-grade school.

The change of type of farming from crop to game farm or a lodge can reduce the number of labourers staying on the farm forcing most families to seek work in other crop farming areas. This factor can also become a pull factor when a former game farm turns into a crop farm, then more families flock there to seek jobs thus increasing the enrolment numbers of learners in a former multi-grade school to a mono-grade school.

Other push factors that can cause the increase of learners in multi-grade schools to change to mono-grade schools in some provinces are the following:

Provision of better facilities like a clinic, a mono-grade primary school or secondary school in a nearby village forces some families to relocate to those areas; the result is enrolment numbers of learners increase where they have relocated to.

According to Table: 3.1 above, between 2008 and 2009, multi-grade schools increased from 629 to 665. In the Limpopo Province alone, there was an increase of 36 schools. This is a significant rise in one year and calls for the Department of Basic Education to consider the existence of these schools and their importance to providing education in communities. As such, teachers and learners from these schools need universities to provide appropriate teacher training in teaching and learning strategies. Taole (2014:

536) concurs that training remains the only viable option for learners in multi-grade schools for effective teaching and learning to take place.

3.3 CHARACTERISTICS OF SUCCESSFUL MULTI-GRADE CLASSES, ADVANTAGES AND TEACHERS' PERCEPTIONS

Successful Multi-grade classes are characterized by effective peer instruction and self-directed learning. In multi-grade classrooms there is more evidence of a greater variety of independent work. For example, pupils go and fetch reference materials such as dictionaries or other learning materials when they need them. This is possible as the teacher is not available to them. There is much more interdependence work in multi-grade classes. Despite a reduction in direct instruction, learners in multi-grade classes do not necessarily suffer, partly because of the input they receive passively from the other levels. Learners tend to be more independent to work on their own when self-access materials are available.

When multi-grade teaching is done correctly, it offers many advantages, particularly to the learners' cognitive abilities which are stretched as younger or less able learners are pulled along by being exposed to a higher level of work. Peer tutoring is an advantage to both the tutor who is mentoring and the tutee, one who is being mentored. There is also positive behaviour modelling where younger children learn appropriate classroom behaviour from older ones (Carr, 2003:62-63). Other advantages are: students have a better self-image and a more positive attitude about the school and learning. Teachers can make long-range plans spanning two to three years thereby allowing for greater depth of concept development. Teachers also have the opportunity to be creative, they are forced to use a variety of instructional methods that are good for learning and management problems for the teacher are reduced (Hayes, Juarez and Associates, 1993:5).

What teachers do in their multi-grade classrooms is influenced by their perceptions, beliefs and the context about teaching and learning they find themselves in. This information might assist multi-grade pedagogy and other practices that take place in their classrooms. Most multi-grade teachers teach their classes like mono-grade learners. For example, they teach each grade separately while other grades seat and wait for the teacher to attend to them (Taole and Mncube, 2012:160).

Various studies have found that most teachers in multi-grade schools are dissatisfied with the teaching and learning situation they are in. They indicated that the teaching is very difficult, demanding and inferior to mono-grade classes; less satisfying than in mono-grade schools; if they could have their way, they would transfer to mono-grade schools. Also, planning for multi-grade classes is more demanding and time consuming as they have to plan for more subjects and grades at the same time (Taole and Mncube, 2012:157 and Mulryan-Kyne, 2004:6).

Teachers complain about too much repetition in Science and Social Studies, insufficient time for individual attention to learners and their needs. To this Brown (2010:44) adds the following: reduced curriculum coverage especially in areas beyond basic skills and insufficient time for oral activities. It is said that multi-grade classes are characterized by frequent interruptions, relatively high off-task time and disruptive behaviour. Great difficulties are created by insufficient time for feedback and re-teaching, for preparation of class materials, for marking tests and for remediation. Further problems cited by teachers are: teaching of two programmes in the time of one programme in mono-grade classes, no time to reflect on their teaching, lack of professional training, departmental guidance and support, isolation, neglect and inadequate materials and resource.

On the opposite side, positive remarks among multi-grade teachers were; that it offered learners opportunities for more social interaction, for peer tutoring and for learners to work independently (Mulryan-Kyne, 2004:6).

3.4 CURRICULUM DEVELOPMENT IN SOUTH AFRICAN MULTI-GRADE CLASSES

Curricular issues are addressed more in some countries than in others. Brown (2010:55) explains that in both European countries such as Finland and Greece; and Asian countries such as Vietnam and Sri Lanka multi-grade curricular issues are being addressed. This is not the case in some developing countries such as South Africa; mainly because there is no policy on multi-grade teaching in place in this country.

One significant multi-grade training initiative occurred under The Department of Education and Training (DET) Management and Teacher Development Project in 1988 that was before Outcomes Based Education (OBE). The project was funded by African Oxygen Limited (AOL). The training offered five different modules, some of these modules discussed active participation, learner involvement, use of concrete objects to improve learning, moving from known to unknown and teaching methods and techniques (DET, 1988:5). The module on teaching methods and techniques focused on objectives and starting levels, methods and techniques, lesson planning and evaluation. The training was hands-on, interactive and introduced teachers to learner centred techniques. Teachers were taught how to design suitable objectives in different subjects and know the starting levels of their learners.

Under methods and techniques, teachers were taught forms of introducing lessons, list problems of lecturing, distinguish memory questions from thinking ones, how teachers deal with questions and answers, give examples of how to use problem solving and discovery methods, how to make rote or drill learning more effective, using a textbook as a resource for teaching, using fieldtrips in everyday teaching and using role play and drama as aids.

A major outcome of this training initiative was that teachers learnt different ways of introducing a lesson such as: posing a problem, introducing a stimulus, using learners'

own experiences and recapping previous lesson (DET, 1988:29). Each method was explained, demonstrated and teachers also came up with their own examples. All these methods are still relevant and encourage collaborative learning. This kind of training for multi-grade teachers should have been repeated in subsequent years in order to assist newly appointed teachers.

Some initiatives on multi-grade in-service teacher training have been done in South Africa to address multi-grade education needs with the introduction of Outcomes Based Education (OBE). One such initiative was the Kgatelopele (KDP) in conjunction with MOLTENO which offered OBE training for multi-grade schools in Soutpansberg and mono-grade schools around Nebo in Limpopo. This initiative was in selected areas and not sustainable. Cape Peninsula University of Technology (CPUT) has opened a Centre for Multi-grade Education (CMGE), is presently the tertiary institution that offers focused training on multi-grade training in the form of an Advanced Certificate and some short courses. This certificate is a very good initiative which could be offered in other tertiary institutions across the country. The Department for Higher Education needs to take the lead to develop multi-grade centres or for Education faculties to provide similar certificates for multi-grade teacher training in other provinces, an issue which is overdue.

The South African education policy has undergone two revisions since its inception after 1994. Curriculum 2005 was implemented in 1998 and then revised to be the National Curriculum Statement, (NCS). Criticisms raised were its complex language and terminology; too many learning areas and lack of conceptual coherence in the design structure. The second revision of the NCS was as Curriculum Assessment and Policy Statement (CAPS); criticisms levelled at the NCS were that teachers were overburdened by too much administrative work, lack of clarity and confusion among teachers and parents around assessment issues. CAPS was implemented in 2012.

Despite all revisions and new curriculum developments, the South African curriculum has remained mono-grade oriented. Even though in 2009 the Ministerial committee had advised that multi-grade teaching was a curriculum issue (Ministerial Report, 2009:62), the committee further acknowledged multi-grade pedagogy as one important teaching context in South Africa which needed a specific policy to address it.

The report stated: "Separate, special guideline documents ...for multi-grade classes will be developed, aligned to the Curriculum and Assessment Policy documents" (Ministry of Department of Basic Education, 2009:27). However, this has yet to be undertaken. Interestingly though, CAPS curriculum advocates learner centred approaches which are also suitable for teaching in multi-grade classes.

If there are any multi-grade training programmes, they are fragmented and offered on an ad hoc basis by some tertiary institutions and non-governmental organizations. Such trainings need a higher body like the Department of Basic Education (DBE) to be coordinated. This is not only a South African problem; Blum and Diwan (2007:43) refer to this about India: some limited efforts from the government sector, most commonly in the shape of pilot projects, have attempted to implement similar efforts for multi-grade and marginalized student populations in the past, but these remain fragmented and a more concerted effort is needed to bring about the intended results.

For those countries which have accommodated multi-grade pedagogy, they have adopted a cascade model to train teachers and have also adapted the curriculum in four main strategies. These are Quasi mono-grade, differentiated curricula, multi-year curriculum cycles, and learner materials-centred strategies (Brown, 2010:59-60 and Pridmore, 2007:6).

3.5 TEACHERS' KNOWLEDGE ON MULTI-GRADE TEACHING AND LEARNING STRATEGIES

From the information above, it is clear that some ad hoc multi-grade training on teaching and learning strategies has taken place some time back in this country. That was to address the curriculum then. Few of these teachers who had undergone such training are still in the system and their knowledge might be out-dated or irrelevant to CAPS. The issue is, most teachers do not know multi-grade teaching and learning strategies as higher institutions of learning offering pre-service training focus on mono-grade classes. Besides this, in-service training provided by subject advisors focused on mono-grade teaching. This leaves multi-grade teachers frustrated as they do not receive support from the department of education. It is for this reason that they have a negative attitude towards multi-grade teaching. They are unsure of what they are doing and because they tend to teach multi-grade classes as if they are mono-grade classes. This becomes a laborious task which results in their not completing grade syllabi.

3.6 THE EFFECTS OF MULTI-GRADE TEACHING ON LEARNER ACADEMIC PERFORMANCE

Cornish (2009:119) indicated that; a considerable amount of studies indicate improved achievement in multi-grade classes as cited in (Miller, 1991; Vincent, 1999a). Gayfer (1991:16) for example, reported positive findings in a Canadian study comparing 4 407 students; that the achievement of multi-grade students was significantly higher in vocabulary, reading, mathematics, problem-solving and mathematics total. He further mentions that other studies consistently showed that multi-grade students demonstrate outcomes that are at least equal to those in single grades, and research reviews consistently fail to find any better achievement in single-grade classes.

According to Cornish (2009:119), Veenman (1995) has done research in both multi-age and multi-grade classes; his conclusion with regard to multi-grade classes is that; students in multi-grade classes learn as much as their counterparts in single-grade

classes. Veenman's study had been done in multi-grade schools in developed countries where multi-grades are well resourced and proper teacher training supported. He further posits that multi-age classes appear to be generally equivalent to single-age classes. Brown (2010:41) after referring to Veenman's (1995) research as best-evidence synthesis of research on cognitive and non-cognitive effects of multi-grade and multi-age concurs with Cornish that clearly, the multi-grade classroom is a viable and equally effective organizational alternative to single-grade instruction. On the reading, mathematics and language, more than 80% of the subtests revealed no significant differences between the achievements of the two groups of students. He further indicated that the overall median effect size for cognitive outcomes was 0.00, while the overall median effect size for affective outcomes was +0.10. On the basis of his findings, Veenman (1995:367) drew the following conclusion that:

"parents, teachers and administrators need not worry about the academic progress or social-emotional adjustment of students in These classes are simply not worse, and simply no better, than single grade classes."
Veenman (1995:367).

There are very few examples of research comparing multi-grade and mono-grade learner performance. However, Berry (2001:539) and Little (2004:8) have reported learner performances by country: In Burkina Faso and Togo, Jarousse and Mingat (1991) as cited in Little (2004:8) have found that students in multi-grade schools performed better than those in mono-grade. In Colombia within the Escuela Nueva programme, Grade 3 multi-grade learners performed better in Spanish and mathematics, and Grade 5 in Spanish. In Pakistan, Rowley (1992) Little (2004:8) showed cognitive differences in favour of mono-grade

In the Turks and Caicos Islands, Miller, Forde and Smith (1994) as cited in Little (2004:8) found that learners in multi-grade schools consistently outperformed those in mono-grade schools in terminal grade of primary school. In another study, Miller, (1990:2) indicated that there is little or no difference in achievement between learners in single and multi-grade classrooms. In Indonesia, Bray (1987:43) reported that

learners in a project designed to support multi-grade teachers, performed better in most subjects than did those in mono-grade schools. In India, Kotchar (2007 as cited in Little, 2008:51) reported that achievement tests were lower in multi-grade classes than in mono-grade ones. It is important to note that there are not sufficient studies to make safe generalizations about which grade levels or subjects are best for multi-grade teaching.

In South Africa, the only data available are reflected in the following tables: the table shows the promotion rate of learners for each province from Grades R to 12, as well as the national averages for the Department of Basic Education (DBE), in 2010. The province with the highest promotion rate averaged over all grades is Gauteng, with 90.75%. It is also the province with the highest pass rate for senior certificate, followed by Kwa-Zulu-Natal with Limpopo having the lowest pass rate for multi-grade schools, 83.03% (CEPD, 2011:23).

Table 3.2: Multi-grade Promotion Rate-by Province and for the DBE (2010)

	Gr R	Gr1	Gr2	Gr3	Gr4	Gr5	Gr6	Gr7	Gr8	Gr9	Gr10	Gr11	Gr12	Ave
EC	90.0	84.3	89.3	89.8	88.8	90.7	93.4	92.9	92.2	89.1	78.6	76.7	59.6	85.79
FS	91.7	78.9	88.0	90.4	88.1	89.8	93.1	95.4	90.4	78.9	79.8	73.0	69.4	85.15
GT	96.4	92.4	94.6	95.1	96.1	96.5	97.0	96.9	95.1	91.5	75.7	77.0	75.4	90.75
KZ	93.7	85.5	91.5	92.9	91.0	94.1	95.4	95.9	92.6	92.5	82.1	80.5	70.9	89.12
LP	97.9	89.6	90.9	89.4	87.2	89.5	91.5	94.8	88.1	76.1	62.0	65.1	57.3	83.03
MP	96.3	84.5	88.7	88.6	87.6	89.9	92.9	94.5	85.9	83.2	70.8	69.0	52.5	83.40
NC	95.0	84.0	84.9	90.0	84.8	91.6	91.5	95.6	94.7	91.5	84.2	82.8	71.5	87.85
NW	95.3	73.1	86.2	89.8	88.0	91.5	92.6	93.1	89.8	83.4	79.6	80.0	76.1	86.01
WC	88.2	78.1	89.0	94.2	87.7	93.0	92.5	95.0	94.0	85.4	74.3	77.0	76.9	86.55
DBE	93.81	83.36	89.22	91.13	88.82	91.83	93.32	94.91	91.41	85.73	76.33	75.66	67.74	86.41

Source: National EMIS database (2010)

Table 3.3: Mono-grade Promotion Rate-by Province and for the DBE (2010)

	Gr R	Gr1	Gr2	Gr3	Gr4	Gr5	Gr6	Gr7	Gr8	Gr9	Gr10	Gr11	Gr12	Ave
EC	93.2	85.1	89.4	90.1	89.4	91.6	93.3	93.4	90.7	87.5	73.6	71.0	58.3	85.12
FS	94.1	77.7	89.3	90.8	90.8	92.1	92.8	95.6	93.8	83.2	72.3	78.8	70.7	86.31
GT	97.5	91.9	94.4	95.2	96.2	96.8	97.3	97.8	94.9	90.9	76.8	78.6	78.6	91.29
KZ	96.0	87.1	91.8	92.5	92.7	94.4	95.4	96.3	90.4	90.7	79.3	74.9	70.7	88.62
LP	98.4	88.8	90.8	89.8	88.0	90.9	92.4	95.5	90.2	79.2	63.4	64.9	57.9	83.86
MP	97.1	83.8	88.4	89.0	88.9	90.3	92.5	94.1	87.7	80.5	72.6	73.8	56.8	84.65
NC	97.7	84.0	88.6	91.2	90.7	91.2	92.0	94.5	91.6	86.7	78.2	81.8	72.3	87.73
NW	96.3	76.8	86.2	89.0	89.0	91.1	93.1	94.8	90.8	85.5	74.4	76.7	75.7	86.10
WC	94.9	82.5	91.1	94.4	91.3	93.9	95.0	96.6	63.0	80.2	79.4	83.0	76.8	88.62
DBE	96.14	84.19	89.99	91.32	90.76	92.48	93.77	95.39	91.46	85.46	74.44	75.95	68.65	86.92

Source: National EMIS Database (2010)

Table 3.4: Comparison, as a Percentage- Promotion Rate where Multi-grade and Mono-grade (2010)

	Gr R	Gr1	Gr2	Gr3	Gr4	Gr5	Gr6	Gr7	Gr8	Gr9	Gr10	Gr11	Gr12	MG	MOG
EC							1		1	1	1	1	1	6	7
FS		1					1				1			3	10
GT			1						1	1				3	10
KZ				1			1		1	1	1	1	1	7	6
LP		1										1		2	11
MP		1	1				1	1						4	9
NC						1		1	1	1	1	1		6	7
NW				1		1					1	1	1	5	8
WC									1	1				3	10
TOTAL	0	3	2	2	0	2	4	2	5	5	5	5	4	39	78

Source: National EMIS Database (2010)

It is worth noting that studies on student achievement in multi-grade teaching have mainly sought to systematize and evaluate the research on the effects of multi-grade

classes on student achievement together with the processes that contribute to these effects. Referring to the tables above, CEPD (2011:25), states that the results of comparisons between mono-grade and multi-grade are often inconclusive. Moreover, being a multi-grade student does not negatively affect academic performance. Besides, very little is known about non-cognitive performance of multi-grade teaching and the impact of the different variables in South Africa. Although Atchoerena and Gasperini (2003:130) indicate that research has shown that the performance levels of most learners in rural schools, in Literacy, Numeracy and Mathematics: the foundations on which all other forms of learning depend, are at least two years behind their counterparts in mono-grade schools. It should be noted that these results only indicate data for one year; one cannot really make conclusive remarks on the basis of one year's data.

Furthermore, the CEPD (2011:25) report cautions the readers of the tables above comparing results of South African mono-grade and multi-grade schools as they show very high pass and promotion rates. Looking at the latest literacy results from Progress in International Reading Literacy Study (PIRLS) (2011:xvi) report, it is said that " South African Grade 4 learners, particularly those tested in African languages, achieved well below the international centre point despite having written an easier assessment." On the Grade 5 PIRLS, the report says that there was no difference in the overall achievement for South African learners in 2011 compared to 2006 (Howie, van Staden, Tshele, Dowse and Zimmerman). PIRLS results seem to concur with Atchoerena and Gasperinis (2003:130). Internally, assessment tests may be easy to allow learners to get high scores yet internationally; our learners are performing two grade levels below their international counterparts.

3.7 TEACHING AND LEARNING STRATEGIES IN MULTI-GRADE CLASSROOMS

In order to improve the quality of multi-grade classrooms, appropriate instructional strategies are needed. It is suggested that teachers should use strategies that encourage interdependence and collaborative learning. Most of these strategies involve the teacher as a facilitator than a giver of information. Considering the fact that the teacher has to teach more than one grade at a time, and to avoid learners waiting for the teacher, it becomes necessary that he be able to use a variety of strategies where the learner works independently, in pairs, groups and as peers. Brown (2010:53) suggests the following as some of the effective strategies: cooperative group-work, which involves small groups engaging in collaborative tasks, Individualized learning programmes which involve the student in self-study and Peer tutoring, where students act as teachers for each other.

In 1989, Miller developed six topic areas that are considered essential for effective multi-grade instruction: classroom organization; classroom management and discipline; instructional organization, curriculum and evaluation; instructional delivery and grouping; self-directed learning; and planning and using peer tutoring (Vincent and Ley, 1999b:7). This study will discuss teaching and learning strategies only.

3.7.1 Instructional Delivery and Grouping

In a multi-grade class, the teacher deals with a number of grades, varying abilities, and developmental stages, so a great emphasis is placed on group work as it involves cooperation and peer support (Vincent and Ley, 1999(e):1, 26).

The strategy is useful to manage learners of varying abilities, either mixed or homogeneous groups. The type of group work used depends on the subject being taught as well as learners' developmental levels or grades. How learners are grouped is

determined by what they learn how they feel about themselves and relate to one another. According to Vincent and Ley (1999e:26), mixed ability grouping is the most effective way to maximize learner success. Besides this, flexible grouping allows the teacher to teach learners on the basis of their interest and opportunities of learning from one another are great. Many teachers prefer a situation where learners sit facing each other, thus allowing the teacher to speak to them. Learners can be taught in small groups as classes, they can be taught same concepts through whole-class teaching, discrete groups can be taught some subjects or content areas, or difficult concepts (Mathot et al., 2001:28).

The multi-grade teacher can use whole class mixed ability teaching in activities where all learners enjoy or relate to for example; problem solving games, dramatic presentation of stories or sharing classroom rules and regulations. Integration is needed in a multi-grade class for the teacher to manage subject content of all the grades, this is an ability the teacher cannot do without if he has to complete his teaching load for the year. The advantage of whole class teaching in a multi-grade class leads to improved learner relations (Vincent, 1999e:27). The teacher can also use group work for various subjects such as Maths or language. After teaching a group, the teacher has to give learners an activity to be done either as a group or individually before proceeding to the next group. This is the advantage of group work; it allows the teacher to move around the groups supporting individual learners while groups are engaged in various activities.

3.7.2 Self-directed Learning

The multi-grade classroom consists of learners of different levels, abilities achievement and social and physical development. The varieties place a great demand on the multi-grade teacher's time and effort. Teachers have to adapt their teaching to suit learner diversity in their classrooms thorough differentiated teaching. This is an approach that enables teachers to plan strategically to meet the needs of individual learners (Smit and

Humpert, 2012:1153). Self-directed learning is defined as “a process in which individuals take initiative with or without the help of others; in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate strategies and evaluating learning outcomes” (Mathot, 2001:39). It means that in this situation, learners are responsible for their own learning. Learners follow a curriculum that has been adjusted to their needs, develop as individuals and take initiatives for learning and not wait for the teacher to direct them.

One characteristic of self-directedness is; the student should be able to shape and manage change; he should be an initiator and be responsible for his actions. It is necessary that learners be trained, taught and engaged in specific strategies that allow them to make decisions and solve problems on their own, strategies to process information effectively and be self-confident and able to succeed. Learners should be reflective about their thinking and learning process (Vincent and Ley, 1999:1b).

Learners should be taught to set their own goals for personal development, planning and achieving them. When learners set goals, they are motivated to attain them than goals set by the teacher. Implementing self-directed learning means that teachers should examine learner ability to work independently, his perspective as a teacher in the classroom. The role of the teacher is more of a facilitator, who creates a rich learning environment and functions as a role model (Smit and Humpert, 2012:1153). Teachers have to be open minded, flexible on planning and implementing teacher activities and be ready to pass responsibilities and trust to learners. The teacher has to observe learners’ behaviour on the cognitive and their general behaviour in the class. Teachers should look at learners’ comprehensive self-monitoring, self-questioning and testing mechanisms, spotting essential information and abilities to elaborate and integrate knowledge, the teacher can also focus on learners’ time management resources in class, their work organization, completing tasks and progressing to new ones (MUSE:p3). The Teacher should always be there to monitor progress, guide, and

make new adjustments to ensure positive results. Teachers should set academic goals that are structure challenging and achievable. The learning activities for self-directed learning should not be too easy, then learners will be bored, but at the same time they should not be too challenging as this will frustrate learners. A multi-grade teacher encourages self-management activities as the first concern. Learners who can manage time, complete tasks, follow schedules, find needed resources, stay on task to completion afford the multi-grade teacher time to focus on other learners who need the teachers' attention.

The benefits of self-directed learning

This strategy is an advantage to both the teacher and learners. Good students provide role models to younger and weaker learners, so that both these groups can emulate them. This leaves the multi-grade teacher with more time to assist those in need. Self-directed learners allow multi-grade teachers to work intensively with small groups or individuals who need additional attention (Vincent and Ley, 1999:7 and Mathot, 2001:40). The more multi-grade teacher encourages self-directed learning, the more a learning environment is created, and an increase in academic learning time which is related to higher learner achievement. The more learners are encouraged to learn on their own, the more responsibility they have on their learning, and the more motivated they become. Learners develop self-reliance, and independence, setting their own goals, pacing themselves on task completion. They gain more decision making skills and self- evaluation.

Four instructional activities are suggested for successful self-directed learning, namely:

1. Appropriate academic demands should be challenging and not frustrating;
2. Adequate instructional supports like explaining guidelines should be explicit;
3. Opportunities to learn and practice effective self-directed learning activities; and
4. Provision of a variety of them for appropriate classroom goal structure.

Self-directed learning eliminates classroom competition and encourages cooperation; learners that use this strategy operate in an environment where learning is a benefit, a necessity for all instead of a reward to the talented.

A condition that encourages self-directed learning and student motivation is:

Rewards that is contingent. For instance, learners can do the following activities: projects where they find out about their school or community, assignments, classwork and homework, practicing what they have learnt, work cards with words they have to find meanings of in order to discover certain knowledge (Mathot, 2001:40).

3.7.3 Planning and using Peer Tutoring

The teacher starts with direct teaching, followed by class activity which is done in groups. While groups work, the teacher can then visit individual groups to lend support, check progress, assess their understanding and provide support for slower or extension activities and challenges for those who are faster learners. The above perspectives imply that effective multi-grade teaching demands new and different strategies from single-grade teaching. One multi-grade strategy that can assist the teacher during class is peer tutoring. This is when two learners of the same age teach each other and it can occur in three forms for example: older learners teaching younger learners, faster learners helping slower learners in the same grade and friends studying a topic together and then discussing it to help each other understand it more. Slower learners can tutor fast learners in areas which they are strong in; for example physical education, agriculture, drawing, singing, etc. (Mathot, 2001:38).

This strategy allows the multi-grade teacher to deal with other problems while peer tutoring is in progress. The teacher may teach another grade while tutoring goes on with another grade. In a way, peer tutoring frees the teacher to focus on those aspects he could not do if peer tutoring was not taking place. Brighter learners get the opportunity to exercise their gifts, at the same time it is a way of multiplying skills in

the classroom. Learners benefit by teaching something that they understand better in this way develop maturity as a result of the responsibility placed upon them. Slower learners feel freer to express themselves and voice their own problems to peers than in the presence of the teacher. The multi-grade teacher can use peer tutoring for both formal and informal lessons such as developing practical skills in ploughing, tending a vegetable garden and social behaviour like road side safety or first aid (Mathot, 2001:39).

It should be remembered that the above strategies have shown to function effectively in multi-grade classrooms where there is a multi-grade policy in place, curriculum adaptation for multi-grade teaching is supported from the department of education; also where there is both pre-service training and in-service supporting multi-grade teaching.

3.8 TYPES OF TUTORING

Tutoring can be distinguished in three forms, namely: peer tutoring, cross age tutoring and parent/adult volunteer tutoring. Peer tutoring can be defined as a one-on-one teaching process in which the tutor is generally of the same age, grade or academic status as the tutee Gaustad (1993:2). Topping (2005:632) elaborates by saying that Peer tutoring (PT) is characterized by specific role-taking as tutor or tutee, with high focus on curriculum content and usually also on clear procedures for interaction, in which participants receive generic and/or specific training. Some peer tutoring methods scaffold the interaction with structured materials, while others prescribe structured interactive behaviours that can be effectively applied to any materials of interest. Within peer tutoring are the following techniques: Reciprocal peer tutoring (RPT) in which same age tutors and tutees change positions as tutor and tutees and Class wide tutoring (CWP) takes reciprocal tutoring further by adding an element of competition and incentives among tutors and tutees.

When the tutor is an older student, in a higher grade, cross age tutoring is the appropriate term to use. It is important that some scholars use these two terms interchangeably, but in this study, the two terms will refer to the definitions given here. The third type of tutoring is parent/adult volunteer, where adults outside the school tutor students. Attributes for the different types of tutoring will be discussed shortly.

Cross-age tutoring takes advantage of the higher status inherent in the age difference, while still retaining many of the benefits of peer tutoring. It can increase the tutees' self-esteem as a result of having an older, higher status friend. It helps to prevent feelings of inferiority that children may experience if they are of same age as the tutee. Parent/volunteer tutoring, this is tutoring by either parents or volunteers; it puts parents and other community members in touch with the school. It creates advocates for the school and the tutoring process in general. It reduces distractions; adult – student pairs generally do not get as distracted as student-student pairs, because of this attribute, it is less necessary for a teacher to supervise (Kerka, 2007:8 and 9).

3.9 PEER TUTORING

This is conducted between learners of the same grade. The process avoids disruptions in schedules that other tutoring cannot avoid. It is conducted in one class with one group of children. It provides tutors and tutees with a similar language. The pairs are closer in knowledge and status than are students and teachers. Generally both children feel freer to express their own opinions and take risks. It is cost effective.

3.9.1 Defining Peer Tutoring

The word “tutor” is derived from the Latin *tueri* and originally, it meant one who protects, guards, cares for”. This definition indicates the dual relationship between the tutor and the tutee. In a tutorial situation, not only is the tutor committed to the tutee achieving specific academic goals, but there is also a bond of trust and caring that is

created between them and friendships bud from such associations. Peer tutoring occurs when tutor and tutee are of the same age and also in the same grade level Gaustad (1993:2). Vincent and Ley (1999b:1) define peer tutoring as cooperation between two or more students, where one individual imparts knowledge to the other(s). They further add that it can occur between students of the same age or grade (same age tutoring) or between students of different ages or grades (cross age tutoring). An example of peer tutoring could be, when one student helps another to identify English nouns from a text. This might be a sixth grader helping another sixth grader; thus helping each other.

Peer tutoring has been defined by some researchers as: a cost efficient educational intervention in which learners provide instruction for other learners. Learners seem to be capable of successfully teaching each other and younger ones. Not only is it popular for its robust findings, both tutors and tutees benefit academically from the teaching experience (Roscoe and Chi, 2004:1). As a collaborative learning intervention, peer tutoring has also shown promising results in increasing learners' achievement for low-income and low-achieving learners. Besides gains in achievement, these learning interventions have resulted in improved classroom behaviour and peer relationships. Fantuzzo et al, (1992) as cited in Roscoe and Chi, 2004:1) acknowledge that peers can serve as resources for one another with respect to cognitive development. Examples of researchers who have used peer tutoring to produce effective classroom-based learning interventions in settings are; (Cohen and Kulik, 1981, Cohen Kulik and Kulik, 1982).

3.9.2 Research on Peer Tutoring Internationally and in South Africa

Tutoring as a mode of training and teaching has a long history. According to Osguthorpe (1984:5) and Fudge (1998:3) it is the oldest form of instruction known to society and has taken place since 69 to 88 century when A.D Quintilian, who was the head of an oratory school in Rome, described instructional settings where older children taught younger ones. Quintilian further said: "one who has just acquired a subject is

fitted to teach it.” Osguthorpe (1984:3) and Olmscheid (1999:4) further add that between 1530 and 1550, some tutoring activities were reported in Germany and the Spanish Jesuits in Lisbon College. The programs both emphasized positive benefits of both tutors and tutees.

Tutoring was used extensively during the Industrial Revolution when there were serious teacher shortages in the schools in England. The utilization of the strategy waned with increase of teacher supply at schools and sufficient education funding to hire and remunerate teachers Fogarty and Wang (1982:450), Osguthorpe (1984:5) and Fudge (1998:5). In the late 17th and 18th centuries, two British educators developed and involved students in peer tutoring activities. Firstly, it was Andrew Bell in 1789, who was a superintendent in a military Male asylum at Madras, in India. When the school’s faculty became reluctant to implement his innovative ideas, he trained his students in the techniques of peer tutoring and developed a system where they could teach each other. According to Vernon and Allen (1976:13): “Not only did this system appear to be successful as a means of providing elementary instruction, but it also brought about a marked improvement in behaviour of the students.”

The second educator to involve students in peer tutoring activities was Joseph Lancaster who in 1801 opened a Borough school for disadvantaged boys in London, England. The boys were from poor communities and did not have sufficient teachers to teach them various subjects. It was necessary to select able learners to teach less able ones in the school. Lancaster actually developed curriculum materials and organized the boys in groups with specific curriculum materials. Both Lancaster and de Laborde, a Frenchman, realized that the individualized instruction afforded close surveillance of each child’s behaviour, thus reducing disciplinary problems (Vernon and Allen, 1976:16). In short, Bell was the innovator and Lancaster was the developer and disseminator of peer tutoring system (Topping, 1988:14). The Bell-Lancaster system gradually waned because of several reasons: initially; governments began to employ

more teachers as they phased in the graded system, then teachers looked down upon work done by tutors as sub-standard.

Extensive research on peer tutoring has been done internationally for learners with learning disabilities (Beirne-Smith, 1991:330-337), with handicapped learners (Cook and Scruggs, 1985:483-492). According to Osguthorpe (1984:8 and 9 and Hartley, 1977) compared tutoring to three other teaching techniques namely, computer assisted instruction, programmed instruction and individual learning packets. In each study Hartley computed the effect sizes of the treatment of all four studies. Upon comparing the four instructional techniques, it was found that the effect size for tutoring was .6, as compared to .4 for computer assisted instruction, .2 for individual instruction and .1 for programmed instruction. The study also revealed that tutoring was clearly the most effective method as supplementary technique and three times more effective as a replacement technique.

In the same study Osguthorpe (1984:8) reported three different studies done by Harrison (1976), Melargno and Newmark (1968) and Osguthorpe (1976) who investigated tutoring on reading and found out that learners performed significantly better. Vacc and Cannon (1991:7-8) employed cross-age tutoring where 6th grade learners tutored moderately mentally impaired elementary learners in Mathematics for a period of six weeks. They found out that after six weeks of tutoring there was an increase in basic skills and maintenance in all four learners. In Los Angeles Fractions Project, Fitz-Gibbon reported about 40 tutors who were 9th graders (14 year olds) who tutored 68 4th grade tutees (8year olds) who were randomly selected from neighbouring schools. Tutoring on fractions was done for three weeks. Post-test results favoured tutees over untutored 4th grade learners. Retention tests administered three months after the experiment revealed significantly higher average achievement scores for tutees $t(66)=2,68, p<05, \text{Cohen's } d= 8.1$.

Cohen, Kulik and Kulik (1982:237-247) did a meta-analysis of 65 school tutoring programs with control groups, revealed a moderate effect on achievement of tutees (average ES .40). This means that tutoring raised the learners' performance by .4 of a standard deviation or 50th percentile to 66th percentile. It also means that 66% of the learners from these classrooms outperformed the control group learners. Moreover, 45 out of 65 groups had positive effects on the academic performance and attitudes of those who receive tutoring. There was also evidence that where tutoring was structured and tutors have been trained, the experimental effect was higher.

Topping (1992) identified 28 reviews and meta-analyses of research in peer tutoring mostly in schools. Then Sharpley and Sharpley (1981) as cited in (Topping, 1996:326) also conducted a meta- analysis of 82 studies where they reported substantial cognitive gains for both tutor and tutee. Lastly, but not least, Mastropieri et al., (2005) conducted a study on cross wide peer tutoring of learning disability high school students on Chemistry. The total number of students was 39 with 10 of them disabled. Pre-test and post-tests were conducted on both groups. Two classes were taught by the same co teachers; one a chemistry teacher and the other a special education teacher. They also used similar Chemistry textbooks which were recommended by the school district. There were teaching materials prepared for the control group which was taught traditionally and the experimental group with disabled students used peer tutoring. The experimental group performed better than the control group.

One can conclude that peer tutoring, in any structured form where tutors have been trained and supported can be used for various learners under different purposes, and will yield positive results. Scholars regard peer tutoring as an instructional strategy that consists of learners' partnerships, linking high achieving learners with lower achieving learners or those with comparable achievement, for improved learning (Fuchs and Fuchs, 2001).

The intention of peer tutoring is for able learners to help those who struggle to master certain learning material. Rohrbeck et al, (2003:204), take the definition of peer tutoring a step further as: a systematic, peer-mediated teaching strategy. The learners work together to accomplish a common goal. In learning from the interaction, both tutors and tutees achieve success in learning, both become motivated and their self-esteem is heightened.

A great interest has risen in this strategy in education because it has been realized that students are no longer seen as passive receivers of instruction but are viewed as active participants in the teaching and learning process. In addition to the above statement, educators have come to recognize more fully the potential in using students' talents to supplement their teaching and motivational efforts. They have also realized that they are not the only source of knowledge. According to Vincent and Ley (1999b:3) multi-grade teachers rely very strongly on learners helping one another. This alleviates the teacher's problem of attending to several grades at the same time and frees a teacher to focus on a particular grade while the others tutor each other (Dineen, Clark and Risley, 1977:237). Vernon and Allen (1976:17) concur with Vincent and Ley (1999b:3) by indicating that, the burden of being the sole teacher for several levels of students often made it necessary for the teacher to turn to the older children for assistance in instructing younger students. This also maintains order in a classroom as learners work on a particular activity without disrupting other grades.

Several studies have been done on peer tutoring in South Africa relating to Nursing, Computer studies and Engineering fields. Of significance are the following: Roux's (2009) study of tutoring at a South African university to support a module on Curriculum Development for first and second year student teachers. This tutoring intervention was by one tutor to a group of tutees. Three studies which focus on peer tutoring at schools were done by Xulu (2005) in Kwa Zulu Natal (KZN), Byers (2007) in Gauteng province and Kariola (2008) also in Gauteng province. The study on peer tutoring by Xulu was based at a high school in KZN, where the researcher wanted to

establish the limits and possibilities of this strategy. A total of 30 participants were sampled, these consisted of 20 learner tutees and 10 tutors with 5 teachers. Semi-structured interviews were administered to all participants. The researcher further made some tutorial observations which were tape recorded. The results yielded were positive. The findings revealed that overall peer tutoring had positive benefits for learners and had the potential to enhance learning and teaching at the school. Some of the benefits that emerged were: increased motivation; enhanced self-concept; reduced inhibition; learning in a supportive, enabling environment; increased communication and dialogue; development of learner autonomy and independence.

While there were positive aspects, the study further revealed that there were areas in the programme that needed to be systematically monitored, for example, in peer interactions to ensure that they were not at a purely concrete knowledge telling level. Training had to ensure that deep level thinking and problem solving occurred. The active involvement of teachers was necessary at all levels, in particular to monitor discipline. The findings also suggested that the success of a peer-tutoring programme might be linked to the culture and ethos of a school as a whole (Xulu, 2005:iii).

The second study referred to, is that of Byers (2007) conducted in five primary schools in Gauteng province. The objective of this research was to establish teacher's current perceptions of OBE. The research also aimed to ascertain how useful peer collaboration was in facilitating learning. Twenty teachers responded to a questionnaire. The results from this study showed that teachers were uncertain about the efficacy of OBE. Although a significant number of teachers strongly agreed with the underlying principles of OBE they felt that implementation as intended by policy makers was idealistic. Furthermore, they were conflicted about the notion that peer collaboration could sufficiently facilitate learning. Lastly, the findings of this study suggested that in implementing peer collaboration successfully, tenets from social psychology such as group dynamics needed to be considered (Byers, 2007:i).

The first three studies that is: Roux (2009), Xulu (2005) and Byers (2007) involved large groups of tutees with a tutor and were qualitative in nature; Kariola's quantitative study was more of a one on one type of peer mentoring assessing the impact of reading proficiency in English among Grade 9 learners in a high school in Gauteng Province. The sample consisted of 173 Grade 9 learners. The learners had been pre-tested in Grade 8, the previous year and were post-tested in Grade 9 utilizing the Stanford Diagnostic Reading Test (SDRT). The peer mentoring intervention lasted for three months. Students who had scored above the mean of the 60th percentile were nominated as mentors and those who had scored below the 40th percentile group, were mentees. All Grade 9s who had undergone the reading intervention performed better, in their vocabulary, comprehension and academically than those that had not participated in the intervention.

The last study the researcher would like to refer to; is closely related to the present study. It took place between a private school, Merensky high school and a farm or multi-grade school, Inzana in Limpopo province around Greater Tzaneen area. It was undertaken by Topping, Nel and van Kraayenoord in 2006:300-302 and focused on paired reading (PR). Inzana, is a one roomed multi-grade school with Grades 1 to 3 learners taught in the classroom while Grades 4 to 6 are taught on the veranda. These learners are children of farm labourers on the farm and Merensky students are rather from affluent communities which are multi-cultural, speaking mainly English, but some of them come from Tsonga, Sepedi and Afrikaans speaking communities. The Tzaneen library supplied the reading books for all the learners and Paired reading was done in a large storeroom where the two groups met. Inzana learners were tutored mainly in English. But, there was reciprocal tutoring when the Merensky students were helped by the primary school learners to read in their mother tongues. The actual peer tutoring took place at three high schools and three farm schools but the paper explains the case of Merensky and Inzana as an example. The project has been successful and has continued even a year after it was started. Success has not only been academically,

Merensky students have collected blankets and clothes for their disadvantaged tutees and tutors.

Besides this, the tutoring sessions have now continued among Inzana learners themselves with older learners tutoring younger ones. Inzana learners further take home books to teach reading to siblings and family members. What the paper does not mention are samples and scores or tests done among the tutors and tutees. All examples of tutoring discussed above seem to suggest that this intervention is effective in both mono-grade and multi-grade classrooms.

In this study, peer tutoring took place among Grade 5 multi-grade learners, to improve spelling, as part of the normal school program; for supplemental instruction and provided both tutors and tutees and the teacher with training skills, so that peer tutoring as a teaching and learning strategy could continue to be implemented long after the researcher has left the multi-grade schools.

3.9.3 Peer Tutoring in Multi-grade Schools

In the history of peer tutoring, it was explained how large classes created the desirability of selecting and utilising some of the children as tutors or monitors because of the large number of learners. For many decades during the development of the state education system in Britain, classes of 50 and 60 pupils were very common, and it is very likely that some form of peer tutoring was employed. Equally, the one-teacher village school, which is presently called multi-grade school, was once very common, although today it is usually found in sparsely populated, rural and remote areas. In such schools, 'vertical grouping' is of necessity the favoured form of organisation; children from a wide range of age groups and grade levels receive instruction within a single room, the multi-grade classroom (Topping, 1988:16).

In such situations, the younger learners of greater ability automatically have access to more advanced instruction by overhearing the teacher teaching more advanced learners, while less able learners automatically have access to frequently review and preview of material. Furthermore, the multi-grade classroom presents an ideal opportunity for older and more able learners to assist younger and less able pupils with learning in cross-age tutoring situation. Children of all ages are bound to mix socially to a greater extent than in a larger school (Topping, 1988:16).

According to Topping (1988:16) Allen and Devi-Sheehan surveyed the use of children as tutors in 110 rural schools which still functioned with a single teacher; these were multi-grade schools. Some form of tutoring was reported to take place on a fairly regular basis in 30 per cent of the schools, and in another 25 per cent there were similar informal arrangements. Most of the formal tutoring was on a one-to-one basis, although tutors frequently worked with more than one tutee during the week. Same sex and opposite sex pairings were equally frequent, while age differential ranged from 0 to 5 years. It seems likely that such arrangements had been in existence in these situations for some time, and would continue for the foreseeable future. This school situation still exists but unfortunately, teachers in the multi-grade have not been trained to utilize this valuable teaching and learning strategy.

3.9.4 Benefits of Peer Tutoring

Peer tutor process encourages cooperation among learners, in marked contrast to competition which exam-related activities encourage. Gifted and able learners need to be assigned tasks which are meaningful, challenging and open-ended and, tutoring is such a task.

One-to-one peer tutoring has the advantage of enabling teaching procedures to be individually tailored and paced to particular needs and speeds; thus promoting a high percentage of on-task behaviour. It also enables a highly interactive, participative,

activity-based style of teaching and learning (Topping and Wolfendale, 1985:23). Peer tutoring is an economically and educationally effective intervention for persons with disabilities that can benefit both tutor and tutee, socially, and educationally by motivating them to learn. Peer tutoring interventions were more effective when learners controlled tutoring sessions. Their results also showed greater gains for learners in Grades 1-3; who came from urban settings; from low socio-economic areas; of minority learners; based within school-wide prevention programs (Rohrbeck et al, 2003).

Benefits to Tutors

Children have certain advantages over adults in teaching peers. They tend to understand tutees' problems because they are cognitively closer. Allen and Fieldman found that third and sixth graders were more accurate than experienced teachers in determining from nonverbal cues behaviour whether age mates understood lessons. The fact that their cognitive framework is similar may also help peer tutors to present subject matter in the form that their tutees can understand (Vincent and Ley, 1999b:5).

Tutors reinforce their own knowledge and skills in turn build their self-confidence and self-esteem. As they explain the study matter to tutees, it helps them better understand it themselves. With better understanding of content, better achievement will naturally follow. Besides, when tutors are asked to assist tutees, their attendance is focussed (Grimm, 2004:15 and Osguthorpe, 1984:12).

Benefits to Tutees

Tutees receive immediate clarification of information they do not understand and feedback in a non-threatening environment, free from fear of teacher criticism or class ridicule (Olmscheid, 1999:5). Grimm (2004:15) concurs with the previous authors that behaviour improves as well because tutees are able to express their needs in an acceptable way without being either too passive or too aggressive Tutees have the opportunity of modelling pro-social behaviours of tutors. Young children admire older children and want to emulate them, thus will learn more academically and socially

(Osguthorpe, 1984:12). Tutees can also copy study skills such as concentrating on material, organising work habits and asking questions from peer tutors.

The use of cooperative learning structures and group rewarding contingencies can increase social motivation between tutor and tutee. Learners who are actively engaged in their own learning produce greater academic achievement. According Carr (2007:27) with peer tutoring, learners get immediate feedback from their peers and immediate feedback provides greater motivation for pupils. Learners also benefit from the verbal interactions with each other. The level of engagement influences learners' motivation to achieve classroom goals.

Benefits to Teachers

By utilizing peer tutoring in the classrooms, teachers will ideally be able to teach more effectively. Peer tutoring frees the teacher for refinement of curricular materials. It also allows the teacher to focus on new materials as it reinforces materials already taught as well as giving help to learners in need. As tutors assume responsibility reinforcing taught material; this can free the teacher for new roles as coordinators and facilitators, instead of being dispensers of knowledge (Grimm, 2004:8-9).

Peer tutoring gives teachers the capacity to accommodate a classroom of diverse learners to improve academic achievement across ability levels and content areas; this is very true for multi-grade classrooms; where several grade levels and learners are combined in one classroom.

Little (2005:10) sums up the advantages of peer tutoring in this way: that peer tutoring was perceived to benefit all learners: cognitively, socially and personally. More able, higher achieving and older learners 'cement' their learning through teaching and helping others, while the less able, lower achieving and younger learners look up and learn from others. In addition, the younger learners learn appropriate social behaviours from the role models offered by older learners.

Benefits to the School

The benefits go beyond tutors and tutees because, peer tutoring often improves the overall school atmosphere. Both teachers and parents assist to create a more supportive classroom environment. “The children seemed much more accepting of their peers and classmates and I’ve heard less derogatory remarks about classmates,” wrote one parent (Gaustad, 1993:3). Carr (2007:27) adds the following benefits of peer tutoring to the school:

There is a reduction in misbehaviour in class, an increase in all learners’ self-confidence. All learners’ social skills are developed and enhanced and the class bonds together better and tends to become a more cohesive group and learners enjoy the programme. According to Grimm (2004:9) peer tutoring has a potential to increase academic engagement. This can be defined as active participation in concrete academic behaviour. For a successful classroom instruction to take place, academic engagement, a critical factor in learning, must be present. This is critical in a multi-grade classroom where the teacher deals with several grades simultaneously. Learners need to be academically and constructively engaged for effective teaching and learning to occur. Besides, peer tutoring assists the multi-grade teacher to maintain order in the classroom.

Finally, we can conclude by commenting that all authors mentioned above agree that peer tutoring yields positive results for tutors, tutees, teachers and school in teaching and learning in different classroom contexts.

3.9.5 Peer Tutoring Improves Academic Performance

Results from a number of studies have shown that low achievers in reading made significant gains in reading performance after being tutored in reading (Marascuilo, Levin, and James, 1969; Erickson and Cromack, 1972; Klentschy, 1972; Mavrogenes and Galen, 1979 as cited in Fogarty and Wang, 1982:452). Furthermore, significant

academic gains were observed in tutees that were taught by older tutors (for example, Rogers, 1969; Klentschy, 1972; Williams *et al.* 1972) as cited in (Fogarty and Wang, 1982:452). Some have attributed the positive gains in peer tutoring to additional instruction for the tutee and the review materials for the tutor. Others have suggested that while the tutor teaches a tutee, he may be reviewing and consolidating existing knowledge, filling in gaps, finding extra meanings and reformulating their knowledge in new conceptual frameworks. Above all, they are likely to remember the material better from experience of the need to put knowledge to some purpose (Topping, 1987:4).

Besides what has been alluded to above, it has been proposed that the academic benefits of peer tutoring programs are derived from factors other than increased exposure to instruction such as social and motivational quality of tutoring relationship (Fogarty and Wang, 1982:452). According to Gartner, Kohler and Reissman (1971), as cited in Fogarty and Wang (1982:452) the resulting academic gains from a peer tutoring program may be attributed to the tutor's ability especially to a low-achieving tutor, to attend to tutee's individual academic and personal needs and to the special attention given the tutee, the availability of regular and responsive feedback on the correctness of his or her efforts, and is subject to close monitoring which maximises the amount of time spent on tasks. Sometimes, tasks can be selected to suit ideally the sole recipient of the tutoring and the speed of the presentation constantly adjusted for optimum learning (Topping, 1987:4).

While, Luppitt (1976) as cited in Fogarty and Wang (1982:452) emphasized that the tutor-tutee relationship becomes closer than that of a teacher and learner; Gartner et al. (1971) as cited in (Fogarty and Wang 1982:452) further mentioned that in an instructional environment, the cross-age peer tutoring relationship provides an opportunity to establish a cooperative experience between peers, one that could provide motivational influence for both tutor and tutee. Finally, it is proposed that the tutoring process provides a unique opportunity to develop the tutor's sense of the social

use of knowledge (Fogarty and Wang, 1982:452). Moreover, there is an opportunity to demonstrate the required behaviour.

3.9.6 Peer Tutoring Develops Positive Attitudes

Research has further revealed that after peer tutoring process, tutors' attitudes toward teachers and school life; were positive, and their self-concepts had improved (Fogarty and Wang (1982:452). Little (2008:50) indicated that peer tutoring was perceived to benefit learners cognitively, socially and personally. More able, higher achieving and older learners 'cement' their learning through teaching and helping others; while the less able, lower achieving and younger learners look up to and learn from others. Mohan (1972) also found out that the motivation of second graders and third graders improved significantly after a tutoring experience; this is due to the benefits they see in their academic life. Furthermore, tutors are valued more for their friendship and concern and then for their teacher-like esteem. The tutor's role may be enhanced by the tutee's attitude towards the tutor. Tutors are older and they lack teacher's expertise so the tutee will not view the tutor's role as that of the teacher.

To support this theory, Allen and Feldman (1975) Steinberg and Cazden (1979) cited in Fogarty and Wang (1982:453) have discovered that small children have the ability to discern nonverbal cues from other children. They further reported that even students with classroom behaviour problems may reveal a surprising competence in tutorial communications. Moreover, Topping (2005:632) asserts that there has been a great interest in deploying helpers whose capabilities are nearer to those of the helped, so that both members of the pair find some cognitive challenge in their joint activities. The helper is intended to be "learning by teaching" and also modelling. It is thus important for the teacher or the researcher assisted by the teacher to select tutors and tutees who will effectively learn through the tutoring process.

Despite the overwhelming evidence that tutoring works, it should be apparent that it is not a remedy to every teaching and learning difficulty. In some eleven studies conducted by Mathes and Fuchs, it was found that a wide range of effect sizes associated with tutoring, ranging from as little as .07, which meant no meaningful gain was made over that made by the control group to as high as .75 which is a substantial educational and valuable gain. The same effect was made by Cohen and his colleagues (1982); one collection of fourteen studies they had made had a mean size effect of 16 and another of two studies had a mean size of only 06 (Shanahan, 1998:221). In the same vein, Gaustad (1993:4) emphasizes that simply putting two students together will not result in successful tutoring. Untrained tutors: whether adults or students may resort to threats of punishment and scornful put downs. It is necessary that tutors be trained to master effective tutorial and communication skills and they should be continually supported during tutoring sessions and after.

3.10 SUCCESSFUL PEER TUTORING CONDITIONS

High-quality tutoring programmes include the following: clear outlined objectives of the school and those of the subject to be tutored. There should also be an identified need for the program. Besides these; responsible and willing teachers whose learners need the program and they are available to undertake the program. The school principal, the senior management team and other staff members ought to support the teachers and program. For an effective peer tutoring program, it should be well planned from start. Pre-planning for peer tutoring program is essential.

3.10.1 Structured Peer Tutoring

It is recommended that tutoring should be structured and not incidental. This means that it has to be well organized, planned, systematically implemented, monitored and evaluated (Wright, 2004:7). It is suggested that tutoring for a shorter period; (one to four weeks duration) appears to produce best results. When tutoring continues beyond

four weeks, there is a diminishing return. Tutoring where level skills are taught and tested, produces best student outcomes. Best tutoring results occur in math, followed by reading, than in other subject areas. Tutorial sessions should be closely monitored to determine if the desired results are yielded by the process and to detect any problems experienced by tutors and tutees. If problems are discovered, it is advisable to establish the root cause and attempt to solve those as early as possible. Because rural multi-grade classrooms are often more informal than mono-grade classrooms, tutoring activities may be implemented in a less structured, more spontaneous way (Vincent and Ley 1999b:4; and Kerka, 2007:2).

3.10.2 Target Age Groups, Subject and Goals

It is important for the teacher or school to decide upon specific objectives. For example, who participate in the tutoring program and in what form. This ultimately determines whether tutoring should occur in one-on-one or cross-age tutoring. Assessing students' progress frequently will give the program staff feedback on the effectiveness of lessons and motivate both tutor and tutee to work hard and thus improve.

3.10.3 Procedures for Selecting and Matching Tutors and Tutees

Some of the items to use to select and match the groups would be test scores and teacher judgment. Tutors may be selected on the basis of academic achievement and a desired positive attitude. Other criteria for tutor selection can be the following: academic skills of tutors, student relationships, characteristics, student preferences, gender and ethnicity. The teacher might also consider how he will handle absenteeism and communication with parents. Tutors may be given basic training to accompany carefully structured materials. When the main objective is academic progress, then extensive training may be desirable (Vincent and Ley, 1999b:11).

3.10.4 On-going Tutor Training, Supervision and Support

When tutors and tutees understand why an activity has to be done in a specific way, or are given the benefits of it, their tutoring tends to yield better results. Younger tutors will need more structure and more supervision. In periodic group meetings, older tutors feel free to talk about frustrations and sharing success stories. Tutors can learn how to handle problems from others besides getting ideas from staff members. For a tutoring program to succeed; it depends on the staff and administrators in the long run. It is important for teachers to inform parents and the community about the tutorial programme (Gaustad, 1993:5 and Vincent and Ley, 1999b:8).

3.10.5 Resources

The items mentioned here are vital for a successful tutorial programme. There should be a specific teacher in whose class the tutorials are going to take place or if the tutorials are for the whole school, then a designated venue can be decided upon. If funds are available, an administrator can be hired to assist during tutorials. Specific materials to be used in the programme should be bought or prepared, their level of difficulty, choice of the materials needs to be agreed upon, where the materials will be stored and looked after is important as they have to be readily accessible for the tutorials, the staff ought to agree how they will decide on the progression of learners, this means they should agree on what the learner should be able to do to move from one level to the next. The tutorial sessions should be scheduled either within the school programme or after, this will depend on whether the tutorial session is peer tutoring or cross age tutoring. A time slot for the purpose should also be decided upon (Topping, 1988:40).

In organizing a tutoring programme, the teacher needs to consider what else would be going on in his own class at the same time as tutoring, particularly in a multi-grade classroom where one grade might be involved in peer tutoring while the other grade is

not. If it is tutoring on reading in pairs, then the class might be noisy. But, if you want older learners to tutor younger ones on math, it would be advisable to designate a specific area in the classroom for the purpose (Topping, 1988:41).

3.10.6 Monitoring, Evaluation and Feedback as Essential Parts of Tutoring

Throughout peer tutoring sessions, there should be constant monitoring of the whole process, tutors and tutees; checking whether correct procedures are being followed. Monitoring has to be on the administration of activities, scoring and recording of marks. Evaluation of the programme based on its objectives which were set out at its inception. There are a number of activities that need to be evaluated such as observations of tutors and tutees while reading. Meetings between the project coordinator and the different groups also need to be recorded, focus group interviews can be held between coordinator and tutors and tutees.

3.11 HOW TO ORGANISE A SUCCESSFUL PEER TUTORING PROJECT

Just as much as research has indicated beyond doubt that peer tutoring can work; there is also evidence that shows that peer tutoring can fail to work. To counter this, it is recommended that tutoring should be structured and not incidental. This means that it has to be well organized, planned and systematically implemented, monitored and evaluated. For a beginner, try to keep the project small and simple.

The following suggestions have been made for effective peer tutoring to occur: but as Devin-Sheehan and Vernon (1976:254) explain; that the options suggested are not intended to be exhaustive; they suggest that new variations and combinations of alternatives are created with each new tutoring programme. Peer tutoring should be coordinated with good classroom reading practices, it should form an integral part of classroom activities; learners perform better than when tutoring is unrelated to classroom instruction. Tutees whose tutors participated in on-going, intensive training

throughout their participation outperform tutees whose tutors do not complete the on-going training sessions. Devin-Sheehan and Vernon (1976:254) indicated that; a structured programme tends to have precise goals, systematic selection of participants, specific tutoring materials and techniques and regular evaluation of the younger learners' progress. On top of that, structured tutorial programmes demonstrate higher achievement gains than unstructured programmes. Successful tutor-tutee relationships are characterized by strong reinforcement of progress, a high number of reading and writing experiences in which the learner moves from being fully supported to working independently, and explicit demonstration of appropriate reading and writing processes.

Rigorous evaluations of tutoring programmes report positive results for programmes whose tutoring sessions run from 10 to 60 minutes in length. Tutoring programmes in which tutors meet with tutees at least three times a week are more likely to generate positive achievement for tutees than programmes in which tutors and tutees meet twice a week. The most important strategies for improving early reading instruction and learning have been identified as creating an appreciation of the written word, developing an awareness of printed language and the writing system, teaching the alphabet, developing students' phonological awareness, developing phonemic awareness, teaching the relationship of sounds and letters, teaching children how to sound out words, teaching children to spell words, and helping children to develop fluent, reflective reading (Kerka, 2007:5-7).

The design of a tutoring programme is dictated by its objectives, including age group targeted, whether the tutor and tutee are same age or different ages and subject area, the availability of human, physical in terms of venue, time of the day, length of the tutorials and intensity; financial resources and an effective evaluation process. It is necessary to establish specific, measurable objectives which will allow for individual assessment of individual progress and evaluation of the programme as a whole. Frequently assessing the learners will give programme staff feedback on the

effectiveness of lessons and encourage both tutor and tutee (Gaustad, 1993; Fuchs, Fuchs, Mathes and Simmons, 1997:178).

Peer tutoring is characterized by specific role taking as tutors and tutees, with a high focus on curriculum content and usually also on clear procedures for interaction, in which participants receive specific training. Some peer tutoring methods scaffold the interaction with structured materials, while others prescribe structured interactive behaviours that can be effectively applied to any materials of interest (Topping, 2005:632).

3.12 IMPLICATIONS OF PEER TUTORING ON LEARNER PERFORMANCE

According to Topping (1988:22), the peer tutoring movement was given an opposite motto by Alex Dickson (1972): 'Each One, Teach One'. He also added the following:

The statistics which define the problem [of literacy] also indicate a means for easing it. If 15 per cent of the children have difficulty in reading, it follows that 85 per cent have acquired the skill. Here then is a human resource ready at hand – and it should surely be the function of remedial teachers to train and deploy this potential force of helpers.

What Dickson meant was that, more learners in that class were literate than illiterate ones, so the literate ones could be used by the teacher as tutors to teach those who cannot read or write, how to read. Reading is the crucial basic skill area – it is the key to many other curriculum areas, opening doors to so many walks of life. Many peer tutoring programmes have focused upon the development of reading skills. In the United States, some of the best known reading tutoring programmes have adopted a highly structured format. The structured view was to be confirmed by empirical research; that structured tutoring programmes tend to produce the best results.

Tutoring on reading can be successful as revealed by the following researches (Cohen, Kulik and Kulik, 1982; Fuchs and Fuchs, 1998; Wasik and Slavin, 1993 as cited in Topping, 2000:17). The most important thing is that methods of reading and tutoring have to be structured. The method that was used here is paired reading which has been shown to be effective by Topping (Topping, 2000:17).

A structured tutorial system for reading was developed by von Harrison and his associates in 1983, at Brigham Young University in Utah. They developed six types of instructional tasks for the tutors: teaching letter names, teaching letter sounds, teaching blending of sounds, teaching decoding of new words which were phonically regular, teaching sight words (phonically irregular) and oral reading. Normally, each tutoring session focused on a particular activity. The original pilot study was conducted when the children were on recess. Tutoring sessions lasted 15 to 20 minutes each day for five days a week, continuing for six weeks (Topping, 2000:17).

The programme proved effective; subsequently the tutorial system was developed to include the following components: supervisor's guide, training procedure, diagnostic pre-tests, 60-item prescriptive instructional sequence, home study materials for the tutor, blending exercises, record keeping forms, 25 decoding exercises, flash cards for letter sounds/letter names/digraphs/sight words, tutee progress reports to be passed to adults, chart to summarise learning gains, evaluative post-tests, reading exercises for teaching digraphs, sound pronunciation guide, ten story books, tutor assignment sheets, and the tutor's log which was to be maintained daily.

In later work, this tutorial system was often much more coordinated with ordinary classroom teaching. It was claimed that one adult could supervise approximately 50 tutors per day. Materials were subsequently developed which applied to children through all the elementary grades in school. Materials were also devised to enable the system to be delivered by para-professional adult tutors. The programme has been

applied in the field of adult literacy and of the teaching of English as a second language, mathematics, writing and other skill areas (Topping, 2000:17).

Structured tutoring has had its problems and limitations. The system had been largely used in cross-age tutoring programmes where older learners tutored younger learners within a school setting. Some of the problems were: the difficulty of matching timetables, movement of learners, possible public resentment where older learners were 'missing' their lessons to tutor younger children. The situation was exacerbated where more than one school was to be involved.

Subsequently the workers in Utah decided to investigate the possibility of reorganising their reading materials and procedures in a single classroom in a true age-peer tutoring format. They carried out an investigation in a class of children aged 6 to 7 years where the tutor and tutee roles were rotated regardless of the children's level of achievement, and this approach became known as 'Companion Study'. After these arrangements had been in operation for eight months, the score of the experimental group on a standardised test was twice that of the control group. It is not known if teachers have utilised this type of tutoring in classrooms (Topping, 2000:17).

From the above discussion, it is clear that peer tutoring had some positive effects on learner performance. The only issue was, most of the studies carried out had been in mono-grade classes. That was why this study was carried out to establish if the peer tutoring in multi-grade schools would yield as positive results as those referred to above.

3.13 CONCLUSION

It is important that the Department of Basic Education (DBE) considers multi-grade teaching as a necessary and unique situation which addresses access to education for rural, farm, children on mines and those in hard to reach areas. A policy focusing on

multi-grade teaching needs to be developed, both pre-service and in-service teacher training need to train multi-grade teachers in appropriate teaching and learning strategies such as: differentiated learning, self-directed learning and peer tutoring. Not only do they need training in teaching and learning strategies, but they also need a forum where their needs are addressed, where they can discuss curriculum and planning issues; where their voices can be heard. Multi-grade schools should have a curriculum that addresses their situation. Closing or merging small multi-grade schools does not mean that the multi-grade phenomenon can be eliminated, it is a temporary measure. As in almost all other countries, multi-grade education is here to stay. The policy question is how these schools should best be supported (Brown, 2010:22). In peer tutoring, learners support each other through reading and spelling. Tutors develop positive attitudes towards assisting others, this process frees the teacher to focus on individual learners and many other curriculum responsibilities. The next chapter explains the research methodology utilized in this study.

CHAPTER 4

RESEARCH DESIGN AND METHODOLOGY

4.1 INTRODUCTION

The intention of this study was to investigate implications of peer tutoring in multi-grade schools for learner performance. This chapter entails a discussion of the research design, research methods, population, sampling, data collection methods, data analysis and interpretation. In essence, the chapter outlines broadly the steps the study would follow.

4.2 RESEARCH DESIGN

There is relative confusion regarding the definition of research design. However, Arthur et al., (2012:23) define research design as; the organization of data collection so that data collected will support unambiguous conclusions about the problem being studied. The research design is a process that endures to explain research procedures in a transparent manner. It is a detailed plan for how the research study will be conducted (De Vos et al, 1998:77). To clarify the ambiguity on the definition of research design, Rubin and Babbie as cited in De Vos et al attempted to give two connotations. One connotation refers to alternative logical arrangements to be selected. This refers to experimental research designs, correlation research designs and others in that category. The other connotation deals with the act of designing the study in its broadest sense. To the two connotations, Kerlinger (1986:279) agrees with both definitions of Rubin and Babbie. Research designs are divided into quantitative and qualitative and mixed methods. Since this study focuses on quantitative and qualitative methods, the two are discussed further here-under.

The study employed mixed methods design which combined qualitative and quantitative approaches

4.3 RESEARCH METHODS

Quantitative and qualitative methods are not discrete; they represent two ends of a continuum. The distinction of a study being either quantitative or qualitative lies in the words (qualitative) rather than numbers (quantitative); or using close-ended questions (quantitative hypotheses) rather than open-ended questions (qualitative interview questions) (Creswell, 2009:3). Babbie (2010:23) adds this dimension, that the distinction between quantitative and qualitative data in social research is essentially the differences between numerical and non-numerical data. What it means is that when a researcher does a quantitative study, he collects information that is numerical for example he would find out how often a teacher uses pair work in a week in his lessons. The answer would be a figure unlike asking a teacher why he uses pair work for teaching and learning where the answer would be an explanation in words.

The study utilized both quantitative and qualitative methods to allow for triangulation of the data. This approach in mixed methods research is called Concurrent triangulation approach. The approach uses separate quantitative and qualitative approaches to balance the weaknesses of the other. So, the two approaches were discussed separately, the collected data were also discussed on their own. The two data process were merged and integrated at the end of the data analysis of the two approaches for triangulation purposes.

4.3.1 Quantitative Approach

This quantitative research is a means of testing objective theories by examining the relationship among variables. These variables can be measured, typically on instruments, so that that numbered data can be analysed using statistical procedures. Like the qualitative researchers, quantitative researchers have assumptions about

testing theories deductively, building protections against bias, controlling for alternative explanations and being able to generalize and replicate the findings (Creswell, 2009:4). Leedy and Ormrod (2010:95) concur with Creswell that quantitative researchers seek explanations and predictions that will generalize to other persons and places. The intent is to establish, confirm or validate relationships and to develop generalizations that contribute to existing theories. Data is collected by an instrument, analysed to find relationships; generalizations are made that end with formulation of theories. Gray (2009:201) adds this dimension that quantitative research emanates from an objectivist position that maintains that reality exists independently of the researcher – the truth is out there.

The quantitative researchers aim to keep themselves at a distance from those they are researching emotionally or physically to avoid contaminating the data or influencing the participants' responses, described by Leedy and Ormrod (2010:95) thus, "they try to remain detached from research participants so that they can draw unbiased conclusions". Quantitative research sees social reality as static, typically exploring the relationship between variables over a restricted time period. So, researchers focus on gathering facts so that truth claims can be established (Gray, 2009:202). Quantitative researchers commence deductively with a theory which will be tested through research, thus they endeavour to verify theory by facts based on research (Leedy and Ormrod concur with Gray, 2009:202) on this idea by mentioning that quantitative researchers tend to rely heavily on deductive reasoning, beginning with certain premises, hypotheses or theories and then draw logical conclusions from them. Also, quantitative research is nomothetic, meaning that it attempts to establish law- like findings that hold irrespective of time or place. To accomplish this, researchers take care in selecting a representative sample so that they can be able to make generalizations. Finally quantitative studies generate data in the form of numbers, collected from questionnaires.

There are set structured guidelines to conduct quantitative studies, consequently; concepts, variables, hypotheses and methods of measurement tend to be defined before the study begins and remain the same throughout. Quantitative researchers choose methods that allow them to objectively measure the variables of interest (Leedy and Ormrod, 2010:95). Quantitative methodology uses questionnaires to collect data. The researcher designed a teacher and principals' questionnaire consisting of several sections: section A addressed the biographical data of participants, section D comprised of questions on a 4 point Lickert scale focusing on the different multi-grade teaching and learning strategies and Section E focused on questions on peer tutoring. The learners' questionnaire consisted of seven questions which focused on mainly peer tutoring intervention, what they knew before and after peer tutoring, whether they had improved in terms of their reading and spelling abilities and what they would like to do after the intervention.

4.3.2 Qualitative Approach

Qualitative research involves looking at characteristics or qualities that cannot easily be reduced to numerical values. It is a naturalistic approach that seeks to understand phenomena within their natural settings (Gray, 2009:166). At the same time, Leedy and Ormrod (2010:90) explain that qualitative research studies complex human situations or complex human creations. These studies also involve human and animal behaviour. Mouton as cited in De Vos et al. (1998:241) concurs with Leedy and Ormrod (*Ibid*) that the most encompassing and widely accepted term, is an indication that this approach concentrates on qualities of human behaviour. It should be pointed out that qualitative research data is open to multiple interpretations which can include the voices of those being researched as well as those of the researcher (Gray, 2009:167). The same idea is reflected in the terminology that is used to discuss this research approach, it is very broad. Some terms have much in common and cover broadly similar approach while others lead towards restrictive usage and a particular emphasis (De Vos et al., 1998:241).

The following characteristics are common in qualitative research:

1. It is conducted through intense contact within a field or real life setting
2. The researcher's role is to gain a holistic or integrated overview of the study, including the perceptions of participants.
3. Themes that emerge from the data are often reviewed with informants for verification.
4. The main focus of research is to understand the ways people act and account for their actions (Gray, 2009:166-167).

The qualitative research method uses interviews, observations and document analysis to collect data. The researcher collected qualitative data through semi-structured interviews from both teachers and principals. The semi-structured interview afforded the researcher the opportunity to go to participants' settings, to hear them express themselves on the research topic. The semi-structured interview comprised of sections. Section A was the biographical data, Section B focused on multi-grade teaching and learning strategies and section C was on peer tutoring.

The study employed the concurrent triangulation approach under mixed methods research. This approach afforded the researcher the opportunity to collect both qualitative and quantitative data at the same time on the research site. The advantage of using the two research methodologies is that: they have complementary strengths and that weaknesses are non-overlapping.

4.4 POPULATION

Creswell (2012:142) and Strydom et al., (1998:190) define a population as a group of individuals who have the same characteristics or properties. It is a term that sets boundaries on the study units. For example, it might refer to all primary school

teachers in a particular district. A population represents a set of entities for which all the measurements of interest to the practitioner or researcher are represented.

In this study, the population was constituted by all multi-grade schools in the Vhembe District of the Limpopo Province which has combinations of either Grades 4 and 5 or Grades 5 and 6 in the classrooms.

4.5 SAMPLING PROCEDURES

Two sampling procedures were used to determine the samples. For qualitative sample a purposive sampling procedure was used to identify teachers and principals who work in multi-grade schools as such would have insightful understanding of multi-grade teaching and learning and peer tutoring. For quantitative cluster sampling was used to select schools.

Purposive sampling is a type of sampling that allows the researcher to deliberately select small groups or individuals who are knowledgeable and informative about the phenomenon of interest; selecting cases without needing or desiring to generalize to all such cases (Gray, 2009:152 and McMillan and Schumacher, 2006:475). Here the subjects have one or more trait to give what is believed to be a representative sample. Four multi-grade teachers and four principals were purposively sampled.

Random sampling is a procedure of selecting subjects from a population such that each member has an equal chance of being selected McMillan and Schumacher (2006:476). Four multi-grade schools were randomly sampled. Firstly, schools that had multi-grade classes were identified and then randomly selected to reduce them to a manageable number. Random sampling is a procedure of selecting subjects from a population such that each member has an equal chance of being selected (McMillan and Schumacher, 2006:476).

In the study the researcher used random sampling on the schools. It was not educationally sound to random sample learners as this would disadvantage learners who were in same class but could not use peer tutoring. At the same time, it was also very difficult to random sample learners in a multi-grade classroom, as these classes were already a combination of two grades.

4.6 SAMPLE

Creswell (2012:142) and Strydom et al., (1998:191) define a sample as a subgroup or element of the target population that the researcher plans to study for generalizing about the target population. A sample is studied in order to understand the population from which it has been drawn.

Two types of samples were used to suite both methods of data collection. For qualitative method, **4 school principals** were purposively identified to participate in the interview schedule due the lengthy period of 10 years existence as multi-grade sites.

For the quantitative data, random sampling was used to sample 4 multi-grade schools whose learners were used in the study. The sample consisted of **8 Grade 5 teachers** and only Grade 5 learners. Learners of other grades combinations were excluded in order to adhere to the principle of peer tutoring. A total of 77 learners constituted the sample.

For the purposes of peer tutoring intervention; each experimental school had 19 learners which came to 38 learners and with control schools one had 23 learners and the other 16 which was 39 learners in total.

4.7 DATA COLLECTION INSTRUMENTS

Data collection instruments are research tools that are used for gathering data either for quantitative or qualitative research study. In this study, the researcher used a questionnaire to collect quantitative data. For the qualitative data, the researcher used semi -structured interviews.

4.7.1 Questionnaire

De Vos et al. (1998:152) define a questionnaire as “a set of questions on a form which is completed by the respondent in respect of a research project.” The questions can be open or closed with an option to respond either “yes” or “no”. Alternatively, the questionnaire can contain statements on which respondents are requested to react. The main aim is to obtain facts and opinion on a phenomenon from people who are informed on a particular issue.

According to Arthur et al., (2012: 231) questionnaires are tools for gathering information. A questionnaire can be used for exploratory work. Collecting data from a small number of people either using paper questionnaires or by interviews could be helpful. This information might help start to define a problem. Secondly, it can also be used to describe a population, especially if you want to establish a general pattern across a population. One can administer a questionnaire to a representative sample of that population. Thirdly, questionnaires can be used as outcomes or controls in studies. They can be used as part of an intervention study or quasi-experiment which needs outcome measures. A questionnaire would be combined together to form a scale. Fourthly, a questionnaire can be used after a workshop to assess its purpose. The purpose of the questionnaire is formative and can also be used in conferences to complete ratings.

The reason questionnaires are popular is that they are low cost in terms of time and money. The inflow of data is quick and from many people. Respondents can complete the questionnaire at a time and place of their choice. Data analysis of closed questions is relatively simple and questions can be coded quickly. Respondent anonymity can be assured (Gray, 2009:338).

Questionnaires are divided into open-ended and close-ended categories. In open-ended questionnaire, the respondent is given a prompt and asked to write what they feel, its free reign. With the close-ended questionnaire, the respondent is asked to tick or make a cross in boxes. This approach can be used if the researcher knows the kind of responses that are likely to appear (Arthur, Waring Coe and Hedges, 2012: 232). In this study, some questions will be on a Likert scale. A Likert scale is a question where a respondent is asked to indicate how strongly they agree or disagree with given statements (Gray, 2009:350).

There is a closed format that requires a question. A Likert type involves presenting answers on a scale of 3 to 7 points. Some authors advice researchers to use an even number of possibilities in order to force the respondent to make a decision. The Likert scale consisted of a 4 point scale; it formed a section on the questionnaire. Questions on the Likert scale focused on multi-grade teaching and learning strategies. Another section of the questionnaire focused on peer tutoring in particular. The teacher was asked to give his opinion relating to how peer tutoring occurred in his classroom, how effective it was if there were any particular changes in his learners' reading and spelling habits or behaviour. The learners also completed a questionnaire comprising of seven questions. The questions established from him if the peer tutoring intervention was of any value to him, whether there was any improvement in his reading and spelling, what he liked and disliked in the peer tutoring sessions, what he would like to do or what he wanted to be improved in the intervention and what he could not do before peer tutoring and what he could do after it. Researchers are advised to pilot their

questionnaires to reduce mistakes in them and non- response to questionnaires. They are advised to pilot the whole questionnaire even the instructions.

In this study, the researcher administered questionnaire to 8 teachers. The learners' questionnaire was administered to the 38 learners who had participated in the peer tutoring intervention.

4.6.2 Scheduled Interviews

According to De Vos et al (1998:297-298) face-to-face interview is a pipeline for extracting and transmitting information from the interviewee to the interviewer. In this way the face-to-face interview helps us to understand the closed worlds of individuals, families, organizations, institutions and communities. In order for us to learn about these worlds, depends on the skill of the interviewer the flow reliable information while minimizing distortions in the interviewee's recollections of events.

An interview is a conversation between people in which one has the role of researcher. Both (Gray, 2009:369) and De Vos (1998:299) concur that the interviewer comes to the meeting with a set of structured questions to use as an aid, to remind the researcher of key areas that need to be probed. Interviewing may pose challenges because of the human interaction between the interviewer and respondent. The researcher has to pose questions, listen to responses and capture the data, probe, so it is necessary that the interviewer be prepared. He should also be able to interpret body language as this reveals a lot about the respondents' attitude.

Interviews are used mostly in researches which are exploratory, and deal with peoples' attitudes and perceptions. The use of semi-structured interviews allows the interviewer to probe for more detailed responses where the respondent is asked to clarify where it is unclear (Gray, 2009:370). About the interview Arksey and Knight (1999:32) comment that it is a powerful way of helping people to make explicit that have been implicit – to

articulate their tacit perceptions, feelings and understandings. The main advantage of semi-structured interviews with a schedule is that they provide for relatively systematic collection of data while ensuring that important data is not left out. The disadvantage of these interviews is that they require a highly trained and proficient interviewer (De Vos *et al.* 1998:300). Furthermore, it is time consuming to collect data through this instrument.

The relationship between the interviewer and interviewee should be peaceful and cordial all the time. The best way to achieve this is for the interviewer to respect the dignity of the interviewee and empathize with him. The interviewer should understand and accept the respondent as he is. In this study, 4 principals were interviewed. Both data were collected simultaneously at the research site; hence the name “concurrent”. The weighting of the qualitative and quantitative approach is equal.

4.7.3 The Pre-test and Post-test

The pre-test is similar to the post test. During the pilot study, the researcher had realized that the Grade 5 teacher at the experimental school used a reader for Grade 2 when enquiring why, she had indicated that her learners could not read the prescribed Grade 5 reader which was a continuous story. Because of their poor reading ability, it was difficult for them to comprehend, follow and remember the story line. She had then looked for a reader that was simple with short complete stories with lots of pictures to support learning. The intention was learners would then progress from the simple reader, gradually building on their vocabulary, improving both reading and spelling and eventually reach an ability to read their appropriate reader by the end of the year. She had not done many stories when the intervention was introduced. It was a convenient place to start the peer tutoring intervention. The selected reading materials for the intervention, was a reader for Grade 2. The title is: *Viva English: Resource and Reading Book* by Carol Beck and Alan Carter, 2003 published by Viva

Publishers and Booksellers. The rationale was that, starting learners on easier reading material would encourage many of them to read and also spell.

A second consideration was to make sure learners benefited and progressed academically. To accommodate this idea, the researcher discussed the reading materials with teachers so that they assisted learners to improve their reading and spelling and they made significant gains; and what the learners learnt formed part and parcel of their curriculum. The pre-test would sensitize both the control groups and the experimental groups to the post-test in a like manner, therefore presenting no internal threat to validity (Dawson, 1997).

In order to assess learners after the intervention on peer tutoring in both experimental and control schools, the researcher developed a post-test word spelling test based on the reader that had been used for the intervention, and based on Northby's (1936:339-346), Moore's (1937:24-28) and words from the original spelling booklet produced by the Victorian Education Department in 1969. For some 15 years or more it provided Victorian primary teachers with a basic reference as to what words to teach to students in each year of the primary school. It is important to understand why this particular spelling list was so different to others of that same approximate era. The original study which gave rise to these words involved an extensive count of the words that students of the different age groups actually used in their writing. The lists that derived from this basic count were then checked against the prevailing 'word frequency' listings of that date and adjustments made. The word lists in the next few pages then, were carefully researched. These words were used to develop the story. Twenty words were selected with the following two purposes in mind: One would be to include words which would easily fit into a short connected story; the other was to include words of varying difficulty, some of which all learners could correctly spell and some which only the best could spell (Northby, 1936:339).

The idea is to count words within the reader to establish how frequent they appeared. If the word appeared more than 50%, it was frequent. The spelling was to have 20 words; 50% of them should be easy, 25% of them should be slightly difficult and 25% of them should be very difficult (Moore, 1937:24). The 20 words should be composed into a story which the learners will read then they will spell them. After establishing the frequency of the 20 words, the researcher developed a story based on one of the characters the learners had read about in the reader. To achieve some validity, the researcher asked a colleague to read and evaluate the story. The researcher also asked three Intermediate phase teachers of local schools to verify the story. From their feedback, the researcher finalized the story. The pre-test and post-test were initially used in the pilot schools, then subsequently given to all four schools on specific days the researcher had arranged with them. The learners were told to read as they read during peer tutoring and paired reading, then the researcher explained that each word they were going to spell would be called twice, first as a word, then in a short sentence then they would be expected to write it down.

4.7.4 Peer Tutoring Intervention: Twenty Word Spelling

The researcher had arranged reading lessons from a reader and compiled twenty spelling words for learners to spell after every reading. Learners would read in pairs to assist each other, and then spell individually. Seventeen reading and spelling lessons were written by experimental schools for six weeks. All four schools wrote both pre-test and post- test. During the peer tutoring lessons, the researcher was a participant observer as the researcher had to make sure that procedure for peer tutoring is followed properly, and where there were any problems, the researcher had to be there to assist the teachers. Data was collected in terms of spelling scores based on words selected from the similar readings from stories given to the two groups of learners. Reading and spelling were done for six weeks, three times per week for one hour. This generated data in the form of seventeen stories read, for eighteen hours and seventeen spelling work for each grade 5 learner excluding both pre- test and post- test.

4.7.5 Administering Peer Tutoring Intervention: Spelling Activities

The quasi-experimental design is utilized here to establish the effects of peer tutoring on learner performance in multi-grade schools. The researcher had challenges in finding multi-grade schools where the teachers were willing to be involved in the research, ended up having out of twenty multi-grade schools; random sampling four schools for the research.

Both were multi-grade schools, thus naming them School B and C which were the experimental schools, both had Grade 4 and 5s combined; whereas in the control schools: school A had Grade 5 and Grade 6 learners combined in the same class and school D had Grades 4 and 5s together.

The distance among the 4 schools is approximately within a radius of 100 kilometres away. This was an advantage in the sense that there was very little possibility of learners from experimental schools contaminating control schools or the other way round. It should be remembered that multi-grade schools are mostly based in remote and rural areas. At the experimental schools B and C, both the teachers and learners were trained on peer tutoring; using it in paired reading and spelling. The Control schools: A and D did not receive any intervention.

The experiment involves introducing a factor to the experimental group and leaving the other group with no artificially induced changes. Having added the new factor, the researcher can then look at the four groups again with the belief that any difference among the schools can be attributed to the factor which was artificially induced. Note, it is not the change in the experiment group as such which is important. Certain changes are bound to occur over time in both groups irrespective of whether the experiment had taken place. We measure the difference between the control group and experimental group with a pre-test at the beginning and a post-test at the end of the experiment.

The length of peer tutoring intervention was six weeks in both schools, with the intervention taking place three times a week for one hour this amounted to three hours a week for six weeks as eighteen hours in total.

4.8 TECHNIQUES AND PROCEDURES OF DATA COLLECTION

To gain entrance to the site, the researcher first wrote to the District Senior Manager to ask for permission to do research in multi-grade schools in Vhembe District. After permission was granted, the researcher wrote letters to circuit managers whose circuits had multi-grade schools to ask for permission to enter the school. Then the researcher wrote a letter of introduction to the school principals explaining the topic of the research, and purpose and also showed them copies of permission from the circuit managers and the District Senior manager. In most schools, the Grade 5 teacher would be called and the researcher would explain what the researcher would like to do with him and the principal. the researcher would then make arrangements for the days the researcher would be able to visit the class, discuss the learner' assent forms and parents' or guardian's consent forms to be signed. If the school is an experimental one, the researcher would demonstrate how peer tutoring is to be done. There would also be discussion on the materials, how to fit in peer tutoring intervention. If the school is a control one there would still be discussions of how to get learners' assent forms signed and parents' consent forms. The teacher and the researcher would still arrange the dates for learners to write the pre-test and post-test. All teachers were very eager to get some reading materials. All four teachers explained that before the researcher came to their schools they had been reading, but the researcher has never seen the readers. The researcher made the conclusion that perhaps the reader was one teacher's copy only. The researcher would also arrange for days when the researcher could administer the questionnaire and interviews. The teacher would be asked to sign

a confidentiality form and the researcher would ask for permission from the respondent if the researcher could record the interview.

4.9 DATA ANALYSIS AND INTERPRETATION

Quantitative analysis is the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect (Babbie, 2010:422). The following descriptive statistics analysed by statistical package for the social sciences (SPSS) version 22 was utilized:

Measure of central tendency the mean, Standard deviation, Standard error mean, the *t*-test, independence *t*-test, and Effect size.

Qualitative analysis is a process utilizing methods for examining social research data without converting them to a numerical format. It remains a useful approach to data analysis and it is experiencing a resurgence of interest among social scientists. In qualitative research, the researcher will look for patterns that occur over time and take causal relations among variables (Babbie, 2010:394). Babbie (2010:394) suggests six different ways of looking for patterns by asking the following questions:

Frequencies: how often an incident occurs.

Magnitudes: refers to size big, medium or small.

Structures: what are the different types? Are they related in any manner?

Processes: Is there any order among the elements of structure or does the order of elements vary?

Causes: What are the causes of the incident? Does it occur more often during certain times?

Consequences: How does the incident affect the victims? What changes does it make in the victims?

The researcher would look at patterns appearing across several observations that represent cases under study, an approach called cross-case analysis. This approach consists of two parts, namely variable-oriented analysis and case-oriented analysis. Variable-oriented analysis explanation focuses on inter-relations among variables. The aim is to achieve a partial, overall using few variables. In a case-oriented analysis, it aims to understand a particular case or several cases by looking closely at the details of each (Babbie, 2010:395).

In this study, the researcher looked at the teachers' and principals' responses and established patterns and common ideas relating to theory and drew conclusions. The researcher tried to find out what multi-grade pedagogy ideas were similar to what teachers and principals mentioned, related them and to the literature. De Vos et al. (1998:342) suggest that identifying salient themes, recurring ideas or language and patterns of belief that links people and settings together assists with the integration of the results. After the two data analysis, the results were merged, integrated and corroborated.

4.10 THE PILOT STUDY

The researcher decided to do a pilot study in order to establish any problems with the research instruments. This was also done so that aspects that were unclear could be identified during the pilot study and be clarified; the researcher could then attempt to correct whatever mistakes and misconceptions before the actual data collection and analysis of the research. The purpose of a pilot study is to detect any peculiar deficiency (Babbie and Mouton, 2001: 166) or to determine whether an intervention will work (Strydom et al, 1998:395).

The study utilized qualitative and quantitative approaches. The researcher designed the following instruments:

1. A semi-structured interview instrument for both teachers and principals.

2. A questionnaire with open-ended questions was also designed for the learners
3. Focus group interview for tutors and tutees.
4. A twenty word spelling test for pre- test and post- test.

The researcher selected two multi-grade schools which were not going to be a part of the actual study. The participants included two teachers, one taught a multi-grade class of Grades 4 and 5 learners and one taught a Grade 5 and 6 multi-grade class and the two principals. School A, which served as control school, had 12 Grade 5 learners. School B which served as experimental school, comprised of 20 Grade 5 learners.

Teachers' Questionnaire

Teachers had to complete two questionnaires; one was to establish their knowledge about Peer tutoring and the second was to establish how they felt about the peer tutoring intervention. The researcher realized after these two questionnaires that the questions focused mainly on peer tutoring and did not refer to multi-grade pedagogy.

It was evident that the researcher had to do more literature review on multi-grade pedagogy in order to develop balanced questionnaires. Most principals teach in the senior phase only, they have very little knowledge about peer tutoring as a teaching and learning strategy and raised different questions that they encountered in multi-grade classrooms. So it became necessary to redesign the semi-structured interview instrument to include aspects on curriculum, teacher preparation and learner behaviour. More questions had to be asked addressing the research question.

Focus group interview schedule for learners. This instrument did not raise new issues but it required the researcher to rephrase some of the questions in order to get appropriate responses. Also, some tutors and tutees were so shy to talk that the researcher realized that they might not get responses from them. The researcher

decided to design a questionnaire with open ended questions instead, these were more focused and learners could be free to write whatever they wanted to say without feeling intimidated.

The peer tutoring intervention in the classroom. Although the researcher had trained both teachers and learners on the peer tutoring programme, teachers were reluctant to implement peer tutoring on agreed days in my absence. The researcher realized that the peer tutoring material had to be packaged in separate envelopes, labelled and dated for the three days of the week when peer tutoring would take place. The idea of learners marking their spelling work also created problems for those who were dishonest. This was also picked up as the researcher verified the spelt words and marks. A verifier is an important person to assist the researcher on spelt words and mark allocation to go through the spelling activities and check errors on spelt words and mark allocation. The twenty word spelling pre-test and post tests were given to three Grade 5 teachers who were asked to comment on their level of difficulty. Constructive feedback was received which was reworked into the instruments to improve them. The pilot study was an eye opener indeed and assisted the researcher tremendously.

4.11 VALIDITY, RELIABILITY OF INSTRUMENTS

Research instruments need to be validated in some way so that they can be accepted and be regarded to be authentic. The validity and reliability of a researcher's instruments influence the extent to which one can make informed decisions about the phenomenon under study, the probability that one would get statistical significance in the data analysis, and also be able to draw meaningful conclusions from the data (Leedy and Ormrod, 2010:28). In this regard one can generalize the results to other groups.

Validity of an instrument is the extent to which it measures what it was intended to measure. It is development of sound evidence to determine that the test interpretation

(of scores about the concept or construct that the test is assumed to measure), matches its proposed use (Creswell, 2012:159). Recently, it has been agreed among researchers that the three items of validity namely: construct, criterion-referenced and content have been combined to refer to evidence and use of the test or instrument. So, validity is the degree to which all of the evidence points to the intended interpretation of test scores for the proposed purpose (Creswell, 2012:159). The spelling instrument which was the pre-test and post-test were scrutinised by three intermediate phase teachers and four subject advisors before they were finalised.

Reliability is the consistency with which a measuring instrument yields a certain result when the entity being measured hasn't changed Leedy and Ormrod (2010:29). The two authors further maintain that both validity and reliability reflect error in our instrument or error in our administration of the instrument. They further mention that instruments that measure psychological characteristics (insubstantial phenomenon) tend to be less reliable than those designed to measure physical (substantial phenomenon); while instruments that measure physical phenomena are not completely reliable. Spelling tests were all reviewed by an external person so that the words and scores were correct.

Validity refers to the accuracy, meaningfulness and the credibility of the research project as a whole. Some of the questions to be addressed are: does the study have sufficient controls to ensure that the conclusions made are truly warranted by the data and the results can be generalizable to other similar areas of study. To ensure internal validity, the researcher used a random sample of the schools; four multi-grade schools were selected from the population by random selection, then the two control and experimental schools were also drawn randomly. All four schools received the reading materials and only the experimental schools teachers and learners were trained in peer tutoring. None of the schools actually knew which schools belonged to which group because of their distances from one another, for example, the control schools were about 150 kilometres apart while experimental schools were 50 kilometres apart, all

four schools belonged to four different circuit offices. The researcher visited all four schools once every week for the six weeks of the duration of the intervention to observe them in class.

External validity of a research is the extent to which its results apply to situations beyond the study itself which is the extent to which the results can be generalized to other contexts (Leedy and Ormrod, 2010:99). To enhance the external validity of this study, the researcher utilized real multi-grade schools which are authentic settings for the study. The researcher also conducted a pilot study with two multi-grade schools which were from the same population. The researcher used some respondent validation to verify the data that was gathered. This was important to assist the researcher to understand and to seek clarity on the information gathered. Furthermore, the researcher triangulated the methods by using mixed research methods for the study. For qualitative data, semi-structured interviews were used for learners, teachers and principals while for quantitative method, spelling scores were used to gather the data.

4.12 TRUSTWORTHINESS

Trustworthiness indicates that the findings are worth paying attention to (Lincoln and Guba 1985:290).

There are four issues of trustworthiness:

Conformability. this refers to a measure of how well the inquiry's findings are supported by the data collected. The findings are supported in that after interviewing the participants, the data confirmed what the literature review had explained that multi-grade was not supported by departments of education in many countries. It was also confirmed by multi-grade teachers that they were neither trained in pre-service nor in in-service as all curricular were written for mono-grade schools. That is why multi-grade

teachers did not know appropriate teaching and learning strategies, particularly peer tutoring.

Credibility: this is an evaluation of whether or not the research findings represent a credible conceptual interpretation of the data drawn from the participants' original data. After transcribing the interviews, further maintain went to all participants to verify what further maintain had transcribed with them that it was what they had said or meant.

Transferability: This is a degree to which the findings of the inquiry can apply or transfer beyond the project. The findings of this study can apply beyond in the sense that the selected schools were randomly sampled, the teachers and learners were purposively sampled. All selected schools belonged to four different circuits in Vhembe District, the distances among them varied from 50 to 150 kms from one another to avoid contamination.

Dependability: this refers to an assessment of the quality of the integrated processes of data collection, data analysis and theory generation. At the end of data analysis, there is a section that deals with integration, corroboration of theory and data.

4.13 ETHICAL CONSIDERATIONS

In the context of education, ethics are particularly important (McMillan and Schumacher, 1993:197), in that they deal with beliefs about what is right or wrong, proper or improper, good or bad. In this study the researcher followed the following ethical measure:

The researcher first sought permission to conduct the study from the Vhembe District Senior Manager of the Department of Education. Through this process the researcher strived to assure the rights and protection of those who may be affected by the research (Mac Naughton et al., 2001).

An initial interview was planned with each school principal, in the course of which the researcher explained the purpose of the study. The researcher produced covering letters indicating appropriate explanation of the purpose of the study; the importance of the respondents' contribution and participation as well as the significance of the study when visiting selected schools. Appointments were made with the school principals beforehand.

Confidentiality, Trust and Anonymity

According to Gay *et al.* (2009) research studies are built on trust between the researcher and the participants and that both parties expect from each other to behave in a trustworthy manner. In this study confidentiality was guaranteed as an assurance to all respondents. Participants were informed that the data was being collected for the purpose of my studies and that it would be used for research purpose only, furthermore, they would be informed that participation in the research was voluntary and they were allowed to withdraw at any time during the study and would not be disadvantaged in any way. The researcher also asked both teachers' and principals' permission to tape record the interviews.

The researcher focused on the research questions and not to interfere in any manner that could jeopardize the integrity of data and the study as a whole. The researcher first got their permission from both the principals and the teachers to sign letters of consent to being interviewed and asked to tape record their voices and also to complete the questionnaire. Teachers were assured that there would be no unpleasant or damaging effects on the individual or the school setting. Questionnaires were shown to the school principals who handed them over to the teachers. Teachers were given a week to complete the questionnaire at their own time. Cooper and Schindler (2003:121) point out that research must be designed so a respondent does not suffer physical harm, discomfort, pain and embarrassment, or loss of privacy. Because the

respondents were minors, their parents were asked to sign the consent forms, subsequently; the learners signed the assent forms. Permission from learners and their parents was also sought and granted before the data collection process started.

In conducting this study, the researcher ensured that there was no physical harm. The researcher followed the correct procedures as stipulated by the ethics committee of the university. All of the above ethical issues were taken note of and observed in conducting this research study.

4.14 CONCLUSION

This chapter dealt with research methodology. The research design was discussed together with research approaches, the population and the sampling. The study utilised a concurrent triangulation approach. This approach combines a quantitative and qualitative approach where the data were collected concurrently at the research site. The study in the quantitative approach utilized a quasi-experimental design. Peer tutoring as an intervention was implemented in two experimental schools while two control schools wrote both groups pre-test and post-test only. Spelling data was statistically analysed through SPSS version 22 while qualitative data was analysed through themes. The data analysed from the two approaches was merged and integrated. The next chapter deals with data presentation and analysis.

CHAPTER 5

DATA ANALYSIS AND INTERPRETATION

5.1 INTRODUCTION

This chapter consists of two sections: A and B, it presents both quantitative and qualitative data analysis and interpretation. The study investigated the implications of peer tutoring as a multi-grade teaching and learning strategy of Grade 5 learner performance in selected primary schools. The study is a mixed methods research, where both quantitative and qualitative researches were combined; called a concurrent triangulation strategy. Both quantitative and qualitative data were collected concurrently at the research site. This concurrent triangulation strategy was used with equal value placed on both the quantitative and qualitative methods.

Subdivision 1 presented data analysis and interpretation of the spelling scores of learners', questionnaire responses of teachers and those of learners' questionnaires. The quantitative data comprised of 77 Grade 5 multi-grade learners of which 35 were females and 42 were males (see Table 5.3), 8 teachers and 4 principals. Grade 5 learners wrote both a pre-test and post-test, and the experimental group wrote spelling tests during peer tutoring and also responded to a questionnaire. Eight participants responded to a questionnaire. Subdivision 2 is the qualitative data comprised of 8 teachers who responded to an interview schedule. It should be remembered that in all multi-grade schools in the study, all principals are also full time teachers.

5.2 SUBDIVISION 1: QUANTITATIVE DATA ANALYSIS

In this section, 3 activities were analysed: spelling, questionnaires for learners and questionnaires for teachers.

5.3 SPELLING RESULTS

For the quantitative method, the design was quasi-experimental as the schools were randomly sampled, not the learners. The pre-test, post-test Control group design was used. Four schools were randomly assigned to experimental and control group. All four schools consisting of 77 learners wrote the pre-test and post-test. There were 35 females and 45 males. There were 38 learners who participated in the peer tutoring intervention.

Schools B and C. The gender distribution was as follows: School A, had 13 females and 10 males, School B had 10 females and 9 males, school C had 5 females and 14 males while school D had 7 females and 9 males. The age varied from 11 years to 15 years. Learners in two experimental schools participated in the peer tutoring intervention for six weeks while the control group did not. The data was statistically analysed by SPSS Version 22. The results are presented below:

Table 5.1: Frequency Table Describing Learners in all Four Schools

School	Frequency	Percent
School A	23	29.90
School B	19	26.4
School C	19	26.4
School D	16	22.2
Total	77	100.0

The frequency table describes the number of learners in a school and the total percentage they represent in the study. School A had 23 learners who represented 29.90% of the total population. School B had 19 learners who represented 26.4% of the total sample, School C also had 19 learners representing 26.4% and School D had 16 learners who represented 22.2% of the total sample. Both schools B and C which are the experimental schools have an equal number of learners. Schools A and C which are control schools, have four learners less from the experimental schools.

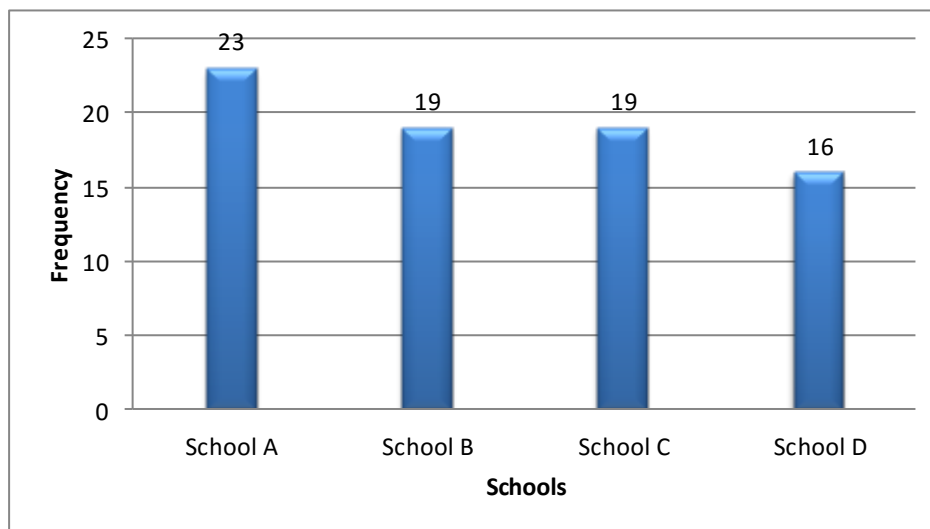


Fig: 5.1: A Graphic Representation of the Sampled Schools on a Histogram

The figure above represents both experimental and control schools on a histogram. The two experimental schools have an equal number of learners, 38 in total, whereas the control schools have 34 learners in total.

Table 5.2: Gender distribution of the total sample

Gender	Frequency	Percent
Female	35	45.5
Male	42	54.5
Total	77	100.0

The gender distribution is 35 females which is 45.5% which is less than the males who are 42 which is 54.5% of the total sample.

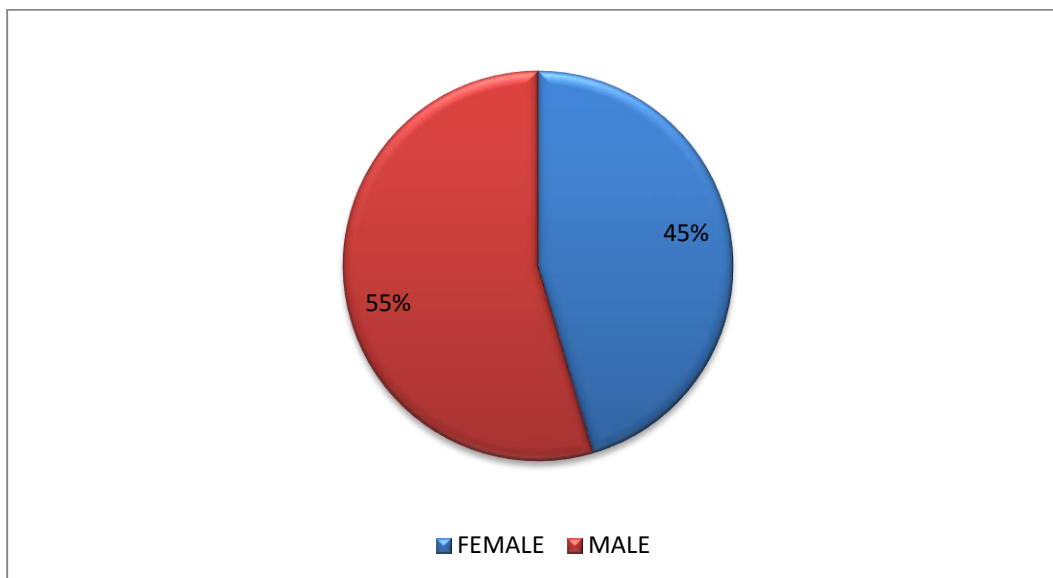


Fig 5.2: Graphic Representation of Gender Distribution on Pie Chart

The graph above represents both experimental and control schools on a pie chart. It is clear on the pie chart that male learners are more than females by about 5%.

Table 5.3: Cross-tabulations Describing Gender Distribution

School	GENDER		Total
	F	M	
School A	13	10	23
	16.9%	13.0%	29.9%
School B	10	9	19
	13.0%	11.7%	24.7%
School C	5	14	19
	6.5%	18.2%	24.7%
School D	7	9	16
	9.1%	11.7%	20.8%
Total	35	42	77
	45.5%	54.5%	100.0%

The table above represents gender distribution in terms of individual schools as follows: School A has 13 female learners which is 16.9% and 10 male learners who represent 13.0%; this is the highest number of males in the sample. School B has 10 female learners, 13.0% which is the highest female group of learners among all the schools while their male counterparts are 9, which translates into 11.7%. School C has 5 female learners, which is 6.5%, this is the smallest number in all gender groups of learners. Their male counterparts are 14, 18.2%, which is the highest number of all males in all schools in the sample. School D has 7 females, 9.1% while the males are 9, 11.7%. Schools B and D have equal number of male learners.

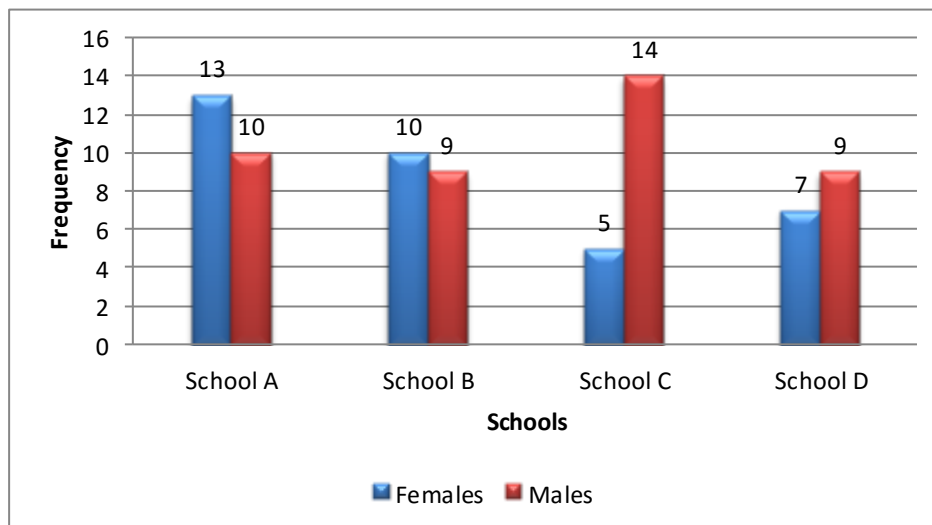


Fig 5.3: Graphic Representation of Gender Sample on Histogram

The figure above represents both experimental and control schools on a histogram. Although the two experimental schools B and C have the same number of learners, 19 in number, it is clear from the histogram that the gender distributions are not the same.

Table 5.4: Pre-test and post-test results for all four schools

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
PRE-TEST	73	24.79	2.457	20.990
POST-TEST	71	36.90	3.449	29.061
Valid N (listwise)	67			

The above table represents the results of pre-test and post-test results for the total sample. Total learners who wrote the pre-test were $N= 73$, $M = 24.79$ while the $SE = 2.457$ and $SD=20.99$. While in the post-test, $N=71$ learners wrote the $M=36.90$ while $SE=3.449$ and $SD= 29.06$ According to the results, all learners performed better in the post-test by 12.11. Only 67 learners got a score while 4 in the pre-test and 6 in the post-test got 0 as a score.

Table 5.5: Gender Performance of all Groups

	Gender	N	Mean	Std. Deviation	Std. Error Mean
PRE-TEST	Female	33	31.67	21.566	3.754
	Male	40	19.13	18.943	2.995
POST-TEST	Female	33	44.09	28.952	5.04
	Male	38	30.66	28.048	4.55

This is a comparison of gender in terms of performance on pre-test and post-test: for all learners in the total sample. A total of 33 female learners' $M=31.67$, $SE= 3.75$ and $SD=21.57$ in the pre-test; while 40 male learners wrote the post-test and their results are $M=19.13$, $SE= 3.0$ and $SD=18.94$. Even though the male learners are more than female learners by 7, they performed poorly than female learners. The female learners performed better than male learners with a mean difference of 12. 54.

With regard to the post-test; 33 female wrote and their $M=44.09$, $SE=5.04$ and $SD=28.95$ while 38 male learners wrote with $M= 30.66$, $SE= 4.55$ and $SD=28.05$. The female learners improved their post-test average by 12.42 points; while the male learners improved theirs by 11.53 points. Although there is a significant improvement in performance in both groups, the female learners still outperformed the male learners by a mean difference of 13.43.

Table 5.6: Effect Sizes (Computed for Gender)

		T value	Df	Cohen's D	Effect sizes
Pre-test	Equal variances assumed	2.644	71	0.628	0.30
	Equal variances not assumed	2.611	64.3	0.651	0.31
Post- test	Equal variances assumed	1.983	69	0.478	0.232
	Equal variances not assumed	1.978	66.9	0.484	0.235

Effect size is an objective and standardized measure of the strength or magnitude of a relationship between the variables in the population, or a sample-based estimate of that quantity (Fritz, Sherndl and Kuhberger, 2012:101). The useful thing about effect sizes is that they provide an objective measure of the importance of the experimental effect.

Cohen's d allows for the evaluation of the size of the effect in a study that is independent of scale and allows comparisons of effect sizes from analysis to analysis.

Cohen's d explains the mean differences between groups; the values for d are: $d=0.2$ (small effect), $d=0.5$ (medium effect) and $d=0.8$ (large effect). From the table above, the calculations for Cohen's d are above 0.6 for the pre-test with the effect sizes above 0.3 meaning that the treatment groups outperformed the comparison groups in the pre-test by about 0.3 standard deviations. This indicates a moderate to high practical significance of the effect between the two groups.

For the post-test, Cohen's d calculations are above 0.48 indicating a small to medium practical significance of the effect. The effect sizes of 0.23 indicate that the treatment group outperformed the experimental group by 0.23 standard deviations. The effect sizes for the pre-test are slightly higher than those of the post-test for each of the groups.

A correlation coefficient of $r = 0$ means the experiment had no effect, and a value of 1 means that the experiment completely explains the variance in the data. According to Cohen 1988 as cited in (Field, 2003:153), the values for r are: $r = 0.10$ (small effect) the effect explains 1% of the total variance, $r = 0.30$ (medium effect) the effect explains 9% of the total variance and $r = 0.50$ (large effect) the effect explains 25% of the total variance.

Referring to the table on effect sizes above, the effect size for pre-test $r = .30$, this is a medium effect, explains 9% of the total variance. The post-test $r = .23$, is between the small and medium effect and the pre-test's medium effect; both effect sizes are statistically significant. This means that there was an improvement in learner performance in the pre-test and post-test, this improvement might be because of the peer tutoring intervention.

On the other hand, Cohen's d explains the mean differences between groups; the values for d are: $d=0.2$ (small effect), 0.5 (medium effect) and 0.8 as (large effect) According to the table above Cohen's d indicates a slightly high medium effect size of $.6$ in pre-test and a medium effect size of $.5$ in the post-test of the total group. According to Cohen's d results; it means also that there was an improvement in performance by all learners, also by the peer tutoring intervention. The control schools also got the reading material even though they were not on the peer tutoring intervention which the teachers used. This could explain the improvement of the post-test scores.

Table 5.7: Pre-test and Post-test for Control Schools

	School	N	Mean	Std. Deviation	Std. Error Mean
Pre-test	School A	18	17.5	20.0917	4.7357
	School D	14	13.571	22.9907	6.1445
Post- test	School A	18	24.167	22.7033	5.3512
	School D	14	17.5	25.6268	6.849

This is a comparison of the two control schools in terms of performance on pre-test and post- test: schools A and D. School A has 18 learners, 4 more learners of the total number of learners than school D has; which is 14. School A performed better than school D in both tests. School A's pre-test ($M = 17.50$, $SE = 4.74$ and $SD=20.09$) while school D's pre-test ($M = 13.57$, $SE = 6.15$ and $SD=22.99$). The post test results of school A have improved ($M = 24.17$, $SE= 5.35$ and $SD=22.70$) while school D's post- test was ($M = 17.50$, $SE= 6.85$ and $SD=25.63$). Both, schools A and D improved in their post-tests performance even though they were not on the peer tutoring programme. This might be due to the fact that the learners have matured and also have improved academically as these tests were administered at the end of the year. Incidentally, the mean for school D in the post-test is equal to the mean for school A in the pre-test.

Table 5.8: Indicating Combined Spelling Scores of Both Experimental Schools

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
LES1	38	33.816	3.6393	22.4341
LES2	38	42.368	4.2576	26.2456
LES3	38	51.579	4.6808	28.8544
LES4	35	60	4.363	25.81
LES5	38	45.526	4.2116	25.9623
LES6	38	42.237	4.4454	27.4033
LES7	38	47.5	4.2951	26.4767
LES8	38	45.658	4.1237	25.42
LES9	38	52.632	4.2492	26.1941
LES10	38	42.763	4.1645	25.672
LES11	19	50.789	6.0125	26.2077
LES12	19	53.947	5.0953	22.2098
LES13	37	62.03	5.519	33.571
LES14	38	59.079	4.5371	27.9685
LES15	34	45.88	4.074	23.756
LES16	38	42.763	4.0608	25.0323
LES17	37	43.38	4.187	25.469

The total number of learners who participated in the peer tutoring programme was 38. Seventeen spelling lessons were written over a period of six weeks. For lessons 11 and

12, one school did not write, that is why the N here is 19 only. The best spelling test was lesson thirteen with $M= (62.03)$, and $SE= (5.52)$. This performance may be attributed to the fact that learners had been on the peer tutoring programme for four weeks and were conversant with it; while the poorest lesson was lesson one with $M= (33.82)$ and $SE= (3.64)$. The poor performance might be attributed to the fact that it was the learners' first lesson and they were perhaps not conversant with the peer tutoring programme.

Table 5.9: Indicating Spelling Scores by Gender: Experimental Schools

	Gender	N	Mean	Std. Deviation	Std. Error Mean
LES1	Female	15	40.000	24.7848	6.3994
	Male	23	29.783	20.3089	4.2347
LES2	Female	15	53.000	29.3258	7.5719
	Male	23	35.435	21.9976	4.5868
LES3	Female	15	56.667	26.8373	6.9293
	Male	23	48.261	30.2117	6.2996
LES4	Female	15	66.67	22.334	5.767
	Male	20	55.00	27.625	6.177
LES5	Female	15	51.667	25.4717	6.5768
	Male	23	41.522	26.0434	5.4304
LES6	Female	15	53.000	25.8291	6.6690
	Male	23	35.217	26.6065	5.5478
LES7	Female	15	57.000	25.6905	6.6332
	Male	23	41.304	25.6381	5.3459
LES8	Female	15	51.333	25.7368	6.6452
	Male	23	41.957	25.0789	5.2293
LES9	Female	15	62.333	24.2654	6.2653

	Male	23	46.304	25.9465	5.4102
LES10	Female	15	55.000	23.2225	5.9960
	Male	23	34.783	24.4242	5.0928
LES11	Female	5	64.000	24.8495	11.1131
	Male	14	46.071	25.8828	6.9175
LES12	Female	5	60.000	22.0794	9.8742
	Male	14	51.786	22.6688	6.0585
LES13	Female	14	70.36	32.073	8.572
	Male	23	56.96	34.137	7.118
LES14	Female	15	64.000	29.1057	7.5151
	Male	23	55.870	27.3717	5.7074
LES15	Female	14	53.93	26.178	6.996
	Male	20	40.25	20.741	4.638
LES16	Female	15	47.667	26.1771	6.7589
	Male	23	39.565	24.3046	5.0679
LES17	Female	15	50.33	28.938	7.472
	Male	22	38.64	22.264	4.747

The table above compares the performance of males and females on the different spelling lessons that they had. The highest mean for both groups was in lesson 13, where females' ($M= 70.36$), $SE = (8.57)$, ($SD =24.79$) and males' $M= (56.96)$, $SE =(7.12)$, ($SD=20.31$). The lowest mean for both groups was in lesson 1; where the females' $M=40.00$, $SE=6.40$, ($SD= 32.01$) while the males' $M=29.78$, $SE=4.23$ ($SD = 34.14$). Throughout all 17 lessons, the female learners performed better than the males; in some instances by 5% more than males. It is worth noting that the South African female learners at grade 5 in PIRLS 2006:20 and PRE-PIRLS 2011: 37, also outperformed males.

Table 5.10: Confidence Intervals for Highest and Lowest Scores

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Lesson1	Female	12	40.417	25.1774	7.2681	24.420	56.414
	Male	15	34.667	20.3072	5.2433	23.421	45.912
	Total	27	37.222	22.3320	4.2978	28.388	46.056
Lesson2	Female	12	55.000	31.2614	9.0244	35.137	74.863
	Male	15	38.667	22.7931	5.8851	26.044	51.289
	Total	27	45.926	27.5973	5.3111	35.009	56.843
Lesson3	Female	12	53.333	27.2475	7.8657	36.021	70.646
	Male	15	52.000	30.2844	7.8194	35.229	68.771
	Total	27	52.593	28.4325	5.4718	41.345	63.840
Lesson5	Female	12	44.583	21.3689	6.1687	31.006	58.160
	Male	15	42.000	30.1662	7.7889	25.295	58.705
	Total	27	43.148	26.1706	5.0365	32.795	53.501
Lesson6	Female	12	50.417	25.4468	7.3458	34.249	66.585
	Male	15	38.667	31.0223	8.0099	21.487	55.846
	Total	27	43.889	28.7674	5.5363	32.509	55.269
Lesson7	Female	12	57.083	25.8895	7.4736	40.634	73.533
	Male	15	44.000	25.4390	6.5683	29.912	58.088
	Total	27	49.815	25.9986	5.0034	39.530	60.100
Lesson8	Female	12	48.750	26.2960	7.5910	32.042	65.458
	Male	15	42.000	25.1282	6.4881	28.084	55.916
	Total	27	45.000	25.3817	4.8847	34.959	55.041

Lesson9	Female	12	62.917	25.9771	7.4989	46.412	79.422
	Male	15	51.333	25.6673	6.6273	37.119	65.547
	Total	27	56.481	25.9739	4.9987	46.207	66.756
Lesson10	Female	12	56.250	23.4642	6.7735	41.342	71.158
	Male	15	42.333	24.4852	6.3220	28.774	55.893
	Total	27	48.519	24.6051	4.7353	38.785	58.252
Lesson13	Female	12	68.750	33.9870	9.8112	47.156	90.344
	Male	15	62.333	31.7280	8.1921	44.763	79.904
	Total	27	65.185	32.2693	6.2102	52.420	77.951
Lesson14	Female	12	63.333	32.1455	9.2796	42.909	83.758
	Male	15	56.333	30.2647	7.8143	39.573	73.093
	Total	27	59.444	30.7075	5.9097	47.297	71.592
Lesson16	Female	12	47.083	27.8354	8.0354	29.398	64.769
	Male	15	42.667	24.5580	6.3408	29.067	56.266
	Total	27	44.630	25.6427	4.9349	34.486	54.774

The table above compares the performance of males and females on the different lessons that they had as well as the confidence intervals. From the table, the females outperformed the males in all the lessons. Looking at lesson 14 for example we can see that the confidence interval for females was (42.909; 83.758) and for males (39.573; 73.093), so although the males improved they could not match the females' performance.

Table 5.11: Independent Samples Test for the Total Sample for Pre-test and Post-test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Pre-test	Equal variances assumed	.539	.465	2.644	71	.010	12.54	4.743	3.085	21.998
	Equal variances not assumed			2.611	64.3	.011	12.54	4.803	2.948	22.135
Post-test	Equal variances assumed	.003	.955	1.983	69	.051	13.43	6.775	-.082	26.948
	Equal variances not assumed			1.978	66.9	.052	13.43	6.790	-.120	26.986

Levine's test showed that homogeneity of variances could be assumed. Thus, from the results, it is evident that there are differences between the groups ($t(71) = p = .465$ and $t(69) p = .955$. This reports the statistical significance. There is a difference between the pre-test and post-test. Both p -values are greater than .05.

Since the p -values for both pre-test and post-test are greater than 0.05, the decision would be that there is no significant difference between the two groups. We do not accept the null hypothesis; we reject the null hypothesis.

On average, participants who were involved in the pre-test ($M = 24.79$, $SD = 20.99$, $N = 71$) were significantly different from those who participated in the post-test ($M = 36.90$, $SD = 29.06$, $N = 69$). This difference, 12.54, CI [3.09, 21.99], was not significant $t(71) = 2.64$, $p = .010$ are bigger than .05. We therefore accept the null hypothesis that there is no significant difference.

"The mean differences of the pre-test ($M = 24.79$, $SD = 20.99$, $N = 71$), $t(71) = 12.54$, $p = 0.010$, was significantly different from that of the post-test ($M = 36.90$, $SD = 29.06$, $N = 69$), $t(69) = 13.43$, $p = 0.051$."

A description of the confidence interval would read as follows:

"A 95% confidence interval on the difference between the two sample means using a student's t distribution with 71 degrees of freedom is (-.082, 26.9), which indicates that there is significant evidence that the peer tutoring intervention made a difference in the post-test.

Table 5.12: Group Statistics: Describing Total Gender Performance

	Gender	N	Mean	Std. Deviation	Std. Error Mean
LES1	Female	15	40.000	24.7848	6.3994
	Male	23	29.783	20.3089	4.2347
LES2	Female	15	53.000	29.3258	7.5719
	Male	23	35.435	21.9976	4.5868
LES3	Female	15	56.667	26.8373	6.9293
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	Male	20	55.00	27.625	6.177
LES5	Female	15	51.667	25.4717	6.5768
	Male	23	41.522	26.0434	5.4304
LES6	Female	15	53.000	25.8291	6.6690
	Male	23	35.217	26.6065	5.5478
LES7	Female	15	57.000	25.6905	6.6332
	Male	23	41.304	25.6381	5.3459
LES8	Female	15	51.333	25.7368	6.6452
	Male	23	41.957	25.0789	5.2293
LES9	Female	15	62.333	24.2654	6.2653
	Male	23	46.304	25.9465	5.4102
LES10	Female	15	55.000	23.2225	5.9960
	Male	23	34.783	24.4242	5.0928
LES11	Female	5	64.000	24.8495	11.1131
	Male	14	46.071	25.8828	6.9175
LES12	Female	5	60.000	22.0794	9.8742
	Male	14	51.786	22.6688	6.0585
LES13	Female	14	70.36	32.073	8.572
	Male	23	56.96	34.137	7.118

LES14	Female	15	64.000	29.1057	7.5151
	Male	23	55.870	27.3717	5.7074
LES15	Female	14	53.93	26.178	6.996
	Male	20	40.25	20.741	4.638
LES16	Female	15	47.667	26.1771	6.7589
	Male	23	39.565	24.3046	5.0679
LES17	Female	15	50.33	28.938	7.472
	Male	22	38.64	22.264	4.747

The table above indicates spelling performance of all male and female learners in all spelling activities. There is a gradual increase of scores for both schools from lesson 1 to 5. Throughout all 17 lessons; the female learners out-performed the male learners. One observation made was, almost, all the 15 female learners wrote the spelling activities whereas, some male students were absent. Out of the 17 lessons, some male learners were absent for three spelling lessons. This causes the male learners' scores to decrease even more.

Table 5.13: Comparison of Performance of Two Experimental Schools

	School	N	Mean	Std. Deviation	Std. Error Mean
LES1	School B	19	30.526	22.2919	5.1141
	School C	19	37.105	22.6885	5.2051
LES2	School B	19	37.895	28.1522	6.4585
	School C	19	46.842	24.1069	5.5305
LES3	School B	19	40.000	23.0940	5.2981
	School C	19	63.158	29.9170	6.8634
LES4	School B	19	51.32	29.900	6.860
	School C	16	70.31	15.107	3.777
LES5	School B	19	31.579	21.5415	4.9420
	School C	19	59.474	22.6013	5.1851

LES6	School B	19	33.421	25.0029	5.7361
	School C	19	51.053	27.4661	6.3012
LES7	School B	19	43.684	25.1574	5.7715
	School C	19	51.316	27.8808	6.3963
LES8	School B	19	36.316	23.9700	5.4991
	School C	19	55.000	23.8630	5.4746
LES9	School B	19	50.789	27.9018	6.4011
	School C	19	54.474	24.9942	5.7341
LES10	School B	19	42.632	23.8262	5.4661
	School C	19	42.895	28.0533	6.4359
LES11	School B	0 ^a	.	.	.
	School C	19	50.789	26.2077	6.0125
LES12	School B	0 ^a	.	.	.
	School C	19	53.947	22.2098	5.0953
LES13	School B	19	54.74	33.060	7.585
	School C	18	69.72	33.276	7.843
LES14	School B	19	48.684	29.8999	6.8595
	School C	19	69.474	22.0413	5.0566
LES15	School B	19	40.53	24.994	5.734
	School C	15	52.67	20.948	5.409
LES16	School B	19	35.263	23.1825	5.3184
	School C	19	50.263	25.1371	5.7668
LES17	School B	19	35.26	22.759	5.221
	School C	18	51.94	25.960	6.119

Both schools B and C had equal number of learners, which was 19. School B wrote fifteen spelling lessons while school C wrote all seventeen lessons. School B's poorest lesson was lesson 1 with $M = (30.53)$, $SD = (22.29)$ and $SE = (5.11)$ while school C's lesson 1 was also its poorest with $M = (37.11)$, $SD = (22.69)$ and $SE = (5.21)$. The best lesson for school B was lesson 13 with school B's $M = (54.74)$ $SD = (33.06)$ and

$SE=(7.59)$. In the same lesson, school C's $M=(70.31)$, $SD= (15.11)$ and $SE=(3.78)$. The two schools almost performed the same in lesson 10 where School B's $M=(42,63)$, $SD=(23.83)$ and $SE=(5.47)$ and while school C's $M=(42.90)$, $SE=(6.44)$ and $SD=(28.05)$ and The difference in the mean is 0.23. In all the written lessons, school C performed better than school B.

Table 5.14: Pre-test and Post-test Results – Experimental Groups

	School	N	Mean	Std. Deviation	Std. Error Mean
PRE-TEST	School B	19	29.21	19.809	4.545
	School C	19	32.11	19.530	4.481
POST-TEST	School B	19	47.11	28.931	6.637
	School C	15	57.67	25.133	6.489

This is a comparison of the two experimental schools in terms of performance on pre-test and post-test: school B and C. Both schools had an equal number of learners, 19 each. School C performed better than school B. School C's pre-test ($M = 32.11$, $SE = 4.48$) while school B's pre-test ($M = 29.21$, $SE = 4.55$). School C's learners did better by a mean difference of 2.90. The post test results of both schools have improved; school B's results ($M = 47.11$, $SE = 6.64$) while school C's results were ($M = 57.67$, $SE = 6.49$). Again school C performed better by a mean difference of 10.56 even though only 15 learners wrote the post-test. Comparing the difference in performance of each school between pre-test and post-test, School B improved by a score of 17.90 while school C's improvement was by 25.56 points. There might have been less difference between School B and C scores had all 19 learners of school C written.

Table 5.15: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Pre-test	Equal variances assumed	.012	.913	-.454	36	.653	-2.895	6.382	-15.838	10.048
	Equal variances not assumed			-.454	35.99	.653	-2.895	6.382	-15.838	10.048
Post-test	Equal variances assumed	.614	.439	-1.119	32	.272	-10.561	9.441	-29.792	8.670
	Equal variances not assumed			-1.138	31.66	.264	-10.561	9.282	-29.477	8.354

Making a decision based on the p-Value for the pre-test. The p-value for the equal variances t-test is $p = 0.653$. Since this p-value is greater than 0.05, the decision would be that there is no significant difference between the two groups. The null hypothesis is not rejected. Thus, there is not enough evidence to conclude that the mean populations are different in the pre-test.

Making a decision based on the p-Value for the post test. The p-value for the equal variances t-test is $p = 0.272$. Since this p-value is greater than 0.05, the decision would be that there is no significant difference between the two groups. The null hypothesis is not rejected. Thus, there is not enough evidence to conclude that the mean populations are different in the post-test.

Making a decision based on the Confidence Interval for the pre-test. The 95% confidence intervals for the difference in means are given in the last two columns of Table 5.15. The interval associated with the assumption of equal variances is $(-15.84$ to $10.05)$, while the confidence interval when equal variances are not assumed is not the same as when equal variances are assumed. Since these intervals do not include 0 (zero), we again conclude that there is a significant difference between the means using either assumption regarding the variances. The confidence interval gives more information than a simple p-value. Each interval above indicates that plausible values of the mean difference lie between about -15.8 and 10.05 .

Making a decision based on the Confidence Interval (CI) for the post-test. The 95% confidence intervals for the difference in means are given in the last two columns of Table 5.15. The interval associated with the assumption of equal variances is $(-29.79$ to $8.67)$, while the confidence interval when equal variances are not assumed is the same as when equal variances are assumed. The 95% CI of the mean difference includes '0' meaning we have not demonstrated a real difference between the treatments. The result is therefore not 'statistically significant'.

Result 3: The 95% CI of the mean difference includes '0' meaning we have not demonstrated a real difference between the treatments. The result is therefore not 'statistically significant'.

The confidence interval gives more information than a simple p-value. Each interval above indicates that non plausible values of the mean difference lie between about – 29.8 and 8.7.

Reporting the results of a (Non-significant) Two-Sample t-Test

Narrative for the Methods Section

A two-sample Student's t-test assuming equal variances using a pooled estimate of the variance was performed to test the hypothesis that the resulting mean populations of pre-test are significant. "The mean populations of the pre-test were not significantly different, $t(36) = -10.56$, $p = 0.27$."

Table 5.16: Group Statistics: For Control Schools

	School	N	Mean	Std. Deviation	Std. Error Mean
PRE-TEST	School A	21	21.67	19.451	4.245
	School D	14	13.57	22.991	6.145
POST-TEST	School A	21	29.29	21.230	4.633
	School D	16	15.31	24.595	6.149

The table above represents performance of the two control schools in both pre-test and post-test. School A performed better than school D in both pre-test and post-test. School A had (M) = (21.67), SE = (4.3) and SD = (19.5) for pre-test and (M) = (29.3); SD = (21.2); SE = (4.6) for post-test. School D had the following scores for the pre-test: (M) = (13.6), (SE) = (6.2) and (SD) = (23.0) and while the post-test was (M)=(15.3), (SE)=(6.2) and (SD)=(24.6) and The two schools improved their post-test scores even though they were not on the peer tutoring intervention. This could be attributed to

learners' maturation. The post-test was written at the end of the year; they might have learned a lot to prepare for end of the year assessment.

Table 5.17: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Pre-test	Equal variances assumed	.015	.905	1.122	33	.270	8.095	7.217	-6.588	22.778
	Equal variances not assumed			1.084	24.710	.289	8.095	7.468	-7.295	23.485
Post-test	Equal variances assumed	.158	.693	1.852	35	.072	13.973	7.544	-1.341	29.288
	Equal variances not assumed			1.815	29.689	.080	13.973	7.699	-1.756	29.703

Table 5.18: Effect Sizes (ES) (Experimental Schools: School B and School C)

		<i>t</i> -value	df	Cohen's <i>d</i>	Effect Size <i>r</i>
Pre-test	Equal variances assumed	-0.454	36	-0.151	0.075
	Equal variances not assumed	-0.454	35.99	-0.151	0.075
Post -test	Equal variances assumed	-1.119	32	-0.396	0.194
	Equal variances not assumed	-1.138	31.66	-0.404	0.198

Effect size is an objective and standardized measure of the magnitude of observed effect. The useful thing about effect sizes is that they provide an objective measure of the importance of the experimental effect. A correlation coefficient of $r = 0$ means the experiment had no effect, and a value of 1 means that the experiment completely explains the variance in the data.

According to Cohen 1988 as cited in Field (2003:153), Valentine and Cooper (2003:5) and Field and Wright (2005:21) the values for r are: $r = 0.10$ (small effect) the effect explains 1% of the total variance, $r = 0.30$ (medium effect) the effect explains 9% of the total variance and $r = 0.50$ (large effect) the effect explains 25% of the total variance.

Referring to the table on effect sizes above, the effect size for pre-test $r = 0.075$, this is a small effect. The post-test $r = .20$, is between the small and medium effect and the

pre-test's medium effect; both effect sizes are statistically significant. This means that there was an improvement in performance between of the learners in the pre-test and post-test, there was an improvement in the peer tutoring intervention.

On the other hand, Cohen's d explains the mean differences between groups; the values for d are: $d = 0.2$ (small effect), 0.5 (medium effect) and 0.8 as large effect) According to the table above Cohen's d indicates a small effect size of 0.15 in pre-test and a medium effect size of 0.40 in the post-test of the total group. According to Cohen's d results; it means also that there was an improvement in performance resulting from the peer tutoring intervention.

Table 5.19: Correlations between Pre-test and Post-test

		Pre-test	Post-test
PRE-TEST	Pearson Correlation	1	.906**
	Sig. (2-tailed)		.000
	N	73	67
POST-TEST	Pearson Correlation	.906**	1
	Sig. (2-tailed)	.000	
	N	67	71

The table above shows findings on whether there are any significant correlations between the pre-test and the post-test. From the table, the value of the correlation $r=0.906$ which indicates a very strong positive linear relationship between the pre-test and the post-test. This means that as the pre-test increases or improves the post-test also increases or improves in a positive manner.

Table 5.20: Summaries of all Four Schools for Pre-test and Post-test

School		Pre-test	Post-test
School A	Mean	21.67	29.29
	Std. Deviation	19.451	21.230
School B	Mean	29.21	47.11
	Std. Deviation	19.809	28.931
School C	Mean	32.11	57.67
	Std. Deviation	19.530	25.133
School D	Mean	13.57	15.31
	Std. Deviation	22.991	24.595
Total	Mean	24.79	36.90
	Std. Deviation	20.990	29.061

The table above indicates that, school C has performed the best among the four in both pre-test (N) 19; (M) = 32.1 and (SD) = (19.5) and post-test (N) 15; (M) = (57.7) and (SD) = (25.1). School B was second (N) 19; (M) = 29.2 and (SD) = (19.8) in the pre-test and (19); (M) = (47.1) and (SD) = (28.9) in the post-test. School A was third with (N) = (21); (M) = (21.7) and (SD) = (19.5) in the pre-test and (N) = (21); (M) = (29.3) and (SD) = (19.2) in the post-test while school D (N) 14) was the poorest in both pre-test (M) = (13.6) and (SD) = (23.0); and (N) (16) (M) = (15.3) and (SD) = (24.6) in the post-test. The over-all performance for all learners in the pre-test is (N) 73; (M) = (24.8) and (SD) = (21.0); and for the post-test (N) 71; (M) = (37.0) and (SD) = (29.1). there was an improvement of all post-test scores for all schools.

Table 5.21: Correlations between Lessons and Performance

	LES1	LES2	LES3	LES4	LES5	LES6	LES7	LES8	LES9
LES1	1	.884**	.796**	.829**	.716**	.832**	.847**	.813**	.856**
		0	0	0	0	0	0	0	0
LES2	.884**	1	.797**	.808**	.755**	.851**	.879**	.846**	.870**
	0		0	0	0	0	0	0	0
LES3	.796**	.797**	1	.790**	.822**	.788**	.752**	.760**	.699**
	0	0		0	0	0	0	0	0
LES4	.829**	.808**	.790**	1	.756**	.775**	.771**	.767**	.802**
	0	0	0		0	0	0	0	0
LES5	.716**	.755**	.822**	.756**	1	.808**	.743**	.832**	.696**
	0	0	0	0		0	0	0	0
LES6	.832**	.851**	.788**	.775**	.808**	1	.786**	.796**	.769**
	0	0	0	0	0		0	0	0
LES7	.847**	.879**	.752**	.771**	.743**	.786**	1	.844**	.913**
	0	0	0	0	0	0		0	0
LES8	.813**	.846**	.760**	.767**	.832**	.796**	.844**	1	.813**
	0	0	0	0	0	0	0		0
LES9	.856**	.870**	.699**	.802**	.696**	.769**	.913**	.813**	1
	0	0	0	0	0	0	0	0	

From the table above it is evident by the values of the correlation coefficient which are all positive and greater than 0.5 that there is a strong positive relationship between the lessons. This means that as the lessons were conducted, there was an improvement from one lesson to another. A child who is performing better say for lesson 9 is also performing better for lesson 8 with the correlation value $r=0.813$.

Table 5.22: Correlation Continued

	LES10	LES11	LES12	LES13	LES14	LES15	LES16	LES17
LES10	1	.847**	.841**	.676**	.607**	.736**	.749**	.694**
		0	0	0	0	0	0	0
LES11	.847**	1	.825**	.683**	.712**	.569*	.794**	.776**
	0		0	0.002	0.001	0.027	0	0
LES12	.841**	.825**	1	.679**	.685**	.770**	.911**	.766**
	0	0		0.002	0.001	0.001	0	0
LES13	.676**	.683**	.679**	1	.876**	.812**	.882**	.850**
	0	0.002	0.002		0	0	0	0
LES14	.607**	.712**	.685**	.876**	1	.798**	.856**	.850**
	0	0.001	0.001	0		0	0	0
LES15	.736**	.569*	.770**	.812**	.798**	1	.861**	.777**
	0	0.027	0.001	0	0		0	0
LES16	.749**	.794**	.911**	.882**	.856**	.861**	1	.848**
	0	0	0	0	0	0		0
LES17	.694**	.776**	.766**	.850**	.850**	.777**	.848**	1
	0	0	0	0	0	0	0	

This table is a continuation of the table about correlation and still conveys the same information about the learners' improvement from one lesson to the next.

Table 5.23: Percentile Scores for all Schools

Percentiles	25TH	75TH	10TH	90 TH
PRE-TEST	10	45	0	55
LES1	15	55	5	62
LES2	21.25	63.75	8.5	76.5
LES3	35	75	10	87
LES4	50	75	14	90
LES5	20	65	13.5	80
LES6	21.25	63.75	10	80
LES7	30	72.5	15	83
LES8	25	68.75	13.5	80
LES9	35	68.75	10	83
LES10	25	60	10	81.5
LES11	32.5	70	17	77
LES12	40	65	27	85
LES13	30	90	8	95
LES14	36.25	87.5	25	95
LES15	26.25	58.75	16.5	73.5
LES16	20	63.75	12	76.5
LES17	25	60	8	75
POST-TEST	10	57.5	0	80

Percentile scores indicate the relative standing in a group and not the percentage of items that are correct. If we look at lessons 14 for example, we can say that 25% of learners scored 36 or below, 75% scored 87.5 or below, 10% scored 25 or below and 90% scored 95 and below. The learners in the 10th percentile have scored 95 and above 95.

Table 5.24: Percentile Scores for Experimental Schools

	School C				School B			
Percentile	10th	25th	75th	90th	10th	25 th	75th	90 th
PRE-TEST	8	15	50	55	4	12.5	42.5	56
LES1	12	17.5	55	62	4	10	47.5	61
LES2	15	25	65	76	5	15	50	74
LES3	10	47.5	82.5	96	10	27.5	52.5	69
LES4	52.5	63.75	77.5	90	9	25	72.5	82
LES5	34	50	75	85	9	15	47.5	61
LES6	15	30	80	85	5	12.5	52.5	68
LES7	15	30	77.5	90	14	25	52.5	76
LES8	23	35	72.5	81	10	20	45	76
LES9	26	37.5	67.5	82	9	35	67.5	78
LES10	10	22.5	57.5	82	10	25	60	69
LES13	8.5	56.25	95	96.5	13	27.5	87.5	95
LES14	38	57.5	90	95	10	30	72.5	91
LES15	27	37.5	65	73	5	20	55	71
LES16	13	32.5	67.5	80	13	17.5	50	66
LES17	20	30	70	78	5	17.5	47.5	66
POST-TEST	29	42.5	80	83	9	22.5	65	86

Looking at the percentile scores for school C and school B we found that the percentile scores differed. For example if we can look at lesson 17 for the 25th and 75th percentiles we can see that for school C 25% of learners scored 30 or below whereas for school B, 25% scored 17.5 and below. Also in school C 75% of learners scored 70 or below whereas in school B 75% scored 47.5 and below. This shows that there are differences between the two schools.

5.4 TEACHERS' RESPONSES TO THE MULTI-GRADE AND PEER TUTORING QUESTIONNAIRE

The purpose of the questionnaire was to establish from multi-grade teachers their knowledge and classroom implementation of different teaching and learning strategies. Eight teachers from the sampled multi-grade schools responded to the questionnaire. The results were as follows:

5.4.1 Section A: Biographical Data of Participants

Table 5.25: Biographical Data of Participants: teachers

Gender	Males	3
	Females	5
Average age (in years)		41-51
Average teaching experience (in years)		5 -25
Average years teaching in multi-grade		5 months - 25
Range of multi-grade classes		0-9
Range of learners in multi-grade classes		33-66

The total number of participants was 8, of which 3 were males and 5 were females. The average age in years was 41 to 51. The teaching experience of participants ranged from 5 years to 25years and while that of teaching in multi-grade schools was 5 months to 25 years. The classes ranged from Grade 0 to Grade 9. The number of learners per class ranged from 33 to 66.

5.4.2 Section B: Multi-grade issues and Peer Tutoring

In this section, respondents had to express their feelings in terms of four choices; strongly agree, agree, disagree and strongly disagree.

1. Multi-grade is demanding; the responses were as follows: all participants (100%) indicated that they agreed. All multi-grade participants responded that multi-grade teaching was demanding.
2. That multi-grade is an inferior type of education, these were the responses:
4 (50%) participants agreed that multi-grade was inferior and 4 (50%) disagreed. Although half of the respondents disagreed that multi-grade was an inferior education, the other half also indicated that it was an inferior education.
3. That CAPS curriculum addressed multi-grade needs, the respondents answered as follows:
3 (37.5%) agreed that CAPS curriculum addressed their needs while 5 (62.5%) strongly disagreed. It seems as if more than half of the respondents felt the CAPS document did not address their multi-grade needs. This concurs with what the Minister indicated before the roll out plan for CAPS that multi-grade teachers would not be trained in CAPS as they needed a special type of training (Ministerial Report 2009:27).
4. To the statement that textbooks catered for multi-grade needs, respondents' answers were:
5 (62.5%) strongly agreed and 3 (37.5%) strongly disagreed.
More than half the number of respondents agreed that textbooks catered for their needs.
5. To the statement that pre-service training prepared them for multi-grade teaching, respondents' answers were:
3 (37.5%) strongly agreed while 5 (62.5%) strongly disagreed. There were some teachers whose pre-service prepared them for multi-grade teaching, but more

than half of the respondents indicated that pre-service teacher training did not prepare them for multi-grade teaching.

6. To the statement that said that in-service was relevant for multi-grade teaching, the responses were:

4 (50%) agreed and 4 (50%) strongly disagreed. Half of the respondents agreed that in-service training was relevant to multi-grade teaching while half indicated that it was irrelevant to multi-grade teaching.

7. To the statement that subject advisors offered support in their classrooms, the responses were as follows:

4 (50%) agreed and 4 (50%) strongly disagreed. There seems to be a division concerning responses to the statement, as half of the respondents agreed with the statement while half disagreed with it. There might be some classrooms that subject advisors visited and those that they did not.

8. For the statement that said that there was sufficient space in their classrooms, the respondents answered as follows:

4 (50%) strongly agreed and 4 (50%) disagreed. Half of the respondents seemed to agree with the statement and half disagreed.

9. For the statement that said resources and multi-grade support were sufficient, the responses were as follows:

8 (100%) disagreed. No respondent answered positively on this point. All 8 (100%) disagreed on the statement that there was support from subject advisors. This indicates that there is a serious shortage of materials and insufficient classroom support too.

10. To the statement that the teacher keeps all his grades occupied the whole day, the respondents answered as follows:

All 8 (100%) agreed. More respondents mentioned that they managed to keep all their learners busy the whole day.

11. Respondents were asked if they managed to give individual attention to their learners and they answered as follows:

4 (50%) agreed, while 4 (50%) strongly disagreed.

There is also a division of responses where half of the respondents indicated that they gave their learners individual attention while half indicated that they could not. Those who could not give their learners individual attention may be having more learners in their grades or more grades in their classrooms.

12. To the statement that says: the younger learners take too much of my teaching time and attention; the responses are as follows:

All 8 (100%) agreed. All respondents indicated that the younger learners took too much of their teaching time and attention because there were several grades and a diversity of learners and abilities. Their attention is divided all the time in order to manage the classes.

13. To the statement that they managed to plan all their lessons for the day, the response was as follows:

4 (50%) strongly agree and 4 (50%) disagreed. Half of the respondents seemed to manage to plan all their lessons for the day while half do not manage to plan all lessons. Those who manage to plan their lessons are those who might have lower grades where there are less subjects while in the Intermediate and Senior phase, there are more subjects and grades are also more demanding.

14. To the statement that said: assessment, marking and recording are manageable; the respondents answered as follows:

4 (50%) agree and 4 (50%) strongly disagreed. Half of the respondents were able to manage assessment, marking and recording of learners' marks, while the other half could not manage the process. The ease with which some respondents managed assessment, marking and recording could be attributed to teaching small classes or less combined grades. For those who could not manage assessment, marking and recording this could also be attributed to many grade combinations, or they could have administrative responsibilities.

15. Respondents were to comment on the statement that said: my learners spend half of the day working on their own; the answers were as follows:

4 (50%) Agreed and 4 (50%) disagreed. Again half of the respondents indicated that their learners spent half of the day working on their own, While half of them

disagreed with the statement. Again this could be attributed to teachers' responsibilities over and above teaching and learning.

16. Respondents were asked to comment on their attitudes towards teaching in a multi-grade school; these were their responses:

5 (62.5%) agree and 3 (37.5%) disagreed. Only 3 of the 8 respondents did not mind working at a multi-grade school while 5 (62.5%) do not like working in a multi-grade school. These results are not shocking considering the situation under which respondents work, with no pre-service teacher training and minimum departmental support.

17. To the statement which said that; my learners miss out when I have to fill in forms; respondents answered as follows:

7 (87.5%) agreed and 1 (12.5%) strongly disagreed. The majority of respondents (87.5%) felt their learners missed out when they had to fill in forms. Although a multi-grade school may not have as many learners as a mono-grade school, the administrative duties are the same in both schools, but the difference is, there are few teachers to manage the duties.

18. Respondents were asked to comment on the statement that said: the content I teach is appropriate to my grades; the answers were as follows:

6 (75.5%) agreed and 2 (25%) strongly disagreed. Most respondents managed to teach relevant content to their learners except few of them. Sometimes it might be difficult to teach appropriate content due to lack of relevant teaching and learning material and lack of curriculum guidance in the classroom particularly in a multi-grade situation. The teacher tends to focus on the exiting grades at the expense of the remaining grades

19. Respondents were asked to comment on the statement that said: my learners work well in groups; their responses were as follows:

6 (75%) agreed and 2 (25%) disagree. More than half of the respondents indicated that their learners could work in groups. Group work is a vital necessity in multi-grade schools as most of the time, learners have to do seat work activities and thus need to assist one another.

20. To the statement that said: I use peer tutoring with my learners; the respondents answered as follows:

All 8 (100%) agreed. All respondents confirmed that they used peer tutoring with their learners. Research has indicated that some form of unstructured peer tutoring has been used in multi-grade schools. Vincent and Ley (1999g: 1) mentioned that "in all reports, teachers indicated that peer tutoring occurred on an incidental basis. That is, tutoring was not generally systematically planned or a planned activity."

5.4.3 Section C of the questionnaire: The use of Teaching and Learning Strategies

Teachers were given different teaching and learning strategies where they had to choose whether they used the strategy, for what and how often in a week.

1. Pair work

5 (62.5%) indicated that they used pair work for reading three times a week, 3 (37.5%) indicated they used pair work five times a week for spelling, 4 (50%) said they used pair work for writing more than three times a week and 5 (62.5%) indicated that they used pair work for oral activities more than three times a week. Results revealed that most teachers frequently used pair work in their classrooms for teaching various activities but particularly in reading and oral; and less for spelling.

2. Peer tutoring

6 (75%) indicated that they used peer tutoring for reading three times a week, 4 (50%) used peer tutoring for writing three times a week, 2 (25%) used peer tutoring or oral three times a week and 3 (37.5%) used peer tutoring daily. It seemed as if most respondents used peer tutoring in various activities but mostly in reading.

3. Cross-age tutoring

4 (50%) mentioned that they used cross-age tutoring in reading, 2 (25%) used it for spelling, 5 (62.5%) used it for writing, 3 (37.5%) used it for oral. More respondents used cross-age tutoring mainly for writing and less for spelling.

4. Whole class teaching

7 (75%) said they used it for reading, 5 (62.5%) used it for spelling, 5 (62.5%) for writing 3 (37.5%) for orals

This looks like the most popular teaching and learning strategy as most respondents used it; it was less used for orals.

5. Separate grade teaching

4 (50%) respondents indicated that they used it for reading, 2 (25%) used it for spelling, 5 (62.5%) used it for spelling and 5 (62.5%) for orals. This strategy is used throughout but mostly in reading and orals and less in spelling.

6. Self-directed learning

4 (50%) respondents said they used the strategy for reading, 2 (25%) used it for spelling, 3 (37.5%) used it for writing, 2 (25%) used it for orals and 1(12.5%) never used it. Only half of the respondents used self-directed learning, few of them used it for spelling, writing and orals while one of them never used it at all.

5.4.4 Section E of the questionnaire: Peer Tutoring and Spelling

Respondents had to explain the extent to which peer tutoring for Spelling has influenced their learners' learning.

Research has indicated that some form of unstructured peer tutoring has been used in multi-grade schools. Vincent and Ley (1999g: 1) mentioned that "in all reports, teachers indicated that peer tutoring occurred on an incidental basis. That is, tutoring was not generally systematically planned or a planned activity."

that peer tutoring had helped learners in various ways, in spelling, reading and working together.

1. Respondents were asked how much their learners enjoyed spelling and the following were their responses:

All 8 (100%) said a lot. All learners have enjoyed spelling during peer tutoring.

Respondents were asked what activities their learners enjoyed doing and the answers were as follows:

Spelling more than before: 4 (50%) a lot 3 (37.5%) a little 1 (12.5%) did not respond reading together more than before: 4 (50%) a lot 3 (37.5%) a little 1 (12.5%) did not respond.

Talking about the pictures before reading the story, this is an activity the tutor and tutee have do before the actual reading.

7 (87.5%) a lot. 1 (12.5%) did not respond.

It would seem as if learners enjoyed spelling more than before, reading together and mostly liked to talk about pictures before the actual reading.

2. Respondents were asked to make suggestions about the peer tutoring and their responses were:

1 (12.5%) There should be competitions.

1 (12.5%) develop more interesting activities.

3 (37.5%) learners should be encouraged to help one another in reading and writing.

1 (12.5%) learners should have a reader to take home to read.

1 (12.5%) more assistance as the peer tutoring helped them.

2 (25%) did not respond.

3. Respondents were asked if the peer tutoring has helped their learners to read textbooks and the response was:

All 8 (100%) said that peer tutoring has helped their learners to read textbooks.

4. Respondents were asked how their learners' attitude to peer tutoring for spelling has improved at all or changed and their responses were as follows:

5 (62.5%) Spell for fun, 5 (62.5%) ask to spell

6 (75%) have interest and enjoy spelling

5 (62.5%) Ask to read

6 (75%) Talk about what they have read

3 (37.5%) Borrow reading material to read at home

More respondents mentioned that their learners' attitudes towards peer tutoring had changed positively, that more learners enjoyed, had interest in spelling and spelt for fun, liked to read and explain in their own words what they had read, but very few learners had asked for reading materials to take home to read. One reason could be that there were insufficient readers to lend out to learners so learners possibly thought that teachers would not like to lend out the few they had.

5. Respondents were asked how the peer tutoring programme impacted on their learners' school attendance and their answers were as follows:

Yes 1 (12.5%) not at all 2 (25%) a bit 2 (25%) a lot 3 (37.5%) extensively.

It seems that peer tutoring has had very little effect on learner attendance. At one school when the researcher asked why it did not have any effect on attendance, the teacher said that their learners attended school every day as their school had been adopted by a police forum that monitored their village. The police and school had an agreement that learners who were seen during school hours walking around the village should be stopped and asked if they had permission, if they did not have that, then the police would communicate with

the school to attend to their absenteeism. He indicated that if they had any problem, the police and school worked very closely together and as such, learners hardly absented themselves from school.

6. Respondents were asked if they would consider to continue with peer tutoring after this programme and their responses were as follows:

2 (25%) a bit and 3 (37.5%) extensively

Only three respondents expressed the need to continue with the peer tutoring program. The reason could be the intensity of a peer tutoring program and its planning and monitoring.

7. Respondents were asked if they had learnt new ideas and their answers were as follows:

1(12.5%) a bit and 6 (75%) extensively

Very few respondents had learnt new ideas and more than half the number of respondents explained that they had learnt.

8. Respondents were asked to add anything they would like to say and the answers were as follows:

4 (50%) asked for reading materials and pictures.

1 (12.5%) explained that the peer tutoring program has inspired him to start a pilot peer tutoring in his community.

3 (37.5%) asked for more training in multi-grade teaching.

1 (12.5%) said that teachers for multi-grade should be given enough time to attend training workshops.

1 (12.5%) expressed a wish for improved classrooms and more teachers

1 (12.5%) respondent said they needed teaching materials for Maths and Science for grade 4, 5, 6 and 7.

From the teachers' comments there were some issues that were not running smoothly in multi-grade schools. Classrooms were not in a conducive teaching and learning condition, there was still a shortage of teaching and learning materials particularly in Science and Mathematics for Intermediate and Senior phase learners in one school; although half of the respondents expressed need in reading materials too. Another issue of concern was, teachers needed more training workshops in multi-grade teaching.

Researchers have mentioned this aspect that workshop training and textbooks are all geared for teaching in mono-grade schools and multi-grade teachers experience problems implementing classroom practice. One teacher expressed the need to be given time to attend workshops. This is a problem in multi-grade schools as one teacher teaches several grades; he is forced to be away from school to attend training for all the grades he teaches. The result is that at his school, the remaining teachers have to combine their grades with his just to maintain order. Effective teaching and learning is compromised by this arrangement.

5.5 LEARNERS' QUESTIONNAIRE RESPONSES ON PEER TUTORING INTERVENTION

Learners for the peer tutoring intervention came from two random sampled schools. Before all learners from experimental and control schools participated in the study, written permission was asked from parents and guardians. A written request in the Home language, which is Tshivenda, was sent to parents and guardians to complete. Besides that, all learners were asked to complete an assent form. The learners' ages varied from 11 to 15 years. Two multi-grade schools were randomly sampled as experimental schools B and C with 19 and 19 Grade 5 learners respectively. Both Grade 5 classes were combined with grade 4 learners. Total respondents to the questionnaire were 37 learners. The researcher administered the questionnaire with the assistance of

the grade teacher who interpreted the questions where necessary. The learners were asked to respond in their Home Language, which was Tshivenda. This questionnaire was administered at the end of a six week peer tutoring programme. The researcher would like to explain that among these learners there were some who could not write coherently in their Home language.

The following are questions and learners' responses.

5.4.1 Learners were asked if they liked to learn with a different grade of learners and to provide reasons for or against.

29 (78.38%) responded positively while 8 (21.62%) responded negatively. The positive group gave the following reasons: that they wanted to learn from one another. There are advantages and disadvantages of a multi-grade situation; learning together with learners of a different grade can be an advantage.

The group that responded negatively explained that the lower grade learners, in this case Grade 4s were noisy, fought and disturbed the teaching and learning process. They further said that sometimes the two groups had to learn different subject matter and this did not work well. Multi-grade teachers had a challenge teaching two or more grades two different subjects simultaneously. They need management, planning and organizational skills so that they can plan in advance on how to keep one grade constructively occupied while they teach the other grade a different subject content.

5.4.2 Learners were asked what they were able to do in English First Additional language (EFAL) before peer tutoring intervention.

11 (29.73%) could read, write and spell a bit in English.

13 (35.14%) could read in Home language (HL), Tshivenda

6 (15, 89%) could only read

4 (10.81%) answers were incoherent.

About 29 (78.38%) of the 37 learners could read. Some of them could even write and answer questions.

5.4.3. After peer tutoring, what are you able to do?

32 (86, 49%) could read, write and spell even new words.

2 (5.41%) could read, write and speak English.

2 (5.41%) could write sentences and questions.

3 (7.89%) could help another learner to understand the story without fighting.

About 91.19% learners gained positively in different ways from the peer tutoring program, while more learners enjoyed the reading and spelling. Others could work with others without fighting.

5.4.4 What did learners like most during peer tutoring?

16 (43, 24%) respondents liked to read and spell with another learner.

14 (36.84%) liked to tutor a tutee and liked to be tutored.

8 (21, 62%) learned to work with another learner.

2 (5.41%) liked to talk about pictures.

4 (10.81) responses were incoherent.

Most learners liked to read and spell, work with another learner, either as a tutor or tutee. These are necessary aspects for a successful peer tutoring programme. Peer tutoring is a very important strategy to assist the teacher to maintain order in a multi-grade class as learners are constructively engaged and this allows the teacher time to focus on individual learners' problems.

5.4.5 What would learners like to do which they are not doing in the peer tutoring programme to improve it?

12 (32.43%) to write sentences or paragraphs using new words

11 (29.73%) respondents wanted to continue with the peer tutoring as it is.

4 (10.81%) respondents wanted to dance, do speeches and drama.

6 (15.89%) respondents wanted to read and explain the story in their own words and stand in front of the class to read .

1 (2.71%) wanted peer tutoring to be used for reading in the Home language, Tshivenda.

2 (5.4%) respondents wanted to draw.

5 (13.5%) responses were incoherent.

Most learners' ideas and suggestions were very constructive. The researcher hopes the teachers managed to implement them at a later stage. It is clear that peer tutoring as a teaching and learning strategy has assisted learners to acquire certain skills, but not all of them. Peer tutoring is not a panacea for all multi-grade problems. There are many more strategies that multi-grade teachers have to be trained in, that they can apply in their classrooms.

5.4.6 Learners were asked to mention what they did not like about peer tutoring.

14 (37.84%) respondents reported that they liked everything about peer tutoring; the whole process.

1 (2, 71%) respondent he did not like to write difficult words. The reason could be because the learner was not able to read and write in English.

7 (18.42%) respondents did not like to get spelling words wrong.

6 (16.22%) respondents did not like being unable to read the story, which could be that, these learners had a challenge in reading.

7 (18.92%) respondents did not like spelling.

3 (8.11%) responses were incoherent.

1 (2. 71%) respondent did not like to sit and do nothing or be told to go out and play.

Those learners who did not like spelling maybe had a challenge in reading and spelling. If a learner cannot read or write, the strongest possibility is, he also cannot spell because he cannot make a link between letters, sounds and word recognition.

5.4.7 Learners were asked to explain how they felt about peer tutoring

All 37 (100%) respondents said they felt good and liked it as they could read and write. This is rather contradictory in a way as some respondents had earlier mentioned that they did not like spelling but on the other hand, because peer tutoring had certain activities like: to talk about the title, to discuss the pictures, then read and spell. Maybe the respondents liked some activities within the peer tutoring process like reading but did not like spelling.

5 (13.51%) respondents said that they had learnt a lot. This is a good indication that the learners had learnt something.

5 (13.51%) respondents' answers were incoherent. These respondents are not completely illiterate but they were able to read and write some words but were not reading at the level of Grade 5 learners. Although all learners mentioned that they felt good about the peer tutoring program, some of them still wrote incoherently. These learners' spelling is still at stage two of spelling development which is referred to as partial alphabetic stage (Bear and Templeton, 1998:226). They understand and can interpret pictures but they cannot link a sound to a letter. They must have enjoyed the activities without much learning taking place while others had really learnt. Maybe they enjoyed the stories more as there were many pictures to support it.

5.6 QUANTITATIVE FINDINGS

The post-test findings of experimental group were much higher than those of the control group. This could mean that peer tutoring as a teaching and learning strategy

might be good for multi-grade classrooms. The mean scores of both Schools B and C for the post-test doubled. The post-tests of Schools A and D improved slightly although they did not undergo peer tutoring and reasons for this could be the learners' maturation and the fact that learners read the stories which had been provided to the schools. The correlation indicated learners' improvement of scores from one lesson to another lesson. What it meant was that learners' performance improved in every lesson they wrote. There were learners who performed above the 95th percentile which meant that they consistently scored very high throughout the lessons.

Learners' questionnaire responses revealed that the majority of learners wanted to work in pairs, help each other and learn in the same class with another grade. This is an advantage for peer tutoring implementation. On the other hand a few learners did not like learning with another grade because their class mates were grade 4s who were noisy, disruptive and fought. This revealed some of the problems experienced by multi-grade classes. Besides, Grade 4s sometimes were not taught the same subject content. This revealed that teachers might not be able to manage both grades; keeping them all occupied; when they had to teach the other grade different content. All learners indicated that they enjoyed peer tutoring intervention even though some of them could not spell. These learners probably enjoyed discussing the pictures and learnt inferentially from them.

All teachers agreed that multi-grade teaching was demanding in terms of planning for different grades and subjects, teaching and assessment. Half of the teachers revealed that multi-grade was an inferior type of education while others disagreed. Most teachers also indicated that in-service training did not prepare them for multi-grade teaching. The teachers wanted an in-service training that would address their needs. Other issues raised were that all teachers did not have sufficient teaching and learning materials, young learners took too much of their time and attention, which resulted in less time for teaching and learning, their learners spent most of their day at seat work tasks. Implementing peer tutoring during seat work tasks would assist learners to learn on their own and learn constructively. Almost all teachers mentioned that they implemented unstructured peer tutoring in their lessons. Although this might be good,

best results might come with implementing organised peer tutoring. It can be used in reading, spelling and mathematics. Teachers indicated that they had knowledge of different teaching and learning strategies and utilised them for various tasks. However, some teachers lacked confidence in their implementing various strategies, they also indicated that their learners enjoyed peer tutoring as it helped them to read, spell and with oral activities. Learners asked to spell, read aloud in class and borrowed materials to read at home. They indicated that learners' ability to read and spell could be shown by their ability to read other subject materials.

5.7 SUBDIVISION 2: QUALITATIVE DATA ANALYSIS

This section discussed the qualitative part of the study. Four principals responded to scheduled interviews. The interview schedule was divided into sections. Data was analysed through themes.

5.8 DESCRIPTION OF PRINCIPALS' RESPONSES

Table: 5.26: Biographical Data of Principals

Gender	males	2
	females	2
Average age group in years	47	
Average Teaching experience in years	15	
Range of years in heading a multi-grade school	5- 25	
Range of multi-grade classes (in grades)	0-9	
Range of learners in the multi-grade classes	33-53	

The total number of principals who were interviewed was 4, of which 2 were males and 2 were females. The average age in years was 47. The average teaching experience was 15 years. Years of heading a multi-grade school was 5 to 25 years. Multi-grade classes ranged from grade 0 to 9. Class size varied from 33 to 53 learners.

Qualitative Data Analysis

1. All principals taught, with no initial multi-grade training except one who had attended some multi-grade training for OBE.
2. All principals agreed that one needed training in multi-grade pedagogy in order to teach effectively in multi-grade classrooms.
3. Reasons for the necessity of training in multi-grade pedagogy were: One cannot teach combined grades without some training knowledge, and nobody could teach without understanding multi-grade and that it was difficult to manage two grades in one classroom. DPMG4

"Yes I think it is necessary to be trained in multi-grade teaching because if you don't have the knowledge, you can hinder the process, because it will have an impact on one group or both, you will not be able to manage the lessons well. Sometimes you find that one class is lagging behind while the other is moving forward. You need skills to manage the two grades in one class. "

4. All principals also revealed that they performed various duties such as planning for the School's academic year, lesson plans, controlling teachers' and learners' books, marking and arranging meetings with parents and members of the School Governing Body (SGB). DPMG4

"My role as principal is to manage the school, all jobs in the school, supervise jobs by teachers and support staff."

Curriculum

Principals stated various reasons about curriculum challenges:

Teachers managed teaching and learning well, APMG1 said,

"We've capable teachers like any other school, the problem is that all teachers don't stay here, come ten past two, the bus arrives and we all leave the school, we can't play with learners, and supervise studies".

This is true, most multi-grade schools were located in remote and rural areas, and the teachers did not stay nearby but travelled long distances to their homes at the end of the day.

Other principals BPMG2 and CPMG3 also mentioned that

"We don't really know how to teach multi-grade classes, it's difficult and demanding, there is too much work and we can't finish the syllabus, learners suffer especially with me the principal as I go to circuit office and meetings."

DPMG4

"My challenge is, I don't have enough time in class with learners and administration. Sometimes I am in class presenting a lesson then a parent comes to school, I have to leave the learners to come to the office and attend to him. When you go to class, learners have forgotten what you were teaching them, they are lost".

This is an aspect that all principals complained about, of staff being untrained, over worked, and a demanding curriculum. The literature review also supported this that staff at multi-grade schools complained about work load; they felt like they were teaching double classes.

Two of the principals complained about shortage of resources:

BPMG2: *"We need resources such as reading books, charts and maps, we have none."*

DPMG4: *"more educators, learning material not enough at all. Learners are not getting enough materials."*

Relevance of in-service training

Principals felt the department was not doing enough about In-service training because it did not focus on multi-grade training but focused on mono-grade.

DPMG4:

"When we go for workshops, they should address this problem of multi-grade., very few have been trained on multi-grade."

APMG1:

"Curriculum is changing, we can't be managing multi-grade classes with knowledge from XXXXXX, I'm talking about new staff members who need training, let's have Inset once or twice in a year, let's have training for CAPS general and CAPS for multi-grade only."

BPMG2: *"Multi-grade is not generally considered in workshops, training is for mono-grade teachers".*

CPMG3: *"It's like we don't exist, we are not catered for".*

DPMG4: *"problem is they do not address multi-grade needs"*

CPMG3:

"If curriculum advisors could be trained in multi-grade." Yes we were trained on the CAPS, but the training was not for multi-grade, it was for mono-grade. Training is for a short time, I assume if they can train us quarterly, may be for 5 to 10 days. They used to train us for 2 days. If they can train us it can be something, training in multi-grade teaching.

Multi-grade teaching was not acknowledged and considered as a necessity by the Department of Education (DoE). There was no policy on multi-grade and the curriculum and textbooks were geared for mono-grade schools. Principals felt that subject advisors

also lacked knowledge on multi-grade pedagogy as they were unable to train them on it.

Teaching and learning

All principals used some form of grouping for various lessons and learners' needs. It could be mixed ability, shared or pair work. For instance:

BPMG2: *"I group them in mixed ability groups with the smart one in the middle."*

APMG1: *"Sometimes we do grouping in pairs, when we do project we do groups according to who stays near whom."*

CPMG3: *"Mostly, I use groups; it can be pairs or mixed ability groups so that they can help each other. Sometimes when they read, they work in pairs, shared reading"*

Grouping is one strategy a multi-grade teacher can use with success and it is important that all principals used the strategy to manage the different groups and grades.

Most principals did not teach Grade 5 and could not respond directly to the peer tutoring intervention programme that took place in those classes. However, some of them could see positive results from it.

Staff relations

All principals reported that they worked well, as a team with their staff members. APMG1: *"My staff work as a team, I'm impressed"*. They raised the difficulty of curriculum planning as teams due to timetabling, mentioning that most staff from intermediate phase taught across phases; subject teaching. However they also indicated that foundation phase teachers planned together.

ADMG1: *"The foundation phase teachers manage to plan together, but we don't manage in the other phases as we all teach across all phases."* This is made possible because they only teach in this phase only.

BPMG2: *"Yes, we work together, after every quarterly audit, we hold a meeting we discuss."* This seems more like reflection and not actual curriculum planning per se.

CPMG3: *"Yes, we are working as a team, the staff cooperates, and we don't have staff problems, maybe it's because we are few."*

DPMG4: *"Yes, there's teamwork, No particular difficulties we work on curriculum, once a month as staff."* It seems as if various staff meetings are held for curriculum issues and some planning does take place. For those principals who teach Home language, initially,

DPMG4: *"There were reading and writing problems, spelling home language, learners can't use diacritic marks, most learners can't read".* One school came up with a strategy of bible reading by learners at assembly and this has brought significant improvements in building learners' confidence and attitude towards reading.

BPMG2: *"Friday strategy works well for us. Learners volunteer in numbers to come and read. Every morning learners read bible at assembly, we can see results, and learners have confidence. The spirit to be there for one another is there."*

The principal of school C indicated that peer tutoring had developed learners' confidence in reading and spelling so much that learners competed to read the bible at assembly on Fridays.

School organization

All principals seemed to allocate teaching load by qualification only at the foundation phase, but from intermediate to senior phase allocation it was by subject specialization.

APMG1: *"Foundation phase from grade R to Grade 3, is good, we don't have a problem,*

BPM2: *" Foundation phase is allocated by qualification, Senior and intermediate phase teachers cut across by qualification, subject specialization."*

CPMG3: *"We try and allocate according to qualification, especially in the foundation phase, in the upper classes, we do subject teaching."*

DPMG4:

"We don't look at qualification, we allocate by the needs of the school. Most teachers are for secondary school. But they started teaching at primary school. For Intermediate and Senior phase I look at qualification with specialization, say those who specialized in Tshivenda and Geography, I give him Tshivenda and Social Science."

On average, principals spent about 3 hours over and above their time after school attending to school related issues such as marking, lesson preparation, looking for donors, meetings and going to circuit office.

APMG1: "Over and above my teaching I work about 3 hours of school work, looking for donations for school, I think of how I can get the school to be funded."

CPMG3: "I spend about three hours outside school to do school work like marking, attending to office issues, parents and circuit office."

Multi-grade schools had problems with parents, parental involvement was rather poor in some schools, and they could only come to meetings on Sundays and come to visit the school to see their children's work at night on weekends. This was a serious challenge as the staff did not stay near the multi-grade schools.

APMG1:

"Parental involvement: parents are involved. At the end of the second quarter, we held a parents' meeting where they came to see learners' work, parents said they should have been called earlier, parents are concerned"

BPMG2:

"Parental involvement: Moderate, not all are interested in learners' education. When they are called for emergency or quarterly meeting, they turn up in large numbers."

DPMG4:

"Eh!! They are still behind, they don't engage in their children's work. They come to meetings, they turn out in large numbers but they don't make follow-ups, they come to attend to problems. Parents say you are the one who can do something with my child, you must beat them. They are unable to read and write, 99% of them are illiterate, for homework they reshuffle the responsibility to the teachers."

Teacher development

Principals felt that the department did not address multi-grade challenges at pre-service teacher training because new teachers who came to schools seemed to know about mono-grade but nothing about multi-grade.

APMG1: *"I don't think pre-service trains teachers for multi-grade teaching, we have never heard new teachers talking about multi-grade."*

CPMG3: *"You see, these new teachers are not trained for multi-grade but they are trained for mono-grade classes."*

CPMG3:

"They should consider multi-grade teaching in training. A qualification is important; the situation might not change. If curriculum advisors could also be trained in multi-grade."

Some principals would like the department to re-open the colleges to train multi-grade teachers; others would like a professional qualification while others wanted some refresher courses by distance learning. Principals were aware that curriculum advisors had no knowledge of multi-grade pedagogy, yet they had to train multi-grade teachers and support them at schools. Neither of the two activities has been taking place that is why principals suggested that subject advisors should also be trained.

APMG1:

"Advantages: doing one work for 2 classes one time. Teaching grades 4 and 5s the same subject, give an activity. There's lots of teaching, controlling, marking is less if there are less learners it may be easy to control, diagnose learners' problems."

DPMG4:

"The good side of it is that you know learners. Say for example I'm teaching Grade 2 now learners progress to Grade 3, I know what part I didn't teach or touch in Grade 2 So, I know what to stress. I try to teach what I didn't do in Grade 2."

APMG1:

"Disadvantages: When teaching Grades 4 and 5s, sometimes the anticipated results are not seen within a short space of time, sometimes you realize late that learners have not understood an aspect. Other learners are very slow, time takers take longer, and you go back and forth."

DPMG4:

"When you introduce a lesson, you start from the known to the unknown, once they see that you are teaching say, Division; they switch off. They tell you we know it its division. They don't listen when I tell them but this lesson we are moving on like say it is long division, they just argue that it's the same. You end up with only few learners listening to you and when they get the sums wrong, they say I'm being difficult."

Some issues raised by principals were that; multi-grade teachers needed a forum where they could meet and discuss their issues. They needed separate, but specific curriculum training for multi-grade teaching. There was a need for some formal course to be offered on multi-grade at both pre-service and in- service training. Finally, that multi-grade was not a phenomenon that could be eradicated over-night; it was going to be here in our schools for some time to come.

5.8.1 QUALITATIVE FINDINGS

The principals revealed that they taught a full load over and above their administrative duties. They all agreed that one needed training in multi-grade teaching and learning

strategies as they had not been trained on multi-grade teaching in pre-service training. All principals indicated that their teachers worked as a team, that teaching workload was allocated by subject specialisation in both intermediate and senior phase. Only the foundation phase teachers could work as a team as they focused their attention on one phase only. Principals confirmed what teachers had initially said that they were not treated well by the department of education, the curriculum did not cater for their multi-grade needs and subject advisors also did not seem to have knowledge on multi-grade teaching. They indicated that they utilised several teaching and learning strategies particularly mixed ability grouping. Principals suggested an introduction of a certificate, diploma through distance learning and some pre-service teacher training for new practicing teachers. All principals complained of less teaching time as they had to visit the circuit office. The result was their learners lost out on precious teaching time. Principals indicated that they could see the effects of peer tutoring on their learners; in other subjects. One principal mentioned that learners competed to read the bible aloud at Friday's assembly. Their learners were confident, cooperative and focused.

5.9 INTEGRATION

This section integrates the quantitative and qualitative results. Both quantitative and qualitative data were collected concurrently and now the two databases to determine if there is convergence, differences or some combination. Some authors refer to this comparison as confirmation, disconfirmation, cross-validation or corroboration (Creswell, 2009:213). The following quantitative data were collected through learner spelling activities, learners' questionnaires and teachers' questionnaires. The qualitative data were collected by scheduled interviews for principals.

5.9.1 Corroboration

Both teachers and principals mentioned that multi-grade teaching is very difficult and demanding in terms of planning for more grades, teaching more classes and assessing

and recording marks. This idea is corroborated in the literature review (see literature review, Section 3.3:54). The principals complained that learners whom they taught were disadvantaged in the sense that the principals were always away to circuit offices, meetings and did administrative work (see literature review, Section 3.3:54). Learners taught by principals lost on learning time as the principals are away on other duties. Principals also mentioned that they did not have multi-grade training and support (check p.44 literature review). It was pointed out by principals that subject advisors did not visit multi-grade classes, they came to check if teachers had completed certain forms correctly. Both teachers and principals had a perception that subject advisors did not visit multi-grade classrooms as they were not conversant with multi-grade teaching and learning strategies. They suggested that subject advisors should be trained in the multi-grade pedagogy.

5.9.2 Confirmation

The results that peer tutoring was a better teaching and learning strategy were confirmed by the statistics (see Table: 5.21 page 131-132). The experimental schools performed much better than control schools. Although control schools' post-tests were better than their pre-tests, they showed improvement even though they were not on peer tutoring intervention (see Table: 5.7 page 113-114). The results revealed that some learners could not read or write. Even though most learners expressed their enjoyment at participating in the peer tutoring intervention; this could have been the input which was the reading material which had a lot of pictures which learners had to discuss with their peers before the reading. Socio-cultural theory explained that learners also learnt from pictures and this could have happened in the intervention. Learners could determine what the story was about from discussing its pictures with a knowledgeable peer. Krashen on second language acquisition mentioned that for learning to occur, the $i+1$ should be challenging but at the same time it should be achievable. The reading material was challenging enough as most learners could read and spell correctly. Peers were very supportive and eager to assist tutees. With the

input, most learners moved from ZAD; a level of knowing and managing reading alone to where they could learn new words and meanings; the ZPD. Spelling gradually improved as they managed to apply their reading knowledge to other subject areas. As peer tutoring requires scaffolding and interdependence, one could see and hear from teachers that specific learners who had been difficult previously could work with others without disrupting lessons. The tutoring intervention kept learners focused on the tasks. Learners kept on asking when the researcher would come back with more materials for them to read.

One aspect in the peer tutoring was that learners' attendance improved. In school C, the teacher reported that their learners' attendance had always been good even before the peer tutoring because the school worked very closely with the local policing forum. So, their learners were never absent unless they had a valid reason and permission.

5.10 CONCLUSION

This chapter discussed two sections of the quantitative and qualitative data analysis. The quantitative data analysis revealed that learners in the experimental group and had undergone peer tutoring intervention performed much better than those in the control group. Although the control group's post test results had improved from the pre-test, this could be attributed to learner maturation and the fact that teachers taught spelling which they did not do before the study as they did not have reading material. All four grade 5 teachers had been provided with reading material for the study. From the learners' questionnaires, the results revealed that most learners did not mind sharing a grade with another group but others insisted that the grade 4s were rather disruptive and not focused which disturbed teaching and learning. Most learners indicated that they liked peer tutoring and would like to continue with the intervention. Qualitative results from teachers revealed that they had not been trained in either multi-grade teaching or learning strategies in both pre-service and in-service training workshops. They indicated the need for training. Schools that had undergone peer tutoring

intervention expressed satisfaction with its results as they could be seen among their learners' ability to read and spell. One principal indicated that grade 5 learners competed on reading the bible at assembly every Friday. Teachers indicated that multi-grade was demanding in terms of planning, teaching and assessment. Principals explained that they were overloaded as they taught a class too. All teachers expressed the need to be work-shopped on multi-grade teaching and learning strategies but also indicated that their subject advisors needed to undergo the same training as at present they were unable to support multi-grade teachers in the classrooms. There were some learners who could neither read nor spell at grade 5. This was a cause for concern.

CHAPTER 6

SUMMARY, LIMITATIONS, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER STUDY

6.1 INTRODUCTION

The study investigated the implications of peer tutoring as a teaching and learning strategy on Grade 5 multi-grade learners' performance. To achieve this, there was a thorough discussion on the body of scholarly knowledge on multi-grade teaching and peer tutoring. The discussion was followed by the research methodology, the data presentation, analysis and interpretation. This chapter consolidates the study through the following subheadings: summary, limitations, recommendations and suggestions for further study.

6.2 SUMMARY

The study is summarized in terms of the research questions, literature review and empirical findings.

6.2.1 How the Study Responded to the Research Questions

Research question 1. What is peer tutoring? How do teachers use it in multi-grade classrooms?

Both experimental groups performed better than the control schools. This is indicated in Tables 5.14 p.121 and 5.16 p. 124. The results indicate that there was a positive

effect of peer tutoring as a teaching and learning strategy. The literature review mentions that when teachers use peer tutoring retention of ideas in learners is 90% (see: 2.4, p.33).

Research question 2: What are the teaching and learning strategies that teachers employ in multi-grade classes?

Both teachers and principals indicated some knowledge of multi-grade pedagogy in the sense that they all managed to use some kind of grouping during teaching and learning. They also managed to do whole class teaching, meaning, they could teach all learners together and varied the assessment activities according to grade levels. They were aware that in order to manage their grades, they had to use mixed ability grouping or paired work. However, most teachers did not know about the concept of peer tutoring and its application. Although they attested that they used peer tutoring in their classroom, few of the teachers knew how to apply peer tutoring in their classes, but it was unstructured peer tutoring. It was applied incidentally, when the need arose. Yet, the literature says that peer tutoring is one successful teaching and learning strategy which can be utilized in multi-grade classes with positive gains as learners collaborate, share and assist each other. It is a strategy that can relieve multi-grade teachers to focus on other curriculum issues than be divided themselves between two grades (see: 3.8.1).

Research question 3: How does peer tutoring contribute to learner performance?

Teachers who implemented peer tutoring intervention mentioned that it worked well, so much that they saw positive gains in their learners. One teacher mentioned that he had started a peer tutoring spelling activity in his community. One principal indicated that at their school, they had Friday assembly with bible reading. He mentioned that due to peer tutoring, learners come in large numbers to read at assembly.

BPMG2:

"Friday strategy works well for us. Learners volunteer in numbers to come and read. Every morning learners read bible at assembly, we can see results, and learners have confidence. The spirit to be there for one another is there".

One of the properties of peer tutoring is that; a knowledgeable one helps the learner who does not understand so that he can reach ZPD or achieve acquisition. This aspect is more emphasized in the literature review by Vygotsky (see:2.2.2 p. 25).

6.2.2 Summary of the Literature Review

The literature review revealed several issues: that learners learning through multi-grade teaching can achieve the same results as mono-grades if teachers have been trained in appropriate and effective multi-grade strategies (see: subsection 3.5 p45).

It was also indicated in the literature that multi-grade teaching is demanding in terms of lesson planning, teaching and learning, assessment, marking and recording. Peer tutoring is based on Vygotsky's ZPD. This is the level that a learner can reach if he is assisted by a knowledgeable one assisting another to arrive at ZPD. This is the level of learning which the learner, by himself would not have achieved. The knowledgeable learner provides scaffolding to assist the other learner to learn the new material (see: sub-section 2.2.4 p. 29).

There is need for comprehensible input in the form of texts for learners to read and spell. Comprehensible input should not be very challenging for learners as this would discourage them from reading or spelling. At the same time, input should not be too easy for learners as it will be boring. Thus, comprehensible input should be just one level above the learners' present ability; what Krashen calls input $i+1$ (see: sub-section 2.3.4 p.33).

For successful learning to occur, the teacher has to provide a warm welcoming atmosphere for the learner. This will allow the affective filter to lower, thus allowing more comprehensible input to pass through the LAD. On the other hand, if the atmosphere is unacceptable for the learner to learn, then the affective filter closes or forms a screen to prevent any learning to take place (see Sub-section 2.3.5.p.34). For successful peer tutoring to occur, it must be structured, planned with objectives (see Subsection 3.9 p.73). The teacher has to select and match tutors and tutees, train them for the tutoring, prepare appropriate material for learning and implement the tutorial sessions, provide feedback, evaluation and record learners' scores in order to measure the impact.

Peer tutoring lends itself to multi-grade teaching and learning as these classes utilize groups of varying abilities. It also relieves the multi-grade teachers in order for them to focus on individual learners' needs and curriculum issues (see Sub-section 3.6.3.p. 56).

6.2.3 Summary of the Empirical Findings

(See subsection 3.9) The quantitative and qualitative results revealed that peer tutoring is an effective multi-grade teaching and learning strategy for learner performance. Learners in the experimental group, who underwent peer tutoring intervention, performed much better than the control group. The spelling for both experimental and control groups increased even though the control group did not undergo peer tutoring.

While majority of learners liked spelling, a few learners did not like spelling activities at all. The researcher assumes that these are those learners who could not read or write. In some schools, the peer tutoring intervention motivated learners to attend school and they enjoyed working together and helping one another (see 3.8.4.p.67). Many learners reported that they liked peer tutoring program. This was a response from almost all learners even those who could not read or write. Perhaps the stories were interesting as they had a lot of pictures to support learning.

Effects of Peer Tutoring

Teachers whose learners had undergone peer tutoring intervention expressed satisfaction that their learners' spelling, reading and writing had improved (see 3.8.4.p. 67). One teacher indicated that he was continuing with the peer tutoring programme. Both teachers indicated that they were prepared to teach other teachers on how to use it. One principal indicated that at his school learners now compete to read the bible at assembly in either English or Tshivenda because of the successful peer tutoring programme at his school CPMG2 p.152. One teacher mentioned that there was less fighting, learners were more focused.

Teaching and Learning in Multi-grade School

Most learners revealed that they liked to attend a multi-grade class as they learnt to share and help one another. A few of them did not like to share a class as the younger grade learners were disruptive; they fought and disturbed the teaching and learning. Most participants indicated that they did not like to teach in multi-grade schools.

Pre-service and In-service Training

Pre-service training should train prospective teachers not only on mono-grade but also multi-grade teaching and learning strategies.

All teachers indicated the necessity to be trained on multi-grade teaching and learning strategies as it was a unique situation. Training during workshops was rather short and summarized by trainers, teachers felt they needed more time for training. For effective teaching and learning in multi-grade classrooms, in-service training that is focused on multi-grade pedagogy should be provided for both teachers and principals.

Teaching and Learning Strategies

The results also revealed that multi-grade teachers utilized some teaching and learning strategies especially grouping; although none of them used structured peer tutoring,

some teachers used unstructured peer tutoring in their classrooms even though they did not know the name of the strategy. Mixed ability grouping is utilized more as teachers have realized how much learners can learn from one another (see 3.6.1. p. 52). Grouping is particularly shared reading, paired reading, and for solving other problems in learning. The results indicated that teachers needed focused multi-grade training. They also indicated that the subject advisors should be trained in multi-grade teaching as at present they were unable to assist and support them in classrooms.

School and Classroom Organization

All participants agreed that multi-grade teaching was demanding in terms of classroom management, planning, teaching, assessment and recording.

All principals complained about their heavy teaching workloads which were aggravated by their administrative responsibilities. As the schools are far, more time is spent on travelling to circuit offices meanwhile their learners have no one to teach them; sometimes the rest of the teachers have to share the principals' grades to keep the learners busy; not that actual teaching takes place; this affects learner performance negatively.

Curriculum and Planning

All participants indicated that they worked and planned together especially at the end of term, year and after assessment results. Participants indicated that they were not trained in CAPS for multi-grade teaching.

Participants complained about insufficient teaching time which was to be divided between two or three grades. The result was, the teacher tended to focus on those grades that have to write some external evaluations, which left him no time to attend individual learners; this impacted negatively on learner performance.

Some teachers expressed the need for teaching and learning materials particularly for Science and Social Studies in Intermediate phase and teaching aids.

6.3 LIMITATIONS OF THE STUDY

Some limitations of the study should be noted. The first limitation involved the administration of the testing as the researcher administered both pre-test and post-test. It was not feasible to have all four schools write both pre-test and post-test on the same days because of the distances among them. The differences in test administration might have created discrepancies in the spelling scores of the learners.

A second limitation of this study was that it was limited to four schools within one district Vhembe, and the population was limited to native Tshivenda speakers within these schools. Therefore, the generalizability of the study can only be made to populations which are similar to the ones from which this study was drawn from.

A third limitation was that the multi-grade grade combinations varied, from school to school and from teacher to teacher depending upon teacher specialty. In one school, Grade 5 learners might be combined with Grade 6s while in another school the Grade 5s would be combined with Grade 4s for both control groups and treatment groups.

English First Additional Language (EFAL) in an educational study like this, much of the learning depends on the learning environment and the teachers' expertise, the grade combinations and level of teaching may have affected the achievement gains of students.

The fourth limitation was the reluctance and resistance with which the researcher encountered trying to access information of the particular statistics and grade combinations from multi-grade school principals. This was despite the fact that the researcher had secured permission from both the Senior District Manager and the circuit managers, who had actually provided the lists of schools, the names of principals and their contact numbers. This might have affected the population of multi-grade

schools and the sample. The other limitation was that some former multi-grade schools had received mobile classrooms at the beginning of the third quarter; that changed the status of those schools from being multi-grade to mono-grade and thus reduced the population sample.

6.4 CONCLUSION

Peer tutoring as a teaching and learning strategy can be used in multi-grade situations and yield positive learner performance. New teachers that are posted to multi-grade schools should have received pre-service training on multi-grade pedagogy. Both teachers and principals need in-service training that is focused on multi-grade teaching and learning strategies. They also need to be supported by subject advisors for their lesson planning and its implementation and assessment in their classrooms during teaching and learning. More teaching and learning materials for various grades are needed to facilitate effective teaching and learning. Most teachers teaching at multi-grade schools do not want to teach at these schools. Both teachers and principals felt that multi-grade was demanding and they were not fairly treated by the department as specific training was not provided to assist them in their situation. The suggested peer tutoring model is intended to assist multi-grade teachers to initiate a peer tutoring programme in their schools. One principal mentioned that multi-grade was a problem that was not going to go away very soon, he further said it was necessary to learn to manage it through appropriate teacher training and classroom support.

6.5 RECOMMENDATIONS

The Department of Education (DBE) has to develop a policy on multi-grade teaching; this would allow the multi-grade teaching to be recognised in the country and be accommodated in curriculum implementation.

It (DBE) also has to develop curriculum materials that are suitable for multi-grade teaching and provide multi-grade training for both subject advisors and teachers.

The national government should advise all institutions of higher learning to infuse multi-grade modules in pre-service training in all phases, from Grade R to 12 to prepare student teachers to teach in multi-grade schools. There is no province in South Africa that does not have multi-grade schools. Peer tutoring and other multi-grade teaching and learning strategies should be introduced in multi-grade teacher training modules. There should be workshops specifically for multi-grade teachers so that effective teaching and learning can take place.

6.6 SUGGESTIONS FOR FURTHER STUDY

Although the World Bank, UNESCO and UNICEF have funded a number of researches particularly in developing countries, most of the research was to assist countries to establish and develop multi-grade schools in order to offer Universal Education for All and thus strive to achieve Millennium Development goals (MDGs), especially goal number two.

One of the issues raised in research on multi-grade teaching was that much of it focused on quantitative research. It is suggested that some qualitative and mixed methods research studies be done to address issues on multi-grade teaching and learning.

More research needs to be done on teaching and learning strategies that are effective for multi-grade teaching.

Another potential field of research would be the effects of cross-age tutoring in multi-grade classrooms. This is important and convenient as multi-grade classes consist of

several grades in one classroom; moreover, most of the time such learners have to work together in various groups.

Peer tutoring as a teaching and learning strategy should be shared with all multi-grade teachers during in-service training. Teachers who participated in the intervention indicated their readiness to assist in training fellow teachers on the strategy.

Principals who participated in the study emphasized the need for a multi-grade forum to be established so that they could meet and share multi-grade issues. Participants also indicated that for all practicing multi-grade teachers, some qualifications like a certificate or diploma should be offered by distance learning.

6.7 PROPOSED PEER-TUTORING MODEL AND PROCEDURE

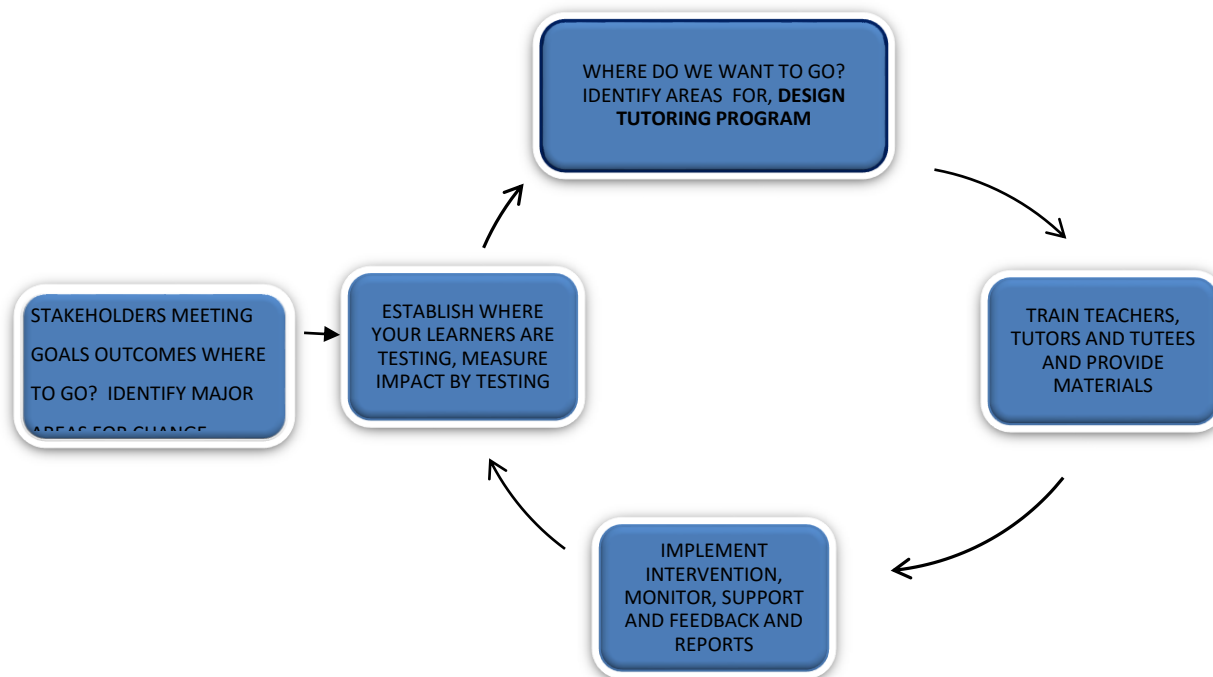


Fig. 6.1: Proposed Peer Tutoring Model and Procedure

6.7.1 Peer Tutoring Procedure

The following is a proposed model of how one could develop a peer tutoring intervention. These are flexible and need the teachers to adjust them for their specific Grades. It is important to start small using few learners within your classes.

6.7.1 School acceptance and support

Peer tutoring is not an isolated activity, it takes place within a school and must be understood, accepted and respected by the community, from the principal, School Management Team (SMT), HOD, other teachers and parents as it will affect the whole school, the time tabling and other activities within the school. Thus it is very important to rally support from all these stakeholders from the beginning in order to get a buy in,

support and acceptance. The first step in implementation is to establish this core partnership (Chipman, Roy and Naylor, 2001:6)

Before deciding to implement a peer tutoring intervention, it is important to convene a stakeholders meeting with all who would contribute to and benefit from the program. Such stakeholders might be the principal of the school, SMT, HODs and teachers, technical support team and the feeding scheme people, the School Governing Body (SGB) and families of children who are likely to participate in the tutoring program.

Define the tutoring program's overall mission. A statement should describe what the program intends to do to address the identified needs. The school's mission statement guides planners as they design, implement and evaluate the program. For example, the mission of the peer tutoring is to motivate and encourage learners to read and spell correctly.

Planners have to set goals and objectives: the goal of the program will be written in general terms. This should be aligned to the curriculum document. Objectives state what the peer tutoring will achieve.

1. Talk about the peer tutoring process and what it entails.
2. Explain the plans, processes for peer tutoring including how tutors and tutees will be selected and trained. Ask for opinions and advice.

6.7.2 Create tutoring program partnerships

It is necessary for the school and stakeholders to discuss how to create partnerships with certain offices and bodies. Some of them may be the following:

The circuit office as the circuit manager is the overall overseer of schools under his jurisdiction, needs to know of all activities that take place within them. Also, it would be important to keep him informed on a regular basis about the learners' progress

during the tutoring sessions. The Phase subject advisors work closely with teachers at schools. A university or college; a relationship with such an institution would assist the school in terms of research, data analysis and interpretation of peer tutoring results. Businesses would assist the school with funding or support of some materials. With regard to the tribal office or the farm owner on whose land the school is situated, communication is necessity for the efficient running of the program. The core team should communicate program details every step of the way (Chipman, Roy and Naylor, 2001:4).

6.7.3 Design the peer tutoring program

The program design describes how the tutoring will carry out its mission in order to achieve its goals and objectives. During the program design, teachers will need to explain how learners who need peer tutoring will be identified. For example, this can be achieved by looking at learners' term performance, class teachers' reports, or some external performance like Annual National Assessment (ANA) results. The program has to have a date when pre-test and post-test will be written by learners in order to assess learners' skills at entry and at end of program. It is advisable to use a reading or spelling test that is accredited or to design one if teachers feel the available ones do not meet their needs, try to ask for inputs from subject advisors, colleges and some researchers in the field to interrogate the test before you finalise it for the sake of validity. A very important aspect would be where and when the peer tutoring session should take place. A library or a hall is suggested (Chipman, Roy and Naylor, 2001:6). In a multi-grade classroom, peer tutoring works well as the classroom consists of learning centres. One centre can be demarcated for peer tutoring sessions. As classes tend to be disrupted later during the day, it is advisable to have the peer tutoring session as early in the morning as possible. State clearly when and where peer tutoring will take place and a timeframe, for example, 40 minutes for a period of six consecutive weeks. Teachers need to explain how learners' tutoring progress will be monitored, supported and measured. Teachers have to develop score sheets where records of learners are entered every week; these will be used by the teacher and the school to

report to parents and other interested stakeholders. Teachers have to plan how tutors and tutees will be trained and oriented by setting aside some training days. Finally, they have to develop a monitoring and evaluation tool of the tutoring program's effectiveness in meeting specified goals and objectives.

6.7.4 Develop or adapt education materials

Teachers should develop and prepare materials from suitable reading/ spelling materials suitable for the developmental stage of their learners. Alternatively, they can select a specific research based reading/spelling program that has been proven successful with children whose reading/spelling skills and needs are similar to theirs. The model should include structured, yet flexible format for tutor sessions. The reading/spelling program should be in line with departmental curriculum. Teachers can adapt the program to suit their learners' needs; maintain a consistent structure so that learners should stay focused on meeting the set goals and objectives. It is advisable to prepare 2 to 3 week's materials in advance. This will allow the teacher time to focus on the actual peer tutoring process in order to observe and assist learners without stressing on sufficiency of materials during a session. Furthermore, it is important to package reading material, spelling lists and record sheets together; label and keep safely.

Both tutors and tutees usually want some materials to take home to read for parents. This is a very good idea as it allows teachers to give learners follow-up materials which can be done with families and it encourages them and their parents to see what they are learning. Encourage them to bring materials back to school for safe keeping and future use.

6.8 IMPLEMENT THE PROGRAM, TRAIN AND PROVIDE SUPPORT FOR BOTH TUTORS AND TUTEES

During the peer tutoring process, the HOD and teachers should:

Meet formally and informally among themselves to discuss the program and learners' progress. Chipman, Roy and Naylor (2001:9) suggest two essential aspects that make most peer tutoring programs meet its goals and these are: training session of both tutors and tutees before the session begins and a feedback session at the end of the sessions.

At some of these meetings they will meet with learners; encourage tutors and tutees to talk about the process. They must ask both (tutors and tutees) to also talk about peer tutoring with their parents. The teacher will meet frequently with tutors and tutees either separately to avoid confrontations of some pairs or together to discuss common issues. Teachers should provide on-going training and supervision through on-site observation and feedback on focused skill development. The amount of supervision and support of peer tutors and tutees will depend upon types of activities they do and the amount of training they have had. This will depend on what they do and how they do it in class. Teachers should have support activities they plan to use in the project. If any additional materials are needed; it will be determined by the pace the learners are working at. If teachers maintain one-to-one meetings of peer tutors and tutees, group meetings to discuss common problems, observation of peer tutors and tutees during activities and reports on a monthly basis, the program will run smoothly.

6.9 COMMON PROBLEMS DURING PEER TUTORING INTERVENTION AND SOME SUGGESTIONS

Both teachers and learners encounter problems during this process.

1. Disruptions of peer tutoring intervention on days it runs. If this persists, the affected days may have to be changed for others.
2. Tutees' resistance to learn especially if the tutor is younger or smaller in stature to the tutee; try to exchange the tutor or tutee.
3. Tutors put pressure on tutees or even threaten tutees to perform; this has to be discussed during meetings to resolve the issue.
4. Lack of interest in peer tutoring among tutors and tutees; restlessness, lack of focus due to longer program – this might be an indication that the tutoring program has been running for too long and needs to end.
5. Lack of patience on tutor's side; this is very sensitive and needs to be discussed between teacher and each group or even specific pair alone.

6.10 FINAL THOUGHTS

Peer tutoring is one of the most effective and interesting interventions. Some of the issues and questions you may face as you plan and implement a peer tutoring intervention are listed below. There are no right or wrong answers for the project. However, there are answers that are right for your project.

1. If and how tutors should be rewarded: Certificates, medals or badges?
2. How long should the project run? Four to six weeks?
3. How should the project be evaluated?
4. When do you stop?
5. After peer tutoring what is the way forward?

Based on Gordon, E. E. 2008. Five Ways To Improve Tutoring Programs, Phi Delta Kappa, Vol.90, No. 6, February pp440-445

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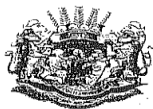
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APPENDICES

APPENDIX A

LETTER OF PERMISSION: DISTRICT SENIOR MANAGER



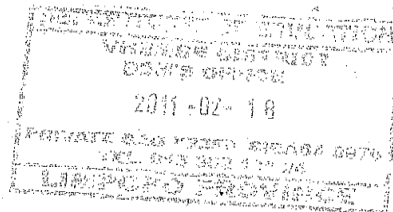
LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

VHFMBE DISTRICT

Ref: 14/7/R
Enq: M.S. Matibe
Tel: 015 962 1029

Mrs. S.K. Muthambi
University of Venda
Private bag X5050
Thohoyandou
0950



REQUEST TO CONDUCT RESEARCH IN MULTIGRADE SCHOOLS IN THE DISTRICT

1. The above matter bears reference.
2. Your request for permission to conduct research in multi grade schools in the district on the topic: Implications of peer tutoring as a multi grade teaching and learning strategy on learner performance in Vhembe and Waterberg districts has been approved.
3. You are kindly requested to observe the following conditions:
 - 3.1 Inform the circuit Managers and principals of affected schools prior to your visits.
 - 3.2 Your interactions with educators and learners should not disrupt the normal teaching and learning activities.
4. Wishing you the best in your intellectual endeavors.


DISTRICT SENIOR MANAGER

18/02/2011
DATE

Thohoyandou Government Building, Old Parliament, Block D, Private Bag X2250, SIBASA, 0970
Tel: (015) 962 1313 or (015) 962 1331, Fax: (015) 962 6039 or (015) 962 2288

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APPENDIX B

1. TRANSCRIPTION INTERVIEW BETWEEN RESEARCHER AND SCHOOL

PRINCIPALS: SCHOOL A: APMG1

The school runs from a crèche to Grade 9. It is a big school with three full phases: foundation, Intermediate and senior phase and it is situated on a farm. It is the only proper farm school among the four schools. The principal is around 51+ in age.

Principal: my roles are to talk to everyone on the farm especially farmers. One farmer was willing to help with building a storeroom, farmers supplied us with papers and toners, and we would not have been able to run our exams had it not been for them, another farmer donated these water taps.

I teach Grades 4, 5 and 6 Mathematics for all three grades.

I have taught for 25 years in a multi-grade school.

I need to be trained in multi-grade, how can you teach without understanding, it's not manageable.

I manage the school, the crèche it is the only school with a crèche, there are many learners; in grade 8 are 38 and 9 they are combined and are 58. The school became combined in 2007, the school is not separated: the combined primary and secondary creates problems teenage behaviour is copied by primary school learners.

Curriculum issues

We've capable teachers like any other school, the problem is that all teachers don't stay on the farm, come ten past two, the bus arrives and we all leave the school we can't play with learners, supervise studies.

The foundation phase teachers manage to plan together, but we don't manage in the other phases as we all teach across all phases. The crèche is managed by someone the parents agreed to hire.

Curriculum needs met?

Our school is different one doesn't get a school so resourced as ours, we have an office library. The biggest problem is personnel we can't have a library serving learners only, it must also serve the community, I'll write a motivation for someone to man the library and community.

Inset

Last time we had inset was 2009 with Kgatelopele. The department is not doing enough At one multi-grade forum I was asked to write a letter to convince circuit people about our situation. When you tell them that this won't work in multi-grade schools, some people think I'm cheeky. The letter helped especially when some multi-grade schools faced closure, I was called to Polokwane to explain about contracts that the department signed with the farm owners. I went around with advocate xxx to get contracts signed and things started moving. The department needs us to agitate in order for things to be done for multi-grade, we must do things that attract attention, we need a forum, we need to act differently to attract attention.

Inset what should be done?

Curriculum is changing, we can't be managing multi-grade classes with knowledge from Kgatelopele, I'm talking about new staff members who need training, let's have Inset once or twice in a year, there's need for inset for multi-grade only, let's have training for CAPS general and CAPS for multi-grade only.

Problem of English: English is becoming a problem for all learners, the problem started when learners learnt everything in vernacular in the Foundation phase. I'm teaching Grades 4, 5 and 6 Mathematics, Grade 4 learners started learning English and

everything through English at Grade 4. This was a very major transition from Venda to English, that's the problem, but now it's better they start English at Grade R and so on.

Teaching and learning

During Mathematics Grade 5 and 6 are grouped into groups, we combine the two, we keep Grade 4 separate. Sometimes we do grouping in pairs, when we do project we do groups according to who stays nearby who. If we may be do additions of proper fractions, when we do activity, the Grade 5s will do it from the activity. Multi-grade is not a bad thing the Grade 4 will see concept at their own level.

Staff relations: My staff work as a team, I'm impressed. Problem they are teaching from Grades 4 to 9. What worries is, I don't have staff.

If we had staff our results would improve by 20%.The school is good, this is a well - established school with foundation, intermediate and senior phase. We have a teacher from Ha-Tshivhase, you can imagine what time she wakes up at as she has to be here at 8 o'clock. We don't have much time after school, come 14:10 we leave, can't give learners extra time to read, library or play with them, we are the only source of information, parents are illiterate when you send a child home with homework, it comes back not done, we use learners' time in the mornings when we arrive. Mornings 5 minutes before class we resort to steal learners' time to discuss. Teachers don't grumble, they say everything is OK. When some of us raise issues it's like we are coming from the other side of the country.

School organization and administration

I have two classes: Grade 4 separately and Grade 5 and 6 combined, Grade 4 is on its own. We are trying to fix the language issue. My Grade 5s sit separately from grade 6s but in groups, grouping depends on what we are doing, for project, I group them according to who stays where, so that they can work together, where they stay, on which farm, those who stay nearby are grouped together.

Whole class teaching, I use say to teach addition of proper fractions, for the activity, they go to separate textbooks, then Grade 5s get their activity from their textbook the same with the Grade 6s. Multi-grade is not a bad thing, in intermediate phase concept is the same, Grade 4s will get its own level of work, It's only if you are negative, it makes us see the positives.

Staff development

Teamwork, my staff work as a team, I'm confident about that, what worries me is these people work too much, if I can get staff for Intermediate and senior phase, foundation phase from Grade R to Grade 3, is good, we don't have a problem, if I was having teachers, now they teach across all phases for e.g. EMS from 4 to 9 and also teach Agriculture, Technology etc...

We have a different challenge, time, our results would change by 20%. Talking of a teacher from xxxx to a farm school and back, when she gets here she's tired, she's a mother, woman, a wife, we don't talk of lateness because even the principal is late, we board the same bus.

Working together to plan curriculum: the fact that we don't have time is a problem, the foundation phase teachers can do that because school ends at 12 for them, all of them are new except one whom we agreed to share with them, we don't plan together, grade R is manned by an unqualified teacher who the parents agreed to pay, we can't plan together, when we get off at xxxx, some proceed to xxxx and and Ha-Tshivhase. Morning 5 minutes meeting, we steal the learners' time. The problem with teachers is they say everything is OK, when I said that that won't work for us in multi-grade schools at a meeting, I was asked am I from the other side?

Department is not planning for multi-grade, subject advisors come here and ask for a form they gave to the teacher at workshop to see if s/he is filling it correctly, no they do it waiting in my office, they are interested in the form where the marks come from,

they don't want to know, they want record, ask me to sign here or there, I sign, they go. Those people should be unearthing things in the classrooms and alerting the department what's happening.

Allocation: some teachers converted from secondary to primary, teacher XXX was a history teacher, he converted to suit our needs, and allocation is according to needs.

Parental involvement: parents are involved, they are afraid of a fine, they decided among themselves that who-ever doesn't turn up for the meeting must be fined. At end of second quarter, we held a parents meeting where they came to see learners' work parents said they should have been called earlier, parents are concerned.

Ancillary staff: Grade R teacher is employed by SGB, except we have cooks paid by department, we are fortunate we identified Mathematics teacher. Principal who is a Mathematics teacher is disaster, he sat in my place as a Mathematics teacher, he came here through that tent, and they are church people visiting the farmer.

Over and above my teaching I work about 3 hours of school work, I go to the shops to buy things for the school, donations for school, I think of how I can get the school to be funded.

Pre-service and multi-grade: no, I don't think pre service trains teachers for multi-grade teaching, we have never had new teachers talking about multi-grade, we did a bit at Tshisimani I'm also a product of multi-grade, but ours was shifts some came in the mornings others after 10, when the concept was introduced, where all learners are in one class at the same time, I don't think the university can train teachers for multi-grade, colleges were the ones who did.

Department should see to it that multi-grade is accommodated in training, reopen colleges to train the department should be aware of the 30% of the total learners in

multi-grade schools, why they don't cater for them, because these schools are theirs make it compulsory or specialized courses, but this needs to go to a bigger forum.

Advantages: Be positive, and then you'll see change, not when you are confronted with a situation, you come to the principal every day, and you won't see the advantages. It comes from you, see the positive talk to teachers and I advise them and support them, I can't see them all the time.

Disadvantages: Teaching eight groups that are not the same, in one class, while you teach this group the others make noise. Preparation is very vital if you are a multi-grade teacher, you need to have something to barge from, be very prepared because learners will embarrass you.

Comment: Multi-grade is not a difficult issue if you prepare, but it becomes a problem for someone who goes to class unprepared. There's a school that has grade R to 7 and it's manned by two people. Teaching foundation phase and intermediate together, having to plan for so many learning areas, yes, this is when I think the department is unfair, you can't allocate multi-grade teachers on a teacher-learner ratio, they forget about multi-grade, I wonder if people up there know what a multi-grade is, you are not given forum to talk about multi-grade and they don't explain about multi-grade.

2. TRANSCRIPTION OF INTERVIEW OF PRINCIPAL SCHOOL B: BPMG2

General

There are five teachers at this school, which is situated in a village; principal is 51+ years old. I teach Grades 3 Mathematics, Life skills, English and Tshivenda.

I've taught in multi-grade schools for 5 years, no training in multi-grade, yes I think it's necessary for one to be trained in multi-grade teaching, the reason is most of the time, I don't know what or how I'm supposed to teach in a multi-grade situation. It's a

challenge for me to teach 2 classes in one with my other responsibilities, my other responsibilities are: controlling everything at school, SGB, nutrition, safety, organize school to be multi-grade school, it became multi-grade school in 2008.

Curriculum:

Challenges of curriculum delivery are we don't really know how to teach multi-grade classes, its difficult and demanding, there is too much work and we can't finish the syllabus, learners suffer especially with me the principal as I go to circuit office and meetings, these children loose out, I'm not there.

My needs: I need to be trained or work shopped on multi-grade strategies, I want to be confident when I teach these little ones.

Inset:

It should be focused on multi-grade not be general as we see when we go for workshops, let it be for multi-grade teaching. When we go to workshops everything is the same for mono-grade classes only, it's like we don't exist, we are not catered for.

I don't teach Grade 5s but we had a problem of staff shortage until this teacher came. It must be challenging for her as she is new in a multi-grade school.

Teaching and learning

Mostly, I use groups; it can be pairs or mixed ability groups so that they can help each other. Sometimes when they read, they work in pairs, shared reading,

I do use peer tutoring but then I did not know the term, I call it pair work, they work in pairs for reading and for Mathematics, they help each other on sums, With home language, some can read but have spelling problem, English is a problem, they are starting to read a bit, it's a bit of a struggle.

Staff relations: Yes, we are working as a team, the staff cooperates, we don't have staff problems, maybe it's because we are few.

We don't have staff challenges, the only thing is, when a teacher goes to a workshop, we have to organize and take over her classes or supervise in shifts, otherwise, learners will disturb others.

We talk about issues, we share ideas, we hold meetings, we are open.

School organization and administration: We try and allocate according to qualification, especially in the foundation phase, in the upper classes, we do subject teaching, where it is possible. It is just that there are too many learning areas.

The buildings are enough; we need more teachers, so that we can use some of these empty classrooms.

Parents are mostly involved; you see we don't have a problem of uniform, When we ask them to come for meetings, most turn up, to collect learners' reports and parents meetings at end of quarter.

We have two ladies that cook for the learners, and a lady who assists as a clerk, but she's not hired by the department.

I spend about three hours outside school to do school work like marking, attending to office issues, parents and circuit office.

Teacher education and professional development

No our challenges are not addressed adequately, you see, these new teachers are not trained for multi-grade but they are trained for mono-grade classes., when they come here, they are really lost, we have to assist where we can.

I think we need some courses or a qualification specific for multi-grade, for teachers who are working, they can develop some refresher courses, they would still help, I think we need to do something about multi-grade now.

Advantages: learners help each other, some are very helpful,

Disadvantages: some learners bully others, but this is not very serious, we stop it,

I think the materials you brought for the grade5s are also helping me; I use them in Grade 2 and 3. Next time we should start this reading and spelling early, and the teacher is willing to share the ideas with us.

3. TRANSCRIPTIONS OF INTERVIEW BETWEEN RESEARCHER AND PRINCIPAL FOR SCHOOL C: CPMG3

General

There are four teachers in the school that runs from grade R to 7. The school is situated in a village. The principal is a male of between the ages of 41 to 50 years old.

I teach Grades 4, 5, 6 and 7. I've taught in a multi-grade school for 5 years. No, I have not received training in multi-grade schools. Yes I think it's necessary for one to be trained to teach in multi-grade school it's not good to do work you are not trained for.

The school was not originally multi-grade, it became one 10years ago. The village is slowly growing and performance of our learners is good. Other responsibilities besides teaching are administration and management.

Curriculum

Curriculum delivery: It's difficult to teach 2 classes at the same time, different matter and being untrained.

Needs: we need resources such as reading books, charts and maps, we have none.

Inset: None, multi-grade is not generally considered in workshops, training is for mono-grade teachers.

Inset improvement: They should consider multi-grade teaching in training. A qualification is important; the situation might not change, because the situation will remain. If curriculum advisors could also be trained in multi-grade.

Challenges at Grade 5: We don't have books, they don't have same Home language novel. We were not told of a common exam, Readers are not the same. One can choose any novel.

Teaching and learning

Learners are organized in groups, in Grade 6 and 7, I give lots of independent tasks, I group them in mixed ability groups with the smart one in the middle. This is very helpful.

Strategies: I use paired reading when I'm in class, to monitor, whole class teaching when I'm not in.

Peer tutoring: Yes I use a lot, learners discuss, come back. Peer tutoring improves teaching and learning, sometimes there is competition.

Reading and spelling: In reading learners stammer, can't read what he's to read. Now all of them can read. Friday strategy works well for us. Learners volunteer in numbers to come and read. Every morning learners read bible at assembly, we can see results, learners have confidence, this brings confidence, applauded, encourage them. The spirit to be there for one another is there.

Disciplinary problems: No in discipline, that's the culture of the school to the classroom, we have very few bullying.

Challenge teaching in multi-grade school: It is very difficult because there's a lot of work expected of you. You have more administrative work, learners forget and time is gone.

Multi-grade learners disadvantaged: Yes and No, if you have manpower, we don't have human resource. There's too much work, teachers burn out, there's no free periods, by afternoon you are exhausted.

Staff relations

Challenges are addressed individually, if it's a number of them, work as team: We sit down as SMT, we brain storm for solutions, talk about our challenges, we motivate one another. Sometimes you have to do somebody's work.

Staff collaboration on curriculum: Workloads are abnormal, this is serious. No teaching resources, teaching aids are needed. School gets very little money, this year it was cut down by administrators, because we are Quintile 3, we get very little money. Yes, we work together, after every quarterly audit, we hold a meeting we discuss, like we realized after departmental Home language exams, some weak learners were identified, given extra reading time, at assembly, they stay behind for extra lessons, they are doing better, they are improving day by day results, reflect and discuss strategies.

Challenges working with staff: None, our number is small, we understand each other. School organization and administration.

Staff allocation: Foundation phase is allocated by qualification, Senior and intermediate phase teachers cut across by qualification, subject specialization.

Classroom condition: The school has out-dated structures, no notice board, overhead projector, not electrified and still under construction.

Parental involvement: Moderate, sometimes they don't come when called, not all are interested in learners' education. When they are called for emergency or quarterly meeting, they turn up in large numbers.

Time spent doing school work after working hours: About 3 hours, I do preparation, marking, comparing tasks from one multi-grade class and schools. The school is better than mono-grade school because multi-grade is small, we go the extra mile. Fill in IQMS, solving problems of the school and of non-teaching staff.

Teacher education/professional development

Multi-grade and pre-service training: No, trying to implement new things, what we were trained does not match what you find at schools.

Solution to address training needs: May be having a college that deals with multi-grade training. Generally, I don't think one can't cope to do multi-grade training while working.

Advantages: doing one work for 2 classes one time. Teaching grades 4and5s same subject, give an activity. There's lots of teaching controlling, marking is less if there are less learners it may be easy to control, diagnose learners' problems.

Disadvantages: When teaching grades 4and5s, sometimes the anticipated results are not seen within a short space of time, sometimes you realize late that learners have not understood an aspect. Other learners are very slow, time takers take longer, you go back and forth. Sometimes you are allocated 4 periods; we need more time to teach.

Changes /improvements in multi-grade: Training of teachers in intervention strategies. Recognize the need to meet, we need to be recognized. They seem to be forgotten schools. We need a forum for all multi-grade teachers to meet. We need a full time manager in a multi-grade school as there's more work, problems, have to go to circuit,

challenge is learners are left behind in your subjects, do abnormal administration work, solve teachers', learners' and parents' problems. Teachers for foundation phase went for CAPS training in English, it was difficult, didn't understand, they mixed.

4. TRANSCRIPTION OF AUDIO BETWEEN RESEARCHER AND SCHOOL D PRINCIPAL: DPMG4

Name of school is school D primary school. It is located in a village. There four staff members. The lady is a female principal of 47 years. I teach grades 2 and 3 all Foundation phase subjects. I have taught in a multi-grade school for 21 years and no I have never been trained in multi-grade teaching.

Need for Multi-grade teachers to be trained

Yes I think it is necessary to be trained in multi-grade teaching because if you don't have the knowledge, you can hinder the process, because it will have impact on one group or both, you will not be able to manage the lessons well. Sometimes you find that one class is lagging behind while the other is moving forward. You need skills to manage the two grades in one class.

My role as principal is to manage school, all jobs in the school, supervise jobs by teachers and support staff.

Curriculum challenges: My challenge is, I don't have enough time in class with learners and administration. Sometimes I am in class presenting a lesson then a parent comes to school, I have to leave the learners to come to office and attend him. When you go to class, learners have forgotten what you were teaching them, they are lost.

Are CAPS resources sufficient? We don't have enough teaching aids provided by the department or NGO structures may be have TVs and DVDs that can be used with other grades.

In-set training: Yes we were trained on the CAPS, but the training was not for multi-grade, it was for mono-grade. It needs more time for training and understanding. Training is for a short time, I assume if they can train us quarterly, may be for 5 to 10 days. They used to train us for 2 days. If they can train us it can be something, training in multi-grade teaching.

Training did not address multi-grade teaching. When you start asking them about multi-grade they tell us that we are teachers, make a reading corner, you have to do teaching aids, they don't go straight to the answer.

In-set assistance to multi-grade teachers: To assist me as multi-grade teacher, In order to help us, the department has to provide another teacher or teachers. But if we are still a multi-grade, the best thing is can give us more support from curriculum advisors.

Do subject advisors come, do they support you in class: Yes they come and observe, most of the time they find fault, no, no, use use kits and criticize, they come to check if we are using kits right, we don't have kits.

Challenges of EFAL: That one is a big challenge because in our Foundation phase, most subjects in Foundation phase are taught in Home language, Tshivenda in our case. When you start teaching English you can see on the children's faces that they are lost, they don't follow me. They have to wait for you to translate into Tshivenda. We were told to go and teach English in English. Don't teach English in Tshivenda.

Classroom organization and management: how do you organize your class: I divide my class into two on the left is Grade 2 near the teacher's table because they are too young to create space and Grade 3 on the right and separate. I used mixed ability grouping and use group leaders. I've seen its working. But at the workshops they discourage us say we must use ability grouping.

Why do you use mixed ability grouping? I used it because I've seen that it becomes helpful. When we come to reading they can help each other, or counting. It is good because when you give them work, you can choose the one who understands to teach or explain to the others. The learners don't want to be taught by someone, they also want to teach others, so they say, so who are you to teach us? I want to teach also tomorrow, so they struggle. They bring healthy competition; they want to read, count. It's easing the work for me.

But when they are grouped by ability, if one group they all don't understand so, they can't help one another they wait for me to come and help them.

Do you work as a team: Yes we work as a team. When I am not here you find that one teacher will take my learners and combine them with hers. She will give them some work, then when I come back, she will show me the work she has done with them. If I am free I she can send my learners to me.

Do you discuss curriculum: Yes we do this during our staff meetings, mostly at end of the year, beginning of the year preparing for New Year or after a quarter when we review results.

What can we do about learners? It doesn't help to grumble, keep on saying CAPS we have to do our work and follow the department.

What would you describe team work? OK! I think it's to work hand in hand with other stake holders SGB, parents and support staff. We once had a school based monitor, she used to help us with meetings, invigilating a test or exam, or controlling class when we are not there and she can look after the learners. She is no more here they terminated the contract, the department. We wrote letters to ask for her, but there was no response.

School organization; work allocation: We don't look at qualification, we allocate by the needs of the school. Most teachers are for secondary school. But they started teaching at primary school. For Intermediate and Senior phase I look at qualification with specialization, say those who specialized in Tshivenda and Geography, I give him Tshivenda and social science, Mathematics and NS

Buildings are they sufficient: No, no, we don't have enough buildings Our structures don't have roofs. They are falling apart, we don't have roofs, even ceiling and zincs are falling apart.

Parental involvement how is it: Eh!! They are still behind they don't engage in their children's work. They come to meetings, they turn out in large numbers but they don't make follow-ups, they come to attend to problems. Parents say you are the one who can do something with my child, you must beat them. I tell them, no we have to come to a joint agreement how to solve the problem. we need to talk together and agree how we can help each the child. They are unable to read and write, 99% of them are illiterate, for homework they reshuffle the responsibility to the teachers. When we look at the village, Ah! most siblings are drop-outs but can read and write, most of them go to the shebeen, some drop-out at Grade 8,9 never been to Grade 11 and 12. They don't have motivation. Motivation starts at home.

Has the school been always a multi-grade school?

I don't know but when the former principal came, it was a multi-grade school because they were five teaching eight grades. I don't know when it started.

Ancillary staff, how many: Yes we do have one, she is a food handler.

What other work do you do and how much time do you spend on school related work: Eh!!! Most of the time, I arrive home at 17h00. Which means after 14h30 I'll be doing school work; sometimes we sit here or I go to other schools or circuit office. Other

duties are lesson planning, planning for activities, may be struggling to do teaching aids and administration.

Professional development: Do you think pre-service training should train teachers for multi-grade teaching? Yes I think so because you will be having the knowledge before attempting to teach it, you know how to tackle it.

For teachers in the field, I think they have to workshop us in the field may be monthly or quarterly not general but specific multi-grade workshops only. They have to call for multi-grade workshop.

What about a specialized course for multi-grade? A specialized course would be helpful. What about a multi-grade qualification?

A diploma in multi-grade teaching with contact twice a week, No if its contact heyi... May be once a week or per fortnight, working towards a diploma.

Advantages of multi-grade teaching? The good-side of it is that you know learners. Say for example I'm teaching Grade 2 now learners progress to Grade 3, I know what part I didn't teach or touch in Grade 2 So, I know what to stress. I try to teach what I didn't do in Grade 2.

What are the disadvantages of multi-grade teaching?

When you introduce a lesson, you start from the known to the unknown, once they see that you are teaching say, Division; they switch off. They tell you we know it its division. They don't listen when I tell them but this lesson we are moving on like say it is long division, they just argue that it's the same. You end up with only few learners listening to you and when they get the sums wrong, they say I'm being difficult.

The other disadvantage is that you as a teacher you can't finish the syllabus. You can touch half part Grade 2 and half Grade 3. When Annual National Assessment comes, it covers all the work for the grade and learners don't know the answers.

What are your advantages as a multi-grade teacher?

I know more about the different curricula and teaching in different grades. I can teach across grades when given either grade 3 or 4 in a mono-grade I don't have problems.

Your disadvantage as a multi-grade teacher?

A lot of work and it is time demanding.

Challenges in multi-grade school?

Attitudes of both teachers and learners. Teachers always complaining that there's too much work, can't do it, work too heavy for me. That saying is boring. If teachers can change their attitudes first, that can pick up the morale of learners prepare more, teach, praise and encourage them.

Are multi-grade learners disadvantaged?

Yes, because I said earlier you can teach half and half work in a grade they are taught only part of the work or half of it but when ANA comes, it covers everything. In a way, they are disadvantaged.

THANK YOU VERY MUCH!!!

APPENDIX C

LETTER OF INTRODUCTION

School of Education
Department of Professional Studies
Private Bag X5050
Thohoyandou
0950
Email: muthambis@univen.ac.za;
Work: 015 962 9089;
Mobile: 076 205 2355;

My name is Salome, Kolobe Muthambi, I am a registered student of University of Venda. I am conducting research for the purposes of obtaining a Doctorate degree in Education. My area of focus is that of peer tutoring as a teaching and learning strategy in multi-grade schools. The research is an intervention study, involving Grade5 teachers and their learners. Peer tutoring is a strategy that can assist a multi-grade teacher and learners to manage their work while coping with two or more groups of grades in their classrooms. I would like to invite the grade 5 teacher and learners to participate in this study.

Participation in this research would entail completing some questionnaires. The questionnaires consist of one typed page which will take 10 minutes of your time. Participation is voluntary, and no person will be advantaged or disadvantaged in any way for choosing to participate or not to participate in the study. All your responses will be kept confidential, no information that could identify you would be included in the research report. The questionnaires will not be read by any person, other than myself. You may refuse to answer any questions you would prefer not to, and you may choose to withdraw from the study at any point.

If you choose to participate in the study, please complete a consent form that will be attached and return it with the questionnaire. Please do not hesitate to contact me for any questions that you might have. My contact numbers are: Mobile: 076 205 2355, Work: 015 962 8227 and email address is: muthambis@univen.ac.za.

Kind regards

.....

S. K. Muthambi

APPENDIX D

The Principal: Consent Form

Consent Form to Conduct Research in the School

I, the principal of Consent to staff of Completing the questionnaires designed by **Salome Kolobe Muthambi** for her study on: **The Implementation of Peer Tutoring as a Multi-grade Teaching and Learning Strategy on Learner Performance**. I understand that:

- Participation is voluntary.
- As a school we may withdraw from the study at any time.
- No information that may identify the school will be included in the research report, and my responses will remain confidential.

Signed:

Date :

APPENDIX E

The Participant: Consent Corms

Consent Form for Interviews and Questionnaires

I, consent to completing the questionnaires and interviews designed by **Salome Kolobe Muthambi** for her study on: **The implementation of Peer Tutoring as a Multi-grade Teaching and Learning Strategy on Learner Performance**. I understand that:

- Participation is voluntary.
- As a school we may withdraw from the study at any time.
- No information that may identify the school will be included in the research report, and my responses will remain confidential.

Signed:

Date :

APPENDIX F

The Parent: Consent Form

I, consent to my taking part in the peer tutoring research to be conducted at Primary school under the supervision of Dr M.P. Mulaudzi from the University of Venda.

I consent to the questionnaires, my academic marks and other test results the school might have use for the purposes of this study.

I understand that:

- Participation in this research is voluntary.
- I may withdraw from the study at any time.
- No information that may identify me will be included in the research report, and all responses will remain confidential.

Name of learner (Please print).....

Signed Date.....

APPENDIX G
QUESTIONNAIRE FOR GRADE 5 MULTI-GRADE LEARNERS

INSTRUCTIONS TO LEARNERS: Answer all questions. Write as much as you can. If you cannot write it in English, write it in your home language.

TUTOR / TUTEE NUMBER.....

We would like to know what you think about the tutoring process. Please write some comments by completing the sentences.

1. Do you like to learn with another grade in the same class, why?.....
.....
.....

2. Before we started reading and spelling what were you able to do?.....
.....
.....

3. Now that we have been reading and spelling, what are you able to do?.....
.....
.....

4. What do you like in reading and spelling with another learner?
.....
.....
.....

5. What would you like to do in reading and spelling which you are not doing now?.....

.....
.....

6. What is it you do not like in reading and spelling?

.....
.....
.....

7. How do you feel about reading and spelling?

.....
.....

THANK YOU

APPENDIX H

Thendelo nga Mubebi

Nxe mubebi/muundi wa, ndi tendela nwananga u dzhenelela kha tshoduluso dza "Peer Tutoring" dzi no khou itwa kha tshikolo tsha Mutoti nga fhasi ha vhulavhelesi ha Vho- Dokotela M.P. Mulaudzi vha Univesithi ya Venḁa.

Ndi a tenda u ri tshikolo tshi nga nxa mutshudeni ane a khou ita tshoduluso maraga dza nwananga tenda dza shuma kha zwa tshoduluso fhedzi.

Ndi khou pfesesa uri:

- U dzhenelela kha tshoduluso a si khombe-khombe.
- Nwananga a nga ḁi litsha u isa phanda na tshoduluso zwenezwo a si tsha funa.
- A huna hune tshoduluso idzi dza ḁo sumbeza madzina na vhuḁe ha nwananga.

Madzina a mubebi/muundi

Tsaino: Datumu:

APPENDIX I

INTERVIEW SCHEDULE FOR PRINCIPALS OF MULTI-GRADE SCHOOLS

1. General

Number of teachers in the school

Geographical location

Gender Age: below 30, 31-40, 41-50, 51+

Role

(principal, Deputy principal, HOD, teacher)

Do you teach?..... Which grades.....which subjects?.....

How long have you taught in a multi-grade school? Have you been trained in

multi-grade teaching? Is it necessary to be trained in multi-grade

teaching?..... Why.....

.....

Any other responsibilities besides teaching

.....

.....

2. Curriculum

- What are the challenges in delivery of curriculum, in a multi-grade class situation?
- What are your needs as a teacher in a multi-grade class regarding the implementation of the curriculum?
- Do you receive any in-service training regarding the curriculum? Is it adequate, does it address your multi-grade needs?
- How can the in-service training be improved to assist you?
- What are the particular challenges for teaching English at grade 5?

3. Teaching and Learning

- How do you organize your learners during your lessons?
- What strategies do you use? Do you use group teaching in your class, How do you structure, organize or manage your groups?
- Do you use peer tutoring in your class, when? How do you feel you can improve your peer tutoring?
- What challenges do you face during reading and spelling?

Questions for grade 5 teacher (not for Principal)

- Before we read and spelt, what were your learners able to do?
- Now that your learners have been reading and spelling, what do you think they are able to do?
- Would you advise any teacher to use peer tutoring as a teaching and learning strategy? Why?
- Have your learners' attitude to reading and spelling changed since they have been in the intervention?
- What would you like to see done in the reading and spelling?
- Do you think learners in multi-grade schools are disadvantaged? In which way?

4. Staff relations

- Do you feel you are working as part of an effective team?
- Are there particular difficulties pertaining to staff collaboration in schools with multi-grade classes? Do you work with your colleagues on any aspect of the curriculum or school organization?
- What, in your opinion, is the most effective means of developing a more collegial approach to school organization and promoting a collaborative culture in any multi-grade school

5. School organisation and administration

- Do all teachers get an opportunity to teach all class levels? How is the allocation of classes determined?

- Is the school building adequate for the needs of the school?
- How involved are parents in the work of the school?
- Has the school always been a multi-grade school or was it a mono-grade? How did it become a multi-grade school?
- Does your school have ancillary staff? What are their duties?
- How much time do you spend outside of school hours on school related tasks?
- What kind of tasks are you involved in after school?

6. Teacher education/professional development

- Do you think that the challenges faced by multi-grade class teachers are adequately dealt with in the pre-service training? What would you like the department to help you in?
- What kind of in-service/professional development opportunities would best address your needs?
- What are the advantages of teaching in a multi-grade situation?
- What are the disadvantages?
- What changes would you like to see?
- Any other comment you would like to point out?

.....

.....

.....

.....

Thank you

APPENDIX J

QUESTIONNAIRE FOR MULTI-GRADE TEACHERS

Dear participant, kindly complete the following questionnaire. The reason why I am asking you to complete the questionnaire is for me to get a better picture and additional information that supplements the interview schedule you completed earlier. There are no wrong or write answers. Do not write your name on it. Thank you.

I, voluntarily agree to participate in this study. I understand that I can withdraw at any time from this study.

Signature: Date:

THE QUESTIONNAIRE IS DIVIDED INTO SECTIONS: A; YOUR BIOGRAPHICAL DETAILS, B TEACHING AND LEARNING IN MULTI-GRADE CLASSROOMS: THE LIKERT SCALE, SECTION C, RELATING TO THE FREQUENCY OF YOUR USE OF DIFFERENT TEACHING AND LEARNING STRATEGIES AND SECTION D, INFORMATION ON PEER TUTORING

SECTION A: BIOGRAPHICAL DATA

1. What is your position at the school: teacher /principal?
2. What is your age?
3. What is your gender?
4. How long have you been teaching?
5. How many years have you been teaching in a multi-grade school?
6. Which grades do you teach?
7. How many learners do you have in your class?

SECTION B: LIKERT SCALE

In the following section, answer by circling: 1. Strongly agree 2. Agree 3. Disagree 4. Strongly disagree.

	Strongly Agree	Agree	Disagree	Strongly Disagree
1. Multi-grade teaching places more demands on teachers.				
2. Multi-grade teaching is an inferior type of education.				
3. CAPS curriculum addresses multi-grade needs.				
4. Textbooks cater for multi-grade teaching.				
5. Teacher training prepared me for multi-grade Teaching.				
6. In service training is relevant to multi-grade Teaching.				
7. Subject-advisors offer support in my classroom				
8. Space in my classroom is enough.				
9. Resources and multi-grade support are sufficient.				
10. I manage to keep all my grades occupied for the day.				
11. I manage to give individual attention to my learners.				
12. The younger learners take too much of my teaching time and attention.				
13. I manage to plan my lessons for the day				
14. Assessment, marking and recording is manageable.				
15. My learners spend half of the day working on their own.				
16. I do not enjoy teaching in a multi-grade				

school.				
17. My learners miss out if I have to fill in forms.				
18. The content I teach is appropriate to my grades.				
19. My learners work well in groups.				
20. I use peer tutoring with my learners.				

SECTION C: In the table provided, indicate by a cross how often you use the following teaching and learning strategies during English lessons.

Teaching and learning strategies	reading	Spelling	Writing	Oral work	Sometimes(3x a week)	Frequently (more than 3x a week)	Daily	never
1. Pair-work								
2. Peer tutoring								
3. Cross-age tutoring								
4. Whole class teaching								
5. Separate grade teaching								

SECTION D PEER TUTORING FOR SPELLING (PLEASE CIRCLE YOUR ANSWER)

1. How has the peer tutoring helped your learners?

Improvement of spelling

Improvement of reading

Working together as pairs

Helping each other

Other (please specify) _____

2. Would you say your learners enjoy spelling

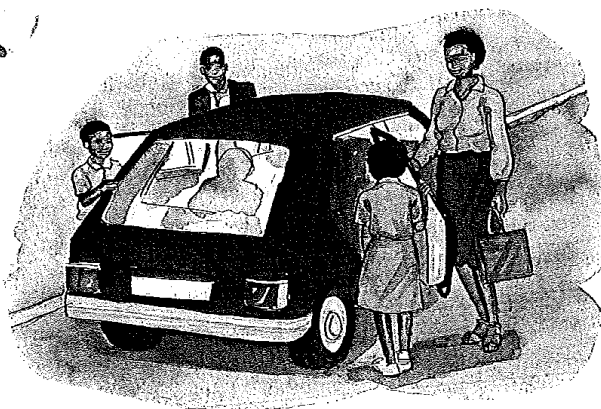
A lot

APPENDIX L: SPELLING TEST

TWENTY WORD SPELLING TEST FOR GRADE 5 MULTI-GRADE LEARNERS

BASED ON A STORY: Viva English: Resource and Reading Book for grade 2 by Carol Beck & Alan Carter

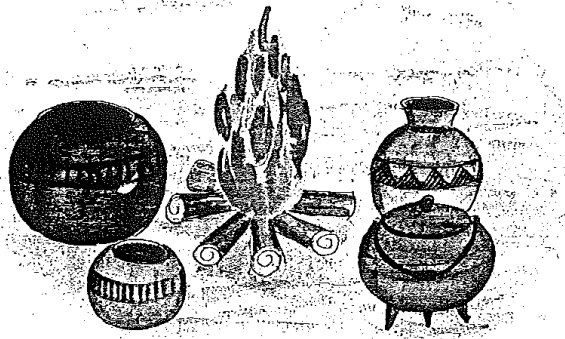
The story : Mbuso's travels.



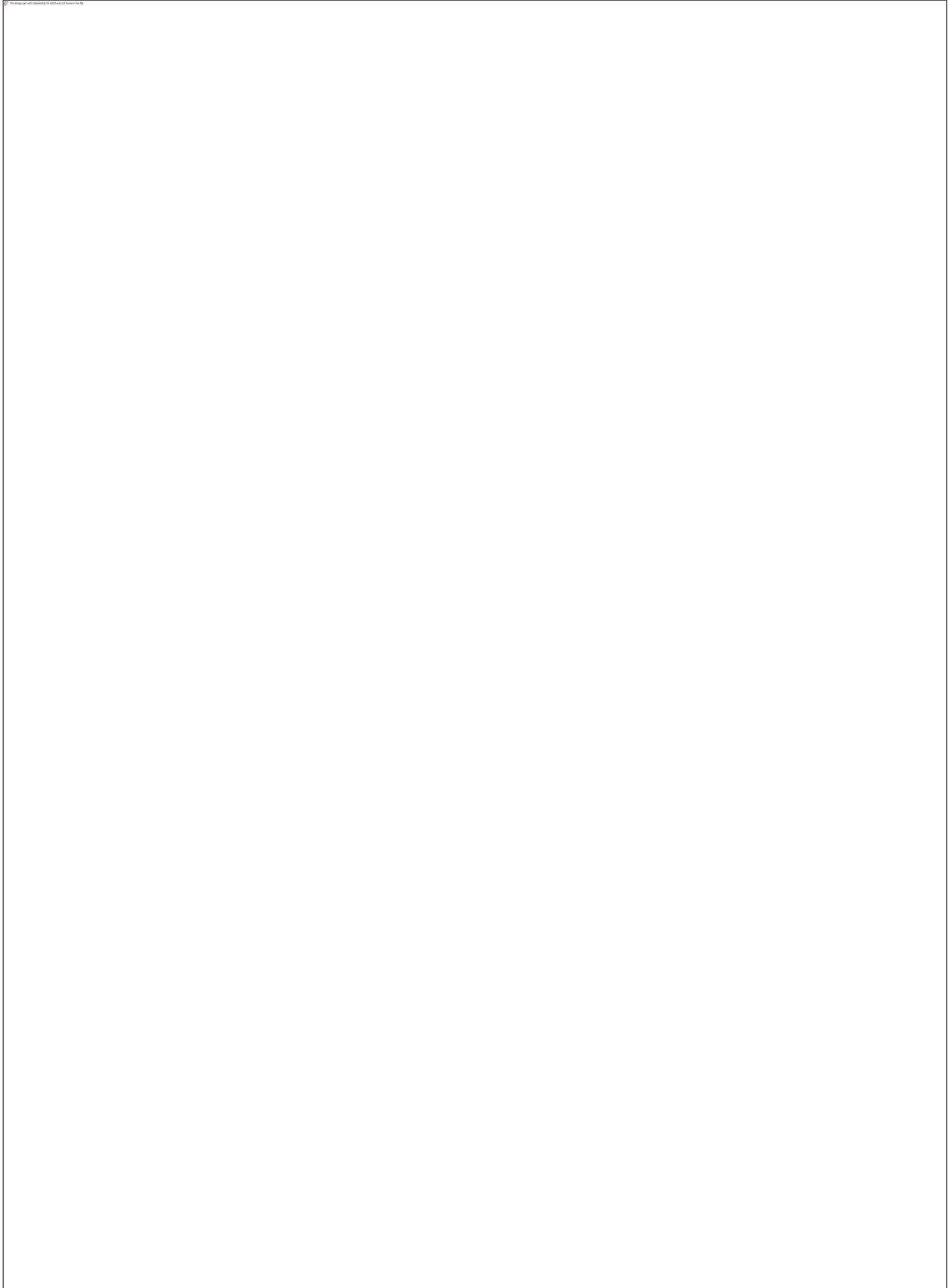
Do you remember the boy called Mbuso? He and his parents travelled around the world to visit many countries. After a month, Mbuso and his parents came home to South Africa in an aeroplane. There was a lot of noise at the airport. His grandmother and his uncle, Ben had come to meet them at the airport. Mbuso was very excited to hear that he was going to visit his grandmother in the village. He knew he would see his friends and ride his bicycle which he had got as a birthday present just before he left for the trip.

1

On the way to the village, grandmother told Mbuso that they had arranged a special party for him. This was a traditional one to welcome him home. He and his friends will be asked to perform a ritual. Mbuso will be given a spear to pierce an ox with it, then he will be given matches to light a fire that will cook the meat. He and his friends will sing and dance around an enormous cooking pot of meat.



2



APPENDIX M

PRE-TEST AND POST-TEST: TWENTY WORD SPELLING

I am going to call each word twice, then allow you to write it down. Then repeat it once again. At the end of the spelling, I shall call all the words once for you to check.

1. Everyone
2. Around
3. Remember
4. Separate
5. Happened
6. Surprise
7. Forgotten
8. Different
9. Trip
10. Carefully
11. Something
12. Smiled
13. Brought
14. Mixture
15. Traditional
16. Danced
17. Ship
18. Ambulance
19. Photograph
20. Spear

APPENDIX N

TWENTY WORD SPELLING ANSWER SHEET GRADES5 LEARNERS

NAME OF SCHOOL:.....

NAME OF TUTOR/TUTEE:..... NUMBER:.....

SPELLING	CORRECTIONS
1.	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

SCORE:....%TEACHER'S SIGNATURE:.....DATE:.....

RESEARCHER'S SIGNATURE:..... DATE:.....

VERIFYER'S SIGNATURE:.....DATE:.....