

**AN INVESTIGATION INTO THE MANAGEMENT OF GRADE 3 MATHEMATICS
CURRICULUM: A TRANSFORMATIONAL LEADERSHIP APPROACH**

BY

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DECLARATION

I Nobel Tshirangwana, declare that this work is my own work and it is original. All the sources and the work of others that I have used have been acknowledged and indicated by means of references. This work has never been submitted for any degree or examination in any university.

DEDICATION

I dedicate this work to my late husband who used to encourage and inspire me all the time. He also makes it possible for me to have formal education

I also dedicate it to my lovely children for their support, love and encouragement at all times.

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My special thanks go to the D9 District and Head Office to give me permission to conduct my research.

I wish to acknowledge all the principals of the school and the educators who participated in the study for their positive responses.

My special thanks to my friends who open hands for me when I needed them. I dedicate this dissertation to my sons and daughter for their advice and support for the entire period of this investigation.

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RESEARCH ABSTRACT

The purpose of this study was to undertake an investigation into the investigation into the management of Grade 3 mathematics curriculum in a Transformational leadership Approach in Johannesburg East public school which is in D9 District of the Gauteng Department of Education.

The role of the Leader in the school is to make sure the educative function is carried out to the desired level. Curriculum management referred to the provision of effective leadership and supervision by HOD's and other education managers of the activities of teaching staff in a school in order to maximize the effectiveness and efficiency with which the curriculum is delivered. The managers must ensure that quality teaching and learning is being provided and it is the responsibility of all education managers.

A qualitative approach was undertaken to enable the researcher to explore the experiences, feelings and perceptions of the educators, Heads of department (HODs) and Deputy Principals to have a wider and richer assortment of current, valid and relevant data of how management of Grade 3 Mathematics in curriculum in Transformational Leadership approach. The quality of teaching in schools strongly influences levels of pupil motivation and achievement, Fullan (2001). The managers in schools has been consistently alluded to as the most significant factor in the success and quality of the school's improvement process (Petersen, 2001: 159)

The data collected for the research was analysed by using qualitative techniques and the findings showed that through the responses from the educators, Heads of Department, Principals showed that not enough support was given by the Department, workshops presented were not enough and educators, HOD and Deputy Principals were unable to implement as required. Educators felt that they did not receive proper and enough support from the SMT as the SMT was not fully equipped to support them.

The HOD and Deputies responded that they felt limited in taking part in the Grade 3 mathematics curriculum transformational approach as educators were confined to a classroom management style of thinking. The deputy principal, the heads of department and subjects heads in primary schools as formal leaders, all have crucial responsibilities in assist the principal in meeting the school's instructional goals.

KEY WORDS

Transformational, Curriculum, Curriculum Management, Leadership, Implementation, Professional development, Parental involvement.

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ACRONYMS AND ABBREVIATIONS

C2005	Curriculum 2005
DET	Department of Educational Training
DoE	Department of Education
INSET	In-Service Education and Training Certificate
LSM	Learning Support Materials
NCS	National Curriculum Statement
OBE	Outcome-Based Education
SASA	South African Schools Act
SGB	School Governing Body
SMT	School Management
PL1	Post Level one
DA	Development Appraisal
GDE	Gauteng Department of Education
STD	School Development Team
CAPS	Curriculum Assessment Policy Statement

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CHAPTER 1: BACKGROUND AND OVERVIEW OF THE STUDY

1.1 INTRODUCTION

Management as a form of leading and guiding leaders and managers can be described as the activity or tasks which influences people in such a way that they will willingly work and strive towards achieving organisational goals. Leadership is the activity of influencing people to strive willingly for group objectives (Blanchard, 1982). The word lead strongly denotes interpersonal relationship between those who go ahead and those who follow. A leader then is one who not only leads but also follows (Cawood, 1983). Reynders (1977) maintains that leading and guiding are universal activities and tasks that are carried out by a person in control of the people's activities, including decision making and directing those activities, to achieve set goals.

Transformational leaders pay attention to the concerns and developmental needs of individual followers' awareness of issues by helping them to look at old problems in new way; and they are able to excite, arouse, and inspire followers to put out extra effort to achieve group goals (Wexner, 1990). A transformational leader provides vision and sense of mission, instils pride, gains respect and trust.

In 1994, a new democratic dispensation was launched in South Africa obliterating 40 years of apartheid economic and political rule. It was a moment of great achievement for all those people who had struggled. One of the most important tasks facing the government was to rebuild the education system. Forty years of apartheid had left deep inequalities in the education system (Christie, 1999).

The review of curriculum 2005 in 2000 led to the creation of the Revised National Curriculum Statement (RNCS) which became policy in 2002. Curriculum 2005 and Revised National Curriculum 2002 are two steps in the process of national curriculum revision undertaken since 1994. The curriculum was undertaken in three main stages; the first involved cleansing of the curriculum of its racist elements in the immediate aftermath of the election. The second involved the implementation of outcomes based education through

curriculum 2005. Out Comes Based Education (OBE) was an international curriculum linked to formative and continuous rather than once off assessment. The third stage involved the review and revision of 2005 three years later in the light of the recommendation made by a Ministerial Review Committee appointed in 2000. This review committee recommended a major revision of the curriculum in order to make it more understandable in South Africa classrooms.

The political side of curriculum review and revision in South Africa deals with the following stages; stage one is the report of the review committee 2000 and stage two is the creation of Revised National Curriculum Statement 2000-2002. South Africa has borrowed and implemented educational ideas from the northern context for more than a century.

After the 1994 election, our country began to walk a new path in education and training. A process of tackling the many negative effects of apartheid education and building a system of education that would suit the demands of newly emerging non-discriminatory democracy, and its place in a rapidly changing global world began. One of the innovations introduced by the government was a new curriculum in 2005. This was done in consultation with representatives of all key stakeholders and role players and the goals of this curriculum were to;

- Promote a non-discriminatory democratic education;
- Introduce teaching and learning practices that are consistent with the demands of the new economic and social realities of the 21st century; and
- Promote creative, constructive and critical thinking together with effective application of learning and positive attitudes and values.

The introduction of the new curriculum in the year, 2005 was refreshing but also controversial. It was refreshing because it shifted away from the rigid, fragmented and narrow perspectives of teaching and learning practices that prevailed in most schools. That the old curriculum was dictative and a parrot form of teaching. Assessment took on a new form where it was at first very one sided therefore, new forms were introduced. For instance, assessment forms included peer, self and group assessment. It opened up enormous possibilities for creating excitement, creativity and authenticity in teaching and learning. It was controversial because of its newness to most educators and schools. That was imposed on them without thorough consultation. The shift from passive learning to a more

participative learning approach was also met with great resistance. Teachers were also against change and unresponsive. To them curriculum 2005 became another burden so they never embraced change. Implementation was very difficult at schools as teachers who embraced the curriculum were regarded as traitors. According to the World Competiveness Reports (2000) of the last few years, South Africa's skills base is second lowest among countries in the study. This has risen nine places from 47 to 33, but our school mathematics ranking is still very low. The literacy and numeracy levels are still very low. Social dislocation is a high factor of national life as indicated by high levels of crime, violence, unemployment and child and women abuse.

The curriculum needs to be supported by more resources and concentrated support for officials, schools and teachers. The study by Tsanwani (2009) showed that mathematics competence is an essential component in preparing numerate citizens for employment and it is needed to ensure the continued production of highly skilled persons required by industry science and technology.

Now there is a new curriculum known as the Curriculum and Assessment Policy Statement (CAPS). CAPS was developed by the Department of Basic Education to be used in schools. A panel of experts appointed by the Department of Education (DoE) reflected on the National Curriculum and Assessment and proposed the implementation of Curriculum and Assessment Policy Statements in order to improve the quality of teaching and learning. CAPS will be fully implemented in the Foundation Phase from 2012.

From the foregoing, it is evident that education plays an important role in the economic growth and development of a country. The government ranks the education of its citizens among its top priorities. It seeks to increase accessibility to education and improve the quality of education in all schools. The DoE recently embarked on a nationwide drive to assess the performance of learners in literacy and numeracy through the administration of Annual National Assessment to learners in Grades 3 and above.

Such assessments have shown that comparatively, South Africa performs poorly on international assessments of mathematics. Recently, it was reported that despite the efforts put by the DoE and other stakeholders, learner performance at primary school level does not

appear to have improved significantly over the past 10 years, Consortium for Research on Educational Access, Transitions and Equity (CREATE), 2010. This paints a gloomy picture of the state of teaching and learning of mathematics in South Africa. The teachers were not having contact teaching as required and were over burdened with admin work. The February 2011 Annual National Assessment (ANA) analysis has shown that learners in grade 2 and 3 scored poorly on mathematics. The NCS policy was interpreted differently at different schools, districts and provinces throughout the country. Teachers were not properly trained on the National Curriculum Statement (NCS) project. Teachers received no support from the School Management Team (SMT), Heads of Department at sites as well as cluster and this led to low morale prevailing and also a high rate of absenteeism began due to educators being treated for stress induced related illnesses. The Learning and Teachers School Materials (LTSM) for the NCS to facilitate this were lacking as some schools did not even have books delivered on time etc. Educators had large classes due to shortage of classrooms and teachers.

The changes of terminology of Outcome-Based Education (OBE) to NCS also caused confusion. The CAPS terminology changes are also confusing and it is almost as though we are reverting to the old curriculum. Changes of the assessment procedures, policy, daily timetable and the components of the lesson plan as required by the CAPS is further going to cause problems and will only be alleviated by proper training of the CAPS. If the changes in curriculum produce the desired results then proper imitation will be done with support and guidance by the relevant authorities, that is, from SMT to province. Educators need to attend mathematical workshops that are arranged internally by the School Management Team.

1.2 PROBLEM STATEMENT

Many of our learners cannot read, count or write. Previous studies show a pathetic state of primary schools in Gauteng (Howie 2001; Reddy 2006). Also, the annual assessment of grade 3 shows low level performance of mathematics. Many learners lack the proper foundation and they struggle to progress in the system and into post schooling education.

The pathetic results confirmed earlier international surveys in which South African Grade 3 were ranked very low and their education was cited by educationists as a symptom of a dysfunctional educational system (Reddy, 2006). The low levels of mathematics in primary 4

schools were worrying precisely because the critical skills of literacy and mathematics are fundamental to further education and achievement in the world of both education and work.

For instance, a study conducted with Grade 4 learners from a number of African countries Tunisia, Mauritius, Malawi, Zambia, and Senegal, were assessed against a set of internationally defined numeracy and literacy learning competencies. Findings indicated that South African learners ranked fourth with an average literacy score of 48.1% and rated last with respect to numeracy, scoring at 30.0% (DOE, 2001). These were learners who had just completed their Grade 3 and it is a cause for concern that they performed so poorly. The failure was attributed to outdated teaching practices and lack of basic content knowledge resulting in poor teaching standards. In addition, the poor standards were also exacerbated by a large number of under-qualified or unqualified teachers who teach in overcrowded and unequipped classrooms. The combination of all these factors has in turn produced a new generation of teachers who are further perpetuating the cycle of mediocrity.

To the knowledge of the researcher, most of the schools in Johannesburg East District have limited teaching and learning materials. Thus, there is overall unsatisfactory achievement of mathematics outcomes by Grade 3 learners in Johannesburg East. The problem of unsatisfactory performance in mathematics among Grade 3 learners in South Africa can be traced back to the apartheid era. There is glaring inequality in terms of resourcing of schools from the apartheid era to date, according to the Human Sciences Research Council (HSRC), 1997. In light of the fact that Grade 3 is a key transition stage between the infancy and intermediate phases of the South African education system, it is worrying that such learners score lowly in numeracy. In South Africa, emphasis on the importance of mathematics is growing yet her learner's rate poorly as compared to learners from other countries in the Southern African Development Community (SADC) region and beyond Southern and Eastern African Consortium Education Quality (SACMEQ 2004). Through policy directives, modifications in the curriculum and educator training programmes will be made.

1.3 RATIONALE OF THE STUDY

In light of the fact that Grade 3 is a key transition stage between the Infancy and Intermediate phases of the South African education system, it is worrying that such learners score lowly in

numeracy. In South Africa, emphasis on the importance of mathematics is growing yet her learners rate poorly as compared to learners from other countries in the Southern African Development Community (SADC) region and beyond (SACMEQ 2004). The resultant assessment of the present study provides an empirical basis for implementing policies that would hopefully improve the management processes of mathematics teaching and learning in Johannesburg East.

1.4 SIGNIFICANCE OF THE STUDY

It is hoped that the findings of this study will inform the educators and administrators about the mastery of mathematical concepts by the grade 3 learners and the nature and degree of assistance that they need. The findings will also help the stakeholders to predict learner performance in numeracy. Also, the study identifies equity factors that affect learner performance in numeracy. It was the first analysis of performance in numeracy of Grade 3 learners in Johannesburg East. In a nutshell, the study contributes significantly to changes in policy directives, modifications in curriculum and educator training programmes.

1.5 AIM AND THE OBJECTIVES

The study was underpinned by the following objectives to investigate the delivery and management of Grade 3 Mathematics curriculum in Johannesburg primary schools;

- To investigate the management of Grade 3 mathematics curriculum.
- To determine the experiences of teachers in the management and delivery of Grade 3 Mathematics curriculum.
- To explore the kind of support mathematics teachers receive at school level in particular and from the Department of Basic Education.
- To appreciate the extent to which school managers support educators in the successful implementation of the mathematics curriculum.

1.6 MAJOR QUESTION

A school with inadequate resources, overcrowded classrooms, poor teaching and library resources and inadequately qualified teachers, struggles to help its student achieve. In South Africa, most poorly resourced schools have had very little help from education support service (Donald 1994). My study was undergirded by the following broad question which was meant to analyse in context, the management and implementation of mathematics curriculum in primary schools;

- (a) How do public schools manage their Grade 3 mathematics curriculum in line with National Curriculum Statement (NCS)?

The study was underpinned by the following sub-questions;

- (a) What mathematical curriculum challenges do Grade 3 educators experience as regards the management and implementation of National Curriculum Statement?
- (b) What are some of the causes of curriculum implementation bottlenecks faced by the educators?
- (c) How do educators get support from the management of the school in particular and the Department of Education in general?

1.7 SAMPLING TECHNIQUES AND PARTICIPANTS

A sample is the source of information used by qualitative researchers including individuals, groups, documents, reports, and sites. Qualitative sampling, in contrast to probabilistic sampling is “selecting information rich cases for study in-depth. (Patton, 2002: 242).

A sample size is a group of individuals who participate in the research. A sample size is selected from a population which is a larger group in a particular environment. The purpose of sampling is to get a manageable group for research purposes. Sampling is used in qualitative research in the selection of interviewees (Krathwohl, 1998). According to McMillan & Schumacher (2006: 319) purposive sampling is a procedure by which the researcher selects a subject based on predetermined criteria about the extent to which the selected participants could contribute to the research study.

The participating schools were selected from Johannesburg East District. I purposively selected three primary schools from Johannesburg East District which have deputy principals and heads of department. The three primary schools were selected as sites for collection of data. Individual interviews were conducted with the Heads of Department (HoDs) responsible for the foundation phase of the selected schools. Each HoD represented a primary school in the sample. The main purpose of interviewing the HoDs was to collect the real information on how educators and SMT manage mathematics curriculum in Grade 3 in terms of departmental support, professional development and classroom practices.

Individual interviews were conducted with each of the grade three educators who were observed in their classrooms. Out of the eight educators one educator per school was chosen for classroom observation and represented Grade three of that school. After the classroom observation the two educators concerned were interviewed.

1.8 THEORETICAL FRAMEWORK

Leadership is the process of directing the behaviour of others towards the accomplishment of certain objectives. It involves taking the lead to bridge the gap between formulating plans and reaching objectives, and also translating plans into reality. Leadership involves elements such as influencing people, giving orders, motivating people as groups or individuals, managing conflict and communicating with subordinates. Although from a management perspective there are various facets of leadership. It is the fundamental task of management to direct the activities and performance of the people so that the objectives of the organisation can be attained.

The performance of any organisation, small or large, is directly related to the quality of its leadership. The principals as manager must be concerned with task performance which involves the quality and quantity of the teaching provided by the staff as a whole. The principal as a manager must be concerned with human resources maintenance which is the attraction and mainstay of a capable and committed teaching staff over time. Stevens (1988: 66) alleges that “a strong leader who strives for an effective school climate and encourages staff involvement is on the road to success”

1.9 DATA COLLECTION STRATEGY

According to TerreBlanche and Durrheim (2002: 45) data are the basic material on which researcher's findings are based. Data comes from observation and can take the form of numbers or language. Hatch (2002: 10), point out that the idea is to collect as many detailed specifics from the research setting as possible then set about the process of looking for patterns of relationship among the specifics.

I used the following data collecting instrument to generate data:

1.9.1 Document Analysis

Document analysis was used to review the mathematics curriculum and support materials that had provided to assist teachers in the implementation of Grade 3 mathematics curriculum.

I analysed the prep file, assessment file, and learners books in PS1 educator to find out if what was planned by the educator is what was actually taught in the classroom for example if the plan showed addition, can I find addition exercises in the learners books.

1.9.2 Observation analysis

After the collection of data from classroom observation analysis will take place. The criteria will be to check if the educator is able to:

- Do effective lesson planning
- Create an effective learning environment

1.9.3 Interview analysis

Interviews allowed me to maximise opportunities for objectivity, and for my results to be valid and reliable (Breakwell, 1990: 230). They were useful for the generation of knowledge through the use of informal conversation and also for social situatedness of the data (Kvale, 1996:11 cited in Babbie & Mouton, 1998). Another reason for the use of interviews is that they allowed me to find out what others feel and think about their worlds and understand

experiences and reconstruct events in which I did not participate” (Rubin, 1995: 1, cited in Babbie, & Mouton, 1998).

Interviews also allowed flexibility in the fieldwork as they could be used at different stages, for piloting and validation of research instruments and also as the main means of data collection. The semi-structured interviews were designed to allow for flexibility in the interview process itself, and I was able to guide the interviews to make sure that I obtained as much of the relevant information as possible. I personally analysed the data because this provided me with an advantage of having insight and in-context knowledge about the research and enable me to establish a variety of important links between the research question, aims and data gathered (Litoselliti, 2003:85).

After each individual and group interview at a selected school I immediately analysed the data before the next interview. This was followed by transcription, where I systematically went through the data and wrote a descriptive code by the side of each of the data (Cohen, et al, 2000:283). I made an analysis of each of a series of individual and group interviews to help determine the number and focus subsequent meetings and revised the topic guidelines or moderate the techniques in the light of the gathered information. I also allowed a few days between the individual and group interviews at a selected school, in order to be able to carry some analysis of each discussion before the next interview (Litoselliti, 2003:87).

I identified those substantive parts in the transcript that relate to the research questions as well as new topics or issue and classified or coded them (Litoselliti, 2003: 90). I modified the wording of category heading, shifted the content of the categories, and new categories and evaluated the interpretations many times during the process. All participants’ comments were examined, looking for the most important themes, issues and ideas. Trends and patterns in the content of each discussion and similarities and differences across a number of groups on the topic I analysed were noted ((Litoselliti, 2003: 91). The data was examined including the follow up interviews, document, and observation feedback and field notes.

The analysis of the interviews and group data answered the following question

- Were the objectives achieved?
- What were the challenges identified by the findings?

- What were the common problems?

What were the suggestions?

1.10 LIMITATIONS AND DELIMITATIONS OF THE RESEARCH

The research focused on three primary schools in Johannesburg East District. Two were purposively identified from disadvantaged communities and the other one from a low residential area. A limited number of Head of Department and educators were interviewed. Not everyone was involved even though individuals and were used to collect data. A limited number of deputy heads, HODs were used to collect data and a limited number of participants were used. Financial constraints made it impossible to cover a large number of schools as well as purchase other resources that would have made it easier to gather as much data as possible from a substantial pool of schools and participants.

1.11 DEFINITION OF KEY CONCEPTS

1.11.1 Transformational leadership

A leader who has the idea of taking one thing and making something else from it is a basic precept for the transformational leader. The leaders of the world will be those who see a different world and realise they must also change to help others to get there (Houston, 1993:11) Transformational Leaders are those who provide individualized consideration and intellectual stimulation, and who possess charisma.

1.11.2 Management

Is about coping with complexity and it brings about order and consistency by drawing up formal plans, designing rigid organisation structures, and monitoring results against the plans.

1.11.3 Leadership

Is about coping with change and established direction by developing a vision of the future and align people by communicating this vision and inspiring them to overcome hurdles. Leadership is the ability to influence a group towards the achievement of the goals.

1.11.4 Curriculum

Is the planned and guided learning experiences, formulated through the systematic reconstruction of knowledge and experience, under the learners continuous and wilful growth in personal–social competence (Tanner and Tanner 1975:48).

1.11.5 Educator

The term educator implies that the teacher should act more as a facilitator of learning than a dispenser of knowledge. The teacher is required to create situations that allow learners to learn on their own or in groups.

1.11.6 OBE

Outcomes Based Education is based on the principles of co-operation, critical thinking and social responsibility and should empower learners to participate in all aspects of society.

1.11.7 Mathematics

Is a human activity that involve observing, representing and investigating patterns and quantitative relationships in physical and social phenomena and between mathematical objects themselves. Mathematics is a product of investigation by different cultures; it is a purposeful activity in the context of social, political and economic goals and constraints.

1.11.8 Empowerment

Refers to a process of growth and development which enables teachers to optimise not only the teaching-learning situations but also their own potential as educators.

1.11.9 CAPS

Curriculum and Assessment policy Statement is the policy that is aimed at improving the quality of teaching and learning in South Africa.

1.11.10 Curriculum Implementation

Is the delivery process, implementation can be considered a system of engineering that takes design specifications through various channels to the teacher and classroom.

1.12 CHAPTER SUMMARY

When education in South Africa is placed under the spotlight from national to local level it is clear that many problems are directly related to the curriculum. To ensure that dynamic and relevant curriculum development takes place, the reflection on the field of curriculum studies is essential. This reflection and acquisition of knowledge is very much in service of teacher empowerment. In South Africa there is currently a greater awareness in regard to curriculum matters, but the question arises as to whether there are sufficient curriculum specialists locally who study both practise and theory and who attempt to find synergism between them and to ensure relevance.

Houston (1993: 11-12) states that leaders will have to break with the tradition and adopt other perceptions and attitudes. Leadership is the activity that infuses energy into the organisation to activate its members and resources to get things moving and keep them in motion. Leadership entails activities such as transmitting information to subordinates; formulating the organisation's mission, objectives and plans explaining to subordinates; giving orders and instructions to subordinates.

CHAPTER 2: LITERATURE REVIEW AND APPLICATION OF THEORETICAL FRAMEWORK.

2.1 INTRODUCTION

Management of Grade 3 Mathematics curriculum should be a critical concern of educational leaders. The school leaders have to make a clear and conscious commitment in regard to the empowerment of staff. Lagana (1989: 54) says that enlightened school leaders realise the necessity of empowering not only themselves but also their staff. Cunard (1990: 33) states that “The leader who shares power with teachers is still a leader. I believe this leader is a more effective instructional leader because empowered teachers are more likely to maximize their potential.

The role of the teacher as a curriculum agent, teacher participation and teacher freedom in regard to curriculum development is also involved. Each teacher must be systematically empowered in regard to curriculum development to optimise the teaching-learning events in the classroom. Empowerment does not mean unrestrained and unstructured action, but rather increasing the learning outcomes and other experiences which may flow from it, there by contributing towards developing the learner’s potential.

According to Miller (1994), a teacher’s adaptation and style determine the quality and standard of what takes place in the classroom. It is critical that the teacher be empowered in order to be a fully-fledged and effective curriculum agent. Bless and Higson-Smith (1995: 22) define literature review as, “a process of reading some background information that has been published and appears to be relevant to the research topic. In the study of literature, relevant data pertaining to the study was gathered from primary schools sources. The research relied on the descriptive method of study in which the researcher describes the problem as it prevails during the period of research.

For this purpose, the researcher made use of a careful selection of books, Journals; papers read at conferences, departmental circulars and governmental publications as well as acknowledging the contributions of other researchers to the research problem.

Ary, Jacobs Rezackvich (1990) identified the following important functions of a literature review:

- Acknowledgment of related literature enables investigators to define the frontiers of their field.
- A thorough review of related theory and research enables researchers to put their questions in perspective.
- Reviewing related literature helps researchers to limit their questions and to clarify and define the concepts of the study.
- A critical review of literature often leads to insight into reasons for contradictory results in an area.
- Through studying related research, investigators learn which methodologies have proven useful and which seem less promising.
- A thorough research search through related research avoids unintentional application of previous studies.
- The study of related literature places researchers in a better position to interpret the significance of their own results.

All these functions assisted me to realise the aims of the research project, achieve the anticipated objectives and get answers to most of the critical questions. The literature on professional teacher development shows that in-service (INSET) programmes need to provide on-going, meaningful opportunities for successful growth. Teachers need to learn these new methods through a collaborative, participatory approach to learning and teaching which envisages an interactive relationship, situated in the community or culture. In the context of under-resourced, over-crowded schools in both the urban and the rural areas, this would need to be organised by the Department of Education so that collaboration does not place too many extra demands on teacher time and capacity (Krajcik et al, 1994). In the study of literature, relevant data pertaining to the study will be gathered from three primary schools critically examined and evaluated and objectively recorded. The researcher relies on the descriptive methods of study in which the researcher describes the problem as it prevails during the period of research.

Numeracy is a fundamental component of the South African curricula as well as the country's human capital development strategy (Witbooi, 2005). The curricula recognize that the 15

development of high levels of language use and numeracy are fundamental to all learning. Correct implementation will contribute significantly towards improved learner performance in numeracy. It is therefore not surprising that, Grades R to 3 offer three learning programmes, with literacy and numeracy taking up over 75% of the time spent at school. Thus, the mastery of mathematical principles is vital in human capital development. It is therefore essential that learner performance in numeracy among Grade 3 learners need constant review.

However, the findings of several studies on learner performance in numeracy among South African Grade 3 learners are worrying. The Department of Education (2008) reported that national, regional and international studies showed that over a number of years, South African children were not able to read, write and count at expected levels. They were unable to execute tasks that demonstrate key skills associated with literacy and numeracy.

Tshabalala (2008) reported that a comparative analysis of numeracy performance of Grade 3 learners in urban and primary schools that was conducted by the Department of Education (DOE) in South Africa showed that the performance was below expectations. The finding supports another national survey that was conducted by the Department of Education (2003). The department of education reported that learners obtained the lowest scores in numeracy (national mean of 30%). The numeracy scores were skewed heavily towards the lower scores, with most of the learners obtaining between 0 and 40%.

Also, in South Africa, the Imbewu Project (2011) conducted with Grades 4 to 7 learners showed poor performance in mathematics. The learners had greater difficulty with the counting and ordering task than with addition, subtraction and multiplication. Thus, learners seemed not to have had adequate exposure to the number system. Poor levels of reading were found to contribute significantly to low performance in numeracy. It is disturbing to note that even where little reading was required, the learners were unable to perform addition and multiplication tasks which should be routine for Grade 3 learners. The failure to achieve foundation competencies in previous grades left them without the knowledge and skills needed to understand even the most elementary tasks. Witbooi (2005) reported that with a view to improve the Grade 3 reading and numeracy rates in the Western Cape, the Department of Education embarked on the training of educators, development of materials, special interventions and diagnostic testing. Despite the above efforts, the results showed that

while there has been a slight improvement in results, the Grade 3 learners still fell far short of what was required for learners in Grade 3. An average of 37.3% passed the numeracy test, compared to 36.6% in 2002. There was need for greater coordination, monitoring and evaluation of the teaching of mathematics in schools.

The Western Cape Education Department was not flattered by the improved Grade 3 mathematics results. In the years 2008 and 2009, the educators, schools and districts in the province focused primarily on improving numeracy. The strategy bore desirable outcomes. A survey conducted in 2010 showed that learner performance in numeracy significantly improved. The results were in line with the targets that were set in the strategic plan. The pass rate in numeracy rose to 48.3%. However, the pass rate fell below the desired output.

Furthermore, Tshabalala's (2008) study suggested that equity variables such as gender, language of test instruction, funding, location of school, physical learning facilities (e.g. classrooms) and availability of learning materials had an influence on learner performance in numeracy. The finding supports Dietliens (2006) who indicated that the lowest performing learners were from townships, rural and farm schools. The results also support the findings of a similar study that showed that learners in well-resourced schools performed better in numeracy than those from under-resourced schools (DoE 2005). This is similar to Howe's (2002), assertion that unequal provision of resources and facilities in the past and different socio-economic backgrounds affect learner performance in numeracy. Classrooms that are neither conducive nor stimulating to learners contribute to poor learner performance in numeracy (National Institute for Educational Development (NIED 2010)). This worsens the situation of the learners since Mathematics has been negatively perceived. The majority of schools in economically disadvantaged communities do not have adequate learning materials. The educators neither develop nor teach learners to develop learning materials. Such schools lack proper management and administration of mathematics, while the filing system is poor. Similarly, SACMEQ (2004) reported that the reasons for poor curriculum management in Mathematics include shortage of qualified educators, misallocation of subjects to educators, educators' lack of mastery of curriculum content, unavailability of teaching materials, poor methods of presentation, non-conducive learning environment, poor lesson preparation, gender of the learner and motivation to learn.

Kotze and Strauss (2007), indicated that mathematics performance often lags behind in disadvantaged schools. Provinces with lower economic levels, lower scores in mathematics were associated with rural schools. In the same provinces, higher scores were associated with urban schools. But, it should be noted that some disadvantaged schools produce good mathematics results in spite of the difficult circumstances.

Gender was found to be related to learner performance in numeracy. One study reported that girls performed better than boys in numeracy (DoE, 2005). Low performance in numeracy is influenced by the misconception of the subject as difficult and perception of the subject as designed for a certain group of people based on gender and intelligence because of the line of professions it leads to (NIED 2010). Another interesting finding in the previous studies was that the language of test instruction influenced learner performance in numeracy. Learners who received test instruction in vernacular language performed better than those who undertook assessment tasks in another language (DoE, 2005).

There is a relationship between the availability of qualified educators and learner performance in numeracy. A study conducted in the United States of America showed that learners taught by qualified and experienced educators perform better (Goldhaber, 2002). Qualified and experienced educators deliver their lessons more effectively than their newly qualified counterparts. Recently, National institute of Educational Development NIED (2010) indicated that educator characteristics are related to learner performance in mathematics. Unqualified educators, lack of specialization, poor teaching methods, poor coverage of concepts, educator preference and poor assessment of learners cause poor learner performance in mathematics.

In South Africa, the Department of Education seeks to improve the performance of learners in mathematics. In 2001, the government launched the mathematics, science and technology strategy to bolster learner participation and performance in higher grade (higher level) mathematics and science, especially of blacks. The DoE aimed to double the number of learners passing high level mathematics to 50 000 by 2008. The government did not ignore mathematics performance for Grade 3 learners. To show the importance of Grade 3, the government sought to increase the number of learners in Grade 3 who by the end of the year would have mastered the minimum language and numeracy competencies for Grade 3

(Department of Basic Education 2011). The government sought to achieve the output goals by attracting in each year a new group of young, motivated and appropriately trained educators into the teaching profession, recruit more educators to avoid large classes and improve educator competency, efficiency, professionalism and increase their motivation. Among other things, the DoE sought to provide adequate textbooks and workbooks, increase access to media, computers, increase funding of schools, improve physical infrastructure and the environment at every school to inspire the learners and improve the quality of monitoring and support provided by district offices to schools.

2.2 THEORETICAL FRAMEWORK

It is believed that the quality of leadership makes a significant difference to school and student outcomes. South Africa is a part of the world where the people of the country are recognized as the main asset to enable full participation in a global economy that is becoming very competitive and the country recognises that a highly skilled workforce has to be trained by committed and effective teachers who have been under the leadership and mentoring of a highly educated and well informed management team.

While education can learn from other settings, educational leadership and management has to be centrally concerned with the aims of education. This underpins the crucial sense of directing school management. There has to be a clear understanding of the link between purpose and management to avoid the danger of ‘managerialism’ which stresses on the procedures at the expense of educational purpose and values (Christie 1999: 240). Educational leadership and management can be distinguished by realising that the concept of management overlaps with that of leadership. Cuban (1988) provides one of the clearest distinctions between leadership and management. He links leadership with change while management is seen as a maintenance activity. He also stresses the importance of both dimensions of organisational activity. By leadership I mean influencing others’ actions in achieving desirable ends. Leaders are people who shape the goals, motivation and actions of others. Frequently they initiate change to reach existing and new goals. Leadership takes much ingenuity, energy and skill. Managing is maintaining efficiently and effectively current organisational arrangements.

When conceptualising educational leadership and management there is less clarity about which leadership behaviours are most likely to produce the most favourable outcomes. The implementation of South African Schools Act (SASA), 1996 and similar moves towards self-management in many countries, have led to an enhanced emphasis on the practise of educational leadership and management, Huber (2004). Principals are inundated with advice from politicians, officials, academics and consultants, are about how to lead and manage their schools. Many of these prescriptions are theoretical in the sense that they are not underpinned by explicit values or concepts (Bush 1999: Bush, 2003). The main theory has been categorized into six major models: formal, collegial, political, subjective, ambiguity and cultural. Bush and Glover (2002) extended this typology into eight models. These are among nine leadership models shown in the following table 2.1.

Table 2.1. Leadership and management models in education

Management model	Leadership model
Formal	Managerial
Collegial	Participative
	Transformational
	Interpersonal
Political	Transactional
Subjective	Post-modern
Ambiguity	Contingency
Cultural	Moral
	Instructional

Table 2.1 Leadership and management models in education (Leithwood, 1994).

There are six major models of educational leadership and management. Each of the leadership models is partial; they provide distinction but undimensional perspectives on school leadership. These leadership models considered to be the most relevant to the South African context.

Managerial leadership can be defined as given by Leithwood (1994: 14) that the focus of leaders ought to be on functions, tasks and behaviours and that if these functions are carried out competently the work of others in the organisation will be facilitated. Caldwell (1992: 16-17) argues that managers and leaders of self-managing school must be able to develop and implement a cyclical process involving seven managerial functions: goal setting, needs identification, priority-setting, planning, budgeting, implementing and evaluating.

2.2.1 Transformational Leadership

According to Bush (2003), 'transformational leadership' assumes the control focus of leadership as linked to his three models of collegial management as this focuses on the commitment and capacities of all organizational members i.e. headmaster, senior management and the middle management. Because of personal commitment in accomplishing set out goals extra effort and greater productivity becomes the focus and all stakeholder are happy. Leithwood (1994), conceptualised the transformational leadership along these eight dimensions: building school vision, establishing school goals, providing intellectual stimulation, offering individualised support, modelling best practices and important organizational values, demonstrating high performance expectations, creating a productive school culture and developing structures to foster participation in schools decisions.

Transformation should focus primarily on the process by which leaders seek to influence school outcomes rather than on the nature or direction of these outcomes. In the same voice it is criticized as being a vehicle for control over teachers and likely to be the accepted norm by the leader. Chirichelles (1999) alleges that transformational leaderships have the potential to become despotic because of their strange heroic and charismatic features. Chirichelles further reiterates that leader's power ought to raise moral qualms and serious doubts about their own policy objectives as this gives a more centralized, more directed and controlled education

system which dramatically reduces the possibility of the realization of the genuine transformational education and leadership system (Bottery, 2001: 215).

In South Africa; transformation has a special meaning linked to the need to convert the previous stratified system into a new framework stressing equity and redress. A transformation leadership approach has the potential to engage all stakeholders in the achievement of educational objectives. The aims of leaders and followers coalesce to such an extent that it may be realistic to assume a harmonious relationship and a genuine convergence leading to agree decisions. In the South African context, transformation requires action at all levels and there are limits to what principals can achieve in the absence of appropriate physical, human, and financial resources.

2.2.2 What is management?

Management means planning, establishing goals and objectives and formulating strategies and plans to reach the goals, organising and staffing which develop a structure for the assignment of the tasks and resources to produce the results expected by stake holders. Management on the other hand is more directed to maintaining the status quo, and availing the sustained effort needed to maintain new directions. Management includes leadership in addition to the other functions of management, such as planning, organisation and controlling (Griffin, 1993).

2.2.3 What is Mathematical Curriculum?

Mathematics is a human activity that involves observing, representing and investigating patterns and quantitative relationships in physical and social phenomena and between mathematical objects themselves. Through this process new mathematical ideas and insights are generated (DOE, 2002). Mathematics uses its own specialised language that involves symbols and notations for describing numerical, geometric and graphical relations. Mathematical concepts build on one another, thereby creating a coherent structure (DOE, 2002). Mathematics is a product of investigation by different cultures, it is a purposeful activity in the context of social, political and economic goals and constraints and it is not value free or culturally neutral (Revised National Statement School Policy 2002).

Mathematical Curriculum is an attempt to communicate the essential principle and features of an educational proposal in such a form that is open to critical scrutiny and capable of effective translation into practice.

2.3 CURRICULUM DEVELOPMENT IN SOUTH AFRICA

Monstert's (1986: 8-9) view of curriculum development mainly comprises a summary of internationally and nationally accepted opinions. Normally a curriculum is developed by designers at various levels at governmental or departmental level and implemented by practitioners at other levels by teachers in schools.

When education in South Africa is placed under the spotlight from national to local level it is clear that many problems are directly related to the curriculum. To be able to solve these problems meaningfully and to ensure that dynamic and relevant curriculum development takes place, reflection on and the study of the field of curriculum studies is essential. It is necessary to reflect theoretically on the subject of the curriculum with a view not only to understanding practise better but also with a view to improve acquisition of knowledge and this is very much in the service of teacher empowerment. The curriculum problems of each country are unique and each country also has varying levels of locally available curriculum proficiency. Curriculum Development

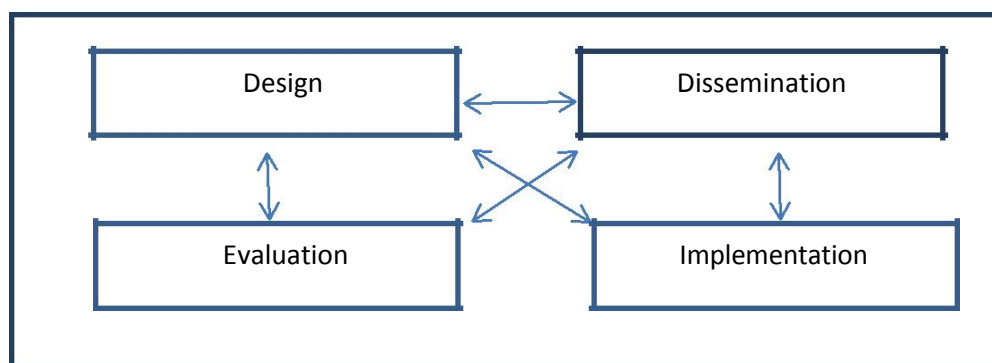


Figure 2.1: Curriculum Development in school (Schubert 1986)

Curriculum development is regarded as an umbrella and on-going process ranging from design and evaluation. There are different kinds of phases, which are Design, Dissemination, Evaluation and Implementation.

A curriculum design is the re-planning and review of an existing curriculum and is done after a full re-evaluation has been carried out. This phase has a number of characteristic components which include purposefulness, contents, methods, learning, experiences and evaluation.

Curriculum dissemination is the phase in curriculum development during which the curriculum consumers are prepared for the intended implementation and information is disseminated. This is done through the distribution or publication of information, ideas and notions and in-service training.

Curriculum implementation is the phase during which the relevant design is applied in practice.

Curriculum evaluation, only the success and effectiveness of the curriculum are evaluated and the effect thereof on the learners. Curriculum needs to be planned in such a way that it delivers a related learning programme within the structured workplace. It also emphasised that curriculum development lends itself to different interpretations and identifies six authoritative phases. This happened in order to show how curriculum development progresses (curriculum design, dissemination, curriculum implementation).

Schubert (1986: 42) regards curriculum implementation as the delivery process, implementation can be considered a system of engineering that takes design specifications through various channels to the teacher and classroom. Curriculum implementation depends on the field on which the initial design is made and for whom it is envisaged. The broad curriculum will be implemented at a broad national level, while a specific subject syllabus will be implemented at school and classroom.

2.4 DEFINITION OF CURRICULUM

The concepts 'curro' means "I run" and is a word of Latin origin and refers to a race, a track or a racetrack. (Songe, 1977: Brubaker, 1982). When reference is made to the educational track on which learners move under the leadership of their teacher on the way to adulthood, it can be linked to the concepts 'curro'. In terms of this, the curriculum serves as preparation for life. Curriculum is the sum total of the means by which a student is guided in attaining the intellectual and moral discipline requisite to the role of an intelligent citizen in a free society. It is not merely a course of study, nor is it a listing of goals or objectives, it encompasses all of the learning experiences that students have under the direction of the school (Mark, Stoops and King- Stoops 1978: 457). Tummer (1981a:1; 1981b: 30) describes the curriculum as the whole spectrum of compulsory and optional activities which are formally planned for students.

2.4.1 Curriculum has given rise to the following interpretations

Curriculum is that which is taught in a school.

- Curriculum is a set of subjects which are followed.
- Curriculum is content.
- Curriculum is a study programme followed by a learner.
- Curriculum is a package of material.
- Curriculum is a number of courses following on each other.
- Curriculum is a set of behaviour objectives.
- Curriculum is everything which takes place within a school, including co-curricular activities, guidance and inter-personal relationships.
- Curriculum is everything planned by staff.
- Curriculum is learning experiences of the learners in a school.
- Curriculum is what an individual learner experiences as a result of the school's involvement.

Rowntree (1978:1-2) sees curriculum as part of the so-called Educational Technology, the design and evaluation of curricula and learning experiences which lead to implementation

and evaluation. According to him this is a rational problem–solving approach, during which learning and instruction can be systematically thought through. Curriculum consists of identifying goals, designing learning experience, evaluation and improvement of education following on evaluation.

2.4.2 Principles of curriculum development

- Purposefulness is an important aspect of effective curriculum development.
- The rationale must be clear and communicable.
- Curriculum development must be based on sound accountable curriculum theory.
- A clear method is an important characteristic.
- Effective and ongoing evaluation from the design phase to the evaluation phase is essential
- Effective leadership is essential.
- A particular level of curriculum ability is necessary for all those involved.
- Effective time utilisation and orientation are determinative for effectiveness.
- Adequate learning must be an important point of departure.
- Relevance is an important characteristic of effective curriculum development.
- Meaningful connection between the various elements is essential throughout the whole process.
- Individualisation must be considered during planning.

Teachers are regarded as the recipients of the curriculum that is developed by specialists elsewhere. The teacher’s curriculum function remains limited to the correct application of what has been developed by these specialists (Carl, 2005).

Teachers are regarded as partners in the process of curriculum change. There should be an opportunity for their voices to be heard before the actual implementation. They should be given the opportunity to make an input during the initial curriculum development processes (Carl, 2005: 223).

2.4.3 Teacher Involvement and Professional Development

Tanner and Tanners (1975: 614) pointed out that if teaching is to be a profession, the teachers must participate in curriculum development at the classroom, school and school system levels. Professionalism is inextricably intertwined with curriculum development. Czajkowski and Patterson (1980: 173) confirm the view that it is the teacher who often has the best specialist knowledge and that the utilisation may lead to greater development within the school, as well as in the classroom. Teacher involvement is essential, not only for the institutional and curriculum development of a school but also for the personal professional growth and empowerment of the teacher. Teacher participation brings about positive results, which may lead to dynamic curriculum development.

2.5 MANAGEMENT IN SCHOOLS

Management is a framework by which school leaders provide direction and resources to educators and learners, with the objective of bringing about improvement in teaching and learning in the school environment. The role of the managers involves tasks such as setting clear goals, allocating resources to instruction, managing the curriculum, monitoring lesson plans and evaluating teachers.

The principal of the school is the one who is responsible for the day to day professional and operational leadership and management of the school. The school principal is no longer able nor expected to carry this responsibility alone, rather, national policy suggests school management tasks be shared with others, including members of the School Governing Body (SGB), SMT and senior teachers (DoE, 2000). The SMT therefore is responsible for the day – to-day management of the school and implementation of the school’s policies which have been determined collaboratively with the SGB. All members of the SMT have leadership functions as part of the job, and the professional responsibility and mandate for running the school. The principal still holds ultimate responsibility for making sure that the task of teaching goes appropriately.

Effective school management plays a pivotal role in the successful implementation and delivery of curriculum in a school. The discussions that follow attempt to shed light on the link of the importance of school management to the study.

2.5.1 Effective Team Management

Managing an effective team is about ensuring that you get the most out of working with an effective group of people and that everyone in the team has opportunities for development plus the reward of being part of a collaborative and successful team (Chivers, 1995; De Beer 1996: 53).

2.5.2 Setting objectives

An effective manager as a leader of the management team should ensure that the objectives meet the following requirements as given by the following guidelines: Be specific and remember objectives must be clear and well defined and the use of positive words is essential. Objectives should be measured quantitatively and qualitatively, if possible objectives must be realistic and within potentialities of individuals as well as the team to be achievable. Have a target date because objectives must be achieved within a specific time schedule. Objectives should be the results of consensus; the team leader and team members must reach consensus in respect of the specified set out objectives. The objectives should be team orientated and emphasis should be placed on both team and individual involvement. Individualism and collectivism must be equally emphasised. It is important that objectives should be in writing in order to eliminate ambiguity (De Beer, 1996).

2.5.3 Monitoring

The principal as a team leader needs to monitor the following aspects: Achievement of aims, the leader needs to be informed of the progress of the actions in respect to the goal attainment. Performance: The quality of the results achieved must be monitored. Target dates: A good data processing system is necessary in order to record the achievement of objectives, feedback received, training given and recognition gained. Information: Continual feedback will eliminate unwelcome surprises (De Beer, 1996).

2.5.4 Feedback Continuity

Feedback must occur on a regular basis whether it be formal informal or as the situation arises. Urgency: Feedback needs to be given within 48 hours of the activity taking place. Specificity: Feedback must address a specific work performance on meaningful aspects or generalities. Focus: The focus needs to be placed on specific work performances rather than the person.

2.5.5 Leadership

A good and effective leader assists when help is needed and when achievement is slow and poor. The following should be his/her guide for assisting:

- Provide for the experience of the team member.
- Allow for face to face communication.
- Provide for discussion of problems and their possible solutions.
- Allow for adjustment to be made to actions to ensure that the objectives will be met.

2.5.6 Reporting

The leader will see that reporting is an integral part of leadership. The team provides a written report about the effectiveness in respect to goal achievement. The team gives an honest report on the effectiveness in respect to the work performed. It provides an action plan for the team or team member recommending specific skills or techniques which could be used to improve effectiveness.

2.5.7. Recognising the best motivator

For further goal achievement the motivation shown may be intrinsic or extrinsic and includes: Honourable mention of achievement which should occur in the staffroom in the presence of other staff members. Honest and positive reporting of appraisals. Financial rewards which could be in the form of bonuses for the entire team. Promotion is probably the most powerful motivation for excellent achievement that a leader can provide. Handshakes can be used as a

form of recognition for work or a task well done. Letters of appreciation can be used to emphasise the team member's specific and personal qualities.

2.5.8 Leadership and vision

Vision is an essential and important component of effective leadership (Beare, Caldwell and Millikan 1989). Outstanding leaders have a vision for their organisations. The vision must be communicated in a way which secures commitment among the members of the organisation. Communication of vision requires communication of meaning. Attention should be given to institutionalising the vision if leadership is to be successful (Bennis and Nanus 1985)

2.6 HOW MANAGEMENT AND LEADERSHIP ARE INTEGRATED

According to Etzioni (1961), there is a universal requirement of management which is the need to obtain and maintain compliance; meaning the manner of getting teachers and learners involved in their work and maintaining this involvement over time. The key point of this compliance theory is the various strategies being used by the leader to get and maintain the involvement of the teachers to focus and achieve the set goals. This includes the various forms of power and leadership to obtain and maintain compliance. Leadership and management are often regarded as essentially practical activities. The determination of vision, the allocation of resources and the evaluation of effectiveness all involve action (Bush, 1999). Leadership refers to the way in which educational leaders influence the kind of identification and attachment people will have for their work and the degree of acceptance that occurs when power is executed. In short leadership determines the quality of the desired outcomes, whenever power is executed (Van der Westhuizen, 1991).

Cuban (1988) provides one of the clearest distinctions between leadership and management. He links leadership with change while management is seen as a maintenance activity. He also stresses the importance of both dimensions of organizational activity. By leadership I mean influencing others' actions in achieving desirable ends. Leaders are people who shape the goals, motivations and actions for others. Frequently they initiate change to reach existing and new goals, leadership takes much ingenuity, energy and skill.

Managing is maintaining effectively current organizational arrangements. While managing well often exhibits leadership's skills, the overall function is toward maintenance rather than change. I prize both managing and leading and attach no special value to either since different settings and times call for varied responses (Cuban, 1988). Bush (1998, 2003) links leadership to value or purpose while management relates to implementation or technical issues. Leadership and management need to be given equal prominence if schools are to operate effectively and achieve their objectives. Leading and managing are distinct but both are important. The challenge of modern organization requires the objectives perspectives of the manager as well as the flashes of vision and the commitment wise leadership provides as stated by Bolman, and Deal (1997).

Leithood (1999) makes the important point that, in practice principals in their day to day work are rarely aware of whether they are managing or leading; they are simply carrying out their work on behalf of the school and its learners. However, the nature of that work should reflect the school context and in particular, it needs at any one time. For example, South Africa's underperforming (Ministerial Review 2004; Pandor, 2006) requires a greater emphasis on basic management, making the organization functional rather than a visionary approach. This may involve ensuring regular and timely attendance by learners and educators, maintaining order and discipline in classroom, and providing adequate resources to enable learning to take place. Once schools are functional, leaders can progress to developing vision, and outlining clear aims and politics with the confidence that systems are in place to secure their implementation.

Planning of all school activities is a managerial task of the leader which involves future aims and objectives. Assuming that agreement can be reached on the educational aims and objectives of a school strategic and tactical planning will be needed in order to achieve them. To plan unfortunately takes a lot of thinking time and consideration of the uncertainties of the future to be taken into account. Effective leadership and management are essential if schools and colleges are to achieve the wide ranging objectives set for them by their many stake holders and the governments which provide most of the funding for public education institutions. In an increasingly global economy an educational workforce is vital to maintain

and enhance competitiveness. Teachers and their managers are the people who required delivering high educational standards.

2.6.1 Leadership and Management: Two Sides of a Coin

In reality, leadership and management work together; they are two sides of the same coin. The teacher in a leadership position cannot be an effective leader if he or she is an incompetent manager (Drucker and Bennis, 2003). Management is efficiency in climbing the ladder of success. Leadership determines whether the ladder is leaning against the right wall (Drucker and Bennis, 2003).

These are differences between management and leadership as shown in the table below.

Table 2.6: The purpose of this table is to show that leadership and management work together and their functions are inseparable. Leaders and managers work together in achieving a long term-vision of day to day management functions.

Table 2.2: Management and leadership: Two sides of coin (Drucker and Bennis 2003)

Leadership	Management
Guides	Coordinates
Motivates	Organises
Initiates	Maintains
Anticipates	Stabilises
Builds vision	Realises
Creates	Structures
Moves forward	Establishes parameters
Inspires	Handles
Breaks boundaries	Sets boundaries

A leader guides, motivates and initiates to its members while the manager co-ordinates, organises, maintains and realises. Functions such as strategic planning, vision building, liaison with communities and parents, and staff development can be identified as leadership functions. Functions such as structures, establishes parameters and set boundaries fall under the banner of management. Leadership determines whether the ladder is leaning against right wall.

The functions of leadership and management are inseparable because the two complement each other. There is also an area of overlap. Certain functions within the school are both management and leadership functions (Drucker and Bennis, 2003). Functions such as strategic planning, vision building, liaison with communities and parents, staff meetings, co-ordinating the duty roster and administering textbooks fall under the banner of management. (Drucker and Bennis, 2003). Leadership involves bringing about change, envisioning a new future for the organisation and impassioning people to commit and dedicate themselves to the new directions.

Management, on the other hand, is more directed to maintaining the status quo, albeit very effectively, and availing the sustained effort needed to maintain new directions. It has a flavour of bureaucracy, system and procedure (People Dynamic, 1997). Leading is not the same as managing. Leadership and management are related, but they are not the same. A person can be a manager, a leader; both, or neither, management is much broader in scope than leadership and deals with all the functions of management (Griffin, 1993).

Table 2.3: Distinction between management and leadership (Griffin 1993)

Activity	Management	Leadership
Developing human network to achieve the agenda	Planning: Establishing goals and objectives and formulating strategies and plans to reach the goals	Establishing direction: Develop a mission and strategies for change
Outcomes	Organising and staffing: Develop a structure for the assignment of tasks and resources	Aligning people: Motivate people and teams to follow a vision
Creating an agenda	Produce the results expected by the stakeholder	Produce change and often dramatic results

2.6.2 Distinction between Management and Leadership

Managers focus on non-behavioural aspects of management such as the systematic selection of goals and objectives, the development of strategies to achieve these goals, leaders focus on behavioural aspects of management, the leaders focus on energising people to change what needs to be changed and steer the organisation in a certain direction. Organisations need both management and leadership to be effective.

2.6.3 What is Transformational Leadership?

The term transforming, transformation and transactional have become central to the study of leadership and are often used to differentiate leadership and management. The theory of transformation leadership was first developed by Burns (1978) in order to differentiate those leaders that established meaningful and motivating relationships with subordinates and followers from those that relied extensively on exchange or transaction to generate results (Burns, 1978).

Burns (1978) Identified that a transformational leader looks for potential motives in followers, seeks to satisfy higher needs, and engages the full person of the follower (Burns, 1978). Transformational leaders have better relationships with their supervisors and make more of a contribution to the organization than do those who are only transactional (Bass, 1990). Transformational leaders are similar to charismatic leaders, but are distinguished by their special ability to bring about innovation and change. Transformational leaders emerge to take an organization through major strategic change. They have the ability to make the necessary changes in the organization's mission, structure and human resources management. Transformational leadership is most appropriate in dynamic situations such as the current setup in South Africa. The transformation of South African organisations to include all South Africans and to empower them managerially and economically calls for transformational leadership (Blanchard, 1988).

Transformational leadership is the form of leadership that assumes that the central focus of leadership ought to be the encouragement of setting commitments and goals which are in high capacities from the organizational members. Higher levels of personal commitment to organizational goals and greater capacities for accomplishing those goals are assumed to result in extra effort and greater productivity (Leithwood, Jantzi and Steinbach, 1999).

In transformational leadership, by contrast, leaders and followers are united in pursuit of higher level common goals. Burns (1978) maintains that "Such leadership occurs when one or more persons engage with others in such a way that leaders and followers raise one another to higher levels of motivation and morality". When transformational leadership is successful, purposes that might have started out as separate later become fused. Transformational leadership initially takes the form of leadership by building. The focus is on arousing human potential, satisfying higher order needs and raising the expectations of both the leader and the follower in a moral commitment. Bush (2003) links three leadership models to his collegial management model. The first of these is "transformational leadership". Leithwood (1994) conceptualises transformational leadership along eight dimensions.

- Building school vision.
- Establishing school goals.
- Providing intellectual stimulation.
- Offering individualised support.

- Modelling best practices and important organisational values.
- Demonstrating high performance expectation.
- Creating a productive school culture.
- Developing structures to foster participation in school decisions.

Caldwell and Spinks (1992) argue that transformational leadership is essential for autonomous schools.

Transformational leaders succeed in gaining the commitment of followers to such a degree that higher levels of accomplishment become virtually a moral imperative. The transformational model is comprehensive in that it provides a normative approach to school leadership, which focuses primarily on the process by which leaders seek to influence school outcomes rather than the nature or direction of those outcomes. Chirichello (1991) says it may also be criticised as being a vehicle for control over teachers and more likely to be accepted by the leader than the led. Allix (2000) goes further and alleges that transformational leadership has the potential to become despotic because of its strong, heroic and charismatic features.

The environment within which schools have to operate also raises questions about the validity of the transformational model despite its popularity in the literature. A school leader is required to adhere to the government prescriptions which affect aim, curriculum, content and pathology as well as values (Botter, 2001). There is a more centralized, more direct, more controlled educational system that has dramatically reduced the possibility of realising a genuinely transformational education and leadership. Transformational leadership is consistent with collegial model and it assumes that leaders and staff have showed values and common interests. When it works well, it has the potential to engage all stake holders in the achievement of educational objectives.

2.7 AN INTERNATIONAL VIEW OF MANAGEMENT OF GRADE 3 CURRICULUM

The purpose of having an international view of management of Grade 3 curriculum is to help schools and teachers keep up with the latest international trends within the teaching sector. This will be beneficial when international learners enter Grade 3 having 36

mastered a variety of tools for learning as the teachers will be able to teach the children adequately and use similar techniques that they are used to. During the course of the year in Grade 3 learners begin to use the skills to become intentional in their thinking, reading, writing and problem solving.

2.7.1 An International View of Managing Curriculum

According to Day and Sachs (2004: 150), international research reminds us that during the 1960s and 1970s “in-service education, then known as “professional development” was aimed at keeping individual teachers up to date with the latest changes and developments in discipline, content or pedagogy and such “in-service education” was usually organized either by the state-based education systems or by professional associations. The most common formats were one day or half day workshops held at a site remote from the classroom with little follow ups to support educators or to evaluate the effectiveness of the programme in bringing about change in schools.

2.7.2 United States of America

Education in the United States is mainly provided by the public sector, with control and funding coming from three levels: federal, state, and local. Children education is compulsory (Day and Sachs, 2004). Public education is universally available. School curricula, funding, teaching, employment, and other policies are set through locally elected school boards with jurisdiction over school districts with many directives from state legislatures. Educational standards and standardized testing decisions are usually made by the state government.

The country has a reading literacy rate of 99% amongst the population over age 10 while ranking below average in science and mathematics understanding compared to other developed countries. The poor performance has pushed public and private efforts such as the No Child Left Behind Act (Miller, 2000). In elementary school, basic subjects are taught, and students often remain in one or two classrooms throughout the school day, with the exceptions of physical education. The curriculum in public elementary education is determined by individual school districts. The school district selects curriculum guides and

textbooks that are reflective of state learning standards and benchmarks for a given grade level.

Learning Standards are the goals by which states and school districts must meet adequate yearly progress as mandated by No Child Left Behind. This description of school governance is simplistic at best, however, school systems vary widely not only in the way curricular decisions are made but also in how teaching and learning take place. Some states or school districts impose more top-down mandates than others. Teachers play a significant role in curriculum design and their few top-down mandates.

Primary school teachers are trained with emphases on human cognitive and psychological development and the principles of curriculum development and instruction. Schools meet with the parents or guardians to develop an Individualised Education Program and determine the best placement for the child. Most schools have predetermined the number of minutes that will be taught within a given content area, because No Child Left Behind focuses on reading and maths as primary targets for improvements.

2.7.3 Leadership differs across international boundaries

Americans emphasise coordination, cooperation with people, understanding and delegation as the most important leadership qualities. This is possibly a reflection of their democratic way of life. The British set great store by general fortitude, integrity, discretion and willpower.

Europeans stress the quality of leadership or supremacy, natural authority, discipline and inspiration and see themselves as a reflection of the European aristocratic tradition (Napoleon, Bismarck and De Gaulle, 1995). The German management elite manifests authoritarian tendencies to retain the leadership function for themselves and tend to delegate authority only for routine functions (Rupert, 1965).

2.7.4 Australia

According to Day and Sachs (2004), Australia in the 1990s introduced the Quality Teaching Programme, which aimed at the enhancement of skills and competencies, defining the employer and relating to productivity (improvement in learning) or a broader notion of a professional community in charge of their own development. Through the late twentieth century (Day and

Sachs, 2004: 158) noted a number of themes for successful professional development in which educators participated and the most important of these were the following:

- Relevance to the needs identified at the school level by the educator.
- Control of the professional development programme by participants.
- Adoption of collegial and collaborative programmes organisation.
- Longer time frame to allow development through cycles of action and reflection.
- Acknowledgement of the need for school reform and restructuring as a basis of improvement as well as professional development and change.

The implication is that whatever professional development is introduced at school, it may be informed by the experiences and views of the educators at school and needs of the school.

The involvement of educators in the professional of programmes that have the impact on them is important, as this will give them the opportunity to have a say in their own development and they may feel that they are part of the programme. “If we expect educators to do a better job and improve education, the needs perceived by in-service and pre-service educators for their professional development should be accounted for when planning future educator training and preparation programmes” (Noh, Cha, Kang and Scharmann, 2004: 1286).

2.7.5 Singapore

In Singapore’s education system today, students receive six years of primary education, and four to five years of secondary education, followed by two years at junior college. Singapore’s success in education has pursued its vision of high education system over a long period of time and has accomplished significant improvements at each stage of its journey. Singapore has focused on the universal development of strong mathematics, science and technical skills (Box, 2007). The country’s solid foundation in mathematics and science for all students in the elementary grades seems to be a core part of the student’s later success. At primary level mathematics is a core subject that every student must take. The teaching of mathematics begins when students enter pre-school and science is taught from primary

onwards. Students have specialist teachers in mathematics and science from upper primary onwards.

The Singapore approach to mathematics is distinctive and has become well-known because of Singapore students' success. The Singapore national mathematics curriculum is based on the assumption that the role of the mathematics teacher is to instil "maths sense". In a Singapore classroom, the focus is not on one right answer, rather the goal is to help students understand how to solve mathematics problems. The Singapore "Model Method" Also makes extensive use of visual aids and visualisation to help students understand mathematics. The concrete pictorial abstract model used is based on an understanding of how children learn mathematics rather than on language consideration. Teachers cover far less material than in many other countries, but cover it in depth; the goal is to master mathematics concepts (Hong et al. 2009). The level of mathematics in the Primary School Leaving Examination (Grade 6) is approximately two years ahead of that in the US schools (Schmidt 2005).

Training: All teachers in Singapore receive training in the Singapore curriculum at the National Institution of Education (NIE) at Technology University. **Professional development:** In recognising the need for the teacher to keep up with the rapid changes occurring in the world and to be able to constantly improve their practice, they are entitled to 100 hours of professional development per year. **Leadership:** Singapore has a clear understanding that high quality teaching and strong school performance require effective leaders. Poor quality leadership is a key factor in teacher attrition in many countries (Nig, 2008).

2.7.6 Nigeria

According to Schaeffer (1990), curriculum change or innovation is a complex and multi-faceted process. Schaeffer (1990), states that "there is nothing easy about the process of change. Nowhere is this more the case than in education. Effective management is a sine-qua-non to the successful implementation and institutionalization of curriculum change. If curriculum is a process of preparing children for a living and life in their own societies and for competition in the global economy of tomorrow, then it is only logical that primary school curriculum, both formal and informal, contents and processes should be dynamic enough to adapt to the new socio-economic, political and technological realities of time (UNESCO-II

CBA 2002). Several research (Bray, 2004: Hawkins, 2004) have shown that in regions and countries where the will to provide quality education is present, adequate resources are equitably provided for effective curriculum development, implementation and management. School materials including books and writing materials are provided in adequate quality and quantity (Bray 2004: Hawkins, 2004).

In other countries, particularly the developing nations, findings show that the struggle to provide classroom accommodation and books for pupils still appear insurmountable. To promote equity in the management of curriculum reforms in a pluralistic country such as Nigeria, certain factors should be considered (Ikoya, 2005).

1. Learner's community needs.
2. Ecological environment
3. Resources availability
4. Mental, physical and environmental challenges facing learners.

According to Kearsley and Lynch (1992), the right leadership behaviour is fundamental to successful curriculum change. Transformational leadership is critical to the institutionalization, successful management and implementation of curriculum reforms, irrespective of the environment in the globalization age.

2.7.7 Botswana

The primary school system in Botswana can be sub-divided into two phases; lower primary and upper primary. Primary education in Botswana is free, and has been since the removal of primary school fees in 1980 (Zuze, 2010). Since 2009, the country uses 10 educational regions in an effort to decentralise the management of education (Manyaku & Mmeriki, 2011).

In Botswana the distribution of reading and mathematics performance split by socio-economic quintile, where quintile 1 contains the poorest 20% of primary school learners, quintile 2 the second poorest 20% and so on (Manyaku & Mmeriki 201) In reading, and to a 41

slight lesser extent in mathematics, students from wealthier homes perform better than those from poorer homes. Botswana students do better in reading than in mathematics, at least as measured by the SACMEQ tests and based on SACMEQ performance levels in these two tests.

2.7.8 South Africa

On the 27th of April 1994 the people of South Africa went to the polls in what has become thought of internationally as the ‘miracle’ elections. There have been two major curriculum changes in South Africa since 1994, each of which can be understood within the political context of the time. The first period of policy making was characterised by the politics of compromise in the interests of a peaceful transfer of power and of national reconciliation. The second was carried out after the election of 1999, which ended the Government of National Unity, when the ANC received enough support to govern on its own. Apartheid in South Africa and the consequent institutionalisation of inequality have had a lasting impact on education in the country.

The very low value for money provided by the South African schooling system has become well known in the 15 years since the fall of apartheid. The poor performance of South African schools compared to those in both developed and developing countries has been established at primary level in mathematics and reading (Moloi and Strauss 2005). The Southern and Eastern African Consortium Education Quality (SACMEQ) scores for mathematics at Grade 3 and grade 6 level starkly show low performance in South Africa. The figure shows that South Africa is outperformed by Mauritius and Kenya, and in all the other quintiles the South African mean scores fall below those of the South and Eastern African Consortium Education Quality (SACMEQ) all country means. A culture of complacency and low expectation permeates the entire South African system, including those schools which were privileged under apartheid and which continue to enjoy levels of resourcing well in excess of those which pertain in the majority of schools.

There are massive disparities in performance between schools within the South African system, to a large extent structured by a history of poverty and deprivation, with African schools overwhelmingly represented in the poor performing category. Indeed, South Africa

has the highest levels between school inequality of performance in both mathematics and reading, by a large margin, among SACMEQ countries (Van der Berg, 2005).

The prevalence of functional innumeracy is high in Mozambique, Namibia, Botswana and South Africa, most notably in Namibia. In the majority of provinces in Mozambique, Namibia and South Africa, more than one in three students are functionally innumerate. More than half of all rural students in South Africa and Namibia are functionally innumerate, as are more than half of all quintile 1 and 2 students in these two countries. Almost half of Namibian Grade 3 students are classified as functionally innumerate, as compared to 40% in South Africa, 33% in Mozambique and 22% in Botswana.

2.7.9 Annual National Assessment (ANA) Results 2012

Minister of Education Angie Motshekga said: Grade 9 pupils are a worry and there is an anxiety over maths marks, the maths performance of Grade Nine pupils was a cause for concern. “In Grade Nine mathematics, the average performance is 13%. Provincial performance ranges between 9% AND 17%. These results explain to a very large extent why, among many other reasons, we have such high failure and dropout rates at Grades 10 and 11. Motshekga added that the department was concerned that few pupils took mathematics and science in the further Education and Training phase.

Pupil performance in the foundation phase (Grades One, Two and Three) was pleasing, said Motshekga. There was also progress in the intermediate phase (Grades Four, Five and Six), While in Grade Three, the national average performance in literacy was 52% this year, compared with 35% in 2011. Motshekga said that in Grade Three numeracy, pupils were now performing at an average of 41%, compared with 28% in 2011. This is a significant improvement of 13%, particularly noting the commitment to ensure that learners pursue mathematics and science in later grades. Provincial performance ranged between 34% and 47%, and was highest in Gauteng and the Western Cape (The Citizen 4 December 2012).

2.8 MANAGEMENT MODELS

The study of management in education is an elastic pursuit. Models have been borrowed from a wide range of disciplines, and in a few cases developed specifically to explain unique features of educational institutes. Cuthbert (1984) categories are analytic, pragmatic- rational, political, models that stress ambiguity and phenomenological and interactions models. There are six major models of educational management. The six models are formal, collegial, political, subjective, ambiguity (Cuthbert, 1984).

2.8.1 Formal models

They assume that the organisation is a hierarchical system in which managers use rational means to pursue set goals. Heads possess authority legitimized by their formal positions within the organisation and are accountable to sponsoring bodies for the activities of their institutes. Formal models give prominence to the official structure of the organisation. Formal structures are often represented by organisation charts which show the authorized patterns of relationships between members of the institutions. In informal models the official structures of the organisation tend to be hierarchical. All formal approaches typify schools and colleges as goal seeking organisations (Cheng, 2002). Cheng (2002) claims that goal development and achievement is one of two main general elements in leadership. How to set goals, create meanings direct actions, eliminate certainty or ambiguity and achieve goals is also a core part of leadership activities in education. Increasingly goals are set within a broader vision of a preferred future for the school (Beare, Caldwell and Millikan, 1989).

Heads and principals possess authority over the staff because of their formal roles within schools and colleges. There are seven roles within schools and colleges. There are seven features which compromise the formal models-which are structural models, systems models, bureaucratic models and hierarchical models. Cheng (2002), stresses the role of models in goal development and achievement. He argues that leaders should be goal developers and goal leaders and should have two main strategies to promote quality: Develop appropriate institutional missions and goals, implement plans and programmes and meet standards.

2.8.2 Collegial Models

They assume that organisations determine policy and make decisions through a process of discussion leading to consensus. Power is shared among some or all members of the organisation who are taught to have shared understanding about the aims of the institution. Little 1990: “Something is gained when teachers work together and something is lost when they do not. The benefit must be great enough that the time teachers spend together can compete with time spent in other ways”. Collegial models have the following major features.

- 1) They are strongly normative in orientation.
- 2) Collegial models seem to be particularly appropriate for organisations such as schools and colleges that have significant numbers of professional staff. Teachers possess authority arising directly from their knowledge and skill. They have an authority of expertise that contrasts with the positional authority associated with formal models.
- 3) Collegial models assume a common set of values held by members of the organisation.

The size of decision- making groups an important element in collegial management. Collegial models assume that decisions are reached by consensus rather than division or conflict. Collegial models are the appropriate way to manage primary schools. In England and Wales it remains the normative model of good practise in the phase of education, despite the contrary pressure arising from government imperatives. Little 1990 describe how collegiality operates in practise that teachers talk about teaching and there is shared planning and preparation. The presence of observers in classroom is common. There is a mutual training and development.

2.8.3 Political Models

Political Models assume that in organisations policy and decisions emerge through a process of negotiation and bargaining; interest groups develop and form alliance in pursuit of particular policy objectives. Conflict is viewed as a natural phenomenon and power accrues to dominate coalition rather than being the preserve of formal leader.

National and local politics strongly influence the context within which schools and colleges operate. Central government determines the broad character of the educational system and this is inevitably underpinned by the political views of the majority party. In England and Wales, the 1988 Education Reforms Act and subsequent legislation set the framework within which schools and colleges must operate. In England and Wales local politics have become less influential since the 1988 Act which allocated many former local education authority responsibilities to central government or educational institutions. National and local government determine the broad framework for education, political models apply to school, colleges and other organizations just as much as they relate to political parties. International trend towards self-management in Education expands the scope for political activity. As schools have greater responsibility for their own affairs, so the potential for conflict inevitably increase (West, 1999). The majority of decisions that concern teachers and the responsibility for planning the individual school future now reside within the school. Schools in England and Wales have never offered more scope for micro political influence than they do now within the self-managing schools. These has never been a time when an awareness of micro political process and interactions was more useful to head teachers (West, 1999).

Political models tend to focus on group activity rather than the institution as a whole. The emphasis is on the basic unit not the school or college level (Becher and Kogan, 1992). (Wallace and Hall 1994), said that researchers on school management teams (SMT) in England and Wales shows how issue of power and resources were strongly evident in the work of SMT and in their relationship with other staff in the school and that political models are concerned with interests and interest groups. Individuals are thought to have a variety of interests which they pursue within organizations (Morgan, 1997).

Political models stress the prevalence of conflict in organizations. Interest groups pursue independent objectives which may contrast sharply with the aims of the sub-units within the institution and lead to conflict between them. Micro politics is about politics, and how people compete to get what they want in the face of scarce resources (Mawhinney, 1999). Political models assume that goals of organizations are unstable, ambiguous and contested. Individual interest groups and coalitions have their own purpose and act towards their achievement (Bolman and Deal, 1991). The concept of power is central to all political theories. The outcomes of the complex decision making process and likely to be determined according to

the relative power of the individuals and interest groups involved in the debate (Morgan, 1997).

A source of power in education is that power may be regarded as the ability to determine the behaviour of others or to decide the outcomes of the conflict. The source of power can be made between authority and influence. Authority is legitimate power which is vested in leaders within formal organizations; authorities are defined essentially as the people who are entitled to make binding decisions (Bolman and Deal, 1991). Influence represents an ability to affect outcomes and depends on personal characteristics and expertise (Bacharach and Lawler, 1980).

2.8.4 Subjective Models

Subjective Models assume that organizations are the creation of the people within them. Participants are thought to interpret situations in different ways and these individual perceptions are derived from their backgrounds and values. Organisations have different meanings of each of their members and exist only in the experience of those members. Hermes (1999) offers a similar definition in applying subjective models to higher education in Germany using the term construction to mean interpretation of events.

2.9 CONCLUSION

Leadership plays a central part in understanding of group behaviour, for it is the leader who usually provides the direction towards goal attainment. A more accurate predictive capability should be valuable in improving group performance. Leadership is one of the most controversial and researched subjects in management. Leadership is the process of leading and it is one of the four fundamental management functions. If an organisation is to attain its objectives, someone must set certain activities in motion and keep them going. Effective leadership and management are essential if schools and colleges are to achieve the wide – ranging objectives set for them by their many stakeholders, notably the government which provides most of the funding for public educational institutions. Teachers, and their leaders and managers, are the people who are required to deliver higher educational standards.

Transformational leadership pays attention to the concerns and developmental needs of individual followers. It changes the followers' awareness of issues by helping them to look at old problems in new ways. In addition, it excites, arouses and inspires followers to put out extra effort to achieve group goals. The pursuit of quality in education is one of the fundamental drivers in the educational transformational process. Learner performance is one of the very important determinants of this. The conceptual framework that will be tackled to categories types of curriculum delivery in mathematics, curriculum development and monitoring consist of three elements- curriculum design, curriculum dissemination, curriculum implementation and programme implementation that underpin the Management of Grade 3 Mathematics curriculum.

Strategic intervention in learner attainment in the classroom done by educators should be monitored on a continuous basis. School managers should encourage the participation of parents, learners and staff in the curriculum management of their schools. Finally, the whole school needs to be involved in marketing the school's vision, particularly in terms of what type of learners it wishes to produce for the labour market.

The next chapter discusses the research Methodology used in this study.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 INTRODUCTION

The general aim of this research is to investigate the delivery and management of Grade 3 mathematics curriculum. The data of this research was obtained through group interview with individual educators teaching Grade 3s of the selected schools, individual interviews with the heads of departments, classroom observations of individual educators and document analysis.

3.2 QUALITATIVE APPROACH

Qualitative designs are just as systematic as quantitative designs, but they emphasize gathering data on naturally occurring phenomena. Most of these data are in the form of words rather than numbers, the researcher must search and explore with a variety of methods until a deep understanding is achieved. Lichtman (2006: 8) asserts that qualitative research has as its purpose a description and understanding of human phenomena, human interaction or human discourse. The qualitative approach has its own interest in meaning and interpretation as created by human talk (Holliday, 2002: 6). The researcher chose qualitative research approach because it builds a complex, holistic picture formed by analysing words and reporting detailed views from participants (Creswell, 1994:1). Furthermore, a qualitative approach allows the researcher to uncover the meaning that a situation has for those involved and to understand a phenomenon (Holliday, 2002: 6)

3.3 QUALITATIVE RESEARCH DESIGN

The Research design refers to plan for selecting subjects, research sites and data collection procedures to answer the research questions. The design will show which individuals will be studied, and when, where and under which circumstances they will be studied (McMillan 1993: 157). A descriptive research design was used (Babbie 1998). The design was preferred because the aim of the study was to investigate the management of Grade 3 mathematics curriculum. It sought to put into perspective the context in which the teaching and learning of Mathematics for Grade 3 learners take place in Johannesburg East.

3.4 QUALITATIVE INTERPRETIVE APPROACH

The present study is qualitative in nature. The achievement and problems surrounding the management of Grade 3 mathematics curriculum in Johannesburg East will be investigated.

A qualitative research approach was appropriate for this study because a naturalistic method is used to collect the required data about the perceptions, experiences and expectations of educators about their own professional development in schools. The qualitative research approach examines one phenomenon of interest in depth at the selected site or sites for the sake of a better understanding of that phenomenon, regardless of the number of participants, social scenes, processes and activities (McMillan and Schumacher 2001: 396). It is important to choose an appropriate method for research. Every inquiry is unique and each research project will have a different approach, methodology and methods. The interpretative constructionist theory will be used for data collection and analysis.

- Ontological and epistemological perspectives
- Ontologies of effective school management
- Interpretivist epistemologies
- Interpretivism as a paradigm

3.5 QUALITATIVE RESEARCH METHODS

Tutty, Rothery and Grinnel (1996: 4) describe qualitative research as the study of people in their natural environments as they go about their daily lives. In this field of study, the qualitative research method was employed in response to the demand of the research problem. Qualitative research is concerned with abstract characteristics of events, the meaning given to events by participants who find themselves experiencing them in their everyday lives. Qualitative research is concerned with the abstract characteristics of events, the meaning given to events by participants. Qualitative research focuses on all aspects of the “lived experiences”. It attempts to:

- Describes qualities of events;

- Interpret meanings and relationships among these events;
- Measure the importance of events in the larger picture of educational concern;
- Ground these appraisals on explicit social values and human interests (Kincheloe 2003: 189-190).

Qualitative research includes some distinctive characters such as aims that are directed at providing an in-depth and interpreted understanding of the social world of research participants by leaning about their social and material circumstances, their experiences, perspectives and histories (Lewis and Ritchie 2003: 3). The researcher used the following qualitative research data collecting techniques to gather information in the selected schools.

3.6 SAMPLING PROCEDURE

The study population for the research were all underperforming primary schools in Johannesburg East. It included all Grade 3 learners. The sample comprised three primary schools. Two were chosen from disadvantaged communities and the third from a low residential area. This was done to cater for the different socio-economic circumstances in which the schools were situated. Purposive sampling was used to select Johannesburg East schools that were underperforming. Schools in Johannesburg East were chosen because they host the majority of learners who reside in a poverty stricken area. In addition, most educators reported that they were not coping with the problems of managing the mathematical curriculum of Grade 3 in the area. Heads of Department, Deputy Principals and Grade 3 maths educators of the three selected schools took part in the study.

3.6.1 Sampling

Sampling is the group of subjects or participants from whom the data were collected. The sample can be selected from a large group of persons, identified as the population, or can simply refer to the group of subjects from whom data are collected (even though the subjects are not selected from the population). The researcher selects particular elements from the population that would be representative or informative about the topic of interest. On the

basis of researcher's knowledge of the population, a judgement is made about which subjects should be selected to provide the best information to address the purpose of the research. The following participants were interviewed: eight grade 3 educators, two heads of department, two deputy principals were interviewed. Their characteristics are summarised below:

(a) Deputy Principals

The ages of the deputy principals ranged from 40 to 50 years. They possessed Grade 12 academic qualifications and professional qualifications of a Degree and Higher Education Diploma. Their teaching experiences were as follows:

- Deputy Principal from PS1 has 15 years of experience.
- Deputy Principal from AS2 has 19 years of experience

(b) Heads of Department

The ages of the Heads of Department ranged from 37 to 45 years. They had Grade 12 academic qualifications and professional of a Degree and Higher Education Diploma. They had various teaching experience as shown below:

- Head of department from PS1 has 6 years of experience.
- Head of department from AS2 has 4 years of experience.

(c) Educators

The ages of the eight grade 3 educators ranged from 38 to 45 years. They taught at the different schools which two of them are not far away from each other but the other one is little bit far but reachable. The schools were (PS1, PS2, PS3,) and those teachers were given symbols, E, F, G, H, I, J, K, and L. All the educators attended the CAPS implementation at their schools. All educators had the following qualifications:

Grade 12 academic qualification

Three-year Teacher Diplomas

3.7 RESEARCH INSTRUMENTS

According to Denzin (1998), the interview is a favourite methodological tool for qualitative research. The primary data source consisted of personal interviews with the participants. These were the semi-structured, face to face open-ended questions (appendix E-G). Greeff (in de Vos 2002) states that qualitative interviews are “attempts to understand the world from the participants’ point of view, to unfold the meaning of people’s experiences and to uncover their lived world prior to scientific explanation” (ibid: 292). This approach was chosen so that I could present accurate descriptive data in the participants’ own words. With the participants’ expressed consent (Appendix H), I used a recorder to record the interviews. This information was later transcribed verbatim. This was done to ensure some form of accuracy in the data collection process. This approach was chosen because the technique helps to access data by asking rather than by watching. Interviews were useful in gaining an understanding of the experiences of the mathematical curriculum of participants and the meanings they personally attached to their experiences. This is the appropriate instrument, as Cohen and Manion (1994) point out that interviews are used to convert into data information “directly obtained from a person, by providing access to what is inside a person’s head, what a person likes and dislikes and what a person thinks”(p.56).

The research instruments used are discussed below to give a clear indication of their relevance and importance to the study.

3.7.1 Interview

An interview is when a researcher talks to someone with the purpose of obtaining information (Hitchcock and Hughes 1989: 153). An interview is according to Niuewenhuis (2006: 22) a two way conversation where the interviewer asks the participants questions to collect data and to learn about the ideas, beliefs, views, opinions and behaviour of the participants. The aim of the qualitative interviews is to “see the world through the eyes of the participant “and the interview can be a valuable source of information, provided it is used correctly. The aim of my data collection strategy was always to obtain rich descriptive data that would help one understand the participants’ construction of knowledge and social reality. If the interviewee

thinks the topic is important and trusts the interviewer, the person is normally willing to share information with the researchers that they would not be able to collect in another way. I had the opportunity to get to know the educators quite intimately, so that I could really understand how they thought and felt about continuous professional training and development (Kelly and Terre Blanche 1999: 128). To ensure that the participants talked to me in some depth about their perceptions and experiences, I used semi-structured interviews and some questions relating to their perceptions, experiences and expectations about the Grade 3 maths curriculum. I jotted down in advance what I perceived to be information of value immediately (Kelly and Terre Blanche 1999: 128). Semi structured interview is commonly used in research projects to corroborate data emerging from other data sources. It seldom spans a long time period and usually requires that the participant answers a set of pre-determined questions. It does allow for probing of and clarification of answers.

3.7.2 Individual interviews with heads of department

The first step was to conduct individual interviews with the heads of departments at the selected schools. The researcher use semi-structured questions. The aim was to determine their perceptions, experiences and expectations regarding Grade 3 maths curriculum. The value of applying a semi-structured individual interview with a schedule was that the interview was flexible and adaptable allowing the interviewer to make a true assessment of what the participant believes in. Although flexible, data are obtained relatively systematically which makes it easy to compare and analyse data in order to interpret clearly (De Vos 1998: 299). The value of this interview structure was to provide a systematic collection of data (McMillan and Schumacher 2001: 444; Borg and Gall 1996: 306).

3.7.3 Individual interviews with the Grade 3 educators

Individual interviews were conducted with each of the Grade 3 educators who were observed in their classrooms. The researcher used semi-structured questions. The aim of the research was to determine experiences of Grade 3 educators regarding the Grade 3 mathematics curriculum.

3.7.4 The observation of individual educators in their classrooms

Observation is the systematic process of recording the behavioural patterns of participants, objects and occurrences without necessarily questioning or communicating with them. Observation is an everyday activity whereby we use our senses (seeing, hearing, touching, smelling and testing) - but also our intuition- to gather bits of data. As a qualitative data gathering technique observation, was used to enable the researcher to gain a deeper insight into and understanding of the phenomenon being observed. The risk of course is that observation by its very nature is highly selective and subjective. We seldom observe the whole situation but tend to focus on a specific object/event within the whole, thereby cutting us off from the whole. I was therefore conscious of my own biases and design ways and means to deal with it. In qualitative research I accepted that I could learn the most by participating and/or being immersed in the research situation being observed (Nieuwenhuis 2006: 21-22).

3.7.5 Types of observation

Although there are four types of observation used in qualitative research namely, complete observer, observer as participant, participant as observer and complete participant the researcher, in the light of the research aim; made use of the observer as participant. The observer as participant- i.e. I got into the situation, but focused mainly on my role as an observer in the situation. I looked for patterns of behaviour in a particular school or classroom to understand the assumptions, values and beliefs of the participants and to make sense of the social dynamics but I remained uninvolved and not influenced by the dynamics of the setting. I observed the educators while teaching in their classrooms. This enabled me to understand the impact of Grade 3 maths curriculum practices or lack thereof, in the classroom fully (Birmingham and Wilkinson 2003: 121).

The following were observed:

- The creation of a positive learning environment.
- Implementation and knowledge of the curriculum.
- Lesson planning, preparation and presentation.

- Learner assessments/achievements.
- Learner books.

I observed how departmental policies and the planned Grade 3 maths curriculum in the selected schools were implemented in the classrooms. Observation was preceded by short interviews with each of the observed post level one educators.

Two educators were asked to be observed in the classroom. Those educators were from the two schools which were primary school 1 (PS1) and primary school 2 (PS2). Classrooms were neat, clean and orderly. They contained displays, posters, wall charts that could support the learning process. Displays of pupils work, since displaying pupils work is an excellent form of positive reinforcement. Educators used the learning materials to provide visual and tactile stimuli to enliven classroom practise. Educators were creative which included making and using their own learning resources. Educators were flexible with time, teachers provided a stimulating learning environment. Lesson plans were done accordingly and assessment were up to date.

3.7.6 Documents

According to Nieuwenhuis (2006: 19-20) it is important to distinguish between the literature review of a study and using documents as part of data gathering strategy. The two do overlap in the sense that they both deal with the data sources in some or other written format, but including document analysis as part of gathering strategy is something distinct from the literature review that all researchers involve themselves in during a research project. When documents are used as a data gathering technique the approach focuses on all types of written communication that may shed light on the phenomenon that is investigated. Written data sources can include published and unpublished documents, company reports, memoranda, agenda, administrative documents, letters, messages, faxes, newspaper articles or any document that is connected to the investigation. I analysed the minutes of staff meetings to see if issues relating specifically to grade 3 maths curriculum have been recorded and to find out how these were implemented. Secondly the minutes of school management team, phase or department and grade meetings were looked at to determine if matters relating to the planning and implementation of the professional training and development of educators in the

department were recorded. Thirdly, written reports by master educator or educators after attending short courses and workshops relating to planning and implementation of the professional development of educators were also looked at.

Every school has slightly different planning expectations, but in general their planning requirements include the aspects and areas of the syllabus that will be covered on a termly basis. Lesson plans were well prepared which showed date and start –and-finish time of lessons, lesson objectives and outcomes of the content. One school planned daily rather than weekly lessons. Pupils’ books were checked to assess whether what was planned by educators was what was actually taught. In addition, checking was done to find out whether the plan indicated that the maths lesson was to do with multiplication exercises in the books. Teachers assess continuously and record consistently. All teachers take individual needs of pupils into consideration.

3.8 DATA COLLECTION

According to TerreBlanche and Durrheim (2002) data are the basic material on which a researcher’s findings are based. Permission to conduct the study was sought from the Department of Education. Thereafter, consent to participate in the study was given by school authorities. The study used semi-structured interviews, observation and documents to gather data. Semi-structured interviews had the highest response rate and allowed recording of sessions (Neumann 2003). I interviewed educators’ Head of Department. Furthermore, a semi-structured interview allowed probing by the interviewer and the interviewees could provide in depth information to the researcher. Thus, the interviewer could ask follow up questions to seek clarity on some issues. In the present study, semi-structured interviews were used to gain in-depth information on the problems that Grade 3 educators experience in teaching mathematics. Observation of Grade 3 mathematics classes were done including looking at a few exercise books both good and bad to assess their work, to ask the Grade 3 educators what problems they were facing in implementing the curriculum in the classroom.

3.9 COLLECTION OF DATA AND ANALYSIS

In qualitative research there are five major methods for gathering data, which are observation, interviews, document review, and use of audio-visual materials. The data of the study was collected through semi-structured interviews with the individual head of department, individual interviews with the Grade 3 educators and group interviews with the Grade 3 educators. All interviews were audio recorded.

Data was analysed by using content analysis. I identified the various meanings surrounding mathematical problems experienced by Grade 3 educators. Content analysis involved counting the frequencies and sequencing of particular words, phrases or concepts in order to identify key words or themes. I jotted down notes and memos on what I saw or heard in my data claims (Gillham 2000: 71). I did not impose meanings to data therefore since content analysis is inductive in that themes emerge from the data. It was suitable in the present study in that the words and phrases that were mentioned most often reflected important concerns (Sharan 2009).

The body of literature reviewed represents a comprehensive illustration of domains or issues related to mathematics problems, a qualitative content of that literature (to be reviewed in detail) was conducted. Open coding procedures guided the analysis. Emphasis was put on asking specific questions while reviewing the data (Strauss 1987). Themes or distinct dimensions emerged from the analytical process that reflected latent meaning underlying the collective content in each category (Berg 2001). Furthermore, sub-themes also emerged as sub-categories.

3.10 TRUSTWORTHINESS, VALIDITY AND RELIABILITY

Trustworthiness was established by using the following terms credibility, dependability, transferability and conformability (Ntsaba and Havenga 2007). I was able to achieve this by gaining the respect and belief from my fellow colleagues in the cluster by emphasizing the importance of belief, respect and acknowledging everyone's input and participation. These four terms of establishing trustworthiness are discussed below:

3.10.1 Conformability

Conformability is the qualitative investigator's comparable concern to objectivity, the extent to which the researcher admits his or her own predisposition (Patton, 1990). It is a measure of how well the inquiry's findings are supported by the data collected (Lincoln and Guba 1985). This was achieved by engaging an independent person to audit the research methods. After completing data analysis, I thoroughly examined the audit trail consisting of the original transcripts, data, data analysis documents as well as text of the reviewed literature.

3.10.2 Transferability

Transferability refers to the extent to which findings can be applied in the context or with other participants (Lincoln and Guba 1985).

3.10.3 Validity and Reliability

Annual National Assessment (ANA) is standardised and approved instrument for measuring achievement in South Africa. The assessment instrument is used by the Department of Education to monitor progress in the teaching of literacy and mathematics in schools. It is a valid and reliable instrument. I used it to assess the performance of learners of different grades in literacy and mathematics in different schools in South Africa. The assessment tool is suitable for use in the present study (Kellaghan, Greaney and Murray 2009).

3.10.4 Dependability

According to Lincoln and Guba (1985), dependability refers to when the researcher attempts to account for changing conditions in the phenomenon chosen for study as well as changes in the designs created by increasingly refined understanding of the setting. Thus, consistency of the study is achieved when the steps of the research are verified through examination of items such as raw data, data reduction products and process notes (Campbell 1996). Dependability will be achieved by listening to the participants' needs and acting responsibly in the interpretation and in the process proceeds to analyse and interpret the transcribed text for the critical stories told.

3.11 RESEARCH ETHICS

The study observed the research ethics by obtaining Informed consent from authorities of the participating schools. The purpose of the research and all procedures to be undertaken will be explained to the authorities of the participating schools before formal request for their participation is sought. School authorities will sign the consent form and schools will be allowed to withdraw from the study if need be. Data that will be obtained from the schools will be kept in strict confidence and used for research purposes only. Names of participating schools will not be included in the study. The participants in the study were given the right to remain anonymous and information, which they provided remained confidential. The results of the study were not falsified; hence, they reflect the outcome of the performance of the learners who took part in the ANA conducted in February, 2011. The participants' rights were observed and they were protected from all forms of harm.

3.12 CONCLUSION

Educators at all levels are key contributors to the transformation of education in South Africa. Teachers have a particularly important role to play. The National Curriculum Statement envisions teachers who are qualified, competent, dedicated and caring who will be able to fulfil the various roles outlined in the Norms and Standards for Educators of 2000 (Government Gazette No 20844).

Management is about maintaining the school and ensuring that its goals are achieved (Davidoff and Lazarus 2002; Stevens 1990: 66) allege that a strong leader who strives for an effective school climate and encourages staff involvement is on the road to success. All individuals have a role in developing and sharing accountability for the effective implementation of educational goals. The results will enhance the educational process and lead to the ultimate goal of education for all children. Teachers should be trained as curriculum developers, as they should then be in a position to plan and develop their own work thoroughly. The next chapter discusses data interpretation and presentation.

CHAPTER 4: DATA INTERPRETATION AND PRESENTATION

4.1 INTRODUCTION

According to James and Schumacher (2006) stated that in qualitative studies, methods align well with questions that address description, comparisons, correlations, and experimental and single-subject approaches to gathering data. In qualitative research there are five major methods for gathering data, which are observation, interviews, checklist, document review, and use of tape-recorder.

According to Power (2000) there is insufficient literature outlining the pragmatic process of thematic analysis but acknowledges that it is one of the ways of putting information received from participants into meaningful and usable forms for easy interpretation and understanding. In this study, thematic analysis was utilized to analyse the data. The thematic analysis approach utilized to analyse the data based on the comparison and categorization of the data from the interviews, observation and texts, qualitative studies normally results in numerous pages of texts, observations notes and transcripts, thematic analysis become an appropriate analytical approach for evaluating the data. The results of the tape-recorder and transcribing interviews verbatim were large volumes of texts of transcriptions.

Three schools were chosen and two of them were close to each other and situated in the same area. The schools were given symbols, PS1, PS2, and PS3. The Heads of department who were interviewed were from PS1, AS2, and they were willing to participate. The symbols are A, B; each represented the Head of department of the school.

4.2 DEPUTY PRINCIPALS' RESPONSES

There are three categories of results. The categories include the Deputy Principals' responses, Heads of Department's responses and educators' responses.

4.2.1 Meaning of Management of Grade 3 mathematics curriculum

Two participants indicated that teachers need to be supported and empowered by HODs. The finding is supported by the following statements: *Management of Grade 3 is to ensure that teachers are qualified and supported by HOD for foundation phase. Grade 3 mathematics curriculum is to have qualified teachers and enough resources.* This is because without the support of the HOD's the teachers will not be able to teach effectively nor manage their classes to the best of their abilities. Curriculum support and professional development, learner support and teacher development, stakeholders' involvement and resources are very crucial in the management of the Grade 3 mathematics curriculum.

4.2.2 Meaning of Transformational leadership

Two participants explained that a transformational leader is a leader that brings change and has the necessary resources to achieve their goals. The following statements support this finding:

Transformational – brings about change by being a role model and offering support and encouraging staff member..... Have necessary resources, example beads straws counters charts measuring equipment and ensure activities are graded. A leader must be a good listener, enthusiastic, determined, energetic, responsible role model. Participant two describe the meaning of a leader as: A leader is person who manages curriculum change effectively.....A leader who closely monitored the curriculum change actively and informally and as part of the support they provided as change.

Teachers and HODs need to be transformational leaders so that they can handle changes such as curriculum changes efficiently and in teaching mathematics competently. They need to be dynamic and energetic so that they can encourage and promote the subject to their learners creating an efficient learning space.

4.2.3 Understanding of the concept management

Two participants who were interviewed stated that by having qualified teachers and enough resources has enabled them to keep up to date with the new teaching trends being introduced.

This is supported by this statement: *One participant said, having library and enough resources available helped their learners. The Deputy Principal from PS2 mentioned that by having teachers who are qualified and who can manage to upgrade themselves helped their learners to perform far better.*

The availability of resources allows for the constant influx of up to date information that will help teachers truly grasp the concept of management therefore resulting in better cohesion within the grade and ultimately within the school. The access to information will also result in teachers researching and learning new methods to present the curriculum changes to the learners.

4.2.4 Consideration of internal in-service training

One participant reported that team work is important. This is supported by this statement:

Yes, it is important to develop each other; if one of the educators is good with something it is better to share with other educators and also to be up to date with the curriculum.

Within a team the team members have various attributes that lead to the cohesion and effective working of the team. The more trained a team member the better the cohesion of the team because team members are able to contribute a high standard of work. This results in the management of the school working to its fullest ability and the teachers will teach to their fullest ability.

4.2.5 Moral support and guidance to educators

One participant explained that moral support is important. This is supported by this statement: *Always give moral support and encourage people, stand by them and listen, guide them advice given to teachers, leadership act of giving direction.*

Instructional leaders value their role as staff developers and consistently view their responsibility as facilitators driven by a clear vision for their school (Gupton, 2003)

Without support and guidance educators will not function at their best abilities. In order for the learners to learn efficiently the educators must feel comfortable in their roles as educators. To do this they need to be encouraged and supported, this can be achieved if the school management is full of transformational leaders.

4.2.6 Current development appraisal system

Two participants reported that school development system is a priority to educators.

They acknowledged the importance of the developmental appraisal in schools.

This is supported by the following comments: *Participant one: Our grade 3 teachers attend workshops and have regular meetings to discuss challenges and successes, They learn from each other and support each other. It is necessary to have such development appraisal. It is a form of teacher development, They have IQMS to support and change their weaknesses. Participant two: School development is a priority they are passionate about this. We have Development Support Groups which are responsible for observing educators in practice to help to identify the form of development which is necessary.*

The development of educators is a crucial one because it ensures that educators will keep up with the rapidly changing teaching methods that the twenty first century learners need. Through the continued development of teachers via workshops and peer learning teachers will be able to reach their fullest potential and teach effectively.

4.2.7 Management of Grade 3 mathematics curriculum

Three participants explained Grade 3 mathematics curriculum as; their ability to ensure quality of teaching and learning and to have enough resources. This is supported by this statement: *It is a necessary process to ensure quality of teaching and learning at school. It is a developmental process to encourage and support learners to work on their weaknesses. Another participant said: It is constructive to build up learner's ability. Make sure that LTSM is available and well qualified teachers are important, teachers to have patient and understanding with learners. Teachers must use real objects and concrete material to reinforce the teaching of mathematics. Educational tours to teach learners more about mathematics curriculum, These tours are used to expose learners to the curriculum to other aspects of the quality teaching and learning at school.*

The quality and level of an educators' teaching determines the level of mathematics that a student receives in the classroom. It is critical that educators are familiar and have a good understanding of the mathematics curriculum so that they can teach the curriculum well.

4.2.8 Follow up after Grade 3 mathematics curriculum workshops

One participant explained that after the workshops or short courses conducted by the facilitators no follow ups were given. This is supported by this: *no departmental facilitators that come to their schools. The department is not supportive to follow up on the workshops.*

The follow up on Grade 3 mathematics curriculum workshops ensure that the skills learnt are being used in the classroom. The follow up will also ensure that the information that the educators have acquired from the workshops is implemented and interpreted in a way that enhances the teaching of mathematics.

4.2.9 Ways of improving delivery of Grade 3 curriculum

Three of the participants indicated that overcrowding of their classrooms support their learners and the retentions of learners at the end of the year affected the performance of their learners. This is supported by this comment: *By having smaller classes which are manageable, so that teachers can give support to all their learners. One participant explained that for the school to improve the delivery of mathematics curriculum parents must also ensure that homework is done daily, Children must read, and be given support in weak areas. Learners need to be supported with extra lessons given to the weaker learners. The Department of Education often refuses to fail the weak learners this lots of pressure on the new educators in the following grade. Relevant teachers who are qualified as remedial teachers are to help with these extra lessons. One Deputy Principal indicated that partnering with private schools could help with grade 3 mathematics curriculum.*

The large amount of learners in a classroom ensures that each individual child is not given enough attention. This will result in learners not learning as effectively because they do not fully comprehend the mathematics curriculum as there are too many learners for the educator to give individualized attention to the learners.

4.3 HEADS OF DEPARTMENT'S RESPONSES

These are the leaders that supervise and inspect the teachers. These include HOD's duties having the responsibility to supervise teachers' planning. Heads of Department are the senior

management team members who are responsible for the effective and efficient implementation, support and evaluation of curriculum. They are from PSI and PS2. The ages of the Heads of Department ranged from 37 to 45 years.

4.3.1 Meaning of Management of Grade 3 mathematics curriculum

Two participants described the management of mathematics as the implementation of curriculum. This is supported by this statement: *Laying down management plan of when assessment task will be done to monitor the implementation of the curriculum. One other participant said, by seeing how the day to day mathematics curriculum is delivered or implemented. Management is about coping with the complexity. It brings about order and consistency by drawing up formal plans, designing rigid organisation structures, and monitoring results against the plans.*

The management of the implementation of curriculum into the classroom is essential because it ensures that educators are teaching the learners the correct work.

4.3.2 Understanding of the term “Transformational leadership”

Two participants described the transformational leadership as a leader who brings change. This is supported by this definition: *Leadership that brings good positive change in individuals or a group. A leader is a person that brings change.*

Transformational leadership pays attention to the concerns and developmental needs of individual followers, they change followers’ awareness of issues by helping them to look at old problems in new ways, and they are able to excite, arouse, and inspire followers to put out the extra effort to achieve group goals. Transformational leadership gives directions and quality improvement to the school.

4.3.3 Moral support and guidance to educators

All participants agreed that the Head of Department gave support to educators and kept them informed with the implementation of the mathematics curriculum. This is supported by this statement: *conduct workshops and one on one meeting with educators. This assisted them with planning for development workshops. Teachers stay well informed about the curriculum.*

The moral support and encouragement of the educators by the HOD's resulted in the educators being confident in their subject and this helped the educators develop their skills. These skills help them teach the curriculum with ease and confidence.

4.3.4 Consideration of internal in-service training

Two participants agreed that they do have in-service training more often in their schools. This is supported by this statement: *Yes to learn new strategies of teaching mathematics. In service training is important in our school.*

The SMT needs to organize in-service training to ensure that educators are competent and have capabilities to improve in the classroom.

4.3.5 Current development appraisal system

Two participants acknowledged the importance of developmental appraisal programmes in schools. *Participant one said, she feels positive, it offers guidance and support to the teachers. Participant two said, It is important especially for the newly appointed educators.*

Professional development of staff is at the heart of every effective school, and is the sole responsibility of the SMT. The staff development team (STD) is one committee that will help to develop the educators.

4.3.6 Management of grade 3 maths curriculum

Two participants described the management of grade 3 curriculum by developing their educators and checking the necessary documents thoroughly. They manage Grade 3 management by class visit for developmental purposes, workshops and book control. *Participant two said, that they manage grade 3 mathematics curriculum by checking through book control of the learners. Class visit, checked prep file and regular assessment.*

The management of Grade 3 mathematics curriculum by HOD's is necessary so that the content that is being taught in the classroom is one that is according to the curriculum and sanctioned by the government.

4.3.7 Follow up after grade 3 maths curriculum workshops

Three participants explained that after facilitators or the coach had conducted workshops they make follow ups regularly to see the implementation of the curriculum. This is supported by this statement: One participant said yes, they have regular visit by a coach from GPLMS. Other participant *said, it depends on the outcomes of the visit or workshops. One other participant said, they want to monitor if teachers are implementing what they learnt in the workshop.*

The follow up of conductors from workshops helps the HOD's keep the implementation of the skills and information within the schools management intact. This will allow the management to keep up to date with all the workshop information and skills that educators across the country are learning.

4.3.8 Ways of improving the delivery of Grade 3 Curriculum

Two participants explained that by attending workshops regularly and by assisting schools that are under resourced. This is supported by this comment: *participant one said, by attending regular workshops that are current, the system in place is perfect, training and workshops are good for newly appointed educators. Participant two said that by assisting schools that are under resourced and reviewing the teacher learner ratio in classes, informing parents of their responsibility.*

The ways of improving the delivery of Grade 3 mathematics curriculum is fundamental in the improvement of the level of mathematics in a school. The ways of improving the delivery of Grade 3 mathematics curriculum can be presented to parents and teachers so that they can implement it in the classroom and at homes therefore increasing the quality of mathematics.

4.3.9 Leadership style used by the manager

The HOD'S did not feel comfortable with this question, I then left it and let them decide on what to do, they did not want to respond on the question.

4.4 GRADE 3 EDUCATORS' RESPONSES

These are the Grade 3 educators from PS1, PS2 and PS3. The ages of the eight educators ranged from 38 to 45 years. All eight educators are responsible for many different practices in the school, including planning and assessment.

4.4.1 Grade meetings

Two participants explained that they do have grade meetings which are held twice a week and another educator indicated that they do not have grade meetings every two weeks. This is supported by the findings: *grade meeting held monthly respectively. Another educator said that grade meetings are held once a month and training every two weeks. HOD from PS2 pointed out that, we do have informal gathering which relates to the mathematics curriculum. Another educator also said that, they had grade meetings every two weeks they meet to discuss mathematics curriculum. Grade meetings held twice a month.*

The regular occurrence of grade meetings is a necessity in schools because it connects the management and educators. This connection helps the educators and the management keep up to date with what is happening in the school so that they can run the school effectively.

4.4.2 Frequency of meetings

Four participants indicated that they do have meetings which are held once a month but at different times. This is supported by the following comments:

Another participant said that, *every second Tuesday and if urgent matters arise we get information through notice board. Another educator said that, only if they have an urgent purpose to discuss. HOD of PS1 said, we had a meeting once a month with the Grade leader. Another educator said that they had frequency meetings once a month. One educator said that meetings held once a month. Only one educator added by saying that their meeting held once a month towards the end of the term. HOD from PS2 indicated that a meeting will be called if urgent matters arise and the information will be displayed on the notice board.*

The regular occurrence of meetings is essential in the weekly running of school affairs because it helps the staff know what their goals are for the week. It also keeps the management informed of what is going on in the classroom thus keeping the implementation of the mathematics curriculum on track.

4.4.3 Adapting the Grade 3 mathematics curriculum

All participants indicated that they adapted mathematics curriculum to accommodate the various learning styles and mathematical ability of the child and to cater for all the needs of each individual learner. This is supported by this finding: *One participant said that they adapt as there is a lot of variation of learning styles and mathematical ability among learners. Another educator said that to accommodate learners who are weak and remediate them. Participant from PS2 pointed out that since the curriculum cannot be amended by an individual we just try to implement it in a way that will cater for all the learning, needs for each individual learner. Another educator was not sure. Another educator said that, no the curriculum is not the level of learners.*

The adaptation of the mathematics curriculum is essential because learners' methods of learning change and educators need to adapt so that their learners are learning efficiently and to their fullest abilities.

4.4.4 Support given to Grade 3 educators by HODs

All participants agreed that the HOD give support on implementation of the maths curriculum and monitor the education. This is supported by this comment: *Yes, she ensures that there is good implementation, monitoring progress and provide support where necessary. Yes, as she comes for class visits and book control. Another educator said that, often she does provide support where ever she could. However, she is also prohibited by the policies to execute certain activities. HOD from PS2 said that, yes lesson plans and assessment are checked regularly and feedback is given more often. Learner's books are checked and to see if we are in line with the curriculum and if learners are doing their work in class. Another educator said that our HOD is very supportive.*

The support of the implementation of the mathematics curriculum into the classroom by the HOD increases the general acceptance of the curriculum by the rest of the staff. This will ensure that the curriculum is introduced into the classroom by all the teachers.

4.4.5 Self-development as educator

All participants pointed out that the SMT does not arranged developmental workshops. This is supported by this finding: *One educator said no, SMT does not arrange development workshops but I communicating with colleagues from within their schools and with colleagues from other schools. She pointed out that, by reading up and doing research on what is expected and how to do it and also by using the CAPS document. I go through curriculum more often to understand what is required of me. I check different textbooks for different concepts. Talk to other colleagues sharing ideas through E-mails. I do attend extra classes related to fine motor problem and mathematics skills which can assist in teaching mathematics in the right ways. One educator asserted that, by reading from different books and attending workshops. Another participant mentioned that by communicating with my colleagues often, attending mathematical workshops and also inquire to know from other schools how they implement certain concepts or the actual curriculum itself.*

Teacher as specialist will have developed the expertise in the subject or learning areas and level of teaching, possibly other areas of competency. Educator's task is to ensure that they remain up to date with developments in their areas of expertise.

4.4.6 Frequency of departmental workshops

Three participants said they do not have departmental workshops on how to implement mathematics curriculum. Two participants said, *they never had departmental workshops*. This is supported by this finding: *Another educator mentioned that, they have theirs once a month where by many concepts are done at a time thus proper reinforcement of these concepts is not done. She explained that since this is a new curriculum the SMT does inform us and encourages us to attend, depending on what they got from the department. One educator said they never had one for this year but the last one held was on CAPS last year (2012).*

One participant said that they do with the help of GPLMS, training and support SMT encourages educators to attend workshops.

Another participant said that, Not sure but they do arrange, continue to explain that, this year we have attended two workshop already but sometimes it depends on the topic or concepts to be addressed and last year the department held CAPS curriculum workshops in mathematics curriculum. One educator pointed out that, they have departmental workshops once a month and concepts are not reinforced they teach many concepts at a time. Another educator said that, we have departmental workshops very often since we have a GPLMS project in our school, but I have no idea if this project helps or not.

The frequency of the departmental workshops is essential because it makes sure that the skills that the educators have learnt are actually implemented in the classroom. It also helps the educators develop their skills.

4.4.7 Challenges faced by Grade 3 learners

All participants explained that number concepts are difficult to the learners and also struggled to understand GPLMS programme. This is supported by the following statement: *One participant said that, the GPLMS project strategy of teaching mathematics is too difficult for learners. LOLT which is prescribed is a challenge as guidelines are not in line with the new curriculum. Some other concepts are not easy to understand and jumping from one concept to another without drilling the concept. Learners become confused and lose touch of what is expected of them. Another educator said that, the challenge is that GPLMS Project present learners with difficult strategies of mathematics. That makes them struggle to cope with mathematics. Another challenge is progression of the learners to the next grade.*

HOD from PS1 said that, learners still dependent on teacher support, they don't think critically and work independently. Another challenge is LOLT and no support at home, many learners lack vocabulary. Educator in PS3 said that, too difficult challenges everything that is new from the curriculum start with the grade 3.

Learners' struggle to read and count affects them in reading instructions by themselves. Educators are required to create situations that allow learners to learn on their own, if the learner didn't grasp the concept well it is difficult to complete the concept.

4.4.8 Resources that enhance teaching

Two participants agreed that they have resources in their school and others use technology to enhance teaching. This is supported by this statement: *One participant said, yes they do have some resources, example textbooks and access to the internet and other learning and teaching materials. They used videos and training that takes them back to what we taught in school. Another educator pointed out that some resources are available but many of the resources are made by the educators for their learners. One participant said that they , have lot of resources to enhance teaching. Another educator said, no we don't because SMT does not seem to understand the importance of mathematics resources to enhance teaching counting and mental mathematics skills. The HOD from PS1 mentioned that, we have Gauteng on line which gives us more activities on how to deal with certain concepts. We have social networks where we share challenges with other educators.*

Resources that enhance teaching are essential to modern day classrooms as modern day learners are technologically savvy and learn better when material is presented via technology. The presence of resources increases learning productivity and in turn the mathematics level of grade 3 learners will increase.

4.4.9 Expectations of parental involvement in the teaching and learning

All participants said parents are not fully involved and supportive in their children's education and they need to attend workshops for guidance. This is supported by this finding: *One educator said that, some parents are not fully informed and knowledgeable about the new curriculum there needs to be workshops for parents.*

Another participant mentioned that it is so unfortunate that most of the parents of the learners that I am teaching have limited time to help learners with their homework or projects, reason being that others worked shifts and they hardly see their children. Others are not well informed about or don't have knowledge about the new curriculum taking place. I think it will be much better if our parents can be educated on how to give help. Parents need to be in workshops wherein they will be taught how to help with homework, for parents to oversee their children's homework and to make sure it is done correctly.

Educator from PSI said that, parents need to be fully involved and know how their children are doing in class. They must offer support and help with homework.

Another educator asserted that, parents must be informed or educated to know that learning involves the three stakeholders (Educator, learner and parents) they must forget about giving every responsibility to the school or educators. They must support their children with school work at home; they must ask their children what they have learnt at school daily so that they stay informed.

One educator said that, parents are illiterate, their situation is very critical when it comes to academics.

The involvement of parents in their children's learning is essential to productive learning as students receive support from their parents. This will encourage and promote school work and learning to the learners if their parents support them.

4.5 CONCLUSION

The following main question was used to gather data, "How do public schools manage their Grade 3 mathematics curriculum in line with National Curriculum Statement (NCS)?" I extensively utilised structured interviews, observations as well as document analysis to generate findings discussed in this chapter. In the majority of cases findings indicate that there is disjuncture in terms of support provided by the DoBE and school management. Compounding the failure to manage grade 3 mathematics in the classroom is the fact that some educator are ill equipped to teach that subject at primary school level among other factors.

The next chapter highlights the discussion, conclusion and recommendations.

CHAPTER 5: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter gives an overview of the study with reference to the literature study, problem objectives, methods of research and results. The following are what appeared to be major findings after the analysis and interpretations of data obtained by use of data collection methods as indicated in Chapter 3. I wind up my study by proffering by proffering some recommendations.

The objectives of the research were the following:

- To investigate the delivery and management of Grade 3 mathematics curriculum. To determine what mathematical curriculum challenges do Grade 3 teachers experience?
- To understand the causes of curriculum mismanagement by teachers.
- To what extent do educators get support from the management of the school?

This research consists of five chapters. The following are summaries of the contents of each chapter.

The following aspects were discussed in Chapter One which gives the view of the study.

- Problem statement, rationale of the study, significance of the study, aims and objectives, sampling, theoretical frame work, data collection, document analysis, observation analysis, limitation of the research, definition of the key concepts.
- Chapter Two dealt with the literature review management of mathematics curriculum comparing with the African countries and international countries.
- Chapter Three discussed collection of data, data analysis, trustworthy, validity and reliability, conformability, research ethics.
- Chapter Four the researcher discussed data analysis, question and question data analysis.
- Chapter Five which is the concluding chapter the researcher explored findings and presents findings of the study.

5.2 MAJOR FINDINGS

After the thematic analysis of the data collected, the following major findings were identified:

- Findings indicate that there is lack of support by the department of education in terms of empowering educators on to manage mathematics curriculum
- Findings also point to the fact that most of the teachers are ill-prepared or not qualified to manage mathematics curriculum.

5.3 DISCUSSION

5.3.1 Deputy Principals' and Heads of Department's Responses

There are three categories of results. The categories include the Deputy Principals' responses, Heads of Department's responses and educators' responses.

5.3.2 Meaning of Management of Grade 3 mathematics curriculum

Management is about coping with complexity and it brings about order and consistency by drawing up formal plans, designing rigid organisational structures, and monitoring results against the plans. All two deputy principals responded described the management of grade 3 mathematics curriculum as to; ensure that teachers are qualified, support HOD that she/he support the educators. One of the HODs described the management of grade 3 curriculum as to understand mathematics curriculum and implement well in the classroom. One felt that a worked out management plan of when assessment task should be in place to implement the curriculum, while the other indicated that the educators need to attend more workshops in mathematics curriculum.

The HOD of foundation phase must support and empower the educators in her/his department to ensure the smooth running of operations in the school. Jordaan (1989: 386-91) mentions that curriculum problems must be addressed continuously, that practice-orientated in-service training must be given and that support by the education department and school must be available continuously to offer materials assistance and encouragement.

Mathematics uses its own specialised language that involves symbols and notations for describing numerical, geometric and graphical relations. Mathematical concepts build on one another, thereby creating a coherent structure (DOE, 2002). Mathematics is a product of investigation by different cultures, it is a purposeful activity in the context of social, political and economic goals and constraints and it is not value free or culturally neutral (Revised National Statement School Policy 2002).

Pratt (1980: 443) states that the purpose of a curriculum design is still, however, to meet the needs of learners. The success of this purpose is often determined during the implementation phase. Pratt (1980: 443) stresses this purpose of meeting the needs of the learners by stating that the value of the design is fully discharged only when that need is satisfied.

Mestry and Grobber (2004: 2) state that South African school managers have multifaceted and enormous task to establish an environment that can lead to effective schooling. They further say that one of the major changes in the leadership of the school has been the range of expectations placed on the individuals. The Department of Education (2000, p.8) states that there is general agreement about why schools need good management and leadership is to ensure a better quality education for the learners. These expectations have moved from the demand for management of curriculum and control to the demand for an educational leader who can foster staff development as well.

Mathematical Curriculum is an attempt to communicate the essential principle and features of an educational proposal in such a form that is open to critical scrutiny and capable of effective translation into practice. Cjajkowski and Patterson (1980: 158) state that, if mathematics curriculum is to function really effectively, it must make a real contribution in the school and classroom.

5.3.3 Meaning of Transformational leadership

Deputy Principals described the term “Transformational Leadership” as a leader who brings positive change in individuals or groups and one who is open to change while the one HOD said Transformational Leadership displays enthusiasm, determination and bringing about change. Lagana (1989: 54) states that the most effective leaders are those whose teachers 77

have ownership in the mission of the school and an interest in its effectiveness. A very important aspect is that should the leader be prepared to play a role in the empowerment of teachers, it does not mean that the principals lose authority or are disempowered, but teacher empowerment can be viewed as a more intensive professionalization of the teacher's role (Kavin & Tanaka, 1991: 115).

Is the leader who has the idea of taking one thing and making something else from it is a basic precept for the transformational leader. The leaders of the world will be those who see a different world and realise they must also change to help others to get there (Houston, 1993: 11). Leaders who provide individualized consideration and intellectual stimulation, and who possess charisma.

Burns (1978) Identified that a transformational leader looks for potential motives in followers, seeks to satisfy higher needs, and engages the full person of the follower (Burns, 1978). Transformational leaders have better relationships with their supervisors and make more of a contribution to the organization than do those who are only transactional (Bass, 1990).

Transformational leaders are similar to charismatic leaders, but are distinguished by their special ability to bring about innovation and change. Transformational leaders emerge to take an organization through major strategic change. They have the ability to make the necessary changes in the organization's mission, structure and human resources management. Transformational leadership is most appropriate in dynamic situations such as the current setup in South Africa. The transformation of South African organisations to include all South Africans and to empower them managerially and economically calls for transformational leadership (Blanchard, 1988).

5.3.4 Consideration of internal in-service training

All two HOD's considered internal in-service very important as new reaching strategies and innovative approaches towards facilitating mathematics is practiced. Also educators are able to design, develop and implement their own facilitating styles which enhance learning opportunities for the learners. The SMT has a key responsibility to provide information and

in-service training to educators to facilitate decisions that best serve their needs. Kruger (2003: 47) stated that “If the quality of teaching and learning are to be improved the development of the educators is an indispensable part of in-service training”.

Colyn (1991: 112) states that teachers be active agents for change and must be in control of matters in the classes through being able to make decisions with self-confidence. Kane (1984: 59) argues that many teachers acquired the necessary skills through their own efforts in the classroom or through one or other form of in-service training programme. The SMT members in every school are expected to be involved in tasks such as setting up staff development programmes, including in service training (INSET), keeping learner records, visiting classes and observing lessons and learners work.

5.3.5 Moral support and guidance to educators

It was commonly agreed that where moral support and encouragement is given is part of guidance and direction for optimum development of the learners. This ensures that educators are more confidence. They facilitate easily and are enabled to help meet the different needs of the learners. Lagana (1989: 53-5) puts it clearly that school principals must realize that teachers are able to determine their own requirements in regard to professional development and that they are able to grow within this development if the scope to do so is allowed. Sufficient support, time and scope must be allowed for this purpose. Access to sources which can stimulate development must be created.

Other factors which play a role in the development of teachers are the following:

- Educational leaders must themselves also be empowered and supported.
- There must be commitment to the process of guidance and support.
- Building up confidence in educators
- By maintaining good communication with the educators.

Professional Development of staff is at the heart of every effective school, and is the sole responsibility of the school management team. Staff development should be critical concern of educational leaders. According to Prinsloo (2003: 216) human resource development is especially concerned with expanding potential from a long term perspective. It embraces the

long term development needs of the educator, and is a formal, systematic programme designed to promote personal and professional growth.

Professional development is the continuous process by which teachers develop their capabilities. This can improve their performance on the job and prepare them for greater responsibilities. One educator indicated that the HOD gives support only when she can, however she is prohibited by the policies to execute certain activities. Teachers should be encouraged to continuously develop and sharpen their skills and knowledge. HODs can help by creating an environment that is conducive to professional development where teachers are encouraged to develop team work and self-reflection. Sometimes, professional development activities can be training workshops and individuals can improve their skills and performance simply by reflecting on their practices and by observing others.

The deputy principal in PS 2 believes that professional development of teachers was a very important variable in schools because teachers needed to be abreast with new information at all times. SMT value their role as staff developers and consistently view their responsibility as facilitators driven by clear vision (Gupton, 2003). The role of the SMT in these two schools was to help create conditions that would enable staff to develop so that the school could function more effectively.

5.3.6 Current development appraisal system

All the participants acknowledge the importance of the development appraisal programmes in schools. Most of the schools concerned have a School Development Team (SDT) to help educators to identify their own weakness and strengths. Two of the participants indicated that they have Development Support Groups which are responsible for observing educators in practice to help them to identify their development needs. One participant stated that although there is an appraisal programme at school, no meetings for review are conducted while another participant indicated that no frequent meetings of the School Development Team (SDT) are held.

5.3.7 Follow up after Grade 3 mathematics curriculum workshops

Very positive responses were received and participants concurred that this gave the necessary support and guidance needed for newly appointed teachers. One of HOD said it was easier to learn and shape successes and challenges during the regularly called meetings and also used as a platform to provide a base of support.

Two participants explained that facilitators do not make follow ups after they have conducted workshops. One of Deputy Principals from PS1 indicated that sometimes the facilitator comes to visit the Head of Department only.

5.3.8 Ways of improving delivery of Grade 3 curriculum

Common responses included were to have regular workshops whenever challenges arise. One HOD said that by supporting and guiding newly appointed educators through workshops. By encouraging optimum parental involvement in their children's school life can improve learners mathematical abilities as parents will monitor the learners' progress at home. One of the Deputy Principals said that by reviewing teacher-learner ratio in the classes and ensuring that there is enough LTSM at schools to boost the under-resourced schools could improve the level of pass rate within mathematics at schools. This resources will allow and create opportunities for the learners to become innovative independent and creative thinkers.

5.4 GRADE 3 EDUCATORS' RESPONSES

The following are the findings obtained after observing and interviewing teachers about their craft in the classroom. Data collection centred on teacher support and development particularly as regards the teaching and management of grade three (3) mathematics.

5.4.1 Grade meetings

Many varied answers were given by the three grade 3 educators, only one school only indicated that they do not have grade meetings related to maths curriculum but rather have informal gathering where they discuss mathematical problem related to the curriculum.. The two other educators indicated that maths curriculum matters are discussed every second week

and the other educators indicated that maths curriculum training is done every two weeks with a grade leader and grade meetings held monthly respectively. According to the National Qualifications Framework (NQF) these meetings take place at three different levels in the primary schools- foundation, intermediate and senior phase (DoE, 1996).

5.4.2 Frequency of meetings

Two educators indicated that meetings are called if urgent matters arise and the information is displayed on the notice board. Only one school had a monthly meeting with the grade leader. In addition to phase meetings, groups such as grade teachers also meet to develop short-term plans for their particular grade levels. McEwan (2003) said that, these meetings are not for complaining and whining, but are used as strategies for staff development, reaching consensus on mission statements, discussing how to meet the needs of target students, ironing out conflicts and celebrating successes.

5.4.3 Adapting the Grade 3 mathematics curriculum

All educators indicated that they adapted to accommodate the various learning styles and mathematical ability of the child and to cater for all the needs of each individual learner. Schubert (1986: 2) regards curriculum implementation as the delivery that can be considered a system of engineering that takes design specifications through various channels to the teacher and classroom.

5.4.4 Support given to Grade 3 educators by HOD

All participants gave an affirmative response on this aspect and the common factor was that the HODs provide support through ensuring that she does class visits and monitor implementation and progress are given back to the educators on lesson plans and assessment all these areas is checked regularly. Classroom visits was another strategy employed by the SMT to ensure effective teaching and learning in their school. They carried out these functions through the staff development team (SDT), a committee that was responsible for overseeing, planning, coordinating and monitoring quality management process in the school. The Deputy Principal of PS2 mentioned that the aim of these class visits was to assess the

teacher classroom practices and to decide what forms of help the school could provide if the teacher needed it. The SDT committee also undertook informal and unofficial visits, such visits, according to the Deputy Principal in (PS1) “enabled them to help teachers with their work”.

5.4.5 Self-development as educator

Educators in grade 3 maths curriculum participants gave a variety of answers which were very interesting as common factors became evident. One educator said by communicating with colleagues from within their schools were discussed, and with colleagues from other schools they were able to receive information and advice that helped them develop in their teaching style. Another educator said that, reading up and doing research on what is expected and how to do it by using the CAPS document and attending workshops.

The teachers develop their skills they will have developed the expertise in their subject or learning areas and level of teaching as well as other areas of competency. The educator’s task is to ensure that they remain up to date with developments in their areas of expertise.

5.4.6 Frequency of departmental workshops

Of all the participants the following came up.

One school is on the GPLMS project and had workshops on a regular basis. Two schools (PS1) and (PS3) attended meetings once a term where they meet to plan for the new term and to assess the previous term’s work. The school has other workshops depending on the topic or concepts which need to be addressed. Another educator said they had theirs once a month wherein many concepts are tackled at a time as a result proper reinforcement of these concepts was not done. Other participants said they did not have a a meeting this year and that the last one held was on CAPS last year (2012).

5.4.7 Challenges faced by Grade 3 learners

It was very interesting to receive the following feedback: One educator said that concepts were difficult to understand without reinforcement and consolidation made learners very 83

confused and they quickly lost focus. The GPLMS project strategy of teaching mathematics is too difficult for learners and this makes them struggle to cope with mathematics. Another main challenge is the progression of the learners to the next grade as stipulated in the assessment policy (PS1). Learners are not encouraged and supported to be critical and independent learners and thus still depend a lot on teacher support. LOLT which is prescribed is a challenge as guidelines are not in line with the new curriculum said an educator from (PS 2).

5.4.8 Resources that enhance teaching

The following information was given:

One school said that, the SMT did not seem to understand the importance of mathematics resources to enhance teaching counting and mental mathematics skills. Two schools have access to resources; they use Gauteng online, videos, internet and resources textbooks and also have access to the social networks where challenges and successes are shared with other educators. Some resources are made by the educators and learners. The main purpose of curriculum management is to ensure that effective teaching and learning are taking place in schools. Managing the curriculum relates to the management of school resources, including human, materials infrastructure and time. Curriculum management includes overseeing key components including teacher's deployment and timetabling, management of learning resources, supervision of planning to teach as well as having innovative ways of using and making resources learning fun to the learners.

One educator indicated that he doesn't have access to resources because the SMT does not seem to understand the importance of mathematics resources to enhance teaching and counting mental skills. Learning resources are anything that can assist with the learning process, even if it was not specifically designed for that purpose (DoE, 2000). It is the responsibility of the SMT to encourage and support educators to ensure that they use different resources and to share them as well as share ideas.

Another educator from PS1 said that, some resources are available but many of the resources are made by the educators for their learners. The SMT should encourage educators to use resources with the view of helping learners to achieve the intended outcomes. The HOD in 84

the PS2 said, the school management team in the school appoint the Grade head to take charge of the resources, collect and store them in the LTSM properly and keeping a list of all the available resources in the school.

5.4.9 Expectations of parental involvement in the teaching and learning

All participants' feedback was that parental involvement in the teaching and learning of Grade 3 curriculum at their schools was very limited due to plenty of issues such as that parents working long hours/shifts and not having time to supervise their children's work. Some parents are not fully informed and knowledgeable about the new curriculum. Most parents were not aware that learning involved them as a required stakeholder in the learning process. Some parents have given their responsibility of raising their children to the educator. Parents need workshops on how to help their children and to be fully involved and know what their children are learning in class. After sensitization parents will be able to oversee their children's homework and to make sure it is done correctly. Parents should not make their academic literacy an issue but rather a challenge and turn it into a learning experience.

Most children have two main educators in their lives: their parents and their teachers. Parents are the prime educators until the child attends an early education institution. According to the responses of two different educators in different schools; parents are not supportive of their children's education even though they are welcome to the school through their open door policies that encouraged the parents to visit the school when they want to interact with the teachers and the school management about the progress of their children. Gupton (2003) asserts that parents are the most important people in their children's lives with the most potential to influence and motivate. Parental involvement is listed as a critical variable for schools attempting to improve their effectiveness.

5.4.10 Document

Every school has slightly different planning expectations, but in general, their planning requirements include the aspects and areas of the syllabus that will be covered on a termly basis. Lesson plans were well prepared which showed the date and the start and finish time of lessons, lesson objectives and lesson content. One school planned daily rather than weekly 85

lessons. Pupils' books were checked to see if what was planned by the educator was what was actually taught. For example, If the plan indicated that the lesson is to do with multiplication, can I find multiplication exercise in the pupils books? In all schools teachers assess continuously and record consistently. All teachers take individual needs of pupils into consideration.

5.4.11 Observations

The researcher observed four classrooms. Classrooms were neat, clean and orderly. They contained displays, posters, wall charts that could support the learning process. Displays of pupils work, since displaying pupils work is an excellent form of positive reinforcement. Educators used the learning materials to provide visual and tactile stimuli to enliven classroom practice. Educators were creative which includes making and using their own learning resources. Educators were flexible with time and they provided a stimulating learning environment.

5.5 RECOMMENDATIONS

THE MANAGEMENT OF GRADE 3 MATHEMATICS CURRICULUM

- The management must ensure that teachers are competent and have capabilities to improve their mathematics curriculum in the classroom. The SMT remains an important partner and participant in facilitating on-going professional support programmes of mathematics curriculum for all staff. Motivation is an important issue facing school leadership in the current education environment and it is an inner state of mind that enhances educator behaviour and energy towards the attainment of objectives.
 - Curriculum delivery should be in accordance with policy documents and this includes learning programmes, work programmes, lesson planning and learner assessment.
 - SMT should be more involved in the mathematics curriculum by giving much more support through workshops and mentoring.

- HODs to be able to be there for one on one support and mentoring.
- Deputy Principal to be more visible and helpful in supporting educators with the implementation of mathematics curriculum, this could be a joint effort with the District officials to help where problems are detected.
- The curriculum officials should conduct workshops and give feedback to the schools.
- SMTs are responsible for taking the lead in putting the school curriculum into practice and improving it.
- There should be qualified curriculum advisors to help educators and there should be adequate training for teachers so that they are competent.

5.6 CONCLUSION

The researcher found out that the managers play a critical role in the success of organisations. Leadership is one of the most important functions of the management process. Managers need to embrace empowerment. Effective leaders share power and responsibility with their employees. The empowering leader's role is to show trust, provide vision, remove performance blocking barriers, offer encouragement and motivations. The effective schools depend on the quality of collaboration among their leaders to achieve their goals. Leadership may be described as an art of the heart because you have to be 'doing the right thing at the right time'. Management may be described as "doing things right" thus, leadership is about providing vision and direction in a school while management is about maintaining the school and ensuring that its goals are achieved (Davidoff and Lazarus, 2002). Fullan (1992) points out that leadership relates to mission, direction, and inspiration, while management involves making and carrying out plans in a way that maintains effective working relations.

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APPENDIX A

COPY OF ETHICAL CLEARANCE CERIFICATE

APPENDIX B

LETTERS OF REQUEST TO CONDUCT RESEARCH

The circuit manager

Johannesburg

2000

APPLICATION TO CONDUCT RESEARCH IN YOUR CIRCUIT

I am a Masters student currently studying at Unisa. I hereby request for permission to undertake an evaluation and assessment research project with the school management teams as well as educators.

The title of my research project is “An investigation into the management of Grade3 mathematical curriculum in a Transformational leadership approach. The detail and the aim of the research project pertaining to my studies at Unisa is attached separately.

I also hereby wish to have access to evidence of any problems with the delivery and the challenges of the mathematical curriculum being experienced by the participants.

All information will be regarded as confidential and the Department, the school management team as well as all educators will have access to their transcribed interview and observations prior to the finalisation of my report.

Thanking you in anticipation.

Yours in education

Mrs N Tshirangwana

0839547125

Prof J Nyoni

Supervisor

APPENDIX C: APPROVAL LETTER



GAUTENG PROVINCE

Department: Education
REPUBLIC OF SOUTH AFRICA

For administrative use:
Reference no. D2014/044

GDE RESEARCH APPROVAL LETTER

Date:	9 May 2013
Validity of Research Approval:	26 May 2013 to 20 September 2013
Name of Researcher:	Tshirangwana M.N.
Address of Researcher:	P.O. Box 2477
	Houghton
	2041
Telephone Number:	011 786 5309 / 083 954 7125
Email address:	nobelstshirangwana@hotmail.com
Research Topic:	An investigation into the management of Grade 3 Mathematics curriculum: in a transformational leadership approach
Number and type of schools:	FOUR Primary Schools
District/s/HO	Johannesburg East

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

The following conditions apply to GDE research. The researcher may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

David Makhado
2013/05/13

Making education a societal priority

Office of the Director: Knowledge Management and Research

9th Floor, 111 Commissioner Street, Johannesburg, 2001
P.O. Box 7710, Johannesburg, 2000 Tel: (011) 355 6506
Email: David.Makhado@gauteng.gov.za

1. The District/Head Office Senior Manager/s concerned must be presented with a copy of this letter that would indicate that the said researcher/s has/have been granted permission from the Gauteng Department of Education to conduct the research study.
2. The District/Head Office Senior Manager/s must be approached separately, and in writing, for permission to involve District/Head Office Officials in the project.
3. A copy of this letter must be forwarded to the school principal and the chairperson of the School Governing Body (SGB) that would indicate that the researcher/s have been granted permission from the Gauteng Department of Education to conduct the research study.
4. A letter / document that outlines the purpose of the research and the anticipated outcomes of such research must be made available to the principals, SGBs and District/Head Office Senior Managers of the schools and districts/offices concerned, respectively.
5. The Researcher will make every effort obtain the goodwill and co-operation of all the GDE officials, principals, and chairpersons of the SGBs, teachers and learners involved. Persons who offer their co-operation will not receive additional remuneration from the Department while those that opt not to participate will not be penalised in any way.
6. Research may only be conducted after school hours so that the normal school programme is not interrupted. The Principal (if at a school) and/or Director (if at a district/head office) must be consulted about an appropriate time when the researcher/s may carry out their research at the sites that they manage.
7. Research may only commence from the second week of February and must be concluded before the beginning of the last quarter of the academic year. If incomplete, an amended Research Approval letter may be requested to conduct research in the following year.
8. Items 6 and 7 will not apply to any research effort being undertaken on behalf of the GDE. Such research will have been commissioned and be paid for by the Gauteng Department of Education.
9. It is the researcher's responsibility to obtain written parental consent of all learners that are expected to participate in the study.
10. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.
11. The names of the GDE officials, schools, principals, parents, teachers and learners that participate in the study may not appear in the research report without the written consent of each of these individuals and/or organisations.
12. On completion of the study the researcher/s must supply the Director: Knowledge Management & Research with one Hard Cover bound and an electronic copy of the research.
13. The researcher may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned.
14. Should the researcher have been involved with research at a school and/or a district/head office level, the Director concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.

The Gauteng Department of Education wishes you well in this important undertaking and looks forward to examining the findings of your research study.

Kind regards

David Makhado

Dr David Makhado
Director: Knowledge Management and Research

DATE: 2013/05/13

APPENDIX D

LETTERS TO PRINCIPALS

The Principal

Dear Sir/Madam

APPLICATION TO CONDUCT A RESEARCH IN YOUR SCHOOL

I hereby request permission to undertake research in your school.

The title of my research is “An investigation into the management of Grade 3 mathematics curriculum in a Transformational leadership approach”. The details of the aim of my research pertaining to my studies at Unisa University are included separately.

I wish to seek permission to conduct interviews with the school management team, as well as with all educators who teaches Grade 3. I wish to have access to educator’s assessment documents, curriculum documents and preparation files.

Thanking you in anticipation

Yours faithfully Mrs N.M Tshirangwana

Cell 0839547125

APPENDIX E

INTERVIEW SCHEDULE

INDIVIDUAL INTERVIEW WITH GRADE 3 EDUCATORS

1. How often do you have Grade meetings which relate to mathematics curriculum of Grade 3?
2. How often is your phase meeting?
3. Do you adapt the Grade3 mathematics curriculum to meet the individual needs of your learners? If yes why?
- 4 Does the HOD offer support in Grade 3 mathematics curriculum.
- 5 Does the school management Team arrange for development workshops at your school? If so how often?
- 5 How do you develop yourself as educator in grade 3 mathematics curriculum?
- 6 How often do you have departmental workshops in grade 3 mathematical curriculum?
- 7 What are the challenges that grade 3 learners face when doing the grade 3 mathematics curriculum?
- 8 Do you have access to resources that enables you to enhance your teaching of the grade 3 mathematics curriculum?
- 9 What are your expectations of parent involvement in the teaching and learning of the grade 3 curriculum at your school?

APPENDIX F

DEPUTY PRINCIPAL AND HOD INTERVIEW QUESTIONS

INDIVIDUAL INTERVIEWS WITH THE DEPUTY PRINCIPALS AND HEADS OF DEPARTMENT.

1. What is your understanding of the concept “ Management of Grade 3 mathematics curriculum in school”
2. Give understanding of the term “Transformational leadership”
3. Tell me how you give moral support and guidance to educators in grade 3 mathematics curriculum in your department.
4. Do you consider internal in-service training of grade 3 mathematics curriculum at your school as important? If yes give reasons.
5. How do you feel about the development appraisal that is currently run at your school?
6. How do you manage grade 3 mathematics curriculum in your school?
7. Is there any follow ups after grade 3 mathematics curriculum workshops done by the facilitators?
8. How do you think we can improve the delivery of Grade 3 mathematics curriculum?

APPENDIX G

CONSENT FORM

Dear participants

I would like to request your participation in a study project titled '**An investigation into the management of grade 3 mathematics curriculum in a Transformational approach**'. This study project is to understand more about the experiences and challenges faced by the educators in the Grade 3 department of the foundation phase.

If you agree to be part of this study you will be asked to take part in a structured face to face interview in a focus group at your school. Checklist and audio tape will be used to collect data. The time line of this interview will be 30– 45 min of your time and only one session agreed on by the focus group.

Participation in this study is voluntary and strictly confidentially, all names of participants and participating schools will be kept anonymous during the analysis and publishing. You have the rights not to answer the questions you prefer not to answer. You may also withdraw or refuse to participate during the interview. You will not be subjected to any risks as all required ethical standards for research and investigation projects will strictly adhered to.

You will be required to sign this consent form during my visit to your school. You are signing it with the nature and purpose of the procedures. The outcome of this research project will be made available to the participant upon request.

If you have any questions about the study or your participation that is unclear you can contact Nobel 0839547125 or Prof Nyoni 0846886226

You will receive a copy of this consent form.

Participant

Researcher

Sign

Sign

Date

APPENDIX H



Stud no./nr: 47020954
Navres/Cno: Postgraduate Qualifications
Tel: (012)441-5702
Faks/Fax: (012)428-4150

Mrs MN Tshirangwana
P O Box 2477
HOUGHTON
2041

2012-02-21

Dear Mrs Tshirangwana

I have pleasure in informing you that your research proposal has been accepted for the degree of MEd in Education Management and that you may register for the thesis **DFEDU95** for the 2012 academic year.

Registration for the 2012 is now open online at www.unisa.ac.za, and the full prescribed tuition fee is R10986.00. Registration closes on 19 March 2012.

The following title has been approved for your projected dissertation with Mr J Nyoni as your supervisor: **AN INVESTIGATION INTO THE MANAGEMENT OF GRADE THREE MATHEMATICS CURRICULUM: A TRANSFORMATIONAL LEADERSHIP APPROACH.**

Mr Nyoni can be contacted as follows, Department of Further Teacher Education, AJH Van der Walt Bld 06-040, tel: +27124284474 email: nyonij@unisa.ac.za

You may not cancel your registration after acceptance thereof.

Yours Faithfully

Mrs C Kokt
Postgraduate Qualifications
Master's and Doctoral Degrees
Directorate Student Admissions and Registrations



University of South Africa
P.O. Box 1956, Midrand, Johannesburg, South Africa
P.O. Box 959, Unisa, 0001, South Africa
Telephone: +27 12 429 3 11 Facsimile: +27 12 429 4250
www.unisa.ac.za

APPENDIX I

CONSENT FORM

Dear participants

I would like to request your participation in a study project titled '**An investigation into the management of grade 3 mathematics curriculum in a Transformational approach**'. This study project is to understand more about the experiences and challenges faced by the educators in the Grade 3 department of the foundation phase.

If you agree to be part of this study you will be asked to take part in a structured face to face interview in a focus group at your school. Checklist and audio tape will be used to collect data. The time line of this interview will be 30– 45 min of your time and only one session agreed on by the focus group.

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You will be required to sign this consent form during my visit to your school. You are signing it with the nature and purpose of the procedures. The outcome of this research project will be made available to the participant upon request.

If you have any questions about the study or your participation that is unclear you can contact Nobel 0839547125 or Prof Nyoni 0846886226

You will receive a copy of this consent form.

Participant

Researcher

Sign

Sign

Date

