

**Implementation of the scarce skills policy
with reference to the
Free State Province**

By

Mabihi Shuping

**(UDE, FDE-BIOLOGY, PHYSICS & CHEMISTRY
EDUCATION, B.E.d Hons ETD, MDS)**

**A thesis submitted in partial fulfilment of
the requirements for the Degree of Doctor
of Philosophy (PhD) in Public Affairs at the
School of Public Management and
Administration in the Faculty of Economic
and**

**Management Sciences
University of Pretoria
South Africa**

Supervisor: Prof. Dr. J.O Kuye

STATEMENT OF ORIGINALITY

I, **Mabihi Shuping**, hereby declare that this work submitted for a PhD degree in Public Affairs at the School of Public Management and Administration at the University of Pretoria is my original work both in form and content. Where ever the work and /or inputs of others have been used, they have been duly acknowledged. I further cede copyrights of this thesis in favour of the University of Pretoria.

M.C Shuping

Student Number: 29560153

ACKNOWLEDGEMENTS

I would like to thank God almighty for giving me strength and endurance to complete this work.

To my supervisor Professor J.O Kuye, thank you for all your insights, inputs and unwavering support. Your constructive criticisms and brutal frankness have always kept me on my toes.

To Professor R. Gray and Professor C. Thornhill, I marvelled at how you have paid attention to every detail during the editing of this work. You have persistently insisted on quality. Thank you for adding that professional touch to this study.

To the late Professor P.A Brynard, who has shown immense confidence in me and assisted to set the ball rolling for this project. May his soul repose peacefully.

To my colleagues and friends, J. Chittilapilly and T. Matshaya, your efforts and sacrifices were not in vain, you had to forgo your time and interests to ensure that this study is completed.

To the Department of Education in the Free State province, thank you for opening yourself up for scrutiny and for allowing me to go to your district offices and schools. I am indebted to all the participants without whom this study might not have been possible.

To my wife and the girls, you bring out the best in me.

TABLE OF CONTENTS

Statement of originality	i
Acknowledgements	ii
Table of contents	iii
List of figures	vii
List of tables	xi
List of abbreviations and acronyms	xi
Abstract	xvi

CHAPTER 1: BACKGROUND TO THE SCARCE SKILLS CHALLENGE IN SOUTH AFRICA

	PAGE
1.1 INTRODUCTION	1
1.2 MOTIVATION FOR THE STUDY	9
1.3 THE OBJECTIVE OF THE STUDY	15
1.4 SCARCE SKILLS CAREER PATH: ENGINEERING PROFESSIONAL SKILLS	16
1.5 HISTORICAL BACKGROUND OF EDUCATION AND TRAINING IN SOUTH AFRICA-A GENERIC OVERVIEW	18
1.6 SCHOOL EDUCATION ACHIEVEMENTS IN THE POST APARTHEID SOUTH AFRICA	19
1.7. THE POST-APARTHEID FORMAL EDUCATION STRUCTURE IN SOUTH AFRICA	22
1.8 SOME WEAKNESSES IN THE POST-APARTHEID SOUTH AFRICAN SCHOOL EDUCATION SYSTEM	24
1.9 THE CHALLENGES OF SCARCE SKILLS	25
1.10 THE NATIONAL STRATEGY FOR MATHEMATICS, SCIENCE AND TECHNOLOGY EDUCATION (NSMSTE)	28
1.11 THE NATURE OF EDUCATIONAL POLICY	31
1.12 LIMITATIONS TO THE SCOPE OF THE STUDY	38
1.13 THE DIVISION OF CHAPTERS	39
1.14 CONCLUSION	40

CHAPTER 2: RESEARCH METHODOLOGY	PAGE
2.1 INTRODUCTION	43
2.2 QUALITATIVE RESEARCH DEFINED	44
2.3 QUANTITATIVE RESEARCH DEFINED	47
2.4 RESEARCH METHODS CHOSEN FOR THIS STUDY	48
2.4.1 Participatory Action Research	48
2.4.2 Evaluation Research	49
2.4.3 Triangulation	50
2.5 DATA COLLECTION, GARNERING OF INFORMATION AND ANALYSIS	51
2.5.1 Observation	51
2.5.1.1 Validity and Reliability in observation research	52
2.5.2 Questionnaires	52
2.5.2.1 Construction of a questionnaire	55
2.5.2.2 Questionnaire format and content	56
2.5.2.3 Piloting the questionnaire tools	57
2.5.2.4 Validating and reliability in questionnaire	57
2.5.2.5 Administration of the final questionnaire tools	58
2.5.3 Documentation	59
2.6 PROBLEM STATEMENT	59
2.7 RESEARCH DESIGN	61
2.7.1 Purpose of the study	62
2.7.2 Study population	62
2.7.2.1 Names of Dinaledi schools in Motheo district	63
2.7.2.2 Names of Dinaledi schools in Fezile Dabi district	63
2.7.2.3 Names of Dinaledi schools in Thabo Mofutsanyana district	63
2.7.2.4 Names of Dinaledi schools in Lejweleputswa district	64
2.7.2.5 Names of Dinaledi schools in the Xhariep district	64
2.7.3 Availability of resources	65
2.8 SAMPLING METHOD AND SAMPLING SIZE	66
2.9 RESEARCH QUESTION	67

2.9.1	Primary questions	68
2.9.2	Secondary question	68
2.10	RESEARCH OBJECTIVES	69
2.11	RESEARCH SCOPE	70
2.12	CONCLUSION	72

CHAPTER 3: REVIEW OF RELATED LITERATURE ON THE RELATIONSHIP BETWEEN PUBLIC ADMINISTRATION AND POLICY IMPLEMENTATION

	PAGE	
3.1	INTRODUCTION	73
3.2	PUBLIC ADMINISTRATION	75
3.2.1	Legal -Historical approach	81
3.2.2	Structural - Descriptive approach	81
3.2.3	Behavioural approach	81
3.3	DEFINITION OF PUBLIC ADMINISTRATION	82
3.4	POLITICS AND ADMINISTRATION	85
3.5	POLICY AND POLITICS	86
3.6	STRUCTURAL ADMINISTRATION	88
3.7	ADMINISTRATIVE SYSTEMS	89
3.7.1	The administrative role of the school managers	90
3.7.2	The administrative role of the teachers	91
3.8	DEFINITION OF POLICY IMPLEMENTATION	92
3.9	POLICY IMPLEMENTATION AS A CORE FUNCTION OF PUBLIC ADMINISTRATION	94
3.10	CRITICAL VARIABLES FOR THEIMPLIMENTATION OF POLICY	95
3.11	POLICY IMPLEMENTATION WITH RESPECT TO SKILLS DEVELOPMENT	96
3.12	POLICY EVALUATION	97
3.13	MODELS OF COMMUNITY PARTICIPATION IN EDUCATION	98
3.13.1	Parent participation in schooling through the parent support (PLSS) of the Philippines	104
3.13.2	The community Basic School in Mali- <i>Ecole de Base</i>	108
3.13.3	Community selection of school principals in the state	109

of Mina Gerais, Brazil

3.14 SCARCE SKILLS DEFINED	112
3.15 ADMINISTRATION MODELS OF THE PROGRAMMES TO DEVELOP SCARCE SKILLS IN THE PUBLIC EDUCATION SYSTEM OF OTHER COUNTRIES	114
3.15.1 Lessons for managing Mathematics and Science schools from Mbilwi Secondary School in. Limpopo - South Africa	117
3.15.2 Charter schools models	119
3.15.3 Lessons for managing Mathematics and Science schools from Finland	120
3.15.4 Lessons for managing Mathematics and Science schools from Singapore	128
3.16 CONCLUSION	134

**CHAPTER 4: OVERVIEW OF THE RELEVANT LE GAL FRAMEWORKS
FOR THE ADMINISTRATION IN SOUTH AFRICA**

	PAGE
4.1 INTRODUCTION	137
4.2 EDUCATION AND THE LAW	138
4.3 LEGISLATION APPLICABLE TO PUBLIC ADMINISTRATION	141
4.3.1 Public Service Act	141
4.3.2 Public Service Commission Act	141
4.3.3 Public Finance Management Act	141
4.3.4 Labour Relation Act	142
4.3.5 Employment Equity Act	142
4.3.6 Skills Development Act	142
4.3.7 Basic Conditions of Employment Act	142
4.4 SOME OF THE KEY EDUCATION POLICIES IN SOUTH AFRICA SINCE 1994	143
4.5 THE CONSTITUTIONAL BASIS FOR THE ADMINISTRATION OF EDUCATION SOUTH AFRICA	151

4.5.1	The structure and distribution of legislative authority over education Amongst The spheres of Government in South Africa	151
4.6	THE BILL OF RIGHTS	157
4.6.1	The right to equality	157
4.6.2	The right to basic education	162
4.6.3	The right to administrative action	175
4.7	PUBLIC STATUTORY SUPPORT OF EDUCATION IN SOUTH AFRICA	180
4.7.1	Committee of Education Ministers	181
4.7.2	Heads of Education Department committee (HEDCOM)	181
4.8	NATIONAL AND PROVINCIAL STRUCTURES DEVOTED TO THE ADMINISTRATION OF BASIC EDUCATION IN SOUTH AFRICA	189
4.8.1	South Africa Certificate Council (SARCERT)	184
4.8.2	The South Africa Qualification Authority (SAQA)	185
4.8.3	The Council on Higher Education (CHE)	185
4.8.4	National Student Financial Aid Scheme (NSFAS)	186
4.8.5	The South African Council for Educators (SACE)	186
4.8.6	The Education Labour Relations Council (ELRC)	187
4.8.7	School Governing Bodies (SGB)	187
4.9	CONCLUSION	191
 CHAPTER 5: ANALYSIS OF CASE		PAGE
5.1	INTRODUCTION	194
5.2	HUMAN CAPACITY	198
5.3	SCHOOL MANAGEMENT	208
5.4	DISTRICT SUPPORT	216
5.5	ANALYSING THE REASONS FOR THE LOW PRODUCTIVITY OF OUTCOMES IN SCHOOLS	221

5.5.1	Lack of systematic routines and rituals	221
5.5.2	Knowledge problem	222
5.5.3	Bureaucratic and administrative ineptitude	224
5.5.4	Lack of accountability	225
5.6	ANALYSIS OF THE DATA GATHERED FROM THE QUESTIONNAIRES	226
5.7	CONCLUSION	266
CHAPTER 6: FINDINGS AND RECOMMENDATIONS		PAGE
6.1	INTRODUCTION	268
6.2	SYNOPSIS OF THE CHAPTERS	269
6.3	CONCLUSION	292
	LIST OF REFERENCES	295
	ADDENDUM A	327
	ADDENDUM B	328
	ADDENDUM C	330
LIST OF FIGURES		PAGE
CHAPTER 1		
FIGURE 1.1	The engineering skills needs projection from 2003 to 2010	27
1.2	Proposed increases in the number of engineers and artisans : 2007-2010	30
CHAPTER 2		
Figure 2.1	Geographical distribution of study areas	63
CHAPTER 4		
Figure 4.1	South African context of the administration of Education	155

Figure 4.2: Organogram of the National, Provincial and Local structures
 for the administration of education in South Africa 183

CHAPTER 5

Figure	5.1	The framework for a better schooling system	196
	5.2	Age group of the males	227
	5.3	Age groups of the females	228
	5.4	Highest academic qualifications	229
	5.5	Subject managing and/or teaching	230
	5.6	Highest qualification in the subject(s) managing or teaching	231
	5.7	Constitution of South Africa	234
	5.8	National Education Policy Act	235
	5.9	Public Service Act	236
	5.10	White Paper on Science Technology	237
	5.11	Skills Development Act	238
	5.12	South Africa Schools Act	239
	5.13	Further Education and Training Act	240
	5.14	Community Education Forums in the Free State province	240
	5.15	Advanced Certificate in Education programme	241
	5.16	National Development Plan (Chapter 9)	242
	5.17	Quality Learning and Teaching campaign	243
	5.18	Integrated Strategic Planning Framework for teacher Education and Development in South Africa	244
	5.19	Provincial Growth and Development Strategy, Free State Vision 2030 and Operation Hlasela	245
	5.20	International Comparative studies on the Competitiveness in Mathematics and Science	246

	(SACMEQ AND TIMMS)	
5.21	Employment of Educators Act	247
5.22	Rates of districts' curriculum support services	248
5. 23	Rates of visits by curriculum experts and subject advisors	249
5.24	Rates of clarifying assessment principles and policies	250
5.25	Rates of updates and distribution of information from the district office	251
5.26	Rates of conducting context workshops	252
5.27	The role of school Improvement Plans	253
5.28	Responsiveness and relevance of the NSMSTE to address regional scarce skills needs	254
5.29	Management of the school according to applicable regulations and personnel management	255
5.30:	Rates of the ability to promotes education in accordance with approved policies	256
5.31:	Abilities to utilize the resources	257
5.32:	Skills to do stock-taking keep and update logbooks	258
5.33	Abilities to liaise with other institutions of education	259
5.34	Skills to develop assessment programmes and tasks	260
5.35	Skills to establish a direct contact with the public	261
5.36	Skills to implement appraisal processes for performance review	262
5.37	Skills to circulate valuable information to the staff members	263
5.38:	Skills to manage the finances of the school	264
5.38:	Skills to manage extra-mural and extra curricular activities	265
5.39	Skills to oversee the general social well-being of the learners	266

List of tables	Page
Table 1.1 Formal Education categories in South Africa	23
Table: 5.1: Positions of personnel in the school organisational structure	232

LIST OF ACRONYMS AND ABBREVIATIONS

ABET	Adult Basic Education and Training
ACE	Advanced Certificate in Education
AMESA:	Association of Mathematics Education in South Africa
ANA	Annual National Assessment
ANC	African National Congress
ASgiSA:	Accelerated and Shared Growth Initiative for South Africa
ASIDI:	Accelerated Schools Infrastructure Delivery Initiative
AU	African Union
B.Eng/Ing	Bachelor of Engineering
BCEA	Basic Conditions of Employment Act
BEE	Black Economic Empowerment
Brics	Brazil, Russia, China and South Africa
BSc. Eng	Bachelor of Science in Engineering
BSc	Bachelor of Science
CALS	Centre for Applied Legal Studies
CBO	Community Based Organisation
CDE	Centre for Development Enterprise
CEM	Committee of Education Ministers
CESCR	Covenant on Social, Economic and Cultural Rights
CHE	Council on Higher Education
CRC	Convention on the Rights of the Child
CTA	Cuban Technical Advisor
DBE	Department of Basic Education
DEC	Department of Education in the Cape
DED	Department of Economic Development
DET	Department of Education and Training
DHET	Department of Higher Education and Training
DoE	Department of Education

DoL	Department of Labour
DPSA	Department of Public Service and Administration
DST	Department of Science and Technology
EAP	Education Action Plan
ECD	Early Childhood Development
ECSA	Engineering Council of South Africa
EEA	Employment Equity Act
EFA	Education for All
ELRC	Education Labour Relations Councils
FET	Further Education and Training
FETC	Further Education and Training Certificate
GDP	Gross Domestic Product
GDS	Growth and Development Strategy
GEAR	Growth, Employment and Redistribution
GET	General Education and Training
GETC	General Education and Training Certificate
HE	Higher Education
HEDCOM	Heads of Education Departments Committee
HEI	High Education Institutions
HIV	Human Immunodeficiency Virus
HoD	Head of Department
HRD	Human Resource Development
HRDSA	Human Resource Development for South Africa
ICESIR	International Covenant on Social, Economic and Cultural Rights
ICT	Information and Communication Technology
IIEP	International Institute for Educational Planning
IMESA	Institute of Municipal Engineering South Africa
IPAP	Industrial Policy Action Plan
IPET	Implementation Plan for Education and Training
IQMS	Integrated Quality Management System
IT	Information Technology
ITE	Institute for Technical Education
JIPSA	Joint Initiative for Priority Skills Acquisition

LRA	Labour Relation Act
LTSM	Learning and Teaching Support Materials
LUMA	Lu stands for 'luonnoutieteel' Natural Science in Finnish, and MA Stands for Mathematics
MDG	Millennium Development Goal
MEC	Member of Executive Council
NAEP	National Assessment of Educational Progress
NCOP	National Council of Provinces
NCS	National Curriculum Statement
NDip	National Diploma
NDP	National Development Plan
NEEDU	National Education Evaluation and Development Unit
NEPA	National Education Policy Act
NEPAD	New Partnership for Africa's Development
NGEP	New Growth and Economic Path
NGO	Non-Governmental Organisation
NMLC	National Management and Leadership Committee
NPC	National Planning Commission
NQF	National Qualifications Framework
NSA	National Skills Authority
NSC	National Senior Certificate
NSD	National Skills Development
NSDS	National Skills Development Strategy
NSFASA	National Student Financial Aid Scheme Act
NSFNS	National School Funding Norms and Standards
NSMSTE	National Strategy for Mathematics Science and Technology Education
NZDoL	New Zealand Department of Labour
OAU	Organisation of African Unity
OBE	Outcome Based Education
OECD	Organisation for Economic Cooperation and Development
PABLO	Positive Actualisation of Bottom Line Objectives
PAJA	Promotion of Administrative Justice Act

PAR	Participatory Action Research
PDOU	Planning Delivery Oversight Unit
PED	Provincial Education Department
PEN	Participation in Education Network
PFET	Policy Framework for Education and Training
PFMA	Public Finance Management Act
PIRLS	Progress in International Reading Study
PISA	Program for International Student Assessments
PLSS	Parent Learning Support System
PSA	Public Service Act
PSC	Public Service Commission
PSCA	Public Service Commission Act
PSCBC	Public Service Coordinating Bargaining Council
PSETA	Public Service Sector Education and Training Authority
PTA	Parents Teachers Association
QLTC	Quality Learning and Teaching Campaign
RCL	Representative Council of Learners
RDP	Reconstruction and Development Programme
SACE	South African Council of Educators
SADC	South African Development Community
SAFCERT	South African Certification Council
SAHRC	South African Human Research Commission
SANLI	South African National Literacy Institute
SAQA	South African Qualification Act
SACMEQ	South and Eastern Africa Consortium for Monitoring Educational Quality
SASA	South African Schools Act
SDA	Skill Development Act
SECOM	Secretariat for Social Communication
SETA	Sector Education and Training Authority
SGB	School Governing Body
SIP	School Improvement Plans
SKA	Square Kilometre Array

SMT	School Management Team
SPSS	Statistical Package for the Social Sciences
SSDS	Singaporean Skills Development System
TIMMS	Trends in International Mathematics and Science Study
TRACK	Training Return Acknowledged
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organisation
USA	United States of America
WPHRMPS	White Paper on Human Resource Management in the Public Service
WPPSET	White Paper on Public Service Education and Training
WPTS	White Paper on the Transformation of the Public Service

Abstract

The legacy of the apartheid education system in South Africa has created many challenges. Some of these challenges involve the management of public schools. There was a resistance to change, creating serious managerial problems at many schools which in turn led to deterioration in the quality of education. The first post-apartheid government led by former president, Nelson Mandela and, the subsequent administration led by presidents Thabo Mbeki and Jacob Zuma have emphasized the centrality of education as part of the human development strategy for South Africa. The current administration (Jacob Zuma) has taken this initiative a step further by giving education peak priority. In order to drive this initiative, the government has placed Mathematics, Science and Technology Education on the agenda for the development of scarce in the Further Education and Training (FET) band of the South African schooling system. This has led to the introduction of the National Strategy for Mathematics, Science and Technology Education (NSMSTE) as a policy option for the development of scarce skills in some selected schools throughout the nine provinces of South Africa. This study looks at how the implementation of this policy is managed in the Free State province.

Since 1994 the government's attempts to transform education have been stifled by the failures to translate good policies into sound practices. In describing the failures of the African National Congress (ANC) led administration to implement policies, Biko (2013:191) uses an analogy of a failure to discern the dynamics of competing in a world competitive sport wherein all countries out-compete each other in the preparation of their children for the global workforce of the future. Biko (2013:191), further states that this global workforce does not have boundaries, it is not hindered by language barriers and it is also not tolerant of inflexibility. For the future generations, to be globally competitive, schools must provide quality education. This requires effective and efficient management.

Like many other countries, South Africa has made strides in the area of access to education; quality education remains a major drawback. Mathematics and

Science education is a flag point of every discussion on quality education. Many university's degrees and careers such as engineering require a good grounding in Mathematics and Science. Schools in South Africa incessantly produce few passes in Mathematics and Science. A study that looks into the management practices of the implementers of national policy on the development of scarce skills at school level is expedient. This is a Public Administration study that contributes towards the body of knowledge in finding the solutions for the school managers to implement NSMSTE. Although the challenges of managing schools are intricate and also permeate the broader spectrum of South African schools, provinces are unique in terms of infrastructure and human capital. It is for this reason that the scope of this study is only limited to the human capital of schools in the Free State province. Lessons derived from this study are likely to be applicable to other provinces of South Africa.

CHAPTER 1

BACKGROUND TO THE SCARCE SKILLS CHALLENGE IN SOUTH AFRICA

1.1 INTRODUCTION

Mathematics and science are key areas of knowledge and competence for the development of individuals and the social and economic development of South Africa in a globalising world. Since 1994, the government has emphasised the centrality of Mathematics and Science as part of the human development strategy for South Africa. Foundational skills and good performance in these learning areas is one of the indicators of the health of any educational system across the world. They make an important contribution to the economy and they are contributors to inequalities of access and income. Many South African citizens experience Mathematics and Science education for the first and the last time in the schooling system. Competency in these gateway subjects opens up opportunities for empowerment through an understanding of common technologies and provides better access to tertiary education and higher skilled jobs and livelihoods. The reality is that by most performance indicators, South African school-going pupils perform poorly in Mathematics and in the Sciences. Managers of schools that specialise in these subjects have a significant role to play in ameliorating this situation.

Since 1994 all sectors (government, business, academia and communities) have recognised the importance of Science and Mathematics for the development of the country. There have been many interventions by the government, private sector and non-governmental organisations to ameliorate the performance of learners in Mathematics and Science education. Many of these were abandoned after a few years and as a result, there have been limited evaluation accounts and lessons learned from these interventions. It has also been recognised that black South Africans have been mostly disadvantaged by this scenario and needed a programme of redress to ensure better participation and performance in Mathematics and Science. Commitment to this has been outlined in various

Government's Gazettes and policy documents (DoE, 1996; DoE, 2001; DoE and DoL, 2002; DST, 2002). These policies affirm that to build the Mathematics, Science and Technology capacity, interventions are needed at the school level to increase the supply of qualified individuals in scarce skills career paths. In 2001 the Department of Education (DoE) developed a national strategy to improve participation and performance in Mathematics and Science education.

The flagship programme in the strategy is the identification of Mathematics and Science dedicated schools called Dinaledi schools (stars schools) throughout the country. This strategy selected schools that showed the potential to perform well and which could increase pass rates in Mathematics and Science education in each province. The schools received additional facilities, equipment and support for effective Mathematics and Science teaching and learning. While the Dinaledi vision of investing in schools with potential to succeed appears sound, there have been administrative challenges, the implementation and the interventions in the identified schools has been uneven. The Dinaledi intervention has yet to be independently evaluated. It has yet to demonstrate the kinds of gains in participation and performance that were anticipated. This study is intended to unravel some of those administrative challenges and present recommendations.

South Africa is set for a massive boost in the area of Science and Technology. South Africa, together with eight African partner nations: Botswana, Ghana, Kenya, Madagascar, Mauritius, Mozambique, Namibia and Zambia will host 70% of the Square Kilometre Array (SKA) telescope project, while New Zealand and Australia will host the remaining 30%. The SKA is scheduled to be fully operational in the year 2024. This gigantic science project brings with it a number of benefits, including increased regional collaboration among involved African countries and increased economic spin-offs for those countries and the continent. The hosting of the SKA project by various African countries means that Africa will then become a destination for Science and Technology, rather than a place to which foreigners come to extract minerals and resources and take them somewhere else to have value added to them. Most importantly the

SKA project will hopefully elevates the interest of school-going children in Africa to pursue careers in the fields of Mathematics and Science.

Many African countries, including South Africa have devoted considerable attention to educate the successive generations of young people born since they gained independence. Their efforts reflect the political will expressed by the Charter on Education adopted at the 1960 Conference of Addis Ababa and the 1990 Jomtien World Declaration on Education for All, and subsequently reaffirmed at the 2000 Dakar Framework for Action. These international agreements have been made concrete through the formulation of policies that are aimed at reforming the education systems inherited from the colonial period. Despite their efforts, African governments continue to face rising illiteracy coupled with massive drop-out rates at school level. Education forms part of the public service sector. Public Administration in South Africa is hierarchically structured and bureaucratically controlled. This means that politicians make policy decisions and the actual implementation is the function of bureaucrats.

The dawn of democracy in South Africa was accompanied by an avowed commitment to improve the quality of basic education. Since 1994 a plethora of educational policies have been introduced which aim to effect redress, undo the authoritarian ways in which education was managed and improve the quality of education, particularly in historically disadvantaged schools. The primary implementing agents (who is closest to the site of implementation) of these policies differ is sometimes the district office (e.g. implementing decisions concerning right-sizing and labour agreements) and in some cases responsibility for implementation lies with school governing bodies (e.g. determining school language policies) and with individual teachers (e.g. implementing the new curriculum in classrooms). It is in the country's interests to ensure that these different policies are implemented in such a way that the noble outcomes determined by the central (and provincial) governments can be achieved.

Despite this continuum of good education policies being formulated, salient drawbacks are prevalent in the area of implementation. This necessitates an investigation into the administrative capacities of those that are entrusted with the responsibilities to implement education policy. One such policy is the National Strategy for Mathematics, Science and Technology Education policy (NSMSTE) or Scarce Skills policy. The implementation plan of this policy was from 2005 to 2009. In 2009, the government decided to carry on with this implementation plan. This investigation is done in the public schools of the Free State provincial Department of Education in South Africa.

The education system in South Africa, during apartheid, was such that the majority of citizens were deprived of knowledge, education and training, which led to the introduction of the restrictive policy of Bantu Education. This policy of Bantu Education deprived the majority of the South African citizens of the skills and knowledge that would ensure that they reach their full potential. Under apartheid, access to schooling in South Africa was racially and geographically unequal, thereby distorting the human resource development opportunities of the entire population. In the main, education and training under apartheid was characterised by the under-development of human potential, particularly that of blacks. The system ensured that vast disparities existed between blacks and whites in accessing equal and quality educational opportunities.

The extent of deprivation was much greater in the learning and teaching of Mathematics and the Sciences in public schools. Education is a very wide field that encompasses formal and informal education and training in both the public and the private sectors, at three levels: General Education and Training (GET) Further Education and Training (FET) and tertiary or higher education. For the purpose of this study, the scope is limited to formal education and training in the public sector at the Further Education and Training level. Unless the context indicates otherwise, the term education should be discerned as referring to this level of education within the schooling system. Accordingly, this study does not consider private schooling at any level, adult education or higher education offered by the universities and Further Education and Training (FET) colleges.

Starting in 1994, and the subsequent formation of mass education in South African, the government's intent to place Mathematics and Science education on the agenda for the development of scarce skills in the Further Education and Training band of the South African schooling system became clear. This led to the introduction of the NSMSTE as a policy option for the development of scarce skills in selected schools in the nine provinces of South Africa. This is an exploratory study on how the scarce skills policy is implemented in the public school education system of the Free State province. The use of Mathematics, Science and Technology raises the productivity of the citizens, which in turn yields higher standards of living in the broader society. Greater use of Mathematics, Science and Technology education also raises the general level of knowledge in a given population (Mbeki 2011:5).

The legacy of apartheid in South Africa led to an under-investment of skills amongst the majority of the citizens of South Africa. Historical evidence indicates that the neglect and deprivation of the majority dates back 342 years from Dutch and British colonialism through to the era of apartheid (Biko 2013:172). The Bantu Education Act of 1953 was designed in such a way that it would limit the tuition of black people to an inferior curriculum, in order to merely serve the needs of the white economy. It brought about the foundation for mass education for the first time, geared at imparting low-skills to meet the requirements of the post-war industry. The objective of Bantu Education was to ensure that blacks, 'to be forever hewers of wood and drawers of water'. Mathematics and Science were virtually banned in black schools. This has contributed, immensely, to the current lack of technically skilled human capital in the black communities in South Africa (Bhorat, 2001; Lewis, 2001).

Education and skills legislation was also characterised by the creation of skills and earnings inequalities and deficits under apartheid. Access by black South Africans to managerial and skilled work was prohibited by job reservation legislation in favour of white employees. This is attested by Section 66 of the then Industrial Conciliation Act (No.66 of 1956) and the Mines and Works Act (No. 78 of 1973). The legislation was exclusionary in the deliberate omission of

blacks from the definition of an employee, and the implications went beyond the denial of labour rights to prevent legal access to managerial, professional and skilled work.

During the apartheid years, South Africa's rulers feared the rise of knowledge amongst the majority of the country's citizens. This led to the introduction of Bantu Education in 1953. Hendrik Frensch Verwoerd, the prime minister of South Africa from 1958 to 1966 justified a separate system and ideology of education for non-whites when he gave a speech in 1954:

It is the policy of my department that [black] education should have its roots entirely in the Native [black] areas and in the Native environment and Native community. There Bantu education must be able to give itself complete expression and there it will have to perform its real service. The Bantu must be guided to serve his own community in all respects. There is no place for him (the blacks) in the European [white] community above the level of certain forms of labour. For that reason it is of no avail for him to receive a training which has as its aim absorption in the European community. Until now he has been subject to a school system which draws him away from his own community and misled him by showing him the green pastures of European society in which he is not allowed to graze. (Verwoerd 1954).

The tone and posture of the speech bears testimony to the terrible legacy that Bantu Education brought to many black South Africans. It deprived many black children of essential language skills, their reading and writing abilities were irredeemably stunted (Kros 2010:115). Black children have been so conditioned to rote learning and authoritarian styles of teaching to the extent that they can make no sense of a question that requires critical evaluation or an argued response. Despite the advent of countless curriculum reforms that are aligned to democratic principles of South Africa's constitution, Bantu Education continues to exercise its brain-numbing potency amongst many black South Africans, young and old. While it is worthwhile to look back on the negative impacts of Bantu Education, especially among the historically marginalised communities, this

should not be used as a perpetual context within which to address the issues of education, going forward (More 2012:13).

In congruity with the educational clause of the Freedom Charter adopted at the Congress of the People on the 26th June 1955 in Kliptown South Africa which states: *The doors of learning shall be open to all*, the dawn of democracy in 1994 brought along major changes with regards to equity and access for education. The Freedom Charter outlines a transformative agenda that necessitated a major education policy shift in South Africa. The Reconstruction and Development Programme (RDP) of the first post 1994 government identified the development of human resources as key and central to the growth and reconstruction of South African society. In pursuit of this objective, the government established a Human Resource Development Strategy aimed at improving the supply of high-quality skills in Mathematics and Science in the public school education system. The NSMSTE is one of the programmes of action that was put forward by the 2001 administration. The NSMSTE revolves around three main thrusts:

1. To raise participation and performance of historically disadvantaged learners in the Senior Certificate in Mathematics and Physical Science;
2. To provide high-quality Mathematics, Science and Technology education to all learners taking the first General Education and Training Certificate (GETC) and Further Education and Training Certificate (FETC); and
3. To increase and enhance the human resource capacity in order to deliver quality mathematics, science and Technology Education.

Education for skills development was also taken as an integral part of the Reconstruction Development Programme (RDP) for the transformation of society in a constitutional and democratic South Africa. It brought about related commitments from the state; from economic growth to democratic governance as well as competitive democracy. According to Bloch (2009:149) most of the education policies sound good in retrospect, but it is often a series of actions that add up to what he refers to as muddling through.

In recognising the significance of translating policy proposals into the action plans that can be implemented, the ANC's Policy Framework for Education and

Training developed an Implementation Plan for Education and Training (IPET). Despite this development, policy implementation has never ceased to be a challenge. The publication of a Policy Framework for Education and Training (PFET) marked the completion of the policy process which was started by the African National Congress (ANC) in 1992, when the organization held a Ready to Govern National Policy Conference. In the policy document that emanated from that conference, the ANC outlined its broad policy objectives for the education and training system. In line with the ANC's commitment to the principle of stakeholder participation in the public policy process, the Policy Framework for Education and Training was released as a draft discussion document in the beginning of 1994, to broaden the public debate on the reconstruction and development of the education and training system. While the changes in administration since 1994 have often led to ephemeral policy hiatus, there has been policy continuity in the area of the development of scarce skills in the 2007 to the 2009 administration. The policy on the development of scarce skills represent the South African government's overarching goal to build a just and equitable system that provides good quality education and training to all learners throughout the country. According to Ramphela (1997:25), attempts by the government to transform the grossly inequitable and inadequate school education system are characterised by a failure to translate good policies into sound practice. South Africa has not suffered from a lack of good policies or from having abysmal policies but rather from a lack of ability to effectively and efficiently implement these policies.

This research focuses on selected schools which have been identified by the national government as dedicated Mathematics and Physical Sciences schools. There are more than 500 such schools nationally, 36 of these schools are found in the Free State, in five district municipalities. These districts are Motheo, Fezile Dabi, Thabo Mofutsanyana, Lejweleputswa and Xhariep. The study is conducted from the basis of personal engagement with current realities in the areas of Mathematics and Science in the FET band of the school education system. In this study, the researcher assumes the position of an insider who takes stock of his own experiences as a Mathematics and Science teacher in one

of these schools in the Free State province. However, greatest caution is exercised throughout this study to not present a biased view. In order to guard against being biased during the collection of data, a lot of focus is placed on the Mathematics and Science showcasing schools outside the researcher's district municipality (i.e. Motheo district), which is in the greater Mangaung Metro.

1.2 MOTIVATION FOR THE STUDY

The motivation for the study of the implementation of scarce skills in the schools education system of the Free State province stems from the expediency of Mathematics and Science education as drivers of scarce career paths. Mathematics and Science education in the schools system is practiced by the teachers and experienced by the learners. Teachers, system level officials and school principals are central in the implementation of education policy. This study is in a wider national context, about the missing links in the implementation of policy in South Africa. As a Public Administration oriented study, this thesis looks at the administrative capacity, cognitive skills and processes of the interpretation of the models of policy implementation amongst Mathematics and Science teachers, system levels officials and school principals. These public servants are the implementing agents of the scarce skills policy in the schools. The target group for this study are therefore the system level officials, school principals and the heads of departments of the 36 selected Mathematics and Science showcasing schools in the Free State province.

Education is a societal issue that needs the support of all stakeholders namely, teachers, learners, government, private sector and the community at large. The school education system is centred on the teachers, but teachers are not the only role players in the implementation of education policy. This centrality is emphasised by Bradley and Scheiber (2010:18) citing the conclusions of McKinsey's 2007 report on the world's best-performing school system as follows:

- The quality of an education system cannot exceed the quality of teachers;
- The only way to improve outcomes is to improve instruction; and

- Achieving universally high outcomes is only possible by putting in place mechanisms that ensure that schools deliver high-quality instruction to every child.

In South Africa, the centrality of the teacher is affirmed by draft documents such as: The New, Strengthened, and Integrated Plan for Teacher Development published by the Department of Higher Education and Training. The plan is not restricted to the needs of Mathematics and Science education, but Mathematics and Science feature prominently in the plan. The plan places teachers (including school management teams and subject advisors) firmly at the centre of efforts to improve performance and participation in the school education system.

This study also focuses on the officials of the Free State Department of Education including the provincial coordinator of the NSMSTE and the subject advisors of Mathematics and Science within the province. As Scharpf (1978: 347) states:

‘It is unlikely, if not impossible, that public policy of any significance could result from the choice process of any single unified actor, it is imperative to uphold the principle of stakeholder participation in the policy process. Policy formation and policy implementation are the result of interactions among many separate actors with separate interests, goals, and strategies’.

Brynard (2007:657) concurs with Scharpf (1978:348) by pointing out that not only is implementation influenced by a myriad of actors; it also operates at many levels. Brynard (2007:657) continues point out that a national education policy may operate on the national, provincial and local spheres and also an internationally triggered population or environmental policy might be operating at the international level.

Education matters, not merely because of its social and economic effects, but also because of its political effects. As a result, the government’s failure to produce a substrate of well-educated human capital may have undesirable

consequences for the political future of South Africa. It is on the basis of this political effect, that the ANC's policy conference in 2007 made a clarion call for education to be a national priority and the concern of the entire nation. This stance was the culmination of a PFET, which was published in the *Ready to Govern* document of ANC's National Policy Conference in 1992 (Turok 2008:146).

The commitment of the government to education is largely reflected in the national and provincial budgets. Government spending on education in South Africa amounts to roughly 6% of the country's Gross Domestic Product (GDP). Education receives the largest allocation in the budgets of about 19.5% (DBE 2011:6). While these proportions are high by international standards, it is clear that most education receives considerable resource prioritisation. In contrast, surveys conducted locally and internationally reveal relatively low outcomes regarding quality. The Department of Basic Education allocates a conditional grant of about four million rand to support the Dinaledi schools. The grant is set to achieve incremental targets/outputs over a period of three years. This is an endeavour to alleviate the scarcity of technical skills within the country. The budget gives the picture from the side of the resource inputs into the South African education system. The reality is that South Africa's expenditure on education is not matched by results, particularly in the areas of Mathematics and the Sciences (Saunders 2011:42).

In an effort to respond to the country's education needs, a raft of policy papers and a plethora of legislation on education, training and skills development have been developed. The establishment of the National Planning Commission (NPC) by Jacob Zuma's administration to chart the country's long term development path is another initiative of government. The commission released its first set of outputs in 2011. These include elements of a vision statement and a set of diagnostic reports identifying nine key challenges that confront the country in eliminating poverty and reducing inequality. Out of the nine challenges two stand out and are relevant to this study. These challenges are unemployment and the quality of education for most black learners. Other major efforts include the establishment of two new ministries to head two reconstituted education

departments namely; the Department of Higher Education and Training (DHET) and the Department of Basic Education (DBE). The Department of Performance Monitoring and Evaluation within the Presidency was also established. These reforms were made to improve coherence and the performance of the state in general.

Numerous summits have been subsequently held by the newly formed education departments and various commissions were duly established. A range of official statements were released. Some of the government's planning initiatives in education and training include the 10-point plan Education Roadmap of the Department of Basic Education; the national skills accord plan to drive the New Growth and Economic Path (NGEP) to create five million jobs by 2020 with other partners on board; a framework for the national skills development strategy 2011/12 - 2015/16, the Industrial Policy Action Plan (IPAP) and a new Medium-Term Strategic Framework - *Vision 2025*. This is borne out of the desire to integrate the school and post-school education systems in South Africa in order to have synergy. At the centre of this desire is the government's intent to redirect and align all education and training institutions into accessible education and training systems for skills development.

Significant investments in education have often not yielded increases in student achievement. For example, from 1970 to 1994, France, New Zealand and Australia increased their real expenditure per student by 212 per cent, 223 per cent, and 270 per cent respectively, student achievement in Mathematics and Science declined by 7, 10, and 2 percentage points respectively. Similarly, while, from 1970 to 2005, real expenditure per student in the United States of America increased, and the student-to-teacher ratio improved, literacy in three age groups from 9 to 17 years failed to improve. The state of affairs in South Africa is worse (Malan and Chijioke (2011:32).

As with education systems elsewhere, especially in developing countries, there are still many challenges to surmount. For instance, there are still high percentages of learners leaving the system for work without having mastered the

necessary knowledge and technical skills. More worrying is the fact that these challenges are more prevalent among learners from poor and rural communities. To address these challenges systematically, the government through the Department of Basic Education has developed an education sector plan called *Action Plan to 2014: Towards the Realisation of Schooling 2025*. This plan is the blueprint for improving the quality of education and for turning around the schooling system in line with the country's national development goals. It sets out 27 national goals, of which 13 are output goals outlining expected improvements in learner performance and school enrolment. These include:

- Increasing the proportion of learners who master the minimum language and numeracy competencies during Grade 3;
- Increasing the proportion of learners who master the minimum language and Mathematics competencies during Grades 6 and 9;
- Increasing the number of Grade 12 learners who become eligible for a Bachelors programme at a university;
- Increasing the number of Grade 12 learners who pass Mathematics and Physical Science;
- Ensuring that all children remain enrolled in school until they turn 15; and
- Improving access to quality early childhood development.

The Action Plan covers a number of key areas including teachers, learner resources, whole school improvement, school funding, school infrastructure, and support services. By 2025, the Department of Education would like to have:

- Learners who attend school regularly, assume responsibility for their own learning, and have access to computers, good meals, good teachers, and sporting and cultural activities.
- Teachers who are confident, well-trained, continually improve their capabilities, are committed to giving learners the best possible education, and enjoy job satisfaction due to decent conditions of service.

- Principals who ensure that quality teaching takes place as prescribed by the national curriculum; provide responsible leadership; and promote harmony, creativity, and a sound work ethic within the school community and beyond.
- Parents who are well informed about their children and school activities.
- Learning and teaching resources that are in abundance and of a high quality.
- School buildings and facilities which are spacious, functional, safe, and well-maintained.

In short, the *Action Plan* embodies a holistic approach of creating an environment that is conducive to quality teaching and quality learning. In 2009, the government adopted an outcomes-focused approach to the delivery of public services. In line with this, the Minister of Basic Education signed a delivery Agreement with the president which binds the Department of Basic Education to achieving the Action Plan. South Africa shares social and economic characteristics with many other developing countries. However enabling tools such as Information and Communication Technology (ICT) solutions can be deployed in schools to support administration, teaching and learning; teacher training and professional development programmes that can yield the desired teaching corps; quality educational content and resources; and effective, economical strategies for achieving educational goals and vision (Bloch 2009:151)

Administrative skills are prerequisites for putting government's plans, visions and resolutions into action. One of the programmes in which the government has set an ambitious development target for implementation is in education and development of scarce skills, particularly in the areas of Mathematics and Science education at the school level. The development of scarce skills is at the core of the performance agreement contract that was recently signed by the ministers of Basic Education and of Higher Education and Training with the president of South Africa. Key to this target, are the following outcomes

production of additional engineers and technicians and raising the number of qualified mathematicians and scientists.

1.3 THE OBJECTIVE OF THE STUDY

The Free State province has an Education Action Plan (EAP), which spans from 2011 to 2014; part of this plan is aligned to the NSMSTE. There is also a broad Free State Growth and Development Plan, which mandates the delivery agents such as the schools and other institutions of learning to develop scarce skills. This study unravels the role of the school managers in the implementation of the NSMSTE. The main emphasis is on deriving implementation models from other countries and adapting them to cater for the needs of the Free State province. No policy is perfect, and no policy is entirely implementable. Even if policy is not perfect, consistent implementation is more important. National political and administrative leadership has been fairly stable, but there have been huge problems at the provincial level. It is essential to point out that the objective of this research is not to evaluate the performance of the teachers, system level officials and school principals. The objective is also not to bring about a new theory of the implementation of education policy. To this end the objectives of this study is to:

- Determine whether the teaching and learning practices in the Mathematics and Science dedicated schools in the Free State province are in line with the national policy on the development of scarce skills.
- Determine whether the implementation of scarce skills policy is managed in a way that would ensure that the envisaged growth and development plan of the province is attained.
- Provide a broad framework of public policy analysis as a context within which to discern scarce skills in the Mathematics and Science showcasing schools, as indicated in the NSMSTE.
- Critically analyse the current practices of learning and teaching for the development of scarce skills in the schools that are identified to show case the study of Mathematics and Science in the Free State province.

- Propose a model for scarce policy implementation for school managers that could assist the entire school education system as the agents of service delivery in South Africa.

1.4 SCARCE SKILLS CAREER PATH: ENGINEERING PROFESSIONAL SKILLS

According to Powell and Groenmeyer-Edigheji (2006:4), it is expedient to elucidate the meaning of economic terms, such as scarce skills from the onset of any discussion in order to order ambivalence. They argue that different understanding of such terms is likely to cloud remedial decision making, leading to different remedial decisions.

In this study, scarce skills can be regarded as those that are generally in short supply within the labour market. Immense emphasis is placed on professional engineering skills as high-level skills. Technical and artisan skills are excluded. For the purpose of this study, professional engineering skills are regarded as post-school career paths for the mathematics and science learners. The etymology of the word engineer can be traced back to more than 2000 years. It is derived from the Latin word 'ingenium' meaning skill (Potter 2011:15). Engineering is defined as the science of applying knowledge, tact, craft or ingenuity to solve practical problems of industry (e.g. the construction of industrial plants or machines).

Roodt and du Toit (2009:75) identify three main types of engineering professionals in South Africa, namely, engineers, engineering technologists and engineering technicians. Roodt and du Toit (2009) further point out that the designation depends on the tertiary qualifications that are attained. Engineers hold a four-year Bachelor of Science in Engineering (BSc (Eng)) or Bachelor of Engineering (BEng/Blng) degree from a university; technologists hold a national diploma (NDip) from a university of technology. Throughout this study, Mathematics and Science education are regarded as the conduits for the attainment of a career in engineering. Engineering is regarded as one of the scarce career paths in the South African labour market.

South Africa's transition to democracy and the associated liberalisation of the economy has coincided with globalisation and an increase in the knowledge intensity of all levels of production. This has created a demand for the skills of highly competent engineers and technicians across the world. In response, South Africa has developed a sophisticated engineering and technologist training and education system, based around universities, universities of technology and workplace training to address these needs. Political changes in South Africa have meant that the existing racial and gender profile of the engineering profession is no longer acceptable, and that radical changes in the composition of South Africa's engineering corps is required (Steyn and Daniels 2003:556).

These developments have had a significant impact on the engineering education and training system in South Africa. Traditional expertise such as mining, civil and mechanical engineering are no longer adequate. New areas of expertise, such as computer engineering and the combination of different disciplines, have had to be developed, and the content of traditional disciplines has had to be adjusted to accommodate the greater use of information technology and address new economic and political imperatives (Lawless 2007: 157). Consequently, tertiary institutions have altered the structure of their courses to accommodate these new areas of demand, and have responded to the demand for greater numbers of previously disadvantaged groups to be qualified as engineers, adopting various strategies to achieve this end.

The ability of tertiary institutions and the propensity of school-leavers to respond to the changes in the demand of engineering professional skill is a central factor which determines whether the labour market will succeed in meeting the changing demand for engineering professional skills in South Africa. The problem of poor performance of high school learners in Mathematics and Science needs to be addressed as a matter of exigency, and should be a national priority because increased supply of suitably skilled entrants to tertiary institution is central to improving the supply of future engineering capacity (Roodt and du Toit 2008:452).

1.5 HISTORICAL BACKGROUND OF EDUCATION AND TRAINING IN SOUTH AFRICA - A GENERIC OVERVIEW

The legacy of apartheid in South Africa, which reserved better education and training for a minority led to an under-investment of technical skills amongst the majority. The education system in South Africa during the years of apartheid was such that the rulers of that time feared the rise of knowledge amongst the majority of the country's citizens, which led to the introduction of the policy of Bantu Education.

Bantu education was meant to control. Blacks were deprived of opportunities to pursue technical career paths. This has contributed to the current lack of skilled human capital particularly amongst the blacks in scarce careers such as engineering (Bhorat, 2001; Lewis, 2001). Under apartheid, education and skills legislation created skills and earnings inequalities and deficits. Access by black South Africans to managerial and scarce skilled work was prohibited by job reservation legislation in favour of white employees.

The consequence of legislative and organisational exclusion meant that blacks were not prepared for the jobs in the technical field because the appointments for such positions were based on acquiring knowledge, education, training and promotion through the ranks. The current government has inherited the outcomes of policies that were deliberately designed for under-development and deprivation of the majority. The ANC-led government has done well to produce a myriad of policies to redress the ills of the past, but the unsatisfactory outcomes of the past continue to be reinforced by policy implementation slippages within the provinces. The implementation of government's policies is a provincial competence and it is the prerogative of the provincial governments to evaluate and monitor the implementation plans.

According to Jansen (2011:110-113), sight is often lost to the fact that in as much as the 1970s school riots served as a catalyst to end apartheid in South Africa, it had unintended consequences because it left salient vestiges of two

school sub-systems with notable racial dimensions. Jansen (2011:110-113) further expounds on the two sub-systems by pointing out that one is a township school system in which resistance and contempt for schooling is endemic and the other one is the smaller, middle-class and largely white school sub-system. Jansen (2011:110-113) adds that the former is riddled with low productivity and performance outcomes and the latter continue to save the face of the generally collapsing and dysfunctional school system in South Africa. The bulk of high school graduates who make it into universities come from the smaller, middle-class sub-system. In this small group of the privileged, there exist a high percentage of those who pass Mathematics, Accounting and Physical Sciences and would be better placed for becoming engineers, accountants and managers of change thus closing the gap of scarce skills.

Globally, the public service is regarded as the vehicle through which the government fulfils its promise of securing the wellbeing of the people. The effective and efficient performance of public officials and the capacity of departments to deliver services are critical to all aspects of government's agenda for transformation and development. The capacity to deliver lies in the ability of public servants to undertake their assigned responsibilities as public officials, equipped with the necessary levels of skill, knowledge and commitment to serve the public. Sheoraj (2007:3) attests to this by pointing out that implementation of strategic objectives and outputs in the Government's department are enhanced by building capacity and creating an enabling environment for improving the delivery of services.

1.6 SCHOOL EDUCATION ACHIEVEMENTS IN THE POST-APARTHEID SOUTH AFRICAN

The first post-apartheid government inherited an education system that was characterised by racial and regional inequalities, inter alia, in the distribution of education resources and education outcomes. Although there are ongoing attempts to address quantitative inequalities, there are still significant qualitative disparities. One notable achievement in turning around apartheid

school education system is the government's effort to ensure that the country is well placed towards meeting the Millennium Development Goals (MDG's) of ensuring that every learner, especially those in the foundation phase of schooling, has access to free education of an acceptable quality. Major gains have also been made in terms of equity of inputs, most particularly in equalising the learner/educator ratio, and in the growth in the number of learners reaching Grade 12 and writing the Senior Certificate Examination particularly black and female learners. However, these gains have not yet resulted in fundamental shifts in learning outcomes. More improvements are still required to address the quality and equity of learning achievements. The MDG of ensuring compulsory primary education has already been achieved in South Africa, as universal primary education and gender balances in schools transcend the requirements set to be achieved by 2015. Key amongst many achievements is the amalgamation of the apartheid education systems and Bantustan establishments into a single national department responsible for broad policy formulation, and provincial establishments responsible for delivery. The South African Schools Act of 1996 laid a foundation for a non-racial approach to education (De Kadt 2010:12).

There have been improvements in equalising expenditure across the racial divides and reducing provincial inequalities. Other improvements are marked by the efforts in dealing with issues such as size of classes, access to teachers and course materials through the new Norms and Standards which emphasises pro-poor expenditure. A raft of policy papers, reports, legislation, implementation directives and institutional development has resulted in progress being made across many branches of education, from higher to vocational. De Kadt (2010:12) further highlights the following achievements since 1994:

- Access to primary and secondary schooling has improved; with near universal enrolment in primary schooling and about 86% gross enrolment ratio in secondary schooling was achieved by the year 2002. The participation rate among girls is amongst the highest in the world.

- Number of pupils who have progressed to higher levels of schooling has increased significantly from 1994.
- Impoverished learners and those who cannot afford to disburse school fees are exempted from paying school fees.
- There has been an improvement in the performance of learners throughout the schooling system. This is noticeable in the Grade 12 Senior Certificate examination results. A combination of factors, such as closer monitoring of poorly-performing schools and directed professional development programmes aimed at improving teachers skills and teaching methodologies, have contributed to this improvements.
- There has been a general improvement in the qualifications of teachers, with the previously large proportions of unqualified and under-qualified teachers being significantly reduced by means of in-service upgrading programmes
- Pupil-to-teacher ratios have improved from 43:1 in 1996 to 35:1 in 2000. This has been achieved through the redeployment and post-provisioning strategies geared to favour areas of greatest need. This has contributed to improved teaching and learning conditions.
- The Further Education and Training and Higher Education sub-systems have been restructured to make their programmes more relevant to needs of students and the economy to reconfigure their institutional landscapes from an apartheid structure to a rationalised one that eliminates unnecessary duplication and promotes growth, rejuvenation and cooperation.
- The growth of democracy and the promotion of values and moral regeneration are being nurtured through the establishment of the South African History Project and the Values in Education Initiative.
- Illiteracy is being reduced and literacy among the population as a whole has been improved through the establishment of the South African National Literacy Institute (SANLI), the reading advocacy project Masifunde-Sonke and Adult Basic Education and Training (ABET) programmes.

- The NSMSTE was established. The strategy identifies schools around the country and mandates them to promote the study of mathematics, science and technology, especially girls and groups who were previously marginalised.

These figures indicate that despite massive challenges of transformation, there is clearly a positive continuity and logistical capability in the schooling and wider education systems. There are important levels of stabilisation and delivery and this has a ripple effect on many students who attain high levels of achievements despite the challenges.

1.7 THE POST-APARTHEID FORMAL EDUCATION STRUCTURE IN SOUTH AFRICA

The World Declaration on Education for All (EFA) has a slogan: '*Meeting Basic Learning Needs*'. In Africa, a regional meeting which was held in Dakar (Senegal) in 2000 provided further impetus and a renewed commitment by African governments to meeting the targets of the EFA drive by the year 2015. A major achievement of the government post-1994 was the dismantling of the race-segregated, unequally resourced educational structures and their replacement by a single, cohesive national education system, which is organised and managed by the DoE in conjunction with the nine provincial departments' education. With the Constitution of South Africa as the supreme authority, structures and mechanisms were put in place throughout government to ensure that the principles of basic human rights and fundamental human dignity were restored to state operations (<http://www.gov.za>; DoE 2001, EDUCATION IN SOUTH AFRICA: Achievements since 1994).

The principles of human rights and dignity tie in well with the values espoused by the World Declaration on EFA and the MGDs. They reflect the concerted efforts that were made to honour internationally-agreed to aims in education. One of these principles informed the establishment of a qualifications structure designed to enable learning paths to be charted throughout life, by means of

effective articulation between programmes ranging from basic education to the most advanced levels of higher education. Formal education in South Africa is categorized according to the three bands and eight levels of the National Qualifications Framework (NQF) formulated by the South Africa Qualifications Authority (SAQA). The NQF is illustrated in Table 1.1 below:

Table 1.1 Formal Education categories in South Africa

NQF Level	Band	Qualification Type
8 7 6 5	Higher Education and Training	<ul style="list-style-type: none"> ▪ Post-doctoral research degrees ▪ Doctorates ▪ Professional Qualifications ▪ Honours degrees ▪ First degrees ▪ Higher diplomas ▪ National diplomas ▪ National certificates
FETC - recently designated the National Senior Certificate (NSC)		
4 3 2	Further Education and Training	Grade 12 National certificates
GETC		
1	General Education and Training	Grade 9/ABET Level National certificates

Source: SAQA (South African Qualification Authority)

- *The General Education and Training (GET)* band consists of the Reception Year (Grade R) and Grades 1-9 of formal schooling leading to an exit-level GET-Certificate, as well as an equivalent Adult Basic Education and Training (ABET) qualification.
- *The Further Education and Training (FET)* band consists of all education and training offered on NQF levels 2 to 4 (equivalent to Grades 10-12 in the ordinary school sector) and the National Technical Certificate levels 1 to 3 in FET colleges. The FET-Certificate is normally the minimum requirement for admission to Higher Education.

- The Higher Education (HE) band consists of a range of certificates, diplomas and degrees, up to and including post-doctoral degrees.

These levels are integrated within the NQF, as provided for by the SAQA Act (No. 58 of 1995). The main purpose of the NQF is to provide a standard framework for approving, assessing and evaluating qualifications, with the intention to establish quality within the learning programmes and equity between those programmes that are offered on the same level. The NQF is an outcomes-based indicator of educational standards. Bench-marks for the assessment of the outcomes are intended to translate directly into qualitative enhancement of teaching and learning. This has important implications for the supply of skilled and knowledgeable teachers for the formal school education system in South Africa (DoE, 2002: EDUCATION FOR ALL: Status Report, South Africa).

1.8 SOME WEAKNESSES IN THE POST-APARTHEID SOUTH AFRICAN SCHOOL EDUCATION SYSTEM

While there have been significant achievements in the first sixteen years of democracy in the South African school education system, there are also numerous slippages and weaknesses that limit those achievements. Comparative scores for Mathematics, numeracy and literacy in South Africa are consistently amongst the worst in the world: South and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ), Trends in International Mathematics and Science Study (TIMMS) and the Progress in International Reading Study (PIRLS) show that South Africa ranks among the worst performing countries in the quality of mathematics and science education. According to the 2011 census results released late in 2012, in the past ten years 2.7% of men and women in South Africa had tertiary qualifications in natural, physical and mathematical sciences. By 2011, this had declined to 2% in men and 1.8% in women. The national average in the performance of Mathematics and Sciences is dramatically lower than every other participating country.

Recent data gleaned from the South African Annual National Assessment (ANA), a new testing programme being run nationwide for schools indicates that whilst some 65% of 6th- grade learners in the schools in the Western Cape performed at 6th grade level, this figure was only 3% in ex-DEC schools and an appalling 0,1% in ex-DET schools. In the Free State, literacy results were at 37%, while numeracy was at 26% for Grade 3 learners. For Grade 6 learners, the results were 23% for the languages and 28% for Mathematics. The statistics also revealed that poor outcomes weigh far more heavily on poor, rural and township schools. Access to high quality education in South Africa is still determined by race and socio-economic status. A brief examination of the 2010 Department of Basic Education data on school enrolments by race and quintile or school wealth bracket shows that in Gauteng, Free State and the Western Cape provinces, white learners outnumber non-white learners in schools that fall into the wealthiest quintile. This, combined with the structural deficits left by Bantu education, implies that inequality remains a pressing concern in South Africa. Skills scarcity has its roots in an inadequate baseline of achievement within the schooling system (Block 2010:14)

1.9 THE CHALLENGES OF SCARCE SKILLS

According to the survey conducted by the sector skills plan, the top five occupations wherein there are salient scarcities of skills are in financial management, as well as in the Mathematics, and Science and Technology related fields such as engineering. Scarce skills in these areas hinder service delivery, increase unemployment and contribute towards poverty. The South African government has put in place numerous programmes in an effort to address the problem of scarce and critical skills but the shortage of technical skills in post-apartheid South Africa still looms large. Legacy issues, including poor training of black teachers in Mathematics and Science are identified as factors that negatively impact on the development of scarce skills.

According to Lawless (2007:34-35), South Africa has 30 engineers per 100 000 people compared to 340 in Australia and in the United States. South Africa

produces 1 400 engineers with B.Eng and B.Sc. Eng. degrees each year, yet only a small percentage of these graduates go on to register with the Engineering Council of South Africa (ECSA) as practicing professionals. ECSA is the statutory body that regulates the engineering profession and consequently controls the registration of professional engineers in South Africa. In order to simplify the understanding of the engineering profession in South Africa, Du Toit and Roodt (2008:452) categorise the main sectors within which engineers engage into two key areas of the development enterprise in the country: Building and maintaining infrastructure in the public sector, and contributing towards economic growth in the private sector. These are fundamentally diverse contexts in terms of the kinds of engineering work undertaken. In the public domain, engineers are essentially involved in the provision of transport, communication and electrification and are by and large employed by local and provincial governments. In the private sector, engineers work in a wide range of commercial enterprises from small consulting firms, medium-sized to large multinational companies.

There are less than three civil engineering staff personnel in local governments in South Africa for every 100 000 citizens, in comparison to China with its four municipal/local authorities each servicing about 250 million people (Lawless 2007:36). Given the situation in South African wherein there was a population of about 44. 8 million in 2001, 284 local authorities would then service about 157 746 citizens each. Lawless (2007) warns that without proper planning and effective strategic forethought and if the capacity crisis amongst local government officials and municipal managers is not resolved, local government service delivery could be brought to halt. The Joint Initiative for Priority Skills Acquisition (JIPSA) was launched as an intervention strategy to fast - track the acquisition of scarce skills in the engineering profession in South Africa. In 2006, South Africa had 150 civil engineering graduates, whereas China had 200 000 in 2005. (Naidoo 2011:37). The engineering skills needs projection from 2003 to 2010 as projected by JIPSA is given in figure 1.1 below:

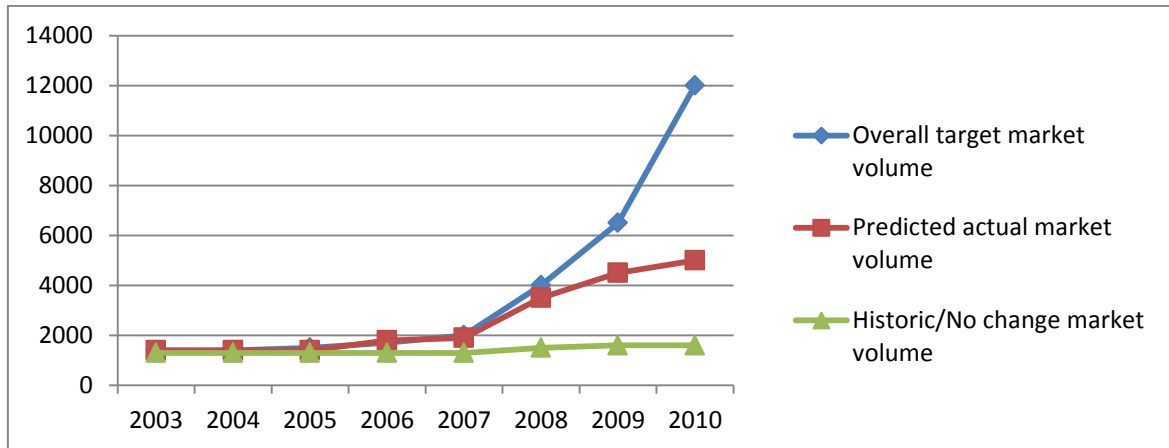


Figure 1.1: The engineering skills needs projection from 2003 to 2010(Source: JIPSA final report, 2006)

Figure 1.1 above, indicates a sharp upward rise of the overall target market volume from 2007 - 2010. Predicted actual market volume increased marginally and historic or no change market volume remained constant. The democratic dispensation has brought about many restructurings and rationalizations in the public service, especially in the local sphere of government. This resulted in many personnel with high-level technical skills being offered packages at a time when the local government was being expanded to serve the entire population of the country, service delivery backlogs became enormous. Senior technical positions within the local government were replaced by unskilled and non-technical managers. This resulted in limited technical and management capacities within many municipalities. Consequently this has presented a huge challenge as the public service delivery took a massive slump. As Lawless (2007:34) rightly puts it, it is necessary to rebuild technical and management capacities and review systems, processes and structures in order to create a more enabling environment for service delivery to take place. While the shortage of engineers is a global phenomenon, South Africa, must in the short term, increase its efforts to fast-track the importation of skills or train its citizenry to meet the immediate service delivery demands (IMESA 18:2008.).

The formulation of national policy in South Africa is the competences of the national government. The implementation of policy is the competence of the provinces. In an effort to substantially increase the scarce skills, the South

African government has rolled out many skills development programmes for the provinces to implement. The focus of this research is to investigate the implementation of the NSMSTE programme as a vehicle for the advancement of scarce skills policy. This study will focus on 36 identified public schools in the Free State province.

1.10 THE NATIONAL STRATEGY FOR MATHEMATICS, SCIENCE AND TECHNOLOGY EDUCATION (NSMSTE)

Since 1994 all sectors (government, business, academia, parents' component in a school environment) have recognised the importance of Science and Mathematics for the development of the country. It has also been recognised that the black population was the most disadvantaged and needed a programme of redress to ensure better participation and performance in Mathematics and Science. Commitment to this has been outlined in various government gazettes and policy documents (DoE, 1996; DoE, 2001; DoE and DoL, 2002; DST, 2002). These policies affirm that to build the Mathematics, Science and Technology capacity interventions are needed at the school level to increase the supply of qualified individuals.

The Department of Education has developed a national strategy to improve participation and performance in Mathematics and Science education (DoE, 2001). This strategy selected schools in each province that demonstrated the potential to perform well. The schools received additional facilities, equipment and support for effective mathematics and Science teaching and learning. While the Dinaledi vision of investing in schools with potential to succeed appears sound there have been problems in the selection of schools according to the predetermined criteria and the implementation of the interventions in the schools has been uneven. As a result, the Dinaledi intervention has yet to be independently evaluated. It has yet to demonstrate the kinds of gains in participation and performance that were anticipated.

In 2002, the concept of Dinaledi (star) schools was implemented as a strategy to promote Mathematics, Science and Technology and, in so doing, improving the quality of education. The Dinaledi schools were mostly established in rural and township areas, and are being groomed as centres of excellence in Mathematics and Physical Science. The Department of Basic Education's premier initiative to improve performance in Mathematics and Science gave rise to the NSMSTE. The Department of Basic Education is responsible for this initiative and the Department of Higher Education Training provides support as the new custodians of skills development in South Africa.

Grade 12 is the gateway to further study and it is an indicator of success or failure at the end of the school system. The most high-profile assessment of educational success in schools is the Grade 12 pass rate. Therefore, this research will focus on the Grade 12 performance in the learning areas of Mathematics and Physical Sciences. Statistics have shown that Grade 12 learners in South African schools achieve a dismal pass rates in both Mathematics and Science. Since the inception of the National Curriculum Statement (NCS) examination in 2008 the national average in Mathematics and Physical sciences learning areas has failed to achieve over a 40% pass rate.

The provinces in South Africa are entrusted with the responsibilities to set up action plans for the implementation of the Dinaledi Project. This study places emphasis on the role played by the teachers as the implementers of the policy to develop scarce skills. The effectiveness of one particular programme, which is offered by the University of the Free State namely, Advanced Certificate in Education (ACE) as a form of a continuing professional development for the teachers will be analysed. The purpose of this programme is to equip teachers with the skills for the positions they occupy and to enable them to move into an education and management career path (Conley 2011:17).

The Dinaledi project was initiated as part of the defunct Joint Initiative for Priority Skills Acquisition (JIPSA). JIPSA ceased to operate in 2009. The JIPSA initiative was aimed at developing skills that are needed and as such it was one

of the key components of the Accelerated and Shared Growth Initiative for South Africa (ASgisa). Figure 1.2 below outlines the proposed increase in the number of engineers for the period 2007 - 2010 as projected by JIPSA.

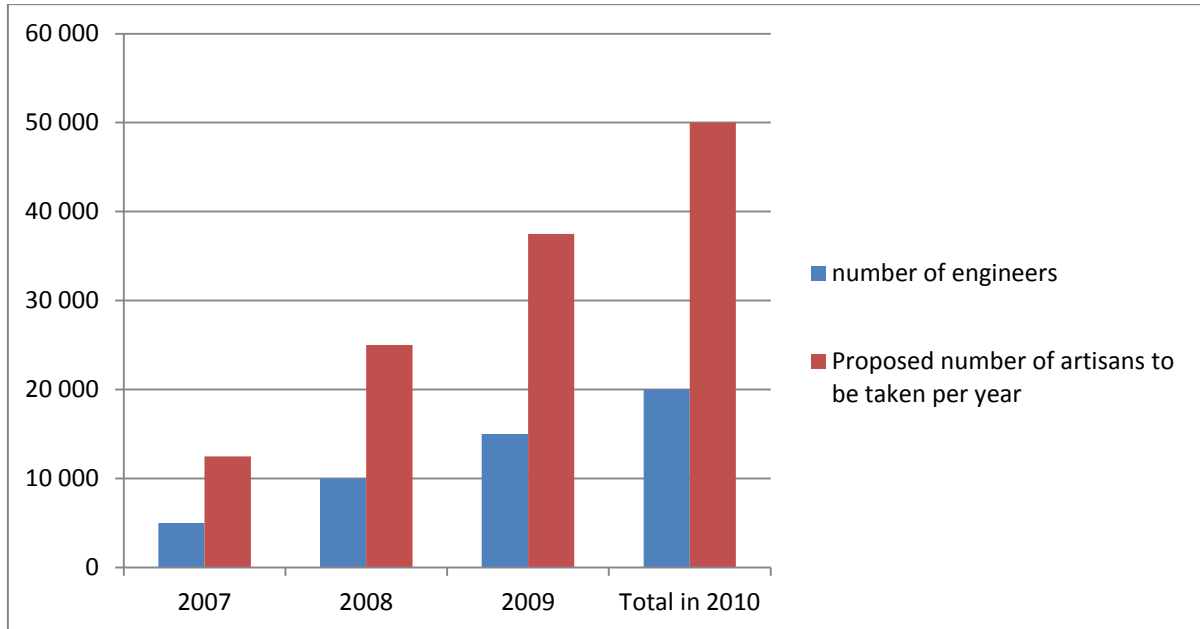


Figure 1.2 Proposed increases in the number of engineers and artisans: 2007 - 2010 (Source: JIPSA final report, 2006)

Although the Dinaledi project is a national programme for the development of scarce skills, each province has its own outcomes that are related to its local and regional needs. In the Free State province, the implementation of the Dinaledi project seeks to achieve the following outcomes:

- Increase the number of black learners, especially females, taking Mathematics and Physical Sciences as first choice learning areas.
- Increase the pass rate at high school level and in Grade 12 with learner attainment in Mathematics and Physical Sciences.
- Strengthen and enhance the capacity of educators to deliver effective Mathematics and Physical Science content in the classrooms.
- Strengthen and enhance leadership, management and governance of dedicated Mathematics, Science and Technical schools.
- Adequately resource schools with access to ICT to enhance the quality of Mathematics Science and Technology Education in the classroom.

- Entering into partnership with other stakeholders to raise required resources, technical support and expertise.
- Improving the language of teaching and learning.
- A systemic collaboration General Education and Training phase and Further Education and Training phase to work on the management, monitoring and implementation of NSMSTE.

The outcomes annotated above are in tandem with the Free State's Action Plan 2014, entitled: *Towards the realisation of Schooling 2025*. The recommendations will be mooted in the form of guidelines at the end of this study. These should assist the province to support the national Department of Basic Education and the Department of Higher Education and Training with their mandates to address the challenges of the implementation of the scarce skills policy at other institutions around the country. This research contributes towards the body of knowledge in Public Administration because the models for the implementation of scarce skills policy in the Free State province can also be applied to schools in other provinces where the Dinaledi programme is operational.

1.11 THE NATURE OF EDUCATIONAL POLICY

According to Anderson (1994:5-6; cf. Also Anderson 2006:6) policy involves a purposive course of action formulated by the authorities in the political system to deal with a problem or matter of concern. Purposive implies that policy is neither a random decision nor an opportunistic occurrence. Rather, policy is a goal-inclined action that comes out of a response to a particular problem or demand. In the same manner and as it is the case with a myriad of public policies, education policy is equally goal-inclined. Hartshorne (1999:5; cf. Waghid 2002:1-2) concurs with Anderson's definition of policy and augments it by giving a comprehensive definition of education policy as 'a course of action adopted by government through legislation, ordinances and regulations, and pursued through administration and control, finance and inspection, with the general assumption that it should be beneficial to the country and its citizens'. Education policy therefore entails a legalised course of action driven by specific

purposes. Drawing from Hartshorne's (1999) definition, education policy is imbued with authority; hence it has the power to achieve the intended goals. In line with this perspective, Adams (2004:36; *cf.* Also Ball 2006:43-50) points out that education policy has the power to structure and to guide government actions.

Taylor (1997:15; 27; *cf.* De Coning 2006:3) contend that education policies are authoritative allocation of values and interests. The issues of whose values and whose interest's policy should represent are debatable. Wissink (2006a:79) highlights this contestation of whose voices will be heard and whose values will be reflected in policies. Since policies can never be neutral when it comes to values and preferences, they sometimes tend to privilege certain visions and interests over others. As a result, language is often used tactfully leading to tensions and contradictions within the policy discourse itself.

This perspective is underscored in Codd (1988:235; *cf.* Adams 2004:40-44 and Niewenhuis 2007:42) account which indicates that 'fundamentally policy is about the exercise of political power and the language that is used to legitimise that process'. This perspective renders policy as a text or a discourse that is open to different interpretations. It is incumbent on the policy analysts to deconstruct policy texts with the intention to reveal what values and ideologies they represent.

Education policies embody authority and legislation; however they are not cast in stone as they involve multi-dimensional, complex, dynamic and interactive processes (Taylor *et al.* 1997:15; *cf.* Adams 2004:22). In the light of this characteristic, policies are open for revision and reform. They can also be adjusted as and when it is necessary in order to address emerging needs. Policies can also be revisited to cater for those dimensions which were overlooked in the past. This makes them more inclusive and relevant for a specific context and time.

According to Harris (1999:8; *cf.* Taylor *et al.* 2004:16) there is usually a prior history, an ideological and political climate, a social and economic context attached to education policies. For instance, in the African context the need to Africanise education policy comes as part of the post-colonial initiative to restore and revive the African identity. This history is extremely important, however given the current circumstances of globalisation, it is crucial for Africa to consider both local and global trends when carrying out policy reforms.

Education policies operate in synergy with policies in other fields. Vilakazi (2000:202) supports this assertion by pointing out that there is a great need to synchronise education policies with other development policies. For instance, while the scarce skills policy is not a tool to promote the economy, it however, does not exist in isolation from economic policies such as RDP, GEAR and NEGP. This perspective is underscored by Codd (2005:193) who posits that in line with neo-liberal policies of structural adjustment, western countries often place their education policies within the orbit of their economic policies. This assists the countries to achieve greater economic growth.

The above discussion around some of the perspectives in relation to the nature of education policy can be summarised as follows:

- An education policy embodies legislation and authority;
- It is a coherent framework for implementation in education systems aimed at bringing about change, preservation and adjustment;
- It is value-laden and can sometimes be tilted towards interests over others;
- It is formulated through dynamic process that leaves room for reformation as well as borrowing from other nations;
- It exists within a specific historical context, it also exhibits local and global dimensions, both of which have to be taken into account in policy reform; and
- It interacts with policies in other fields such as political and economic policies.

In South Africa, since 1994 the government has set out to create a democratic society by formulating policies that are geared towards the improvement of the quality of life of all citizens. In line with the Constitution of the Republic of South Africa, Act No. 106 of 1996, policies and programmes have been put in place to improve the quality of life of all the people. Brynard (2005:649) highlights major periods, where South Africa, in the policy context went through a review of policies. This includes the White Paper from 1995 to 1996 and a period of more emphasis on service delivery from 1997 to 2003.

Sajid (2006:3) attributes the success or failure of policy in developing countries to implementation. To ensure successful service delivery, policy implementation strategies should be enhanced. Policy development, implementation and service delivery should be consolidated so that a more coherent policy and strategy system with on-going monitoring, evaluation, review and performance management (Brynard 2005: 649-650). In South Africa, the establishment of the National Planning Commission was geared at the realisation of this end. Service delivery, in the form of the provision of education and the rolling out of skills development programmes can be linked to policy development and policy implementation. Therefore, the challenges of service delivery within the administrative service delivery agencies of skills development programmes will be unravelled within the context of policy implementation strategies. For the purpose of this study policy implementation will be defined as the carrying out of the selected and planned decisions of the government by the teachers as service delivery agents of education.

Scholars of Public Administration, like Jeffrey Pressman and Aaron Wildavsky (1973) maintain that everything ever done in public policy or Public Administration must have some link with implementation. This also finds expression in Pfiffner and Presthus' (1967:8) definition of Public Administration as a process concerned with carrying out public policies, encompassing innumerable skills, and using techniques that order the efforts of large numbers of people. Similarly Nicholas Henry (1980:26) provides a much broader definition

of Public Administration that has some bearing on implementation as follows: A broad-ranging and amorphous combination of theory and practice. Its purpose is to promote a superior understanding of government and its relationship with the society it governs, as well as to encourage public policies more responsive to social needs and to institute managerial practices attuned to effectiveness, efficiency and the deeper human requisites of the citizenry. In both definitions, albeit Henry's much broader content, it becomes evident that there is a synergistic relationship between policy implementation and Public Administration. Levin (1986:317), however argues that although effective implementation depends on good administration that is not sufficient in itself.

The literature on the implementation of policy is often deemed cumbersome and intricate by many policy scholars. Early scholars of implementation research such as Wildavsky, who began implementation research in the 1960s and 1970s battled to come up with a common causal theory with predictive and prescriptive power for policy implementation. This assertion is attested by Brynard and De Coning (2006:181), who illustrate how early scholars of policy underplayed the significance of policy implementation and instead placed immense zest on its meaning. This is indicated by the manner in which Pressman and Wildavsky (1973: xii-xv) unravel implementation and policies. They expound implementation and policies as follows: Implementation is to carry out, accomplish, fulfil, produce and complete and policies as culled in their seminal book on policy implementation. This implies that theories and policies become programmes when, by authoritative action, the initial conditions are created. Implementation, then, is the ability to forge subsequent links in the causal chain so as to obtain the desired results. Early scholars deemed policy implementation as a mundane administrative choice that, once it had been legislated and the institutions were given authority, it would be self-regulatory. Often this proves to be fallacy.

Jansen (2011:107) attributes failure to implement educational policy to teachers' and principals' lack of knowledge required in a professional setting

like a school. Jansen (2011) identifies five kinds of knowledge required to implement policy in a school setting:

- Knowledge of the subject matter (content knowledge)
- Knowledge of teaching (pedagogy)
- Knowledge of the learners (psychology)
- Knowledge about the nature of knowledge (epistemology)
- Knowledge of the communities from where the learners are coming from (anthropology and/or sociology)
- Knowledge of classroom organisation and discipline (managerial knowledge). These five kinds of knowledge are taken into account because this research revolves around the teachers and the school principals as the implementer of scarce skills policy.

Jansen and Sayed (2001:32) attribute failure to implement educational policy to a myriad of intrinsic and extrinsic factors. In this study, Black Economic Empowerment (BEE) policy, affirmative action policy and employment equity policy are regarded as the examples of the intrinsic factors that drive the implementation of the development of scarce skills policy. The examples of extrinsic factors in this study are the lack and the shortage of the resources such as skilled personnel to support the implementation of scarce skills policy. Extrinsic factors are also discussed in conjunction with the ANC's cadre deployment policy.

A significant proportion of the public service personnel in South Africa are devoid of relevant skills required to meet a myriad of challenges in their workplaces. For public infrastructure the most salient impediment on service delivery is shortage of skills - including professional skills such as engineering and Science; managerial skills such as financial, personnel and project managers; as well as skilled technical employees such as artisans and Information Technology (IT) technicians. Addressing the skills gap remains high on the government's agenda as a way of promoting efficiency and effectiveness to those it employs as public servants. The government of South Africa launched

its first initiatives to rebuild skills for productive citizenship as early as 1998 by enacting the Skills Development Levies Act 9 of 1999 followed by the Skills Development Amendment Act 31 of 2003; introduced by the Department of Labour (DOL: 2005). Government adopted the Human Resource Development Strategy for South Africa (HRDS-SA) in 2001. Despite achievements in the implementation of the strategy there were challenges which necessitated the review of the Strategy in 2008.

Public sector employees with the right mix of skills and profiles are expedient for service delivery (Fourie, 2006: 493). Fourie (2006: 494), further emphasises that the updating of the Public Service legislation with reference to education manifests in the White Paper on Public Service Education and Training of 1998 (WPPSET). The WPPSET seeks to transform Public Service training and education into a dynamic, needs- based and pro-active tool, capable of fulfilling a critical role of providing basic services to the public.

A review of the broader Human Resources Development in the government in 2009 resulted into the reconfiguration of functions and priorities in government. One such reconfiguration that took place is the placing of skills development and Further Education and Training under the purview of the Ministry of Higher Education and Training. This step ushered in high levels of hope amongst the public that implementation of skills development policies would be the government's highest priority. It also brought along optimism amongst the public that many other good policies that the government has developed since 1994 would translate into programmes that could improve the lives of the people.

For nearly two decades, skills development has been central to the South African government's initiative to create employment and reduce poverty. The only shortcoming has only been that each administration has come up with its own skills development. This study is carried out at a critical period in South Africa, when the Department of Economic Development (DED) recently released the new policy model called the NEGP, successor to the 1994-vintage Reconstruction and Development Programme (RDP) and the 1996 Growth, Employment and

Redistribution (GEAR) programme. The NEGP envisages South Africa as a developmental state wherein the public servants work very hard to improve the state's economy. In order for the public servants to do this, implementation of skills development programmes is essential.

This study also discusses Section Four of the NEGP policy framework which has some relevance to the chosen topic, entitled: *Stepping up Education and Skills Development*. Improvements in education and skill levels are fundamental prerequisites for achieving many of the goals that are set out in this new growth path discussion document. The NEGP calls on the DHET to do more in meeting the broad-based development needs in South Africa. It also requires a radical review of the training system to address the shortage of skills. The draft Human Resource Development Strategy for the Public Service Vision 2015 targets at least 30 000 engineers by the year 2014. The country can achieve this by strengthening measures to ensure greater and more equitable access to Mathematics and Science education in public schools. The NEGP's plan to produce 30 000 engineers by 2014 will only materialise if sound policy models are put in place for the implementation of scarce skills policy.

1.12 LIMITATIONS TO THE SCOPE OF THE STUDY

Research in Public Administration is usually conducted in a political charged and context-filled milieu. This milieu often impinges on the findings of the research. Although the ANC has been responsible for the formulation of all the policies since it gained political power in 1994. Changes in the leadership in government have often led to a shift in the ideological framework of the ruling party. Having been established in 2001, the scarce skills policy in the South African schooling system (i.e. NSMSTE) is the policy brainchild of the previous administration. Notwithstanding the fact that the 2009 administration retained this policy, there is a concern that this policy is not managed with greater zeal than in the previous administration. This limits the scope of this study.

The researcher, as a Mathematics and Science teacher in one of the schools where the study is carried out has to support the implementation of the scarce skills policy. This could have an influence on how the respondents react to the questionnaires when data are collected. The inherent hopes of the researcher that originated from the title of the chosen topic and the culture of the population in which the study is carried out may also influence the collection of data. The attitude of the respondents on the NSMSTE and their pre-conceived impressions about the researcher could also influence the validity of the collected data. Another limiting factor is that the models of scarce skills policy implementation which could be applicable in the Free State schooling system as per the lessons acquired through this study may not necessarily be compatible for application in other provinces due to contrasting infrastructural backgrounds of the public schools in different provinces.

1.13 THE DIVISION OF CHAPTERS

Chapter 1: Introduction, History, Overview and Rationale. This chapter presents the background to the study, motivation, objectives, the relationship between public administration and policy implementation as well as the understanding of the nature of public policy and practice. The rationale for undertaking the study is also given. Limitations to the scope of the study are pointed out.

Chapter 2: Research Methodology. In this chapter the method and the design of research are discussed. Theoretical perspectives on different types of research methodologies and their appropriateness and relevance to the study are outlined. The data collection tools and techniques are highlighted and explained. This chapter also includes the statement of the research problem, research questions, purpose and population of the study, research design as well as the aims and objectives of the study.

Chapter 3: Literature Review. Public Administration - theories and practices and where the study fits in. Education policy and implementation as well as policy and politics are discussed. Scarce skills are defined. Theoretical

perspectives in the implementation of scarce skills policy are discussed. Administration and administrative structures in a public school environment are tackled. The administration of the school education systems in the countries that are excelling in the implementation of Mathematics and Science education programmes are modelled (i.e. Finland and Singapore). The models of Charter schools and one Mathematics and Science school in the Limpopo province called Mbwili Secondary School are benchmarked against Mathematics and Science showcasing schools in South Africa. Community participation models in the administration of education in the Philippines, Mali and Brazil are also used as the lessons for the implementation of scarce skills policy in South Africa.

Chapter 4: Public Policy Analysis. This chapter analyses the legal framework for the administration of education in South Africa and the Free State province. Some of the selected policy models are discussed.

Chapter 5: Analysis of Case. This chapter correlates the priorities and suggestions highlighted in the *NDP* concerning basic education as well as the Action Plan 2014 strategy with the theme of this study. The reasons behind the low productivity of the school system in South Africa are advanced. Feedback is also given in this chapter about the fieldwork undertaken and information gleaned on the means of measuring the administrative capacities of system level officials, subject advisors, school principals and Mathematics and Science Heads of Departments (HoDs) to implement scarce skills policy in the public school education system of the Free State Province.

Chapter 6: Conclusions, Recommendations and Limitations. In this chapter the conclusion, findings and recommendations are drawn. Limitations of the study are consolidated and opportunities for further research are highlighted.

1.14 CONCLUSION

Since 1994, the new political order in South Africa has brought along a plethora of good policies and programmes for transformation. Policies have laid a good

foundation for the poor and previously marginalised members of the public to participate actively in the mainstream economy through agrarian reform, industrial policy, social delivery and more broad - based ownership of economic assets. These policies, coupled with the trade pacts that South Africa has with foreign countries, has created more opportunities for the public at large to ameliorate the standard of their lives and push back the frontiers of poverty. The provision of decent work for all is at the apex of the present administration's priorities. Skills development is a crucial factor for the government to achieve its objective of decent work for all. Implementation of effective skills development programmes is a panacea for jobs creation. This will require a holistic approach, which is a collective responsibility of government, organised business and labour, research, education and training institutions and skill development intermediaries.

The placement of skills development initiatives under the purview of the Department of Higher Education and Training by the government was a step in the right direction. This was done in order to obviate the perceived disjuncture that existed between the Government and the institutions that are meant to implement skills development policies like public schools. A qualitative relationship now exists where the Department of Higher Education and Training, the Department of Basic Education and these schools share a common responsibility for a common course of the development of scarce skills. It is through the honing of scarce skills in the areas of mathematics, science and technology that economic policies such as the New Economic Growth Path can be driven forward.

The South African schooling system incessantly produces comparatively low pass rates in Mathematics and Science, lower than the country requires. Many university degrees and technical careers, such as engineering, require a good grounding in Mathematics and Science. The shortfall in the number of learners leaving the schooling system with high scores in Mathematics and Science is a worrying factor. This continues to be a significant constraint on the country's economic growth. It also serves as an impediment towards the development of

state capacity and undermines the programmes for addressing the past imbalances. It is therefore fitting to conduct a study that looks into the administrative capabilities of those who are entrusted with the responsibilities of implementing national policy for bridging a scarce skills gap in the schools education system.

CHAPTER 2

RESEARCH METHODOLOGY

2.1 INTRODUCTION

Research can be defined as a process of engaging in a small set of logical and scientific methods in order to apply and expand knowledge (Babbie and Mouton, 2001: 45). In Public Administration, research is expedient because it improves practice; it adds to the existing body of knowledge in the discipline and also informs policy debates. At a general level research consists of three steps, namely; posing a question, collecting data to answer the question and presenting an answer to the question. Research demands a clear statement and requires a plan. Methodology refers to the tools, procedures and techniques used in the process of enquiry (Babbie and Mouton, 2001:47). Research methodology refers to “the how of collecting data and the processing thereof within the framework of the research process” (Brynard and Hanekom, 1997:27).

Methods of data collection in research can be divided into qualitative and quantitative methods. This depends on the type of the problem that is researched. Cresswell (2008:46) differentiates between quantitative and qualitative educational research by elucidating the actions of the researcher in each method. In quantitative research the researcher decides what to study; asks specific, narrow questions; collects quantifiable data from participants; analyses these data using statistics and conducts the inquiry in an unbiased, objective manner. In qualitative research the researcher relies on the views of participants by asking broad and general questions; collects data consisting largely of words (or text) from participants; describes and analyses these texts for themes; and conducts the inquiry in subjective and biased manner. Quantitative research predominantly seeks explanations; whereas qualitative research aims at in-depth description.

In this study, qualitative research methods shall be used. A rationale shall be provided for having opted for a qualitative design. A variety of the qualitative

methods will be explained in detail. The impact of the qualitative approach in drawing the conclusion and making the recommendations at the end of this study shall also be described.

2.2 QUALITATIVE RESEARCH DEFINED

It becomes difficult to come up with an irrefutable definition of qualitative research methodology because of all the different labels and meanings it has gathered from various scholars throughout the years. There are researchers who prefer to label qualitative research 'ethnographic research' or to give it a more restrained description such as 'ethno methodology'. For example, Crowson (1987:3) describes it as a 'naturalistic inquiry'. In order to obtain a relevant definition of qualitative research for this study, first a myriad of definitions provided by different scholars are explored.

Qualitative research, according to Winberg (1997:3), is research that produces description of how and why people do certain things. To work in the qualitative paradigm is to constantly employ techniques such as data collection, participant observation, the discovery and use of unobtrusive measures, informal interviewing, life history construction, content analysis, and videotaping. After the data are collected, the researcher seeks from the data an understanding of the phenomena observed rather than generalised knowledge of explanation, prediction, and control.

Denzin and Lincoln (2000:7-8) describe qualitative research as a set of practices, embraced within its own multiple disciplinary histories, constant tensions and contradictions over the project itself, including its method and interpretations. The field sprawls between and crosscuts the human disciplines, even including, in some cases, the area of the Physical Sciences. The process of qualitative research puts more emphasis on the qualities of entries and on the process and meanings that are experimentally or measured in terms of quantity, amount, intensity, or frequency. Qualitative researchers stress the socially constructed or nature of reality, the intimate relationship between the researcher and what is

studied, and the natural constraints that shape enquiry. Qualitative researchers emphasise the value-laden nature of enquiry. They seek answers to questions that stress how social experience is created and given meaning.

McMillan and Schumacher (1989:386) posit a narrow definition of qualitative research in education. They see educational qualitative research as an analytical description of a social environment and groups which recreate for the reader the 'shared beliefs, practices, artefacts, folk knowledge, and behaviours' of those people in an educational activity. They add that qualitative research takes the form of social construction, in which individuals or groups derive or ascribe meanings to specific entities such as events, persons, or objects. Individuals form social constructs in order to make sense of viewpoints or perceptions. Belief systems are thus 'constructed realities' of individuals or groups. In other words, the data are the constructions offered by or in the sources. Data analysis can therefore lead to a reconstruction of the social construction. To limit the definition of educational qualitative research and make it relevant to, educational qualitative research is a process or a way of studying human life as it relates to education.

Babbie and Mouton (2001:53,270) simplify the description of qualitative research by describing it as research conducted in a natural setting and attempting to study human action from the insider's perspective (also referred to as the 'emic' perspective). For them the goal of research is defined so as to describe and understand rather than to explain and predict human behaviour. The focus of qualitative research is thus on the processes involved other than on the outcomes. The emphasis, therefore, is on methods such as the administering of questionnaires, conducting unstructured interviewing, observation of the participants and the use of personal documents that place the primary aim on an in-depth description and understanding of actions and events. The qualitative research process is often inductive in its approach, resulting in the generation of new hypotheses and theories. The qualitative researcher is seen as the main instrument in the research process. In this study, the researcher is a member of the school management team and the departmental head of the technical

subjects and the natural sciences. A part of his job description includes supporting and monitoring the work of teachers in the implementation of the NSMSTE. This requires the researcher to evaluate how this national scarce skills policy is implemented using the achievements of other Mathematics and Science dedicated schools within the province, throughout the country and even similar institutions outside South Africa.

According to Leedy & Ormond (2008:134), qualitative research serves one or more of the following purposes:

- Description: Reveals the nature of certain scenarios, settings, processes, systems or people
- Interpretation: Enables the researcher to get new insights about a particular phenomenon, develop new concepts or theoretical views regarding that phenomenon as well as discovering the problems that exist within that phenomenon
- Verification: Allow the researcher to test the validity of certain assumptions, claims theories or generalisations within the contexts of the real world
- Evaluation: Provides a means by which the researcher can assess the effectiveness of certain policies, practices and innovations.

The purposes of qualitative research, described above, shall guide this study as the researcher evaluates how effective the implementation of NSMSTE in addressing the challenges of scarce skills in the Further Education and Training band of the schooling system. However, in this evaluation process the researcher shall be mindful of the fact that the school is a complex social organisation. This complexity can have an impact on the successful implementation of any government policy. In evaluating the effectiveness of the implementation of the scarce skills policy, the researcher uses the qualitative research approach to gain access to understanding, practices, knowledge, beliefs and actions of the Mathematics and Sciences teachers and the school principals. Qualitative research accommodates and accounts for the complex and different views that

are held by the various stakeholders within the school as a social setting. It is therefore imperative that the researcher considers the perspectives and the experiences of all teachers that are sampled for this study when the data are collected.

2.3 QUANTITATIVE RESEARCH DEFINED

Babbie and Mouton (2001:49) discuss the qualification of constructs in the quantitative research paradigm. The quantitative researcher believes that the best way of measurement is assigning numbers to the perceived qualities of things. A related topic concerns the central role of variables in describing and analysing human behaviour. This has become known as variable analysis. The central role is afforded to control for sources of error in the research process. The nature of control is either through experimental control (in experimental design) or through statistical controls (in multivariate analysis). It is known by now that human behaviour is far too complex to try and explain it in this way.

Punch (2000:4) and McMillan and Schumacher (1989:14) simplify the description of quantitative research as empirical research where the data are in the form of numbers. It is indirect and abstract and treats experiences as similar, adding or multiplying them together, or 'qualifying' them. However, Cherry (2000;41,77) explains that quantitative research statistical techniques have been developed so that quantitative methods can be applied using experimental approaches, cross sectional/survey design and time-series design. McMillan and Schumacher (1989: 12) further describe quantitative research as a hypothetic-deductive approach. It makes deductions from theory and thereafter identifies a hypothesis. The hypothesis is then tested, by means of the data to confirm, reject, or modify the theory.

2.4 RESEARCH METHODS CHOSEN FOR THIS STUDY

This study shall mainly rely on the qualitative research method to analyse how school managers in Mathematics and Science dedicated schools in the Free State manage and implement the NSMSTE as a policy for the development of scarce skills in the Further Education and Training band. This study shall also draw a bit on some of the elements of the quantitative method in determining the number of teachers and principals in Mathematics and science dedicated schools who discern the policies that govern their practice as government's service delivery agents of scarce skills. Participatory Action Research (PAR); Evaluation Research and Triangulation methodologies shall also be used.

2.4.1 Participatory Action Research

Participatory Action research gives preference to the qualitative rather than the quantitative research. Participatory Action Research uses methods that are derived from anthropological and sociological traditions that have a more qualitative than a quantitative nature. The fact that information is most often collected in a naturalistic way, suggests that PAR usually draws on qualitative methods. Babbie and Mouton (2005:326) advance further reasons for their preference of PAR for qualitative methods by listing the following advantages that are linked with their uses:

- Facilitates change agent's in-depth understanding of a case
- Focuses on subjective experience
- Congruent with reliance on local knowledge
- Derived from vernacular traditions

Participatory Action Research involves some members of the subjects of the study participating actively in all phases of the process from the design of the project, through to its implementation and including the actions that come with or follow up on the research. It is a widely used developmental strategy for rural

communities. PAR emerged as a research method that is more responsive to the needs and opinions of local people. PAR also generates new theory while promoting practical solutions to problems. Three elements that set PAR apart from conventional research are the location of power, shifting of the research domain and experiential knowing.

At the end of this study, alternative variables which centre on the community involvement in the implementation of policy shall be proposed. PAR is an ideal method to do this because it puts communities and public participation at the centre of the research for workable, community generated solutions. This method produces a different kind of learning, where problems are identified and resolved through continual community action and public participation. According to IDASA Research Report (1999:74), citizen participation in South Africa can be achieved, according to any of the following models: committee model, specialist public participation model, outsources model, and the public relations/communications model. Citizen participation also finds expression in the Constitution of the Republic of South Africa Act No. 108 of 1996, wherein various provisions are made for constitutional and political rights that enhances citizen participation (Arko-Cobbah 2002:54).

2.4.2 Evaluation Research

According to Rutman (1984:10) evaluation research entails the use of the scientific methods to measure the implementation and outcomes of programmes for decision-making purposes. Evaluation is best suited for this type of research because it judges the merits or worth of the programme, focussing mainly on effectiveness of the programmes. It also improves and strengthens the programmes, thus generating knowledge to learn more about policy and theory. The appropriateness of evaluation research also stems from its ability to track the efficacy of social programmes.

The purpose of evaluation research is to focus on the theories of the changes that are implicit in social programmes. Another purpose is to analyse the

practice of those who are involved in social programmes, the issues they deal with and the manner in which they confront these issues. The central goal of evaluation research is focused on answering specific questions about the programmes and their development. These questions normally focus on the implementation and outcomes of the programmes as well as on the quality of the service provided (Potter 2006:411)

2.4.3 Triangulation

Silverman (2005:121) describes triangulation as a research method that enables the researcher to use different methods or sources to corroborate each other. Triangulation is regarded as an indispensable research method because of the flexibility it brings to the other methods that are employed in the social research project. This is premised on the logic that no single method can adequately solve the problems of rival causal factors. Each method reveals different aspects of empirical reality, it therefore becomes a standard rule that multiple methods must be employed in every investigation (Denzin 1978b:28).

Triangulation also involves the collection of materials in as many different ways and from as many diverse sources as possible. This can also assist the researcher to come to a better understanding of a phenomenon by approaching it from several different angles. Denzin (1978b:28) identifies four basic types of triangulation. All four of these types shall be applied to this study:

- Data triangulation: The use of a variety of data sources in a study;
- Investigator triangulation: The use of several different researchers or evaluators;
- Theory triangulation: The use of multiple perspectives to interpret a single set of data; and
- Methodological triangulation: The use of multiple methods to study a single problem.

Triangulation of data also seeks to overcome the context of the researcher's material at the cost of analysing his/her sense in context. As such it is best

suitable to this research because it improves the validity and the reliability of a single method.

2.5 DATA COLLECTION, GARNERING OF INFORMATION AND ANALYSIS

According to Bulmer (2000:205), the collection of data is the critical phase in social research. When researchers refer to all relevant sources, their moral and confidence are elevated in the process of conducting research. Often there is a wealth of information and data on the research problem already garnered by other researchers in the same field of study. This information and/or data may be used as an add-on to the new research problem. Therefore, it may not be cost-effective to conduct an entirely new research project in order to answer the research question. In many cases, existing secondary data may be sufficiently relevant and comprehensive to answer at least a certain part of the overarching research question (Puth, 1996:86). The methods used for collecting data for this study are: observation, questionnaires and documentation.

2.5.1 Observation

Observation entails the systematic selecting, watching and recording of information, behaviours and artefacts in the social setting chosen for the study (Gabrielian, Yang & Spice, 2008:157). The information obtained as a result of the observation made will be utilised to provide an in-depth analysis of the strategies applied by the teachers and the principals in the implementation of the scarce skills policy in the schooling system.

In most cases, observation takes the form of participant observation, where a researcher becomes fully involved in the setting being studied. This method shall be appropriate for this study because the researcher's role as a teacher and the member of the school management team in one of the mathematics and science dedicated schools makes him to be fully involved in the setting that is studied. However, one needs to be wary of not being biased in this observation process.

2.5.1.1 Validity and reliability in observation research

Cohen, Manion and Morrison (2006:158) pose two pertinent questions with regards to determining the validity and reliability of observation-based research:

- How does one know that the results of one piece of research are applicable to other scenarios?
- How does one know that the results of one piece of research are genuine?

There are always fears of bias when the researcher is fully involved in the observation-based research. The observer's judgements may be affected by their close involvement in the study and this is likely to affect the genuineness of the results of such research. In addressing the two questions about determining the validity and reliability of observation-based research, the researcher shall perform rigorous internal validity and reliability checks. The researcher shall also employ sampling techniques that checks on the representativeness of the events that are observed. In addition to this, the researcher shall also cross-check the interpretation of the meaning of those events.

2.5.2.1 Questionnaires

Fox (1969:549) describes questionnaires as the tools that are used by the researcher in an impersonal way to obtain information from the respondents in written form. Though questionnaires are essential to and mostly associated with survey research, they are also widely used in other data-collection activities. Questionnaires are mainly used to determine the extent to which the respondents hold a particular attitude or perspective.

Questionnaires are often used as substitutes for interviews. The researcher often holds the view that the respondents can be objective in answering the questions in a written form instead of an intimidating environment of the interviews. According to Mahlangu (1989:79) questionnaires should be completed

independently and without any outside influence. The researcher should also be guided by the Ethical Protocol that stipulates that the respondents can opt to participate, decline to participate or even discontinue at any time during the course of the study. The respondents should be afforded adequate time to decide to participate in the study without any inducement. The respondents also have the right to know the type of information required of them.

The questions posed to the respondent should be clear, frank and devoid of ambiguity. The objectives of the study should always be kept in mind when the questions that are to be used as items for the questionnaires are developed. A choice should also be made between unstructured (open) and structured (closed) questionnaires. The use of both the structured and the unstructured questionnaires has many drawbacks. One of the drawbacks with respect to unstructured questionnaires is that it demands more time from the respondents and that could lead to the reluctance in completing the questionnaires. The objectivity of the responses from the structured questionnaires might be questionable because the respondents might be given more leeway to respond to items (Mahlangu 1989:80). In the construction of the questionnaires for this study, both structured and unstructured questionnaires are used interchangeably.

Denzin and Lincoln (1994:90) raise the importance of ethical conduct in the construction and the dissemination of questionnaires. According to Denzin and Lincoln (1994), the participants should be mindful of an informed consent clause by which the subjects of research have the right to be informed about being researched and the nature of the research to be conducted. The sensitivity of the respondent should also be taken into account during the collection of data. McMillan and Schumacher (1993:183) point out that the informed consent clause implies that the subjects have an option to participate in an inquiry or not. Kumar (1999:192) affirms the significance of an informed consent clause by warning that it would be unethical to collect data without the participant's prior knowledge, or without requesting their willingness to consent.

In this study, the researcher shall make a formal application for the informed consent before the research method is put into place. Permission shall be sought from the Free State Department of Education. A request letter shall be drafted to ask for permission to conduct research in all the Dinaledi schools in the four districts within the province. In the request letter, the researcher shall clearly state the objectives, scope and the public officials that the researcher shall interact with during the study. The safety and confidentiality of the respondents shall also be ensured throughout the study. By virtue of the fact that the subjects in this are human beings, a high level of caution should be taken to see to it that the subjects are clear from any form of harm. In the event where there is a possibility of risks or any form of duress, the subjects shall also be informed accordingly. Denzin and Lincoln (1994:372; cf. McMillan and Schumacher 1993:183). Ethical approval for the study was obtained from the Superintendent General of Education in the Free State (Addendum A) as well as from the Ethics Committee at the University of Pretoria to conduct the study. Informed consent was obtained from the teachers and system level officials as well as informed assent from the school managers themselves. Participants were also reassured of the researcher's responsibility to adhere to the conditions stated in the letter granting permission to conduct research (Addendum B).

The self-administered questionnaire method of garnering data was employed in this study because of the following advantages:

- It is cheaper to administer, travelling and substance costs are minimal.
- It is quicker to administer, it can be sent through the mail or otherwise distributed in large quantities all at the same time.
- Since questionnaires are identical, the stimuli triggered from the respondents tend to be identical.
- Anonymity of respondents implies that their names are not divulged, because doubts about anonymity could impinge on the validity of the responses.

- Questionnaires can be processed easily, if they are meticulously structured and pre-coded (Dixon 1989:19; Denscombe 1998:105; Bryman 2001:129-130).

In as much as there are advantages of self-administered questionnaires, they are devoid of limitations. Like all other methods collecting data, self-administered questionnaires have some disadvantages. First, pre-coded questions can be frustrating for the respondents and restrain them from answering the questions. Secondly, administering questionnaires deprives the researcher an opportunity to probe the respondents to elaborate further when they answer the questions. Thirdly, there is always a possibility that respondents could develop a negative attitude towards the questionnaires before completing or even in the middle of completing the questionnaire (Dixon 1989:19; Denscombe 1998:106; Bryman 2001:130). Despite all these limitations, with immense care being taken in the construction and administration of the self-administered questionnaire, positive responses could be attained. Hence the self-administered questionnaire is still one of the most commonly used as a data collection method (Dixon 1989:22).

2.5.2.1 Construction of a questionnaire

A well-constructed questionnaire improves the reliability and validity of the data to acceptable levels (Bryman 2001:136). The questionnaire is one of the commonly utilised methods of collecting data (Denscombe 1998:87); Dooley 2001:135; De Vos 2005:166). There is also some criticism levelled against the questionnaire. Some of these criticisms are: excessive non-response rates; poorly-constructed items; questionnaire dealing with trivial issues; and the complexity of synthesising data from questions. Bryman (2001:129) identifies the poor design as the major criticism levelled against the questionnaires. Denscombe (1998:97) raises the wording of the questions as one of the important areas that needs to be perfected in the construction of a questionnaire.

In order to get the better of a poorly-constructed questionnaire, it is imperative that items should deal with meaningful research problems, questionnaires need to be constructed meticulously and be administered effectively to qualified

respondents (Denscombe 1998:97; Bryman 2001:132). To this end, the aim of administering questionnaires in this study was to gather information about the administrative capacity of system level officials, school principals and departmental head of Mathematics and Science in the Dinaledi Schools in the Free State. All the completed questionnaires were imported into the SPSS programme and frequency distributions were conducted.

The review of selected literature in Chapter Three of this study played an integral role in the development of the questionnaire.

2.5.2.2 Questionnaire format and content

The questionnaire is divided into three sections as follows (Annexure D).

Section A. The purpose of the questions is to glean biographical information such as the gender, age, qualifications, positions held in the organisational structure and work experiences.

Section B. The purpose of the questions is to collect information about the awareness of school managers regarding policies, government programmes and other relevant official documents. The reason for these questions is to find out whether school managers know about other national skill development policies in order to promote coherence in policy implementation and avoid silos.

Section C. The questions focus on the support by the district curriculum support service pertaining to training and development. The reason for these questions is to acquire information about the support given to the identified Mathematics and Science dedicated schools to implement scarce skills policy in the Free State.

2.5.2.3 Piloting the questionnaire tools

According to Treece and Treece (1986:382), a pilot study is a small-scale preliminary investigation designed to acquaint the researcher with flaws and problems that needs to be heeded prior major study is conducted. This offers the researcher the opportunity to pre-test the instrument. The major purpose of the pilot trial is to detect problems that may arise before the final questionnaires are disseminated. This assists the researcher to anticipate the problems and device means to come up with solutions.

Most of the flaws of the measuring instruments are detected during the pilot study (Schnetler 1989:92). Piloting is done on participants who are the representatives of the researcher's definitive sample. In this study, the questionnaires were pre-tested using a sample of the principals and Mathematics and Science teachers in five neighbouring high schools that do not have Dinaledi status, but achieve good outcomes none-the-less. This was done in order to determine any ambiguities relating to the structuring of the questions. The participants in this pilot study were requested to complete the questionnaires and to indicate whether questions were clear or needed to be explained further. The piloted participants were also requested to make written comments on the points that need to be revised in order to improve the instrument.

The pre-test results were thoroughly checked and the comments and suggestions made by the respondents were used to improve the final questionnaire. One of the concerns raised by the respondents in the pre-trial was that some of the questions were open-ended and that if they were left unrevised, they might negatively affect the quality of information gleaned as well as the general response rate from the respondents. The population of the pre-trial was not used in administering the final questionnaire.

2.5.2.4 Validity and reliability in questionnaires

According to Cohen, Manion and Morrison (2007:157) the validity and reliability of questionnaires can be tested by demanding the answers to the following two

questions. The first is whether respondents who complete questionnaires do so accurately, honestly and correctly. The second is whether those respondents who fail to return the questionnaires would have provided the same distribution of answers as those who returned the questionnaires. In this study the question of accuracy, honesty and correctness shall be solved by conducting intensive interviews with the respondents. The second question of non-response shall be solved by doing follow-up contact sessions with the non-respondents.

2.5.2.5 Administration of the final questionnaire tools

The final questionnaire was administered to 111 participants comprising of principals, deputy principals, heads of departments for Mathematics and Science, two subject advisors and a provincial coordinator of the Dinaledi programme. Several precautionary measures were taken before the questionnaires were distributed. The researcher visited the respective websites of the Provincial Department of Basic Education, Department of Public Services and Administration, Department of Science and Technology, Department of Higher Education and Training as well as the National Department of Basic Education. The objective of this exercise was to familiarise the researcher with other policies of the government that relate to skills development.

The letter of permission granted by the Superintendent General of education in the Free State assisted in allaying many doubts about the purpose and the level of the study. The researcher was able to visit the schools and the offices of the participants to self-administer the questionnaire. The researcher also sought the help of an assistant to cover schools where the towns are sparsely populated. With this arrangement, questionnaires were returned promptly to the researcher. Most of the questionnaires were returned within a period of two weeks, while others took more time than was anticipated, this forced the researcher to make follow-ups.

One of the major drawbacks of questionnaires is that the researcher often battles to get them back or the respondents may simply be reticent to respond and this may cause unnecessary delays. In this regard, the researcher made it a

point to make personal and telephonic follow-ups to the sampled schools. Of the 111 questionnaires that were distributed, a total of 92 completed questionnaires were returned. This is about 82.9% of the questionnaires that were returned.

2.5.3 Documentation

Documentation involves the gathering of information that does not involve the direct acquisition of data from respondents (Naidoo, 2005:51). Documentary sources such as letters, newspapers articles, official documents and books can be very useful. For the purpose of this study, the documentary sources that will be consulted comprise provincial annual reports of skills development and the Dinaledi project, relevant books on the implementation of education policy, published articles, journals, relevant published and unpublished theses, and government policy documents, Acts, unpublished research papers, summit's resolutions, accords and the provincial growth plan.

2.6 PROBLEM STATEMENT

Skills shortages, linked with high levels of unemployment remain a serious problem facing many school leavers in South Africa. This study will be undertaken against the background that there has been a tangible problem arising from the urge, in South Africa, to reform policies frequently without proper analysis of what is working, and what is not, why it does not work, what institutional capacity exists and which aspects of policy can be improved. Policies or policy initiatives have reached the saturation point in South Africa. The focus must be shifted towards policy implementation. There is also a mismatch between the supply and demand for skills in the South African labour market. There is an urgent need to expand employment opportunities. South Africa has a significant gap in the areas of Mathematics and Science. Simply put, not enough learners study these subjects, and the few who do, battle to meet the required standards to pursue their studies further in these areas at tertiary level. Hence, many cannot be easily absorbed into the labour market.

Between 1994 and 2009, the scarce skills problem was aggravated by non-alignment in government's departments. This non-alignment resulted in the responsibility for workplace and in-service training of workers being allocated to the Department of Labour and the formal education system placed under the purview of the national Department of Education and the Provincial Education Departments. The NSDS policy identifies the development of scarce skills at school level as one of the panacea to the problem of the mismatch between the supply and demand for skills in the labour market. Mathematics and the Sciences are vital for skilled jobs, economic growth and national development. The government has entrusted selected schools with the responsibility of improving the country's output of Mathematics and Science by introducing the NSMSTE policy. Since the inception of this national policy, there has been a problem in regard to the implementation at school level. Many of these policy implementation problems plaguing the identified schools put into question the administrative capacities of the system level officials, leadership and management ability of school management teams comprising principals and heads of departments of Mathematics and Science. Research on the implementation of scarce skills policy in the public school education system is expedient as a means of identifying the gaps in the system and proposing the models and variables for the effective implementation.

The reconfiguration of government departments that characterised major developments in the 2009 administration resulted in the creation of the new education departments namely; the DBE and the DHET. The reconfiguration of the Government also resulted in the location of the skills development under the purview of the Department of Higher Education and Training (DHET). This was done in an effort to ameliorate the efficiency and the effectiveness of the implementation of skills development policy. This research will be conducted in order to assist the DHET and the Free State's provincial government with the guidelines and protocols to fracture a new paradigm for the implementation of education and skills development policies in accordance with Section 10(1)(a) of the Skills Development Act.

While there have been some salient advances over the past 19 years in the alleviation of skills constraints in South Africa, anecdotal and empirical evidence suggest that there are still pervasive shortages of skills in a number of other occupations, such as engineering and astronomy. This shortage is an impediment in the achievement of economic development. Mbeki (2011:5) rightly points out that economic development occurs when a population in a given territory utilises the intricacies of modern science and technology to put forth its processes of production. The skills problem underpins many of the problems that the government faces in regard to service delivery, expansion of decent work and social justice. In an effort to deal with these problems, education and skills development for jobs creation is at the pinnacle of government's priorities. Legislation and guidelines from various stakeholders have been established to actualise these priorities, but there are still some gaps in the system that need to be closed.

A diagnostic report commissioned by the National Planning Commission (NPC) (2011:3) states that one of the primary causes of the endemic dysfunction of the South African school system is the weakness of technical core and capacity throughout the civil service. According to this report, system level officials, teachers and principals simply lack the skills to do their jobs. This results not only in very poor schooling outcomes, but also breeds a lack of respect for the institutions of government. Teachers know a lot less about the subjects they teach than the curriculum expects of their learners (Taylor, 2009a; Spaul, 2009:97), while the majority of principals appear not to know that their main function is to lead and direct learning within a school (Bush and Heystek, 2006; Hoadley and Ward, 2009). Since system level officials are promoted from within this very poor schooling foundation, principals and teachers constantly complain about the poor guidance provided by circuit, district and provincial offices.

2.7 RESEARCH DESIGN

According to Babbie and Mouton (2001:74) a research design is a plan or blueprint of how the research will be carried out. Research designs guide the

manner that aims to combine relevance to the research purpose with the procedure. Cohen and Manion (1989:99) identify three prerequisites to the design of the research, namely:

- Purposes of the study
- Study population
- Availability of resources to conduct the study

2.7.1 Purpose of the study

It is imperative for the researcher to first garner all the relevant information required for the purpose of the study. The purpose of this study is to provide a broad framework on policy analysis as a context to discern the NSMSTE for the Dinaledi schools. It is also about the manner in which the system level officials, school principals in the Dinaledi schools manage and implement the scarce skills policy. Another purpose of this study is to analyse the practices of the teachers as the key role-players in the implementation of the scarce skills policy.

2.7.2 Study population

Located midway on the axis between Gauteng and the Western Cape, it is traversed daily by national political and business leaders, the Free State is halfway to everywhere. For much of the 20th century, under very different political and economic conditions, the Free State could claim to be the national 'heartland'. The national demarcation process, which was finalised in 2000, left the outer boundaries of the Free State virtually unchanged from what had been known until 1994 as the Orange Free State. The Free State comprises 129 480 square kilometres, or about 10, 6 per cent of South Africa, making it the third largest of South Africa's provinces. And about the same size as the Western Cape. It is centrally located, extending from the Vaal River and Sasolburg in the

north to the Orange River in the south, and from Harrismith and Lesotho in the east towards Kimberley (Northern Cape) in the west.

The research design identifies and specifies the population to which the enquiry would be done. This identification and specification would have a direct impact on sampling and the allocation of resources (Leedy & Ormond 2005:276). The population of this study shall comprise 36 Dinaledi schools and their district offices. The administration and management of these schools is decentralised into five district municipalities of the Free State, namely: Motheo, Fezile Dabi, Thabo Mofutsanyana, Lejweleputswa and Xhariep as follows:

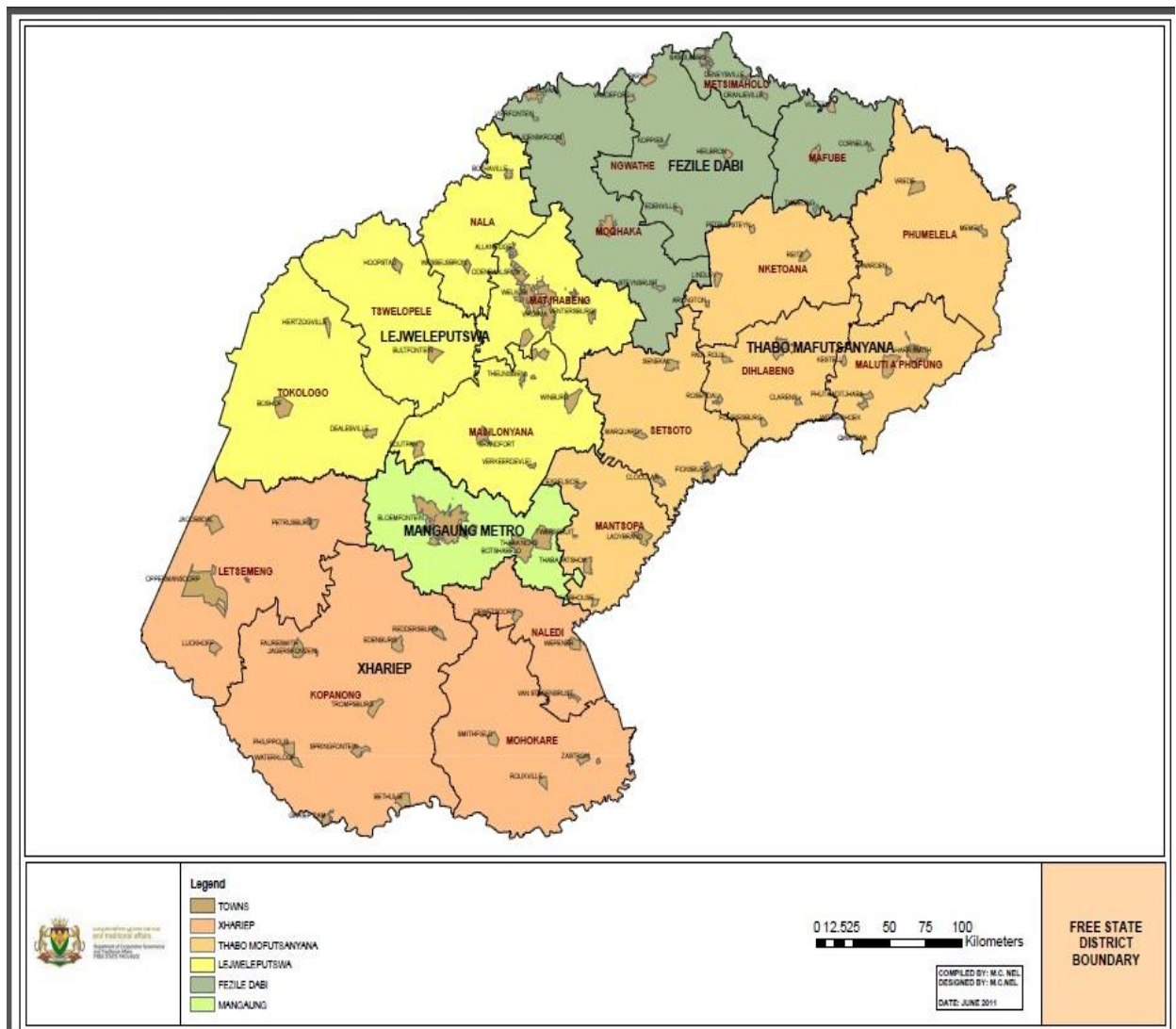


Figure 2.1: Geographical distribution of study areas

Source: Provincial Growth and Development Strategy Free State Vision 2030

The 36 sampled Science and Mathematics dedicated schools and the districts in which they are found are listed below:

2.7.2.1 Names of Dinaledi schools in the Motheo district

1. St. Bernard's High School
2. Brebner High School
3. Navalsig High School
4. R.T. Mogkopa High School
5. Kgorathuto Secondary School
6. Setjhaba-Se-Maketse Combined School
7. Eunice Secondary School
8. Lenyora-La-Thuto Secondary School
9. Seemahale Secondary School
10. Tsoseletso Secondary School

2.7.2.2 Names of Dinaledi schools in the Fezile Dabi district

11. Pele-ya-Pele Secondary School
12. Dr. Cingo High School
13. Falesizwe Secondary School
14. Nkgopoleng Secondary School
15. Sasolburg High School

2.7.2.3 Names of Dinaledi schools in the Thabo Mofutsanyana district

16. Mampoi High School
17. The Beacon Secondary School
18. Ithabiseng Secondary School
19. Kgolathuto Secondary School
20. Ntsu Secondary School
21. Phofung Secondary School
22. Sasamala Secondary School
23. Thahameso Secondary School

24. Tlhorong Secondary School
25. Tiisetsang Secondary School
26. Tsholo Senior Secondary School
27. Lerato-Uthando High School
28. Phalabodiba Secondary School

2.7.2.4 Names of Dinaledi schools in the Lejweleputswa district

29. Leseding Technical High School
30. Kheleng Secondary School
31. Marematlou Secondary
32. Repholositswe Secondary
33. Teto High School
34. Welkom High School

2.7.2.5 Names of Dinaledi schools in the Xhariep district

35. Le Reng Secondary School
36. Lere-La-Thuto Secondary School

The number of these Dinaledi schools in each district municipality is different. The schools are situated far apart from each other. The differences in the number of these schools per district and the distance between them result in the drawing of a sample for this study in order to learn about the larger population.

2.7.3 Availability of the resources

Mulder (1982:57) cautions about the impossibility of including everyone in the investigation of a phenomenon. Factors such as the cost of studying, time constrains and accessibility to the resources often thwarts the researchers from gaining information from the whole population. The researcher therefore obtains data from a smaller group or subset of common characteristics in such a way that the knowledge gained is representative of the total population under study.

This smaller group or subset is the sample and the method is referred to as sampling. Sampling is usually taken into cognisance early in the overall planning of research. Brynard and Hanekom (2006:54) describe sampling as a technique employed to select a small group with a view of determining the characteristics of a large group.

Mulder (1982:59) draws a distinction between a biased and an incidental sampling by indicating that in a biased sample the researcher would consciously exclude certain members of the population; while in incidental sampling the researcher would be limited to the group for his research project.

2.8 SAMPLING METHOD AND SAMPLING SIZE

The quality of research hinges upon the adoption of the suitable sampling method and size. Cohen, Manion and Morrison (2007:101) point out that there are no clear-cut specifications in terms of how big or how small the sample should be. Sample size depends mainly on the nature of the population under scrutiny and the purpose of the study

For the purpose of this study, each of the five district municipalities should be represented. The diversity in terms of resourced and under-resourced schools as per the quintiles of different schools within the Free State should also be taken into account. A proportional representative sample of 25% of the schools in each district municipality would be chosen. All the schools are allocated numbers to assist in sampling. An incidental sampling would be utilised to determine which of the 36 Dinaledi schools in the different districts within the province should form part of the study. This type of sampling is aimed at ensuring that the net is cast sufficiently wide and the researcher cover as many Dinaledi schools as possible within the province.

The school, at the administrative level, is composed of both HoDs and principals. Both are included in the sample, though their roles in various contexts are often quite different. In the South African school systems, HoDs are seen as the lowest

end of the government bureaucracy, trusted to carry out its administrative tasks and deliver its educational instructions to teachers; they tend to share many of the characteristics of the government administrators. From the sample only the teachers who teach Mathematics and Science in Grade 12, HoDs as well as the principals form part of the sample because the study is intended to determine how they implement the scarce skills policy. The literature on policy implementation shall be invoked to determine the framework within which the management of the NSMSTE is discerned.

2.9 RESEARCH QUESTION

A well formulated research question consists of two elements, namely, a clear description of the purpose of the research and a clear specification of the object or unit of analysis of the study. Most research projects commence with the formulation of a research question and identification of a research problem. The definition of a research question is the first and the very critical step in the research process (McNabb, 2002:54). Johnson (2002:27) stresses the importance of this step by alluding to the fact that that if errors are committed at this step the research cannot take off.

According to Birsschoff (2007:54), the local and international world of work has become a dynamic, tumultuous and technologically advancing arena. Employers and managers are continuously challenged by the rapid changing workplace tools, products and processes. Human resources must be developed through capacity building in the public service in order to keep up with the knowledge and competencies of evolving job descriptions. Birsschoff (2007:55) explains that the concept of skill development, nationally and internationally, refers to learning new knowledge, acquiring new concepts and theories, adapting to technological and industrial changes with enthusiasm and without fear, and taking ownership of skills received.

In South Africa the government policy context is in the form skills development legislation, which redefines the government's approach to the development of

scarce skills in the schooling system. For this study the questions that need to be asked are divided into the primary and secondary questions as follows:

2.9.1 Primary questions

To what extent is the implementation of scarce skills policy effective in addressing the scarce skills challenge at the Mathematics and Physical Sciences showcasing schools in the Free State?

2.9.2 Secondary question

By applying the primary and the secondary sources as well as the research methods, the following secondary research questions, which could lead to the possible solution to the problem statement, will be pursued:

- What is the role of the skills development officials in the Free State provincial government, particularly the office of the premier in the implementation of the national skill scarce development policy to address local and regional needs?
- To what extent does *Pillar 2* of the Free State Growth and Development strategy (i.e., Education, innovation and skills development) as well as Driver 6 (i.e., ensuring an appropriate skills base for growth and development) contribute towards the implementation of scarce skills policy in the public school education system of the Free State province?
- What is the role of the Mathematics and Science HoDs, provincial coordinator of the Dinaledi programme, school principals, other system level officials and the subject advisors of Mathematics and Science in the implementation of the NSMSTE Free State?
- What is the role of the community participation groups (e.g., Public Participation in Education Network) in the implementation of scarce skills policy in the public school education system?
- To what extent do other policies of government such as the IPET, affirmative action, employment equity and the ANC's cadre deployment

policy affect the implementation of scarce skills policy in the school education system of Free State?

2.10 RESEARCH OBJECTIVES

Botha and Engelbrecht (1992:37) state that the objective of any research topic must be to give the researcher the opportunity to make a meaningful contribution to the existing body of knowledge. The objective of this research is to provide guidelines for the implementation of the scarce skills policy in line with province's three years Action Plan, spanning from the year 2011 to 2014 as well the Free State Growth and Development Plan. This shall be done by reviewing and identifying weaknesses of the past implementation strategies and refining them. Successful models of policy implementation in other countries shall be utilised as the barometers for policy implementation forging ahead. It is essential to point out that the objective of this research is not to evaluate the performance of the officials, teachers and principals in these identified schools in the Free State province. It is also not the intention of this study to come up with a new theory of implementation, but rather to review the issues of leadership, management and governance of these schools as the agents of service delivery in South Africa.

The other objective is to provide alternative performance and control models for the administrators, Mathematics and Science teachers as well as the principals of the Mathematics and Science dedicated schools in the Free State. Some of the best school management practices from one of the Mathematics and Science dedicated school in the Limpopo province, namely, Mbilwi Secondary Schools will be used to influence improvements in the management of Dinaledi schools of the Free State. Guidelines will also be provided using the policy implementation strategies of the schools and institutions in other countries that have delivered the best outcomes in Mathematics and Science education, namely; Finland and Singapore.

2.11 RESEARCH SCOPE

The research shall unravel the practice of the Mathematics and Science teachers and the administrative capacity of subject advisors, system level officials as well as the principals in the 36 Dinaledi schools within the Free State province. Improvement strategies in how these teachers and principals implement the NSMSTE shall be the main highlight of this research. The success or failure of one threshold qualification for school principals as part of its wider strategy to improve public school educational standards is explored. This course called Advanced Certificate in Education in school leadership (ACE) is facilitated by the University of the Free State. This programme is conceived by the provincial government as a form of equipping the HoDs and the principals of the schools within the province with management skills in order to be able to implement the policies of the government.

Although the challenge of scarce skills permeates the broader spectrum of South African society, provinces are unique in terms of the circumstances of the economy, infrastructure and human capital. This is the main reason why the scope of this research is limited to the human capital of the Free State. However, guidelines emanating from this research can be applied by the DBE in other provinces. The agenda of this research will be to illustrate that a synergetic relationship exists between the implementation of the NSMSTE and the rolling out of scarce skills development programmes by the other eight provincial governments in South Africa.

A cursory look at the evolution of educational policy in South Africa will also be the basis upon which this study is based. The main focus in this research will be to present a strong critical view on the dramatic shift from the traditions of community-based intellectual production model of research to the emergence of the use of foreign expert research wherein policies are crafted according to foreign ideologies. This shift came into being at the end of the 1980s when the democratic movement led by the ANC mandated policy research to what Mangcu (2010:13) aptly describes as the model of knowledge-ideas complex. According

to (Mangcu 2010:13), it is as a result of this ‘knowledge-ideas complex model’ mandate that communities are deprived of their own status as knowledge hubs, which run their own research institutions, publish their own journals and tell their own stories. The impact of this knowledge-ideas complex model on the implementation of scarce skills shall also be discussed.

The topic on the development scarce skills has been widely researched before; however gaps were identified in the existing body of knowledge with regard to policy implementation guidelines. This has prompted the desire for this topic to be researched further. In order for this study to contribute to the existing body of knowledge, education policy implementation guidelines shall be drawn from some of the international practices in the area of the programmes geared towards the development of scarce skills. These include the skills exchange programmes that the Free State provincial government has initiated with countries such as Cuba. The role of the CTA’s in ensuring that the transference of scarce skills takes place within the province will also be discussed. Other provincial initiatives to address the scarce skills challenge include the formation of the partnership between the Free State Department of Education, the NIIT and the organisation called the Eagle Brothers Holdings. This collaboration is geared at facilitating the provision of the mobile Science and Mathematics laboratories to the rural and previously disadvantaged schools throughout the province. The role of such interventions to assist the teachers in the implementation of the scarce skills policy is discussed.

Other international perspectives on educational policy implementation strategies shall be drawn from the models of Mathematics and Science dedicated schools in Finland and Singapore. Community participation models of the countries such as the Philippines, Mali and Brazil shall also be utilised as barometers for the implementation of scarce skills policy in the South African schooling system. Particular attention in this regard shall be given to the participation of communities in the administration of public school.

2.12 CONCLUSION

This chapter describes the methodology that needs to be employed in carrying out all the activities that are required in respect of this study. The definitions of both the qualitative and quantitative research were brought to the fore. The appropriateness of the qualitative methods for this study was also pointed out. The qualitative approach, particularly Participatory Action Research, Evaluation research and Triangulation are regarded as the best suited methods for this study. The choice of the qualitative approach is based on the researcher's intent to tap into the perception of the mathematics and science teachers and principals about their practices in the implementation of the scarce skills policy. This would be instrumental in drawing up the conclusion and making the recommendations.

The purpose of the study as well as the target population of the study justifies the use of the sampling method indicated to be used in this study. The collection of data and the garnering of information shall be done through observation-based research, administering of questionnaires and reading of documentary sources. The research design, research question and the contextualisation of the study as part of a qualitative study are explained. Factors such the informed consent clause and the ethical protocol for participating in the study are pointed out as the prerequisites for the construction of questionnaires. A concerted effort is made to ensure that the validity and reliability of the information that shall be garnered through observation-based research and the administering of questionnaires is taken into cognisance. The scope of this research is confined to the Free State, but the recommendations could be used nationally. The reasons are advanced for focussing only on the Free State despite the scarce skills challenge being a national crisis. The need to benchmark the South African schooling system with international models in the area of scarce skills policy implementation is discussed.

CHAPTER 3

REVIEW OF RELATED LITERATURE ON THE RELATIONSHIP BETWEEN PUBLIC ADMINISTRATION AND POLICY IMPLEMENTATION

3.1 INTRODUCTION

This chapter presents the literature review on Public Administration and how it relates to policy implementation. An overview of the background of what Public Administration entails is outlined. Public Administration as a core function of policy implementation with respect to the implementation of scarce skills in the FET phase of the South African schooling system is discussed. Also in this chapter the complexity of tracing back the history of Public Administration is highlighted. Some of the major developments relating to the history of Public Administration are unravelled in order to get more insight regarding the present theories. The categorised schools of thought on how best to study the field of Public Administration both in South Africa as well as abroad are also brought to light.

The discussions involve the nature and legitimacy of Public Administration and how it relates to policy implementation and educational management. The environments in which Public Administration evolves as well as the principles that govern the conduct of policy implementers in the public service are discussed. This literature review also discusses the models of community participation in education. The premise upon which the discussion on community participation is included in this review is based on the assumption that participation is generally a good practice for policy implementation despite the risks, difficulties, and uncertainties that often accompany its implementation. It assumes that the greater involvement of more partners in the running of the school education system can lead to positive outcomes. In order to understand more thoroughly what community participation can achieve and the conditions which lead to such achievements, the discussions on community participation

consciously focus on the positive side of that participation and overlooks the negative side.

This chapter also expounds on how high-achieving governments in other countries implement scarce skills in the public schooling systems. The models of the administration of Mathematics and Science education in the schooling systems of Finland as well as Singapore are benchmarked against South Africa's NSMSTE. The two countries have been chosen because the majority of their public schools are rated high on the list of the world's best-performing school in the areas of Mathematics and Science education (Organisation for Economic Cooperation and Development (OECD) 2011:171). However, it is important to indicate that anecdotal information of programme success abounds in the literature could be somehow lacking in detail. Evidence of success stories in the lessons derived from the models derived from these countries does not suggest that these models can yield the same degree of success in South Africa, since achievement may depend greatly on the particular context of application.

Education is part of the Public Administration and human resource intensive enterprise. Transformation and redress translate into public policy and human resource management issues. In order to transform public institutions like schools, there is a need to transform the people working and associated with the institutions, including department officials, school staff, learners, parents and community members. Public Administration is acknowledged in Chapter 10 of the Constitution of the Republic of South Africa, Act No. 108 of 1996. Section 197(1) of the Constitution establishes a public service within the public administration which loyally puts into place the lawful policies of the government. The provisions of Section 195(1)(d) of the Constitution stipulates that these services must be provided to all citizens impartially, fairly, equitably and without bias. Issues which form part of the core of democratic governance and administration namely; accountability, transparency, moral integrity, representativeness, responsiveness, efficiency and effectiveness are emphasised in public administration. The prioritization of scarce skills which is embodied in

the development of Mathematics and Science in the schooling system is a response to the obligations of redress by the democratic state.

It is essential to ensure that the public service is better equipped to play its role in the provision of services and building South Africa. This objective can be achieved by building the systems, processes, skills and professionalism of the public service that is committed to the country's developmental agenda. Public servants in the provincial Departments of Basic Education namely; teachers, principals, provincial coordinators and the subject advisors of Mathematics and Sciences are endowed with the responsibilities to implement the institutionalized educational policies. The NSMSTE is one such policy. This policy contributes directly to the attainment of the goals and objectives of the government as espoused in the Constitution. The Constitution is regarded as the supreme law of the Republic in terms of section 2 of the Constitution of South Africa, Act No. 108 of 1996. Public Administration as a discipline is therefore constitutional and relevant to cater for the administrative needs of the public service in South Africa.

3.2 PUBLIC ADMINISTRATION

Public Administration is a relatively new field of academia in comparison with other closely related fields like political science. Having emerged in the 19th century, Public Administration is a multidisciplinary field which draws heavily upon concepts and theories of other social sciences including economics, sociology, administrative law, management as well as political science. Democratic values of improving equality, justice, efficiency and effectiveness of the public service have an extended effect on the goals of public administration. According to Cadwell (1955:458); Raadschelders (1998:7) and Hood (2000:16), there are numerous examples of the use of historical research in studying Public Administration. These examples could give a detailed description and explanation of the contemporary intricacies that are found in the field of Public Administration.

To trace back the history of Public Administration accurately is a difficult exercise. This is borne out of the complexity of identifying the beginning of Public Administration either as a formalised activity or as a recognized field of study. The history of Public Administration could at best be traced back by identifying the generations of the writers on the subject. These are categorised into generations of the pre-generation, the first generation, the second generation and the third generation. Shafritz and Hyde (1997) present a chronological list of the generations of the authors who contributed towards the development of public administration as a field of study.

i. Part One - Early Voices and the First Quarter Century (1880 - 1920)

The main role players during this part were authors like Lorenz Von Stein and Thomas Woodrow Wilson, who argued that the object of administrative study is to discover first what the government can do properly and successfully, and secondly, how the government can be efficient, cost effective and reserve energy in the process of carrying out these duties.

Lorenz von Stein's work on the field of Public Administration is regarded as the first science of Public Administration. He illustrated that Public Administration is an interaction between theory and practice by integrating views from other social science fields such as sociology, political science, administrative law as well as public finance. The integration of these views is relevant to this study because the success or failure of any policy suggestion hinges upon the ability to address the needs of those the policy was meant to serve. Policy implementation is the common boundary between the policy proposal and service delivery.

The work of Thomas Woodrow Wilson is thought to have played a pivotal role in influencing the science of Public Administration. The roots of Public Administration are often ascribed to the article entitled *The Study of Administration* by Thomas Woodrow Wilson which was published in 1887 and is generally considered as the origin of the study of Public Administration (Political Science Quarterly 2, 1997:222). However, it is also deduced that Thomas

Woodrow's article is not the first reference to the study of administrative responsibilities of the state and the study of public administration. Thomas Woodrow Wilson advocated for the separation of politics from public administration, consideration of the government from a commercial or business point of view, comparative analysis between political, private organisation and political schemes as well as indicating that effective management could be reached through training civil servants and assessing their quality.

ii. Part Two - New Deal to Mid-Century (1930s - 1950s)

A sequel to Thomas Woodrow Wilson's advocacy for the separation of politics and Public Administration had a great influence on the writers of the Second Generation. Writers of the Second Generation held the view that both private and public institution could be improved by applying scientific management theory. Writers during this period argued for a rational approach to decision making. The contributors were E. Pendleton Herring (1936); Luther Gulick and Lyndall Urwick (1937); Louis Brownlow; Charles E. Merriam (1937); Chester I. Barnard (1938); Herbert A. Simon (1946) and Dwight Waldo (1953).

iii. Part Three (1950s - 1960s)

Writers who contributed during this era are grouped according to particular themes on which they based their writings. For instance Frank J. Goodnow, Paul Appleby and Herbert Kaufman wrote on theme: The Political Context of Public Administration. This theme has a lot of influence on policy development because the policies of the government are in reality the policies of the majority party in parliament and most of the administration is formed by the electorate of the ruling party. The theme of bureaucracy was attended to by the writers such Max Weber, Robert K. Merton, Downs, and Lipsky.

The Third Generation of writers questioned the whole idea of separating politics and Public Administration. During this era many writers put emphasised bureaucracy. The writers of this era argued that the science of public

administration should focus primarily on governmental organisation and that Public Administration should be bureaucratic. Some writers argued that national bureaucrats may seek to escalate their budgets while the pluralist maintained that public officials are more public interest-oriented. Some writers adduce a scenario whereby the spending might be more in other areas like police and defence but not in the area of welfare. This could be the reality in the case of public schools and the quantity of the resources that are allocated to them.

iv. Part Four (1970s - 1980s)

During this period authors individually wrote on various themes. For example, H.G Frederickson wrote on the theme Towards a New Public Administration and Caiden Naomi wrote on the theme Public Budgeting Amidst Uncertainty and Instability. Other themes such The Possibility of Administrative Ethics and The Seven Deadly Sins of Policy Analysis by Dennis F. Thompson and Arnold J. Meltsner respectively made a huge contribution towards the shaping of the theory and practice of public administration and in addressing of many the challenges that were faced by the field of public administration in the 1970s and the 1980s.

v. Part Five - The Transition to the New Century (1990s)

Contributors during this period include Camilla Strives; Patricia Wallace Ingraham; Michael Barzelay. All these authors wrote on the following themes: Towards a Feminist Perspective in Public Administration Theory; Changing Work, Changing Workforce, Changing Expectations; Breaking through Bureaucracy; and From the Red Tape to Results: Creating a Government That Works Better and Costs Less.

By looking at the chronological order of the generation as listed by Shafritz and Hyde (1997:117), it becomes evident that when many authors were writing about the literature on Public Administration, they were mindful of the problems they were facing in terms of how they were governed during those periods. Writers of

the pre-generation period placed more emphasis on the problems pertaining to morals, politics and on the organisation of public administration. After the creation of the nation state, Public Administration writers emphasised the need for a model of the administrative organisation that would be able to implement law and order and also be able to put in place the defensive structures. This resulted into the creation of the modern science of Public Administration.

According to Pfiffner and Presthus, (1967:10) the debate on the originality of Public Administration is less important, the fact remains that such a field exists. This field of study is concerned with all aspects of governmental operations dealing with influencing and carrying out political decisions. The actual making of such decisions and the resultant implementation thereof has also become a major part of the field of Public Administration.

In South Africa Public Administration has undergone drastic changes since 1990. These changes include the cancellation of the Tricameral Parliament, the granting of franchise to all citizens of the country and a change in government structures and functions (Van der Waldt and Helmbold, 1995: XV11). The Constitution of South Africa Act No. 108 of 1996) has contributed immensely to the shift from the old to the new paradigm of Public Administration. Some of the new developments brought about by the new paradigm include greater clarity with respect to national policy, the establishment of a growth rate in the economy and a goal oriented approach in the manner in which services are rendered to the public. Accountability has become more prominent. The South African Constitution Act No. 108 of 1996 has also ushered in a new direction in response to the political changes since 1994. This has increased the needs and the demands from the society (Van der Waldt and Helmbold 1995:xv11).

Cloete (1986:2), Schutte, *et al.*, (1995:299), Schwella (1990:104-107) all hold the view that it is imperative for Public Administration in South Africa to undergo transformation in order to accommodate the basic values and principles that are the cornerstones of democracy. These values and principles which govern Public Administration are stipulated in the South African Constitution Act No. 108 of

1996: chapter 10:107. The nine principles that govern Public administration are listed in section 195(1) of the Constitution of the Republic of South Africa Act No. 108 of 1996: A high standard of professional ethics; efficient, economic and effective use of resources must be promoted; Public Administration must be development oriented; services must be provided impartially, fairly, equitably and without bias; people's needs must be responded to and the public be encouraged to participate in policy-making; Public Administration must be accountable; transparency must be fostered by providing the public with timely, accessible and accurate information; good human resource management and career development practices to maximise human potential must be cultivated; Public Administration must be broadly representative of the people of South Africa, with employment and personnel management practices based on ability, objectivity, fairness and the need to redress the imbalances of the past to achieve broad representation.

There are numerous schools of thought regarding how best to study the field of Public Administration. In South Africa academic thought on Public Administration has been based on the generic administrative model. According to Rowland (1987:58) as an analytical tool, this model has entrenched a dogmatic philosophy of Public Administration in South Africa. He makes an observation that this entrenchment has to a large degree yielded stagnation in academic thought and discussion regarding a general theory of Public Administration. The appearance of many theses, articles and books on public administration as well as the development of Public Administration curricula at most universities over the years succinctly reflect and attest to this observation.

Pfiffner and Presthus (1967:10-15) categorise the schools of thought on the study of Public Administration into three approaches, namely; (i) the legal-historical approach, (ii) the structural-descriptive approach, and (iii) the behavioural approach.

3.2.1 Legal-Historical approach

This approach is based on a framework of legal rights and the obligations of government. It puts immense zest on the formal relationship among the three spheres of government, namely; the executive, legislature and judiciary. In terms of this approach policy and administration are separated. There is also a great deal of emphasis upon the role of high-level generalists in Public Administration.

3.2.2 Structural-Descriptive approach

This approach is very common in the current Public Administration teachings. It accepts the scientific management assumptions and the relevance of business methods and motivations for Public Administration. It tends to restrict the field of Public Administration to organisations and personnel management. It also advocates for the fitting of individuals into the on-going systems. The shortcomings of this approach are that it insufficiently relates Public Administration to its environment and also does not adequately consider administration as the interaction of human beings.

3.2.3 Behavioural approach

This approach is mainly concerned with the systematic study of human behaviour in an organisational context. The use of this approach is based on the assumption that individual and group behaviour in bureaucratic organisations tends to exhibit some form of regularity.

In summing up the three approaches, it should be borne in mind that each has played a significant role in the study of Public Administration. These approaches analysed the bureaucratic structures and their internal operations, the interpersonal side of organisations, and the complexities of decision-making. The following environmental aspects of the field of public administration were raised: the political framework of administration; normative questions of

administrative responsibility and the public interest as well as the role of public administration as a social instrument.

3.3 DEFINITIONS OF PUBLIC ADMINISTRATION

Scholarly study of Public Administration has often grappled to come up with a succinct definition that commands general assent within the discipline. Public Administration is yet to be defined satisfactorily and in broad terms. Several attempts have been made to resolve the problems of definition and delimitation with respect to Public Administration as a social activity in contrast with Public Administration as an academic discipline (Fox *et al.* 1991:2). For the purpose of this study, a broad definition will be ascribed to Public Administration using an open systems approach as a premise. According to Fox *et al.* (1991:2) Public Administration may be defined as the system of structures and processes operating within a particular society as the environment, with the objective of facilitating the formulation of appropriate governmental policy and the effective and efficient execution of the formulated policy.

Thomas Woodrow Wilson, the man who is universally acclaimed as the doyen of Public Administration states that administration as a part of Public Administration is the most obvious part of government; it is government in action; it is the executive, the operative, the most visible side of government. There are three spheres of government, namely; the judiciary, the legislature and the executive. Public Administration in all modern nations is identified as dealing mainly with the executive sphere in both its political and administrative contexts. This also lends credence to the very broad and executive-aligned definitions of Public Administration as averred by Coetzee (1988:18-20):

- i. The executive branch of government; civil service; bureaucracy; the formulation, implementation, evaluation and modification of public policy. The term represents a broad ranging, amorphous combination of theory and practice whose objectives are to promote understanding

of government and its relationships with society, to encourage public policies that are more responsive to social needs, and to institute managerial practices in public bureaucracies that are designed to achieve effectiveness and efficiency and increasingly to meet the deeper human needs of citizens. The term also refers to all chief executive and judicial officials, or high-level employees of Government departments or agencies that make non-routine decisions that set standards to be carried out by subordinates.

- ii. Public Administration is decision making, planning the work to be done, formulating objectives and goals, working with the legislature and citizen organisations to gain public support and funds for Government programmes, establishing and revising organisations, directing and supervising employees, providing leadership, communicating and receiving communications, determining work methods and procedures, appraising performance, exercising controls, and other functions performed by government executives and supervisors. It is the action part of Government, the means by which the purposes and goals of government are realised.
- iii. Public Administration is a comprehensive and peculiar field of activity, consisting of numerous activities, processes or functions performed by public officials working in public institutions, and aimed at producing goods and rendering services for the benefit of the community. These activities can be classified into three groups:
 - 1. The generic administrative activities or functions of policy-making, financing, organising, staffing, the determination of work procedures, and the devising of methods of controls
 - 2. Functional activities peculiar to specific services such as education, nursing, public works, or defence
 - 3. The auxiliary functions such as decision making, data processing, planning, programming and communication, which are necessary to simplify or expedite the execution of the generic administrative functions and the functional activities.

Fox *et al.* (1991:2) and Coetzee (1988:18-20) definitions of Public Administration are appropriate for this study. These broad definitions are highlighted to illustrate the linkage between the executive sphere of government and Public Administration. It can therefore be concluded that Public Administration activities are centred on the executive sphere of government. It should also be borne in mind that there are other various forms of contemporary definitions of Public Administration. Many definitions of Public Administration are attuned according to the various forms. For the purpose of this study on policy implementation, one of the definitions that could be relevant to the theme of the study is provided by Thornhill, (2007:794). According to Thornhill (2007:794), out that traditionally; the study of Public Administration mainly revolves around administrative activities and requirements that are geared towards giving effect to governmental policies. Public Administration entails the pursuit of the public good and the enhancement of civil society by ensuring that the public service is well administered and that the services provided are efficient and effective in actualising the government's goals.

Fesler (1980:2) aptly describes the nature of Public Administration by identifying policy execution and policy formulation as some of the fundamental functions and variables. He cautions that Public Administration cannot be confined to only these functions and variables, but emphasises that policy execution and formulation provide adequate orientation and offer sufficient paradoxes to introduce the subject. Whatever is accomplished by the government for a society hinges upon the policies it formulates and adopts, but most significantly depends on how effectively and efficiently these policies are implemented. Policy implementation therefore features prominently as one of the most critical areas in the discipline of public administration.

Sajid (2006:3) attributes the success or failure of policy in developing countries to a disjuncture between policy formulation and execution which often becomes an end product of flawed implementation strategies. To ensure successful service delivery, policy implementation strategies should be enhanced. Policy development, implementation and service delivery should be consolidated so

that a more coherent policy and strategy system with ongoing monitoring, evaluation, review and performance management (Brynard 2005: 649-650). In South Africa, the establishment of the National Planning Commission is geared towards the realisation of this end. Service delivery, in the form of the provision of education and the rolling out of skills development programmes can be linked to policy and policy implementation. Therefore the challenges of service delivery within the administrative service delivery agencies of skills development programmes are unravelled within the context of policy implementation strategies.

Scholars like Jeffrey Pressman and Aaron Wildavsky (1973) maintain that everything ever done in public policy or Public Administration must have some linkage with implementation. This also finds expression in Pfiffner and Presthus' (1967:8) definition of Public Administration as a process concerned with carrying out public policies, encompassing innumerable skills, and using techniques that order the efforts of large numbers of people. Similarly Henry (1980:26) provides a much broader definition of Public Administration that has some bearing on implementation as follows: A broad-ranging and amorphous combination of theory and practice. Its purpose is to promote a superior understanding of government and its relationship with the society it governs, as well as to encourage public policies more responsive to social needs and to institute managerial practices attuned to effectiveness, efficiency and the deeper human requisites of the citizenry. In both definitions, Henry's definition presents a synergistic relationship between policy implementation and Public Administration. Levin (1986:317) cautions that although effective implementation depends on good administration this is not sufficient in itself.

3.4 POLITICS AND ADMINISTRATION

The most sought-after theoretical concern in traditional Public Administration has always been to find a practical synergy between politics and administration. Writers and scholars have always made a concerted effort to write about the establishment of the models that illustrate that synergetic relationship between

politics and administration. One such model is the Traditional Public Administration model (Palumbo *et.al.*, 1984:95). This model indicates that Public Administration is concerned with the carrying out the policies of the Government that are developed by the politicians or built on political grounds. The system of governance in South Africa is not devoid of political influence. The current policy processes reflect the politics of redress and equity. These are values espoused by the ANC in South Africa. The enforcement of the policies is the prerogative of political cadres. Public Administrators perform administrative activities that are aimed at implementing these policies developed and enforced by politicians. Public officials are the agents of policy implementation. The bureaucratic expertise that the public officials gain during the implementation of such policies put them in a good stead to give advises to politicians on the likelihood of the potential success or failure of future policy options.

Public administrators influence the policy process by working in tandem with the public in the writing of the regulations, in the establishment of work procedures and specifying the requirement of the regulation in the implementation of policy. Through giving the politicians advice on the best policy options, public officials contribute towards policy implementation. This synergetic relationship suggests that the public, politicians, administrators and public officials work collaboratively in formulating and administering policy.

3.5 POLICY AND POLITICS

According to Carnoy (1999:37) and Waghid (2001:485), policy and politics in South Africa are inter-connected and are shaped by the changes in the global political economy. In formulating the present democratic order policies, the South African government had to respond to what is happening elsewhere across the world. Many reforms in the global arena force the education system to be transformative and to respond effectively to the needs of the country. Changes in the world cause governments to provide citizens with a competitive, financial and equity driven education system to enable the citizens to be more competitive on a global stage. The elements of global influence are reflected in

many other policy documents in South Africa. The NSMSTE policy in particular clearly reflects a trend toward a transformative approach, as practiced in many countries.

The focus of the policy makers of the new dispensation in South Africa was to put in place policies that would transform the education system and to obviate the segregated and unequal education system of the apartheid era. These policy reforms are founded on democratic principles of access and equity. In order to ensure that the educational policy directions are embraced by the broader society, the South African Government has relied heavily on the partnership and participation of the private organisations, teacher unions, non-governmental organisations (NGOs), civil based organisations (CBOs) and other stakeholders who have vested interest on matters relating to education.

Maluleke (2010:71-72) identify the following factors for the successful implementation and management of education policies:

- (i) Communication: that if the intended reforms are succinctly articulated, the likelihood of inconsistency in the implementation could be minimised.
- (ii) Enforcement: Laws, regulations and by-laws should be developed to ensure greater compliance.
- (iii) Comprehensiveness: The policy should be comprehensive enough in order to leave scanty scope for discretion.
- (iv) Quality and organisation of personnel: The quality of staff, organisational structure and the relationships within the units should be sound as they could promote or stifle the implementation of policy.
- (v) Resources: Availability of funds for training and development has a direct impact on the implementation process.
- (vi) Objectives of the policy: The objectives and tasks should be clearly stated in order to limit any misrepresentations and misunderstandings.
- (vii) Needs of the community: The needs of the community that the policy is intended for should be clearly defined in order to ensure that policy addresses the identified needs and it is not misplaced.

- (viii) Political environment: In any democratic order, failure of policy to address the general welfare of the citizens could result in the political office bearers being voted out of office. Adherence to policy compels the political office bearers to be accountable to the voters. As Edwards and Sharkansky (1978:295) rightly point out that it is imperative that those who are responsible for making policy decisions are well versed with what is expected of them in order to ensure the successful implementation and management of educational policies.

3.6 STRUCTURAL ADMINISTRATION

Maluleke, (2011:59-60) defines structural administration as a social process that is concerned with organising human material resources in a unified system in order to accomplish a pre-determined objective. In this study, this social process shall focus on the policy cycle processes in the administrative structure of the Department of Basic Education as one of the national departments. The educational administration structure is divided into national, provincial, districts and schools. The main priority of the different structure in the educational administration is to ensure that the departmental policies are implemented. The Government should provide relevant legislation for the proper functioning of the people that are entrusted with responsibilities of the implementation of policy. Educational administration should provide the space and facilities to ensure that policy is implemented and education is taking place.

Proper administrative structures should be put in place for policy implementation to take place. The administrative structures are underlined by the political structures. These political structures influence the type of policies that are formulated and chart the way forward in terms of the processes that need to be followed during the implementation. The relevance of the political structures to the administrative structure and policy implementation hinge upon their instructive value. The ultimate justification of the political structure also depends upon their success in making the various stakeholders to contribute to the solutions of administrative structure and the development of relevant

policies to address the identified problems. The relevance of the political structures within the administrative structures depends on the ability of communities to control the actions of politicians whilst developing their capabilities. This facilitates the process of formulating policies and programmes that could assist the administration to cater for the current challenges and the shaping of society for the future (Adams 1992:370).

3.7 ADMINISTRATIVE SYSTEMS

A myriad of strategies has been developed to explain the compatibility of Public Administration with the state. The system approach could be utilised to give insight into the roles of the organisational structure. For the purpose of this study, the role of school principals and Mathematics and Science teachers in the implementation of the scarce skills policy is unravelled. As Owens (1970:127) rightly points out that administration involves the process that helps organisations to operate its mechanisms in order to achieve its goals. This implies that the main purpose of administration should be to coordinate the activities according to the dictates of policy, to coordinate the application of such policy and establish ways in which that policy could be improved upon. The main goal of public administration in the context of this study would be to identify the decision-makers and to determine the contribution of other role players in the implementation of the scarce skills policy in the schooling system of the Free State.

The administrative capacity of all the role players who are entrusted with the responsibility to implement policy at various levels of government is a pre-requisite. It is always a mammoth challenge that the role players face in order to be effective and efficient in the implementation of policy because of the unavailability of the general criteria. Van der Westhuizen (1994:364) supports this assertion by making an example that in a school scenario, parents, teachers, administrators and pupils could utilise a starkly different criteria to the one utilised by the departmental officials in determining the efficiency and the effectiveness of the policy implementation process.

3.7.1 The administrative role of the school managers

Van der Westhuizen (1990:57) defines education management as encompassing a variety of manageable education task carried out by a person or body in authority in order to promote educational training. An in depth of his analysis of education management reveals that the management of education comprises of regulatory activities. This implies that education *inter alia* involves regulatory activities which are aimed at ensuring that there is an orderly interaction among all the role players in education. The definition further indicates that there are rules that regulate these activities. The source of these rules include the Constitution of the Republic of South Africa Act No. 108 of 1996 (particularly the Bill of Rights), legislation on education and any other legislation which has a bearing on education. Van der Westhuizen (1990:38) defines administration as the regulatory execution of a formulated policy from a position of authority. Therefore, an activity such as the completion of a weekly register in accordance with the prescribed policy is an administrative activity. Another example of an administrative activity could be the issuing of a school funds receipt on disbursing school fund. This is in strict accordance with the department of education instructions.

In the schooling system, principals, as school managers, are the key role players in determining the performance of the school. The principals are therefore required to use human resources (i.e. the teachers) to achieve the goals that are set out in the national policy. The principals delegate duties and supervise. The work of the teachers is also monitored by the principal. The scarce skills policy is one such policy that calls for the delegation, supervision and the monitoring of the school by the school manager. According to Kroon (1995:9), the school manager should arrange work-related conditions that encourage success by using skills and abilities of teachers as their subordinates. In order for the school to be efficient and effective in meeting its objectives of implementing public policy, the school managers should plan, organise, control, activate and communicate the activities of the school as a unit guided by the principles of reasonableness and fairness. The school managers are public officials and they are expected to

act in the best interest of the public by promoting the welfare of the society and should be seen to be fair to the communities that are affected by their decisions.

In view of their management role in the schooling system, it could be surmised that the management of policy is influenced by the administrative acumen of the principals. The principals have a responsibility for authority over the implementation of educational policy. The principals should develop the systems of accountability to ensure that their staffs deliver educational services to the society. The school management teams should also assist the teachers to undergo self-empowerment courses in order to hone their skill and garner new information that relates to their work.

3.7.2 The administrative role of the teachers

Lipsky (1980:5) labels those who interact with the public and demonstrate considerable tact in determining how the public carry out their work as street level bureaucrats. Since they are in constant interaction with the public (i.e. learners), teachers fit this reference of street-level bureaucrats in the schooling system. These street level bureaucrats are not only regarded as policy implementers but they are also deemed as policy crafters because they are bound to be answerable to the needs of individual learners under their tutelage. Teachers use their discretion in the implementation of policy by determining how policy or certain parts of policy could be implemented. This determines the effectiveness of the implementation of policy.

In a school set up, administrators are responsible for keeping the records of the learner's performance, making of reports, developing teaching and learning programmes as well as developing the assessment tasks. According to O'Toole (1989:2) administrators play the role of setting policy agenda and overseeing the routine implementation of government programmes in the administrative system. It is therefore evident that both the administrators and the teachers

play a vital role in the implementation of policy in the administrative system of the school.

3.8 DEFINITION OF POLICY IMPLEMENTATION

The literature on the implementation of policy is often deemed complex and intricate by many policy scholars. Early scholars of implementation such as Aaron Wildavsky (1973) began implementation research in the 1960s and 1970s. He worked very hard to come up with a common causal theory with predictive and prescriptive power for policy implementation. This assertion is attested by Brynard and De Coning (2006:181), who illustrate how early scholars of policy underplayed the significance of policy implementation and instead placed immense zest on its meaning. Brynard (2007:357) adds that policy implementation in the not so distant past was a foreign field for most scholars in Public Administration in South Africa which resulted in a policy gap. The policy gap often gives rise to implementation challenges. These challenges require alternative implementation models.

Literature on policy implementation study is plentiful. In identifying some of the scholars who made a ground-breaking contribution to unravel the intricacies of policy implementation are (Barret, 2004; Brynard, 2005; Brynard and De Coning, 2006; DeLeon, 1999; DeLeon and DeLeon, 2002; Dye, 1995; Goggin *et. al.* 1990; Hayes, 2001; Lester and Goggin, 1998; Matland, 1995; May, 2003; O'Toole, 2000, 2004; Schofield, 2001; Schofield and Sausman, 2004; Sinclair, 2001). These scholars have an immense body of work that attempt to explain the strengths and weaknesses of implementation research as well as offering valuable insight on possible improvements. From the onset, Dye (1995:312) warns that public policy does not end in the passing of legislation. It reaches a point of policy implementation which involves all the activities designed to carry out policies enacted by the legislature (Madue 2008:1999).

O'Toole (2000:266) defines policy implementation as what develops between the establishment of an apparent intention on the part of government to do

something, or to stop doing something, and the ultimate impact in the world of action. Correspondingly, Henry (2001:295) defines implementation as the execution and delivery of public policies by organisations or arrangements among institutions. Mazmanian and Sabatier (1983:20) as cited in Matland (1995:146) define implementation as the carrying out of basic policy decisions, usually incorporated in a statute but which can also take the form of important executive orders or court decisions. These definitions assist in providing an understanding of the complexities of translating policies into practice.

Pressman and Wildavsky (1973 :(xii-xv) strategically dissect implementation into a noun and a verb. According to Pressman and Wildavsky (1973 xii-xv) as a noun, implementation is the state of having achieved the goals of the policy and as a verb, implementation is a process-everything that happens in trying to achieve that policy objective. Although implementation as a noun and implementation as verb are inextricably connected, for the purpose of this study, implementation as a verb is preferred. Pressman and Wildavsky (1973) expound on implementation and policies as follows: Implementation is to carry out, accomplish, fulfil, produce and complete and policies as culled in their seminal book on policy implementation. This implies that theories and policies become programmes when, by authoritative action, the initial conditions are created. Implementation, then, is the ability to forge subsequent links in the causal chain so as to obtain the desired results.

Early scholars used to take policy implementation as a mundane administrative choice that, once it had been legislated and the institutions were given authority, it would be self-regulatory. For the purpose of this study policy implementation is defined as the exercise of carrying into effect the selected and planned decisions of government functionaries such as HoDs, principals and public official managers in order to achieve coordination of activities in a school environment.

3.9 POLICY IMPLEMENTATION AS A CORE FUNCTION OF PUBLIC ADMINISTRATION

Public institutions in South Africa are entrusted with responsibility of providing public goods and services for the maintenance of the state through various activities which include functions and processes (Cloete, 1992:50). These activities, processes and functions collectively give meaning to what public administration is set to achieve. According to Cloete (1992:90) part of the processes that constitute Public Administration are policy processes which can also be classified as policy-making processes, policy analysis and policy implementation processes. The policy implementation process is relevant for this study. Policy implementation encompasses various activities which are aimed at converting the goals and objectives of various policies into public goods and services for a better life for all the citizens. These activities are carried out by various personnel within the public service who are at different hierarchical levels, with different qualifications, expertise, behaviour, beliefs, norms and values. Efforts to deliver services by all public officials at all levels are required for the South African Government to successfully implement its policies so as to have services delivered efficiently and effectively to the community.

Botes (1994:24) argues that supervisors and managers are appointed, not because of their marketing skills or investment abilities, but because of their particular leadership abilities. Leadership at the lower levels of the hierarchy (where goods and services become visible) is essential to ensure that public officials strive to, not only achieve their own goals and objectives, but also those of the government. The lower level of the hierarchy in this case is the schools where the scarce skills policy is implemented. A specific type of guidance and leadership is needed that will motivate and induce teachers and school principals to give effect to the provisions of Section 195(1)(c)(d) of the Constitution of the Republic of South Africa of 1996 which stipulates that Public Administration must be development-oriented, services must be provided to all citizens impartially, fairly, equitably and without bias and people's needs must

be responded to, and the public must be encouraged to participate in policy-making.

3.10 CRITICAL VARIABLES FOR THE IMPLEMENTATION OF POLICY

There are numerous variables that affect the implementation of policy. For example O'Toole (1996:131) counts more than three hundred variables that might affect implementation. The implementation of policy is also influenced by many role-players.

According to Brynard (2005:658) policies incessantly change because of the implementing actions that concurrently vary the resources and objectives. This assertion is supported by Wittrock and de Leon's (1986:55) perspective that policy is a moving target. Policy implementation operates at all the levels of government. For instance, in South Africa the scarce skills policy, which is a theme of this study on policy implementation, is a national education policy that operates on the national, provincial and local phase of government. The failure of policy to deliver the desired services to the public in those three levels of government leads to policy gap.

Khoza (2003:49), in his research report titled: *Closing the gap between policy implementation in South Africa*, attributes the disjuncture between policy and implementation to:

- (i) Unrealistic policies and a lack of managerial expertise
- (ii) Absence of a people driven process
- (iii) Insufficient co-ordination of policy implementation in virtually all sectors
- (iv) Insufficient staffing and capacity of all three tiers of Government and the relationship between them.

Brynard (2005:657-662) identifies five critical variables which could shape the directions that implementation might take and effectively name these variables the 5C protocol. These variables are Content, Context, Commitment, Capacity,

Clients and Coalitions. The 5C protocol variables are generally accepted by many scholars who adhere to differing views, work on differing issues and in different political systems and in countries that have different levels of economic developments. The 5C protocols variables work in a synergetic manner and influence each other to a certain degree that is contingent with the scenarios surrounding the implementation of a specific policy.

3.11 POLICY IMPLEMENTATION WITH RESPECT TO SKILLS DEVELOPMENT

Burch and Wood (1983:194) analytically advance three reasons for the study of policy impact, namely; pragmatic, democratic and moral. On pragmatic grounds, it is essential to ensure that the government gets value for money and that policies are implemented as intended and at reasonable cost. Democratic reasons stress the conventional view of policy-making, which emphasise the accountability of the government and policy makers by determining as to whether or not the stated objectives have been attained. (Cloete, 1991:51) concurs with Burch and Wood (1983) view on accountability by pointing out that public accountability is one of the characteristics of a democratic government. Moral reasons point to the expediency of assessing the performance of government and making comparisons by judging the extent to which citizens and the society have been treated fairly or unfairly, equitably or inequitably.

Burch and Wood (1983:195) propose two approaches for the study policy impact; the study of the effectiveness of policy and whether or not policy has worked, is working or is likely to work in the future as well as the reasons for any policy failure which are observed or predicted. In this study the two approaches will be utilised in tandem. Democracy in South Africa was concomitant with a transformation agenda. The main priority for transforming South Africa into a non-racial democratic country has been evinced by the manner in which government is swiftly putting in place the policies that impose fairness and equality. According to Levy (1995:318), the preconditions for a non-racial democracy are the transformation of management practices and the racial disparities in skills. It would therefore be impossible to realise transformation

without the skills development through education and training as one of the variables for successful social transformation.

The implementation of skills development policies in South Africa is subject to the time frames during which the policies were implemented. The time frames for the implementation of skills development policy can be traced back to 1993 when the constitutional development of South Africa was drafted. The sequel was a range of skills development legislation such as SAQA, 1995 (Act 58 of 1995), and the Skills Development Act, 1998 (Act 97 of 1998); and the Skills Development Levies Act, 1999 (Act 9 of 1999). The time frames for the implementation of skills development policy for the purpose of this study are between 1999 and 2011. The functional organisation for the implementation of the national skills development policy is the national government under the purview of the Department of Higher Education and Training and the Department of Basic Education. Public institutions or organisations such as schools operate and depend on the environment within which they must render the services to the communities. The NSA is an advisory body to the Ministers of Education. The NSA uses the open system approach in policy-making and implementation by mobilising the society and creating forums for the stakeholder participation through public comments and public debates (Van der Walt and Helmbold, 1995:24).

3.12 POLICY EVALUATION

The process of policy evaluation involves determining, measuring and assessing changes that occur in specific target groups, regions and sectors over a period of time (Cloete *et al.* 2006:253). Evaluation is needed in the policy discourse in order to decide whether to continue with the policy, to terminate policy or to expand the policy programme.

Patton and Sawicki (1993:257) posit that there are two possible methods of evaluating policy namely; analysing policies prior to implementation (*ex-ante*) as well as analysing policies after the implementation (*ex-post*). These methods

have advantages and disadvantages. According to Patton Sawicki (1993:257) the evaluation of policy prior to implementation (*ex-ante*) is the most difficult method because it requires prediction of the effects of the proposed action. Another drawback of *ex-ante* evaluation is that it tends to decide what to evaluate and therefore pre-empts what to predict. In this study, the *ex-post* evaluation is preferred over the *ex-ante* evaluation because the *ex-post* evaluation determines whether the implemented policies are bearing the intended results, whether there is a need to modify the implemented policies and even to determine whether the resources should be channelled to other programmes.

3.13 MODELS OF COMMUNITY PARTICIPATION IN EDUCATION

Community participation consists of restoring the power of citizens to take the initiative and the decision of formulating and implementing activities and programmes concerning their future. It consists of recognizing that the people are creators and full-fledged partners in development. Promoting community participation means instituting a partnership, a contractual relationship among the various agents of development, in particular between the people concerned and those intervening from the outside. Whether the programmes are initiated from outside or in support of previously existing local initiatives, those intervening from outside should start off where the needs and aspirations of the citizens begins and accept to negotiate on that basis. If, as in many cases, such a partnership is initially held back by such factors such as poor organization and improper formulation of requests for assistance, the conditions for the partnerships must be created (Kouassivi 1991:24).

Community Participation in education needs to be encouraged because basic learning needs are complex and diverse, meeting them requires multi-pronged strategies and actions which are integral to overall development efforts. Many partners must join with the education authorities, school principals, teachers, and other educational personnel in developing basic education if it is to be seen as the responsibility of the entire society. This implies the active involvement of

a wide range of partners - families, teachers, communities, private enterprises, NGOs, institutions in managing and evaluating the many forms of basic education (WCEFA, 1990a:4).

Chimwenje (1992:8) describes three models of educational governance. The administrative model leaves educational governance to the central office or other offices down the hierarchy where power has been delegated. The professional model leaves governance to the professionals at the school site on the grounds that they are the best suited to determine the needs of learners and best capable of developing structures to satisfy such ends. The participatory model is one which aims at involving lay people or communities and parents. The last two models imply some kind of devolution of authority from the centre to the regional, district, and, above all, school levels. It is such devolution which leads ultimately to greater school based-management and reform-bringing the authority to create better learning conditions closer to the spot where teaching and learning takes place.

In South Africa, the ailing school system that led to the textbook delivery challenges in 2012 in some provinces among others has coerced Public Participation in Education Network (PEN), a community participation organisation to litigate in the Constitutional Court on the right to quality education being in the national public interest. In essence, this organisation seeks to bring about a better dispensation that is able to deliver more effectively and efficiently what the Bill of Rights enshrined in the Constitution of South Africa Act No. 108 of 1996 promise: Basic education for all. This organisation sees their public initiative as complementary to other similar efforts in the courts, which is the simultaneous and collective mobilisation of the community for quality public education (Pease 2012:41)

Underlying all of the participatory approaches to development are several important implications and issues that planners and managers as well as the political leadership of a government must understand. These all relate to the general process of the restructuring of the educational systems. This process

represents a significant change in the pattern of school governance, where governance refers to the norms and practices of decision-making regarding three critical areas of school life:

- (1) Instructional methodology and curriculum;
- (2) Administrative management and organization; and
- (3) Generation, allocation, and use of resources. Such restructuring generally includes issues related to:
 - (i) Decentralization;
 - (ii) Accountability; and
 - (iii) Autonomy and empowerment (Papagiannis *et al.* 1992:2).

(i) Decentralization

It is a process often particularly crucial in any attempt to facilitate the participation of a broader range of actors. This strategy is meant to achieve various results namely; to generate more resources and assure their more equitable allocation and effective use within the decentralized administrative units; to improve the quality of decision-making and planning by making these processes more responsive to indigenous cultures and to local conditions, needs, and practices; to speed up the decision-making process and free the centre to focus on its legitimate strategic concerns; to encourage initiative, innovation, and participation; 5. to increase local responsibility and accountability over issues more readily understood by local management; and to stimulate communication down and (especially) up the system of control (Bloomer 1991: 4).

(ii) Accountability

Accountability relates to who is required to report to whom about what and therefore can ultimately be held responsible for the determination and implementation of policies and procedures, the achievement of goals, the performance of institutions, and compliance with standards and regulations. At

the most general and ideal level, this relates to the accountability of the state and its agencies, institutions, and structures to civil society. More specifically and realistically, with regard to participation and decentralization, it relates to the extent to which various levels of the administrative hierarchy are responsible to other levels both above and below it and to other 'partners'. In systems both decentralized and participatory, higher level of bureaucracy are to some extent accountable to lower levels (rather than only the other way around), and local government agents (e.g., the school and the staff members) are to some extent accountable to their clients (e.g., children, parents, the community) as well as to the local government office and the bureaucratic levels above (Tandon 1992:29).

(iii) Autonomy

Societies where multi-directional accountability occurs guarantee some degree of autonomy or self-government to lower levels of the system. This includes both autonomy for organizations, to make and implement decisions regarding their own operations, and for individuals, to make decisions regarding matters pertaining to their own concerns. Such autonomy, within a context of accountability to other actors above and to clients below, can help to encourage better management, higher professional competence, and more effective services. One important premise of such a process of providing greater autonomy is that the various actors in the autonomous institutions (e.g., a school) are professionals and able to make informed decision and conscious of self-responsibility for consequences arising from the decisions (Chimwenje 1992:42).

(iv) Empowerment

One important outcome of more participatory processes is empowerment. Greater participation in a decentralized system, with multiple and more democratic processes of accountability of more autonomous institutions, implies that people:

- gain knowledge and awareness of their own social, economic, and
- political conditions (Bhasin, 1979);
- take action - to make and act on choices and to construct 'their own futures through a process of analysis and action' (Myers, 1991); and, above all,
- gain control over the goals and processes of development, and over regulatory institutions (Hollnsteiner, 1982).

If it is accepted that participation should start at the stage of conception and still be in evidence at the stage of supervision, then it is necessary to agree to share certain elements of power (Bugnicourt, 1982:74-5). The concept of empowerment has become especially important in attempts to move the concept of participatory development from rhetoric to concrete practice. This concept is perhaps best defined as a group process where people who lack an equal share of valued resources gain greater access to, and control over, those resources (Bernard Van Leer Foundation, 1990:2). As a result, poor communities come more explicitly to assert rights and responsibilities in determining the direction of their own development (Bernard Van Leer Foundation, 1990:7). This power must be real, formal, and legitimate, including both the ability to make use of formal structures and regulations and control over decision-making processes, knowledge, and techniques. People who are empowered have the power to find direct solutions to their problems they propose solutions, they do not beg for them' (Bernard Van Leer Foundation, 1990:5).

According to Ki-Zerbo (1990:86) the educational system should not be regarded as a branch of the bureaucracy. Instead, it should be a subsystem highly interactive with all other parts of the social whole. The point is to give pupils, parents and teachers responsibility over their own affairs, to the point of enabling them to administer the educational system on their own within the context of natural or contractual communities. This assumption of responsibility must necessarily embrace three indispensable areas: participation in design and decision-making processes; regular, structured involvement in the processes of management and evaluation; and finally financial accountability with regard to

both income and contributions. Participation in education can be analysed in terms both of the degree of participation and the areas of education in which greater participation can occur. It posits a range of involvement in education by various actors from both inside and outside the school. For those from outside the school (parents, community members, NGOs), the range goes from complete non-participation and exclusion from school affairs, except in the provision of resources; through:

- involvement (at home) with motivating children and helping them with homework;
- involvement as an audience and passive supporters at school-run meetings or assemblies;
- participation as 'consultants' on school issues;
- as 'partners' in teaching or training;
- as implementers of delegated powers; and, ultimately,
- as citizens or a community in control of the school (Gregg, 1989, Stallworth and Williams, 1983).

A conference on education for all was held in Jomtien - Thailand in 1999. The conference adopted the Jomtien Declaration. One of the most important recommendations of the Jomtien Declaration is that new and revitalized partnerships at all levels should be built in order to achieve Education for All. Education for all is a call for more involvement of parents, communities, NGOs, and teachers in the implementation of educational programmes are at the heart of the expanded vision of basic education and constitute a great challenge for educational planners and administrators. The community can play a vital role as a watchdog body for educational administrators, local politicians, and teachers, who, for selfish motives, tend to ignore the interests of young learners. The community at large has a significant role in terms of acting as a countervailing force in areas where the traditional bureaucratic control on educational services fails or become less effective. (Aggarwal, 1992:31).

3.13.1 Parent participation in schooling through the Parent Learning Support System (PLSS) of the Philippines

The Parent Learning Support System (PLSS) is a school-based initiative which aims at organizing parents, guardians, and community members to assist in the upgrading of the quality of education generally, and in the raising of achievement levels of pupils specifically. Operationally, the PLSS is a grass-roots strategy which represents a collective effort in co-ordination with the principal and teachers.

The PLSS has the following objectives:

- to support and cooperate with the school staff in improving the pupils' learning capacities and in developing desirable values, attitudes, and behavioural change
- to identify home factors that affect cognitive and affective development of the pupils; and
- to conduct regular forums for discussion and group decisions in providing assistance and support to pupils' learning experiences (Carino; Valisno, 1992:6).

The organizational phase of the PLSS starts with the convening of parents of pupils from all grades to set up the parent-teacher groups in each of the grades. Then the broad concept of the PLSS programme and its ultimate aims are discussed by the assembly of teachers and parents. A second meeting is convened to plan and discuss the various activities of the programme that will be carried out in the school year. During this meeting, parents fill in questionnaires about their particular socio-economic circumstances and support for their children's learning. These surveys aim to determine study habits, socio-economic status of parents, and pupils' activities after class hours or during non-school days. The information collected from Parents is supplemented by the pupils' academic profile data generated from two standard tests administered by school guidance counsellors with the assistance of teachers (Shaeffer 1992a:62).

The pupils' academic profiles are used for deciding and selecting in which class or grade level the PLSS programme is. After the programme is launched, implementation of planned activities starts. During this phase the parent-teacher group's capability is strengthened. Participating teachers are given the necessary orientation in handling the programme, particularly in dealing with parents and community members. The upgrading of parents is achieved through a series of parent education seminars where resource speakers are invited to discuss specific topics on parents' roles and on how they can effectively perform these in the total development and education of their children. Also included is a parent guidance seminar which involves both parents and pupils. This seminar is designed for parents to share their own insights into the learning problems and to make them aware of their child's feelings, attitudes, expectations and hopes. The insights drawn from this seminar series are expected to be applied by both parents and teachers in implementing PLSS activities, e.g. parents' tutorial work, helping children with their assignments at home or in school, helping them read or practice mathematics, assisting teachers manage class conduct and monitoring the performances of their children (Shaeffer 1992b:73).

The seminars not only strengthen the capability of parents and teachers in performing their respective roles, but more significantly also make them sensitive to each other's' needs and especially to pupils' problems. During implementation, parents are drawn into the teaching-learning processes inside the classrooms as observers or teacher aides. Parents are also allowed to observe their children's behaviour at work or play. After these observations, parents write down their comments on their children's behaviour and on teaching methods and styles. Teachers then schedule meetings with parents to discuss the comments and suggestions, and collectively agree on specific measures (Shaeffer 1991:33).

The teacher-parent conference occurs regularly after parent observation and during the periodic evaluation of pupil's performance (i. e., after each grading period, and after each semester or end-of-year evaluation). The finale of the programme is the awarding of certificates in recognition of the participating

parents. Another important activity during the programme implementation of is the teacher's home visit. This is regularly conducted by teachers to familiarize themselves with the pupil's family situation. This visit also allows teachers to discuss more fully means by which parents can assist their children, especially in subjects where pupils exhibit low performance.

Parents and community groups, are usually kept away from what are considered 'professional' matters of teaching processes, may also have a role to play in monitoring and supervising classroom performance and teacher absenteeism (Durning, 1989). This includes:

- (a) Regular opening of the school and its 'products' to parents and the community (e.g., observation of classes, open days, school fairs). They may also serve as an 'audience' for demonstrations of pupil achievement, such as student writing;
- (b) Regular status/progress reports from the principal on school conditions and results;
- (c) Involvement of school-community organizations in monitoring school quality (e.g., in areas such as the adequacy of facilities, the attendance and behaviour of pupils and teachers, and the achievement of school targets); and
- (d) Helping to identify indicators of success, participate in data collection and analysis, and then use the results for subsequent programme planning (Carino and Valisno, 1992:6).

The Philippines PLSS (Parent Learning Support System) is a good example of these activities. Parents are regularly invited into the school to observe school classes, thereby both becoming acquainted with the school and its teachers and, more informally, serving as a kind of check on teacher performance. The involvement of family and community in education can also have an effect on the learning environment for children. In the Philippines, it was found that the PLSS programme transforms schools into friendly, non-alienating, familiar places for children where they can work, play, and study without fear. The learning

opportunities being generated and planned collaboratively by parents, community members, and school personnel have greatly enriched the learning resources available to pupils. The results from the experimental implementation of the PLSS showed significant change in the scholastic performance and attitudes of pupils whose parents had been involved in activities and had been trained to assist and guide their children in their school work (Carino and Valisno, 1992:6).

There are a number of reasons why teachers and the community should be more involved in areas related to the curriculum and material development. In general:

- The involvement of teachers in developing teaching materials and especially in filling in national curricula and syllabi with content more relevant to local conditions and needs can help ensure the presentation of material of direct use to their pupils. It can also make teachers feel greater 'ownership' of the school and of what they teach;
- the involvement of pupils, parents, and community leaders in the collecting, processing, analysis, and interpretation of local information may help to ensure the use of local content, the greater articulation between school and community and the inclusion of family and community culture in the school, the marriage of traditional and modern knowledge, coverage of local culture and history, and the inclusion of economically-relevant practical subjects (Punch and Bayona 1990);
- because participation calls for actual hands-on experiences by resourced persons in the local community, their involvement in curriculum design informs them better as to their possible instructional role (Commonwealth Secretariat 1992:59); and
- involvement in such an activity helps convince both teachers and the community that they have some ownership of what goes on in the school.

As a result of regular and systematic involvement of parents in school and classroom PTAs, the PLSS found that school administrators had changed,

becoming more sensitive to the needs of pupils and their families. The involvement of parents and teachers in school governance should be viewed as a developmental sequence and one that requires support in terms of encouraging policies and procedures, time and money resources, and the knowledge and skills to be effective contributors to school decisions (Gregg, 1989:10).

Experience gained in the PLSS showed that schools and the systems in which innovations flourish need to be both permeable in their receptivity to, and willingness to accept, new ideas, and flexible in adapting to them (Carino and Valisno, 1991). One potential benefit of opening the school to the community is to establish more clearly and directly the link between good education and greater parental and community demand and support for education. In other words, both the more visible ways of making the school and its achievements 'open to the gaze' of the community (e.g., PTAs, parents' days, the observation of classes by parents) and the less concrete (e.g., policy and practice that make parents feel welcome in the school) may increase parental interest in, and support for, the school. Teachers must share this norm. They need to reach a point where openness to change and development is seen as a regular and continuing feature of their professional lives (Schwella, 1996:16).

3.13.2 The Community Basic School in Mali - *Ecole de Base*

The community basic school in Mali is a school created and managed by a village or a group of villages, a neighbourhood or a group of neighbourhoods, or a group of parents, in other words, by local communities. Such a definition is possible within a system where some authority is placed at the level of the village or neighbourhood. The basic school is the initiative and the fruit of labour of a community - rural, urban, even corporate - which becomes its sponsor. The basic school is a school decided on, desired, and accepted by the people, created by them and supported by them. More recently, many of these schools are organized by new categories of sponsors-teachers and young graduates without work who, because of difficult economic conditions, organize basic schools, especially in urban areas (Shaeffer 1994:69).

There are also teachers and researchers who wish to increase the quantity of education in Mali and to experiment with new pedagogical methods and techniques and thus improve the quality of basic education. In one type of community basic school, there is virtually no external intervention. One-room schools are built and opened at the initiative of villagers for their own children. Teachers are recruited and paid by the villagers who furnish them with millet, cultivate their land (with the help of pupils during the school holiday), and give them a small amount of money for other needs. This money is collected from a modest fee paid by each parents (Shaeffer 1994:77).

The teachers use the official curriculum of the first cycle of basic education and teach the pupils until their graduation into the second cycle. In one such school, neither of the two teachers had received any special training (one was a catechism teacher, the other a former secondary school student. They obtained such good results that the public authorities, especially the school administration, became interested in their experiences. More and more such schools, particularly since the middle of the 1980s have been formed at the initiative of young unemployed graduates. They associate themselves with and negotiate with the people of a village or a neighbourhood to open a basic school. The school itself often belongs to the community which is responsible for its management. The parents of the pupils also pay modest monthly fees to ensure the maintenance of the teachers and the functioning of the school (Zevounou 1993: 104).

3.13.3 Community selection of school principals in the state of *Minas Gerais*, Brazil.

In Brazil, a lot of emphasis is put on the quality of the principal for school management. A good principal often plays a vital role in improving public schools. They actively lead their schools and engage with their communities of parents, who then apply pressure on the school to achieve good results. The Brazilian education system is huge. There are more than 42 million students in

high schools alone. It is basically a public system with about 90% enrolment in schools for basic education, which belong to states and municipalities. While there is some overlap, it is essentially a decentralised system. The federal government is responsible for policies and for some special programmes and states and municipalities are responsible for running the schools, paying the salaries, and determining the curricula (Souza 2011:11).

In respect of the general trend to place immense emphasis on the quality of the principal in Brazil, the Brazilian state of *Minas Gerais*, has a special way of choosing school principals for public schools. This is done by combining the criteria of knowledge and professional competence with leadership and the development of school improvement plans, which implies wide participation from the school community and communication with society through the mass media. Parents and even pupils from schools in the state of *Minas Gerais* are involved in the *SECOM* programme. This programme selects school principals on the basis of candidates' proposals with regard to a future work plan and school improvement. Through a school council, they work with the chosen principal in its implementation an innovation and this form part of a wider-scale reform (Namo de Mello and Neubauer da Silva 1993:70).

The selection of principals is designed in three stages with each divided into different phases which demands legal, technical, political and administrative measures. The first stage is made up of tests to evaluate degrees, knowledge and management ability of the candidates. The second stage is devoted to proving leadership skills in regard to the development of a long-term work-plan for the school. The third stage is focused on the successful candidate training to carry out the principal's position in regard to school improvement and autonomy and joint work with school councils.

The implementation of the *SECOM* programme demands an intense political preparation with the legislature and with the professional education labour unions, specifically with the Association of School Principals. In this preparatory phase, the government began a systematic alliance with the Parent's Federation

of Public Schools in the state of *Minas Gerais*, explaining to them the new way of electing school principals and finding them in acceptance of the proposal. In this period, the Education Secretary's office conducted studies to develop the evaluation stage of the candidates' knowledge, skills, and administrative capacity; these were carried out with the help of a university, they tried to establish a professional profile of future principals within the guidelines of educational policy. Once the necessary legislation had been approved and the technical studies concluded, norms and guidelines are prepared and that gave rise to the following development strategy of *SECOM* programme:

- Criteria to identify who could be a candidate for school principal were established; starting from the professional profile prepared for principals, specialized institutions designed tests to evaluate knowledge and administrative capacity;
- The secretary's office carried out a survey of the vacancies existing in the school system and made them known as well as the way of electing, its stages and the proposed evaluation criteria;
- It was then decided that the three best qualified people in the evaluation would be nominated;
- Three days after the announcement of the official results of the evaluation, the candidates of each school should present and defend before school employees, parents and pupils, a work plan for the school;
- Electoral advertising with the name of the candidates would not be accepted. The decision about leadership capacity would not become personal, but rather be a selection between different work plans. The presentation and discussion of the plans in the assembly would be the only criterion for the election and the candidates would have the same time and conditions for their presentations;
- The election of the candidate that had presented the best work plan would be carried out by direct and secret vote. All public employees of the school, all families of school going children (one vote per family, independent of the number of children registered at the school), and all students aged and over 16 would have the right to vote; and

- The candidate with the largest number of votes would be elected to be principal and the one placed would be the vice-principal of the school (Namo de Mello and Neubauer da Silva 1993:70-71).

3.14 SCARCE SKILLS DEFINED

Skills can be identified as an area of knowledge that needs to be acquired to function effectively (Fourie (2004:497). Skills training can be seen as the process of enabling individuals to assume new roles and implement systems effectively in order to achieve positive performance outcomes. Critten (1993:50) identifies four skills that are more or less typical of all jobs:

- task skills making up the technical components of a job;
- contingency management skills referring to the ability to recognise and deal with irregularities and changes in the immediate working environment;
- task management skills relating to the skills needed for managing tasks and prioritizing it; and
- job role environment skills needed to work well with others and cope with specific environmental factors.

The research and skills planning Unit of the Sector Education and Training Authorities (SETAs) in South Africa conducts comprehensive research on yearly basis to determine the profile of the sector and identify skills that are in demand. They also compare and contrast the supply and demand of skills. The skills shortages and gaps identified in this comparison leads to the development of a scarce list. Scarce skills are skills where there are either too few or no people presently or potentially no skilled people in the future. For the purpose of this study, scarce skills will be taken to be in the areas of Mathematics, Science and Engineering professionals. The DoL (2007:6) offered the following definitions in its Framework for Identifying and Monitoring Scarce Skills, to direct the SETAs: Scarce skills refer to those occupations in which there are scarcities of qualified and experienced people, currently or anticipated in the future,

either (i) because such skilled people are not available or (ii) because they are available but do not meet the employment criteria.

According to Breier (1998:84), scarcity of skills can be absolute or relative. Absolute scarcity exists where suitably skilled people are not available. This could be in the case of the new or emerging occupation when there are few, if any, people in the country with the requisite skills (qualification and experience), and education and training providers have yet to develop learning programmes to meet the skills requirements. Alternatively, firms, sectors or even the country as a whole might be unable to implement growth strategies and might experience productivity, service delivery and quality problems directly attributable to a lack of skilled people. Another possibility is that there could be no people enrolled or engaged in the process of acquiring skills that need to be replaced, meaning that there is a replacement demand. The South African Department of Labour's definition of absolute scarcity relates closely to what the New Zealand Department of Labour (NZ DoL) defines as a genuine skills shortage, which occurs when employers have considerable difficulty in filling job vacancies simply because of insufficient job-seekers with the required skills (NZ DoL 2006).

Relative scarcity exists where suitably skilled people are available, but do not meet other employment criteria. There might be a shortage because of the geographical location of the work available, for example, people might be unwilling to work outside of the urban areas. Or there might be equity considerations, in other words, few if any candidates with the requisite skills from specific groups that are available to meet the skills requirement of the firms and enterprises. Replacement demand would reflect a relative scarcity if there are people in education and training (formal and workplace training who are in the process of acquiring the necessary skills (qualification and experience) but where the lead time will mean that they are not available in the short term to meet the replacement demand.

Breier (2009:4) posits that recruitment and retention difficulties can also contribute to the relative scarcity. Employers find it difficult to recruit and retain talent when there is a considerable supply of workers with the required skills in the potential labour market but they are unwilling to take up employment at current level of remuneration and conditions of employment. Retention problems are often a major contributor in this respect (NZ DoL 2006).

3.15 ADMINISTRATION MODELS OF THE PROGRAMMES TO DEVELOP SCARCE SKILLS IN THE PUBLIC EDUCATION SYSTEMS

South Africa needs to develop and strengthen collaboration with other education systems in other parts of the world and particularly the BRIC countries. In economics, BRIC is an acronym for the countries Brazil, Russia, India and China. This collaboration will ensure that students from the South African education system are equipped to be admitted into those systems. International collaboration in education will help South Africa to successfully tackle its education challenges. Stronger educational links with these countries will also help students become increasingly broadminded in terms of how they deal with issues of school education both South Africa and the world.

Education is the single most important investment to raise long-running growth. In the global economy, the performance of the education system is the yardstick for success, particularly in the light of the fundamental technological challenges that re-shape the economy. The knowledge Economy has become a key concept to accelerate economic and social development in many countries around the world. The knowledge Economy or knowledge-based economy refers to building the knowledge base of an economy that generates economic growth, employment, enhances exports, productivity and regional development. These outputs can be achieved through long-term investment in the knowledge base of an economy, meaning investment in education system, science and technology and research and development.

To build a national innovation system, a country or a region needs to integrate innovation policy or science and technology policy to the economic policy objectives. This policy must identify the key objectives of a country or region to build their knowledge economy, their priority areas and means or instruments. However, the influence of the economy and the role played by international actors in the implementation of policy should not be over-emphasised. To become and remain high-performing, countries need a policy infrastructure that drives performance and builds capacity. Improving the administrative skill set of policy implementers is clearly an important issue for many countries. While there is a wealth of books and articles examining the implementation of policy, there is a relative dearth looking at how this has been in other countries (Tapper 2010:229).

In this study, some of the best practices in one of the Mathematics and Science school in Thohoyandou-Limpopo province are discussed. This school, namely, Mbilwi Secondary School is an example of a public school with limited resources but which produces excellent Mathematics and Science outcomes. The school's successes are attributed to the SMTs who manage it like a private institution. A model of charter school is also benchmarked against South Africa's Mathematics and Science dedicated schools. Some of the lessons to implement Mathematics and Science education in the schooling system are derived from the systems implemented by two high-performing countries in Mathematics and Science education at school level. The literature reviewed from the Finnish mathematics and sciences education policy and the Singaporean Skills Development System (SSDS) reveals some valuable lessons that can be indigenised and be applied to the implementation of the NSMSTE in the schools in the Free State. The mode of indigenising these foreign models will be unravelled in the final chapter of this study as part of the recommendations.

The Finnish and Singaporean success stories are often touted as case studies of successful postcolonial development. Finland and Singapore have relatively small population sizes compared to South Africa. These two countries are conveniently modelled because this study focuses on the Free State. Finland and Singapore

have undertaken these elements in a systemic fashion, rather than pouring energy into a potpourri of innovations and then changing course every few years, as has often been the case with Curriculum 2005 and Outcome Based Education (OBE) in South Africa. And while these nations have conducted their school education systems on a national level, similar strategies have been employed at the state or provincial level in high-scoring countries such as Australia, New Zealand, and Canada, Hong Kong and Macao (Sahlberg, 2007: 167).

Since policy is national, the recommendations that will be made at the end of this study can be utilised by national departments of education and by provincial departments of education in South Africa. While the small-scale and tightly-coupled nature of the education systems in both countries may make its approaches seem inapplicable elsewhere, many of its principles and practices are applicable to countries of a different scale and governance structure. The implementation in other countries would have to take a different form owing to the starkly different infrastructural backgrounds of the countries benchmarked. It is also worth noting that there is neither a perfect educational system in the world nor a magical wand in the policy implementation process.

The models of the administration of the school education system of the two countries that are used for the purpose of this study are not devoid of limitations. Sometimes there is no sign of scientifically justifiable accounting of the contextual similarities between South Africa and these countries. Too many aspects of the public debate around education often simply reflect the policy of other countries indiscriminately, and far too many public discussions reflect nothing else than the use of the word 'international' to justify a viewpoint (Noah 1986:161-162). The process of learning from others should replace the process of borrowing, usually of irrelevant proposals/policies. Although no system can be transported wholesale into another context, there is much to learn from the experiences of those countries who have addressed their problems. These experiences can be used to address problems that are encountered in the administration of the South African public education system. There are pockets

of excellence in the running of the school education systems of these countries; the key is how to adapt them to suit the local context.

3.15.1 Lessons for managing Mathematics and Science schools from Mbilwi Secondary School in South Africa

Mbilwi Secondary School is situated at Sibasa in the Vhembe District of the Limpopo Province. It is about 76 km from Louis Trichardt and about 6 km from Thohoyandou. Mbilwi Secondary School was started in 1979 as a Science School. Mbilwi Secondary is one of the schools which started from the top to the bottom, i.e., it started in 1979 with Grade 11 and Grade 12. It is the only school which started with the top classes of Grade 11 and 12 and then evolved downwards to lower Grades as the years passed. The premises which Mbilwi Secondary School occupies have a longer history than the school. This school was built in 1968 as a special school for the then children of chiefs and indunas of the Venda homeland. It existed as such until 1973 and it was used as Venda College of Education in 1975. With regards to the grade 12 results, Mbilwi Secondary School has averaged 98 % pass rate from 1990 to 2010 with an average of more or less 90 % of the pass rate being with Matric Exemption. From 1995 to 2006 the pass rate was 100 % with all learners passing with exemption (Lidzhade 2011:4-6).

The school is actively involved in the community. The mission and vision of Mbilwi Senior Secondary School is to provide quality education in the Sciences and Mathematics to promote the interest of Science education in learners and the teaching of Science by educators in an environment conducive to teaching and learning. Because of this mission and vision, Mbilwi Secondary is involved in a number of community out-reach programmes. Four of these programmes are discussed below.

(i) Mbilwi's Saturday School

Mbilwi staff members recruit other top teachers from the neighbouring schools and together they teach Saturday classes from Grade 8 to Grade 12. The

emphasis in these Saturday classes is on Science and Mathematics. The Saturday classes start on February and end in June when the winter schools start. These Saturday classes which have been going on now for the past seven years have helped many learners from other school to improve their work and to have interest in the Science subjects. Many learners came to realize that their problems, when it comes to Mathematics and Science are because of lack of background. Learners are charged a minimal fee to run these Saturday classes and Mbilwi Secondary School is proud to host these classes and is willing to provide its limited facilities for the smooth running of these classes.

(ii) Learners and teachers site-visits

Mbilwi also promote an exchange programme with other willing schools. These schools send their learners to observe how things are done for a week and during that week they are treated just like Mbilwi's learners and they are expected to take part in all activities which are going on at the school. Teachers and principals from other schools also visit. The idea is for the teachers and principals to come and spend the whole day observing and exchanging their ideas with their counterparts. They are allowed to visit any class and observe any teacher in action and they are also allowed to talk to any learner and monitor their books.

(iii) Hosting Mathematics and Science competitions

Mbilwi Secondary School annually hosts Science Expo for Young Scientist and AMESA (Mathematics competition) for the district.

(iv) Computer training course

The school has a computer-training course for members of the public. A Cyber laboratory has been donated to the school by Universal Service Agencies. It is the school's responsibility to see to it that the Cyber laboratory benefits the learners and members of the community.

The most important function of the School Management Team (SMT) and School Governing Body (SGB) at Mbilwi Secondary School is to foster unity among all our

educators so that they work as a team. Teachers co-operate with each other. The teachers who teach the same subject in different Grades help each other so that in their subject learners have a good background when they reach Grade 12. The management or principal does not make any decision without involving all the staff members. The school has a long standing tradition and culture of excellence that pushes everyone to strive for outstanding results. The principal, SMT and the teachers set very high standards. The school recruits young graduates with BSc qualifications and without teaching qualifications. The young graduates are encouraged to enrol in a part-time Diploma in Education course. Senior teachers provide orientation and induction on school culture and practices. They also provide mentorship and support to the new teachers (Lidzhade 2011:38).

3.15.2 Charter schools models

Charter schools are primary or secondary school that receive public money (and like other schools, may also receive private donations) but are not subject to some of the rules, regulations, and statutes that apply to public schools in exchange for some type of accountability for producing certain results, which are set forth in the school's charter. Charter schools are opened and attended by choice. While charter schools provide an alternative to public schools, they are part of the public education system. They are publicly funded schools that have signed a contract (charter) with the equivalent of the Department of Basic Education and are held accountable for improving learner achievement. Some charter schools are founded by teachers, parents, or activists who feel restricted by traditional public schools. The schools themselves are non-profit, in the same way that public schools may be managed by a for-profit corporation. Corporate management does not affect the status of a school.

There are two principles that guide charter schools. First, they will operate as autonomous public schools, through waivers from many of the procedural requirements of district public schools. These waivers do not mean a school is exempt from the same educational standards set by the state or district.

Autonomy can be critically important for creating a school culture that maximizes student motivation by emphasizing high expectations, academic rigor, discipline, and relationships with caring adults. Second, charter schools are accountable for learner's achievement. They are accountable for test scores, state mandates, and other traditional requirements that often have the effect of turning the charter school into a similar model and design as public schools. Countries that have successfully implemented the charter school model include: Chile, Sweden, Canada, England, New Zealand and the United States of America.

3.15.3 Lessons for managing Mathematics and Science schools from Finland

Schooling is free and compulsory in Finland between the ages of six and sixteen. The basic compulsory educational system in Finland is the nine-year comprehensive school. Compulsory education consists of six years of primary school and three years of secondary school. Finland has consistently scored at the top in international tests in Mathematics and the Sciences. The Finnish school education system offers many workable and pragmatic education policy directions for creating a top-notch education system. Once poorly ranked educationally, with a turgid bureaucratic system that produced low-quality education and large inequalities, Finland now ranks first among all the Organization for Economic Cooperation and Development (OECD) nations on the Program for International Student Assessments (PISA), an international test for 15-year-olds in language, Mathematics, and Science literacy (de la Rey 2011:33).

Sahlberg (2009:22) identifies a set of global reforms, undertaken in Anglo-Saxon countries, that Finland has not adopted, including standardization of curriculum enforced by frequent external tests; narrowing of the curriculum to basic skills in reading and Mathematics; reduced use of innovative teaching strategies; adoption of educational ideas from external sources, rather than development of local internal capacity for innovation and problem-solving; and adoption of high-stakes accountability policies, featuring rewards and sanctions for students, teachers, and schools. By contrast, Finnish education policies are the result of four decades of systematic, mostly intentional, development that has created a

culture of diversity, trust, and respect within Finnish society in general, and within its education system in particular. Education sector development has been grounded on equal opportunities for all, equitable distribution of resources rather than competition, intensive early interventions for prevention, and building gradual trust among education practitioners, especially teachers.

There are no external standardized tests used to rank students or schools in Finland, and most teacher feedback to students is in narrative form, emphasizing descriptions of their learning progress and areas for growth. As in the format of the National Assessment of Educational Progress (NAEP) examinations in the United States, samples of students are evaluated on open-ended assessments at the end of the second and ninth grades to inform curriculum and school investments. The focus is on using information to drive learning and problem-solving. Finland maintains one exam prior to attending university: The matriculation examination organized and evaluated by a matriculation exam board appointed by the Finnish Ministry of Education. Although not required for graduation or entry into a university, it is common practice for students to take this set of four open-ended examinations that emphasize problem-solving, analysis, and writing. Teachers use official guidelines to grade the matriculation examinations locally, and samples of the grades are re-examined by professionals hired by the matriculation exam board. Although it is counterintuitive to those accustomed to external testing as a means of accountability, Finland's use of school-based, student-centred, open-ended tasks embedded in the curriculum is often touted as an important reason for the nation's success on the international exams (Sahlberg 2009:23).

The national core curriculum provides teachers with recommended assessment criteria for specific grades in each subject and in the overall final assessment of student progress each year. Local schools and teachers then use those guidelines to craft a more detailed curriculum and set of learning outcomes at each school, as well as approaches to assessing benchmarks in the curriculum. According to the Finnish National Board of Education, the main purpose of assessing students is to guide and encourage students' own reflection and self-assessment.

Teachers give students formative and summative reports through verbal and narrative feedback. Inquiry is a major focus of learning in Finland, and assessment is used to cultivate students' active learning skills by asking open-ended questions and helping students address them (Allen 2002:11).

In a Finnish classroom, it is rare to see a teacher standing at the front of a classroom lecturing students. Instead, students are likely to determine their own weekly targets with their teachers in specific subject areas and choose the tasks they will work on at their own pace. In a typical classroom, students are likely to be walking around, rotating through workshops or gathering information, asking questions of their teacher, and working with other students in small groups. They may be completing independent or group projects or writing articles. The cultivation of independence and active learning allows students to develop meta-cognitive skills that help them to frame, tackle, and solve problems; evaluate and improve their own work; and guide their learning processes in productive ways (Sahlberg 2009:25).

In order to improve teaching, teachers are prepared for a research-based teacher profession in Finland. This has been the central idea of teacher education developments in Finland for many years. Prospective teachers are competitively selected from the pool of college graduates. Only 15 percent of those who apply are admitted and receive a three-year graduate-level teacher preparation programme, entirely free of charge and with a living stipend. Unlike in South Africa, where teachers either go into debt to prepare for a profession that will pay them poorly and enter with little or no training, Finland made the decision to invest in a uniformly well-prepared teaching force by recruiting top candidates and paying them to go to school. Slots in teacher training programmes are highly coveted and shortages are virtually unheard of. Teachers' preparation includes both extensive coursework on how to teach—with a strong emphasis on using research based on state-of-the-art practice—and at least a full year of clinical experience in a school associated with a university. These model schools are intended to develop and model innovative practices, as well as to foster research on learning and teaching. Teachers are trained in research

methods so that they can contribute to an increase of the problem-solving capacity of the education system (Buchberger and Buchberger 2004:10).

Within these model schools, student teachers participate in problem-solving groups, a common feature in Finnish schools. The problem-solving groups engage in a cycle of planning, action, and reflection/evaluation that is reinforced throughout the teacher education programme and is, in fact, a model for what teachers will plan for their own students, who are expected to incorporate similar kinds of research and inquiry in their own studies. Indeed, the entire system is intended to improve through continual reflection, evaluation, and problem-solving at the level of the classroom, school, municipality, and nation. Teachers learn how to create challenging curriculum and how to develop and evaluate local performance assessments that engage students in research and inquiry on a regular basis.

Teacher training emphasizes learning how to teach students who learn in different ways, including those with special needs. It includes a strong emphasis on multiculturalism and the prevention of learning difficulties and exclusion, as well as on the understanding of learning, thoughtful assessment, and curriculum development. The egalitarian Finnish reasoned that if teachers learn to help students who struggle, they will be able to teach all students more effectively and, indeed, leave no child behind. All teachers in Finland are required to hold Master's degrees in both their content area and in education, and they are well prepared to teach diverse learners including special-needs for deep understanding, and to use formative performance assessments on a regular basis to inform their teaching so it meet their students' needs. Teachers are well trained both in research methods and in pedagogical practice. Consequently, they are sophisticated diagnosticians, and they work together collegially to design instruction that meets the demands of the subject matter as well as the needs of their students (Laukkanen, 2008:118).

Finnish teachers are conscious, critical consumers of professional development and in-service training services. Just as the professional level of the teaching cadre has increased over the past two decades, so has the quality of teacher

professional development support. Most compulsory, traditional in-service training has disappeared. In its place are school- or municipality-based longer term programmes and professional development opportunities. Continuous upgrading of teachers' pedagogical professionalism has become a right rather than an obligation. This shift in teachers' learning conditions and styles often reflects ways that classroom learning is arranged for pupils. As a consequence of strengthened professionalism in schools, it has become understood that teachers and schools are responsible for their own work and also solve most problems rather than shift them elsewhere. The Finnish teaching profession is currently on par with other professional workers; teachers can diagnose problems in their classrooms and schools, apply evidence-based criteria and often alternative solutions to them, and evaluate and analyse the impact of implemented procedures (Sahlberg, 2007:155).

The focus on instruction and the development of professional practice in Finland's approach to organizing the administration of the education system has led, according to reports, to an increased prevalence of effective teaching methods in schools. Furthermore, efforts to enable schools to learn from each other have led to lateral capacity building, the widespread adoption of effective practices and experimentation with innovative approaches across the system as well as encouraging teachers and schools to continue to expand their repertoires of teaching methods and individualizing teaching to meet the needs of all students (Sahlberg, 2007:167).

The successful performance of Finnish students in Mathematics and the Sciences is attributable to an array of interrelated factors. The development programme to improve skills in Mathematics and Natural Sciences in Finland is called LUMA. LU stands 'luonnontieteel' natural sciences in Finnish and MA stands for mathematics. The LUMA programme is part of the national joint action launched by the Finnish Ministry of Education for elevating Mathematical and Scientific knowledge. The implementation of the programme takes place in 16 networks involving 78 local authorities and within their regions in a total of 270 educational institutions. Primary schools, secondary schools and vocational

schools collaborate with each and with other educational institutions and enterprises in their areas. Central activities in the LUMA programme include the promotion of effective continuing Mathematics and Science education, e-learning and creating materials to support learning.

Furthermore, LUMA brings together researchers from universities, school teaching staff, and civil servants in educational administration, and professionals working in industry to assist schools. The media also shows interest in the instruction of Mathematics and Natural Sciences education. Another goal of LUMA is to raise interest in the learning of Mathematics and Science among girls. National studies have repeatedly shown that there are major discrepancies in the learning results between boys and girls (Finnish National Board of Education report 2002).

The LUMA programme has served to pilot the view of Science and Mathematics education as a continuum, starting at pre-primary level. This provides adequate evidence of a concerted effort to build up good practices for upgrading knowledge and skills from a young age. The motivation and initiative of individual teachers is a necessary ingredient for the progress of the LUMA programme. LUMA generates a teacher-to-teacher collaboration within schools, across disciplines. This gives powerful support to their team spirit and enthusiasm. It also helps to promote effective learning and teaching across different subjects and in different stages at school. This process provides an effective model that could well be developed and implemented more widely. Teacher-to-teacher collaboration outside the school is another strong feature of the LUMA programme. This is promoted by education /pedagogical/LUMA afternoon's initiative, which is supported by municipalities. These events offer a forum for exchanging ideas, moral support and identification of best practices in the classrooms Allen (2002:14-16).

The role of the school coordinator/contact person in driving the LUMA programme within the school and liaising with the municipal coordinator is very important. The attitude of the school principal is also critical to its success. The

spread of an ethos of Science and Mathematics learning is dependent on the attitude of the principal to the importance of the programme and his/her help in accommodating non-routine activities that are consequence of this programme is important. Another major benefit is to the whole school system is the increased availability of in-service training for all Mathematics and Science teachers. A generous budget allowance from the Finnish government enables the higher institutions of learning to give focus on Mathematics and Science in-service programmes, allowing degree tuition and short-term courses to be made available across the country. The curriculum has also been revised, amongst others; this involves among others the re-distribution of classroom hours for comprehensive Mathematics and Science education. The share of Mathematics and Natural Sciences reflects its importance in modern education for citizenship and for preparation for further study. This revision of the curriculum addresses the weaknesses in the achievements in science and mathematics of students entering vocational institutions in Finland (Allen 2002:17-18).

According to Lombardi (2003:3) factors that have led to the success of LUMA can be summarised into three factors:

- (i) The philosophy that works
- (ii) Highly qualified teachers and pedagogical autonomy and
- (iii) Curriculum and governance.

(i) The working philosophy

The comprehensive school is not only a system; it is a matter of pedagogical philosophy and practice in Finland. With a population of more than five million, Finland has more than 4,000 comprehensive schools, 750 upper-secondary schools, 20 universities, and a great many other educational institutions. The comprehensive school is for each child; hence, it has to adjust to the needs of each child. Teaching and pedagogy are structured to work with heterogeneous student groups. The interests and choices of students are taken into account when schools plan and select the curriculum, content, textbooks, learning

strategies, and methods of assessment. All this calls for a flexible, school-based and teacher-planned curriculum along with student-centred instruction, counselling, and remedial teaching. The teacher takes care of every single student and allows, in everyday school work, for a diverse student body. Special education is usually closely integrated into normal teaching and is highly inclusive (approximately 2% of students attend special education institutions). Every student has the right to student counselling, and schools provide students with guidance in study skills, options, and planning post-secondary studies. At Grades 7 to 9, every school has a student counsellor who provides individual guidance to those who need or want it. The class sizes are among the smallest in the countries in this study. Finnish teachers are constantly worried about what they consider too-large class sizes, finding it demanding to look after the individual needs of students.

(ii) Highly qualified teachers and pedagogical autonomy

In Finnish culture, teaching is one of the more respected professions in society, and substantial resources are invested in teacher education. Teachers are trusted to do their best, and are entrusted with considerable pedagogical independence in the classroom; schools have likewise enjoyed significant autonomy in organizing their work within the national curriculum. All Finnish teachers are required to complete a Master's degree, either in education or in a teaching subject. They are considered pedagogical experts. Additionally, the teaching profession is greatly valued and popular among post-secondary students. Finnish teachers set high standards for students' literacy skills and interests. Regarded as educational experts, Finnish teachers are relied on when it comes to student assessment, which usually draws on students' class work, projects, teacher-made exams, and portfolios.

In Finland, teacher-based assessment is more important because at comprehensive schools students are not assessed by national tests or examinations during the years of schooling or upon completing school.

Teachers are vested with considerable decision-making authority as concerns school policy and management. They have almost exclusive responsibility for the choice of textbooks and have more say than their counterparts in the OECD countries in determining course content, establishing student assessment policies, deciding which courses the school should offer, and allocating budgets within the school.

(iii) Curriculum and governance

The comprehensive school is underpinned by an exceptionally broad cultural and political consensus about the purpose and direction of the school system. In Finland, significant political conflicts and sudden changes in educational policy have been rare. Since 1990, the national curriculum has become flexible, decentralized, and less detailed. Finland has established national grading guidelines for performance that allow for student effort and activity to be taken into consideration. The outcomes of all Finnish nine-year comprehensive schools are followed by sample-based surveys. The results are published only on the system level. Schools have a high degree of autonomy with regard to pedagogical practices. Governing bodies of schools and local educational authorities have less decision-making power in Finland than in the other countries. Finland's high performance in the OECD assessment is generally attributed to a high degree of school and teacher autonomy in decision-making (Sahlberg 2004:28).

3.15.4 Lessons for managing Mathematics and Science schools from Singapore

According to Kuruvilla *et.al* (2002:1461) Singapore is the best known example of a country that has successfully managed to transform itself from a developing country to a modern industrial economy through a sound school education system. Singapore's education system has remained consistently at or near the top of most major international education ranking systems. Recognizing that it

had few other resources, Singapore's policymakers invested in their human resources and adopted a theme: 'To dream, design and deliver a solid education to every child' (Kuruville *et.al* 2002:1462). The education system of Singapore contributes to the country's consistent top ranking in comparative surveys of human resource development. The education system, which is anchored and run by the government in collaboration with the private sector, appears to debunk the conventional fallacy that governments are notoriously poor at organising and administering skills development programmes, particularly on the national level. In fact, the system seems to provide a rare example of a concerted national effort, operating at different levels of government, involving multiple institutions and policy directions and with private-public sector collaboration. The ability of the Singaporean government to successfully match the supply and demand of education and skills in the labour market is a major source of Singapore's competitive advantage (Cheung and Sidhu 2003:118).

In Singapore's school education system students receive six years of primary education, and four to five years of secondary education, followed by two years at a junior college, polytechnic or the Institute for Technical Education (ITE). At the school level, Singapore has an educational vision with a slogan: 'Thinking Schools, Learning Nation'. This represents a vision of a school system that can develop creative thinking skills, lifelong learning and nationalistic commitment in the youth (Lee *et al.*, 2008:1462).

Singapore's success is the result of several decades of judicious policy and effective implementation. On the spectrum of national reform models, Singapore's comprehensive goal has been to move the whole educational system to be public policy-driven. Good teachers and effective school leaders form its cornerstone. According to Block (2009:83) a high-quality teacher workforce doesn't simply happen by chance or as a result of a cultural respect for teaching; it is the result of deliberate policy directions that the government follows. Singapore has developed a comprehensive system for selecting, recruiting, training, compensating and developing the teachers and school

principals. The Organisation for Economic Cooperation and Development (OECD) report (2011:172-173) lists ten key lessons that other countries can learn from the Singaporean education system:

- (i) Vision and leadership;
- (ii) Alignment of the education system to economic development goals;
- (iii) Coherence of the education system;
- (iv) Clear goals, rigorous standards and high-stakes gateways;
- (v) Curriculum, instruction and assessment to match the standard;
- (vi) High-quality teachers and principals;
- (vii) Strong central capacity and authority to act
- (viii) Accountability
- (ix) Meritocratic values; and
- (x) Adaptation of proven practices from abroad (Ashton and Sung 1997:107).

(i) Vision and leadership

Political leaders with a bold long-term vision of the role of education in a society and economy are essential for creating educational excellence. Change in political leadership cannot be a hindrance to attaining excellence. A guiding coalition needs to be created to keep the vision moving forward rather than having a change of direction with every change of administration (Stewart 2010:233).

(iv) Alignment of the education system to economic development goals

According to Kuruvilla *et.al* (2002:1462) the strong link between education and economic development in Singapore has produced several dividends. Some of these include keeping the investment in education a central priority, making educational policies highly pragmatic, placing immense zeal on the high-quality Mathematics and Science education.

(v) Coherence of the education system

In many countries there is an enormous gap between policies and implementation at the school level. In Singapore, whenever a policy is developed or changed, there is enormous attention to the details of implementation from the ministry of Education, to the National Institute of Education, cluster superintendents, principals and teachers. The result is a remarkable fidelity of implementation and relatively little variation across schools. While different mechanisms would be needed in larger, more multi-layered or decentralised systems, finding ways to bring greater alignment and to make all the parts work together is essential for producing results in the classroom in the educational systems of other countries (Ashton *et.al* 1999:1473).

(vi) Clear goals, rigorous standards and high-stakes gateways

Singapore's education system is extremely rigorous. The academic standards set by its Primary School Leaving Examination and O-level and A-levels are as high as anywhere in the world. Students, teachers and principals all work very hard towards these important goals. All students have a strong early foundation in the core subjects of mathematics and science (Godfrey 1997:122).

(vii) Curriculum, instruction and assessment to match the standards

Singapore does not just establish high standards and then leave it to the individual teachers to figure out how to achieve them. Serious attention to curriculum development has produced strong programmes in Mathematics and Science, in particular, and has ensured that teachers are well-trained to teach these subjects. Having been very successful as a knowledge transmission education system, Singapore has a curriculum, pedagogy and assessment that lead to a greater focus on high-level skills.

(viii) High-quality teachers and principals

Not so long ago, Singapore often had teacher shortages and was not always able to attract the highest quality people into teaching. To address this problem, the government put in place a comprehensive and intensive human resource system to obtain high-quality teachers and school leaders. The system rests on active recruitment of talent, accompanied by coherent training and serious and continuing support. Education policies in Singapore today are less focused on structure and more on maintaining and increasing the quality of the educational professions (Godfrey 1997:125).

(ix) Strong central capacity and authority to act

The Ministry of Education in Singapore is staffed by knowledgeable, pragmatic public officials, trained at some of the best universities in the world. They function in a culture of continuous improvement; constantly assessing what is working and what is not working using both data and practitioner experience. They respect and are respected by professionals in schools. Stewart (2010:235) argues that whilst countries vary in whether the locus of authority is at the national state/province or local level, whoever is charged with the responsibilities of developing strategy and holding authority would do well to emulate the competence and capacity of the Singapore Ministry of Education.

(x) Accountability

Singapore runs on performance management. Teachers, principals and students all get incentives for working hard. To maintain the performance of teachers and principals, serious attention is paid to setting annual goals, to garnering the needed support to meet them and to assessing whether they have been met. Data on student performance are included, but so too are a range of other measures, such as contribution to school and community, and judgements by a number of senior practitioners. Reward and recognition systems include honours and salary bonuses. Individual appraisals take place within the context of school

excellence plans. While no country believes it has got accountability exactly right, Singapore's system uses a wide range of indicators and involves a wide range of professionals in making judgements about the performance of the individual in the education system.

(xi) Meritocratic values

Underpinning the whole Singaporean system is the belief - for students of all ethnic backgrounds and all ranges of ability - that education is the route to advancement and that hard work and effort pay off. The government has developed a wide range of educational and social policies to advance this goal, with early intervention and multiple pathways to education and career. The success of the government's economic and educational policies has brought about immense social mobility that has created a shared sense of national mission in Singapore. The schooling system gives all students the skills and knowledge needed to succeed by ensuring that every school has the best teachers and assigns these teachers to the students who are struggling. Singapore has been successful at training their teachers to diagnose student challenges and figure out how to address those challenges successfully. The belief that achieving high standards is a function of effort is stoutly embraced in Singapore and extends to the great emphasis put on raising the quality of the teachers. Singapore is exemplary in the professional way that its teachers view their responsibilities. All these elements of policy produce a remarkably well-performing education system.

(xii) Adaptation of proven practices from abroad

The design of Singapore's education system owes a lot to lessons from other parts of the world. Focused and universal use of international benchmarking and research has enabled Singapore to move up the value chain and foster a culture in which it never stands still. This system recognises the rapidity of change around the world and has the capacity and inclination to learn and adapt.

Singapore fosters a global outlook for everyone in the educational set up. The teachers, principals, and students are expected to have global awareness, cross-cultural skills, to scale new heights in a changing world and to be future-ready. While the specific details of Singapore's education system remain particular to Singapore, the lessons from its education journey to excellence can be generalised for other settings.

Success requires a clear vision and belief in the centrality of education for students and the nation; persistent political leadership and alignment between policy and practice; a focus on building teacher and leadership capacity to deliver reforms at the school level; ambitious standards and assessments; broad support in the population; and a culture of continuous improvement and future orientation that benchmarks educational practices against the best in the world. It is now widely recognised as having one of the world's leading economies and an advanced and successful education system. Singapore's political leaders were determined from the beginning not just to attract foreign business investment with low-cost labour, but to raise incomes as rapidly and widely as possible. They knew that education and training had to be key elements in their strategy. More than any other country in the world, Singapore has aggressively pursued a policy of advancing in education and other arenas by systematically benchmarking the world's best performance and creating a world class education system based on what they have learned through that benchmarking.

3.16 CONCLUSION

Public Administration is a broad and multidisciplinary field which draws heavily upon other related fields of study. It is on the basis of this that it lacks a succinct definition that commands general assent. However, an attempt was made in this chapter to trace back the history of Public Administration in order to connect the past with the present. A definition that inter-links Public Administration and policy implementation was then adopted for the purpose of this study. This linkage is illustrated in the manner in which the functional set ups of Public Administration such as the public schools are entrusted with the responsibilities of implementing educational policies. These policies are

developed and enforced by the political decisions of the majority party in a democratic state. They are then passed on as regulations and laws by the legislature. The policies supported by the majority reflect the mandate that is given by the citizenry as and when they vote the politicians into power. Policies should be aimed at the promotion of the general welfare of society. Public officials perform administrative roles of implementing these policies. In a schooling system, these administrative roles are performed by the system level officials, subject advisors, school managers and the teachers.

For the government to be able to deliver services effectively and efficiently, an improved administrative service is a prerequisite. However, this improved administrative service is often handicapped by structural challenges, particularly in policy implementation. Policy implementation models provide governments with alternative strategies of addressing these structural challenges. Levin and Ferman (1986:317) warn that although effective implementation hinges upon good administration, that is not adequate in itself. Public officials, particularly those who serve in the higher echelons of the administration should therefore be sensitive to the political implications of their actions. Senior managers need to understand that there is a stark difference between theory and practice when policy is implemented, therefore, they need to be versatile and adapt to the environment where policy is to be implemented. They should be mindful of the fact that administrative executive institutions in the public sector operate within a political milieu wherein the policies to be implemented ought to respond to the needs of the community. As Shisana and Louw (2006:451) point out, policy is effective if it aids the nation in attaining its long-term goals of national development.

The strength of a public service is built on the core values of democratic governance and administration which are stated clearly in section 197(1-4) of Constitution of the Republic of South Africa, 1996. These core values should speak intelligibly to principles of non-political alliance, impartiality, professionalism, responsiveness, effectiveness, efficiency and accountability that should be upheld by all public officials. Administrative activities should also

be based on the active participation and the involvement of the community. Administrative systems, which are the possessors of extensive knowledge for the public, are also eminent in policy issue systems.

For any policy to be implemented effectively and efficiently, its intentions should be clear and the resources should be adequately allocated. The intentions of the policymakers with regards to the context of the research problem of this study is to invest in the human resources and to deliver a solid Mathematics and Science school-based education system to every child, thus bridging the gap of the mismatch that exists between the supply and the demand of scarce skills in the South African labour market. Competent teachers, administrators, subject advisors and school principals are the human resource base that forms the cornerstone of this system.

CHAPTER 4

AN OVERVIEW OF THE RELEVANT LEGAL FRAMEWORKS FOR THE ADMINISTRATION OF EDUCATION IN SOUTH AFRICA

4.1 INTRODUCTION

The legal framework sets forth the rules which enable a government to provide various public services and to allocate state resources thereto. Administrative bodies such as schools are affected and governed by a network of legislation, regulation and policies. In South Africa, the legislative framework consists of constitutional elements as well as the national and provincial legislative elements. There are original and subordinate forms of legislations. Original legislation is promulgated by parliament and the examples thereof are education and general legislation, while subordinate legislation is issued in terms of or in authority of the original legislation and the examples are regulations and proclamations. The discussions in this chapter are mainly tilted towards original legislation (Van Heerden and Crosby 1996:3).

Black (1979:42) defines administration as ‘Acts which are necessary to be done by legislative body or such are devolved from it by organic law of its existence’. In this study, administration is defined as the system which allocates authority in a system such as education and wherein management or governance (terms used inter-changeably in Chapter 4) is a sub-system that operates within the system of administration. The system deals with a variety of administrative responsibilities including the implementation of policy, maintenance of organisational stability and ensuring that routine organisational tasks are carried out efficiently and effectively through such functions as planning, organising, supervising, coordinating, budgeting and staffing. It is imperative for public officials of the Department of Education (DoE) and the Provincial Education Departments (PEDs) to understand the legislative framework within which education is governed and managed. This chapter will analyse the legislative framework for the administration of education in South Africa. The legislative

framework discussed in this chapter mainly subscribes to the constitutional ethos of cooperative government. This legislative framework is grounded in the purpose and values of transformation that are shaped by the ethos of cooperative government. According to Smith and Foster (2001:260) cooperative government is a normative standard that guides the policy making process, where two legislatures have concurrent powers to make laws in respect of the same functional areas, and the only reasonable way in which these powers can be implemented is through cooperation.

South African law is essentially an amalgamation of constitutional law, substantive law and procedural law. Constitutional law consists of many directives relating to the composition and functioning of all bodies that exercise government authority (e.g., public schools). Substantive law deals mainly with the legal principles and rules that prescribe and regulate the legal rights and obligations of persons. Procedural law is the part of the legal system that prescribes the procedure for enforcing legal rules. (Joubert and Prinsloo 2011: 2 - 8). The legal framework analysis as discussed in this chapter will solely revolve around the constitutional law.

4.2 EDUCATION AND THE LAW

There is an inextricable link between democracy, education and law. This interrelationship is evident from the Constitution, International Law and education legislation. The following examples catalogue this interrelationship:

- The founding provision of the Constitution of South Africa Act No. 108 of (1996) (Section 1) confirms that South Africa is a democracy based on the rule of law;
- Several of the fundamental rights enshrined in the Constitution of South Africa Act No. 108 of 1996, including the rights to education (Section 29); equality (Section 9), human dignity (Section 11); freedom of expression (Section 16); freedom of association (section 18); freedom of religion, belief and opinion (Section 15); the right to

use language and culture of choice (Section 30); and the right to belong to a cultural, religious and linguistic community have particular significance for education;

- The Convention on Prevention of Discrimination in Education of 1962 endeavours to respect the diversity of education systems and provides that the establishment or maintenance, for religious or linguistic reasons, of separate education systems which is in keeping with the parent's or legal guardian's education, does not constitute discrimination. The Convention is aimed at preventing discrimination and promotes equal treatment in education;
- Article 30 of the Convention of Prevention of Discrimination in Education of 1962 provides that in those states in which ethnic, religious or linguistic minorities or persons of indigenous origin exist, a child belonging to such a minority or who is indigenous shall not be denied the right, in community with other members of his or her group, to enjoy his or her own culture, to profess and practise his or her own religion, or to use his or her own language;
- African Charter on the Rights and Welfare of the Child (OAU Doc. CAB/LEG/24.9/49:1999) affirms the democratic values provides in Section 2 that the education of the child must be directed to the preservation and strengthening of positive African morals, traditional values and cultures; the preparation of the child for responsible life in a free society, in the spirit of understanding tolerance, dialogue, mutual respect and friendship among all ethnic, tribal and religious groups;
- The preamble of the National Education Policy Act No. 27 of 1996 provides that legislation should be adopted to facilitate the democratic transformation of the national system of education into one that serves the needs and interests of all the people of South Africa and upholds their fundamental rights;
- The directive principle in Section 4 of the National Education Policy Act No. 27 of 1996 contains the democratic requirement that the national Minister of Education must ensure broad public participation

in the development of education by including stakeholders in policymaking and governance in the education system;

- Section 4(b) of National Education Policy Act No. 27 of 1996 contains the principle that policies should be developed to include the advancement of democracy in the education system;
- The South African Schools Act No. 84 of 1996 gave formal effect to a participative form of democracy by redistributing power to local school governing bodies;
- Centralised control over certain aspects of educational decision-making and the establishment of cooperative governance between education authorities and the school community (Squelch, 1998:101; Oosthuizen et al, 2003:195). In principle these provisions were intended to establish a democratic power sharing and co-operative partnership among the state, parents, and educators (Karlsson, 1998:37);
- In terms of the South African Schools Act No. 84 of 1996, members of school governing bodies are democratically elected to represent parents, educators, learners and personnel of a school. School governing bodies have the democratic and statutory authority to adopt a constitution (Section 20); recommend appointment of staff (Section 20), determine the language policy of a school (Section 6), take measures to ensure learner discipline at schools (Section 8, Section 9), and control of school property and financial resources (Section 20, Section 21).

It is evident that a number of legal instruments contain provisions that require democratic transformation through education, fundamental rights and the law. However, these legal instruments are silent on the nature, tenets and principles of democracy and do not stipulate the application of any particular model of democracy.

4.3 LEGISLATION APPLICABLE TO PUBLIC ADMINISTRATION

The list of Acts enumerated below provides a brief summary of each of the major statutes and regulations which are applicable to education and public administration and impact heavily on the theme of this chapter.

4.3.1 Public Service Act

The *Public Service Act (PSA)* of 1994 constitutes the general legislative framework for the administration of the public service. Subject to the other legislation stipulated below, it sets out the general rules governing duties, powers and conditions of service of persons employed in the public service, including school principals, teachers and system level officials.

4.3.2 Public Service Commission Act

The *Public Service Commission Act (PSCA)* of 1994 deals specifically with the establishment and operation of the Public Service Commission (PSC). It sets the rules for dealing with the complaints and grievances of officials in the public service.

4.3.3 Public Finance Management Act

The *Public Finance Management Act (PFMA)* of 1999 is intended to regulate financial management in government and to ensure that all revenue, expenditure, assets and liabilities are managed efficiently and effectively; more specifically the objective of the PFMA is to ensure transparency, accountability and sound management of the revenue, expenditure, assets and liabilities of the institutions of government.

4.3.4 Labour Relation Act

The *Labour Relations Act (LRA)* of 1995 deals with collective bargaining and related matters, including strikes and lockouts, trade unions and employer

organisations and unfair labour practices. The LRA includes the *Code of Good Practice: Dismissal (LRA Code)* (Schedule 8). It is under this Act that various bargaining councils are formed in the education sector, including the *Public Service Co-ordinating Bargaining Council (PSCBC)* and the *Education Labour Relations Councils (ELRC)*.

4.3.5 Employment Equity Act

The *Employment Equity Act (EEA)* of 1998 is a special section of legislation which applies to all employers and employees in the education sector. It is designed to achieve equity in the workplace by promoting equal opportunities and fair treatment. It eliminates unfair discrimination by implementing affirmative action measures to redress the disadvantages in employment experienced by designated groups. This is done to ensure that representation in all occupational categories and levels of the workforce are equal.

4.3.6 Skills Development Act

The *Skills Development Act (SDA)* of 1998 is meant to provide an institutional framework to devise and implement national, sectorial and workplace strategies to develop and improve the skills of the workforce.

4.3.7 Basic Conditions of Employment Act

All public and private sector employees are covered by the *Basic Conditions of Employment Act (BCEA)* of 1997. This Act is meant to provide for minimum employment standards in both the public and the private sector for both unionised and non-unionised workers. This Act or anything done under it takes precedence over any agreement including a collective agreement, whether entered into before or after the commencement of this Act. However, Section 4 of the Act makes it clear that the standards contained therein do not affect any contractual benefit that is more favourable to the employee than such standards.

4.4 SOME OF THE KEY EDUCATION POLICIES IN SOUTH AFRICA SINCE 1994

In 2009, the current government made education a key priority. In doing so, it has placed education and skills development at the centre of the administration's priorities. This has necessitated the creation of two ministries with clear responsibilities. The ministry of Basic Education focuses primarily on schools in order to achieve the goal of a quality basic education. The ministry of Higher Education and Training is tasked to deliver an improved higher education and training system which provides a diverse range of learning opportunities for youths and adults. These departments work in tandem. Legislation has also been promulgated to create a framework for transformation in education and training. A summary of key policies and legislation in South Africa since 1994 are listed below:

- *The Constitution of the Republic of South Africa Act No. 108 of 1996*, which requires education to be transformed and democratised in accordance with the values of human dignity, equality, human rights and freedom, non-racism and non-sexism. It guarantees access to basic education for all, with the provision that everyone has the right to basic education, including adult basic education. The fundamental policy framework of the Ministry of Education is stated in the Ministry of Education's first White Paper: Education and Training in a Democratic South Africa: First Steps to Develop a New System (February, 1995). This document was adopted as the point of departure for the Education Policy Framework of the Government. After extensive consultation, negotiations and revision, it was approved by Cabinet and has served as a fundamental reference for subsequent policy and legislative development in education.
- *The National Education Policy Act (NEPA) (1996)* was designed to inscribe in law the policies, as well as the legislative and monitoring responsibilities of the Minister of Education, and to formalise the relations between national and provincial authorities. It laid the

foundation for the establishment of the Council of Education Ministers (CEM), as well as for the Heads of Education Departments Committee (HEDCOM) as inter-governmental forums to collaborate in developing a new education system. As such, it provides for the formulation of national policies in general and further education and training for, inter alia, curriculum, assessment and language policy, as well as quality assurance. NEPA embodies the principle of cooperative governance, elaborated upon in Schedule (3) of the Constitution of the Republic of South Africa Act No. 108 of 1996.

- *The South African Schools Act No. 84 of 1996.* This is the cornerstone of South Africa School law. It provides for the decentralisation of authority to schools. SASA also promotes access, quality and democratic governance in the schooling system. It ensures that all learners have the right of access to quality education without discrimination, and makes schooling compulsory for children aged 7 to 14. It provides for two types of schools - independent schools and public schools. The provision in the Act for democratic school governance, via school governing bodies, is now in place in public schools country-wide. The school funding norms, outlined in SASA, prioritise redress and target poor public schools with regard to the allocation of funds. SASA has been amended by the Education Laws Amendment Act 24 of 2005, so as to authorise the declaration of schools in poverty-stricken areas as ‘no-fee schools’.
- *The Further Education and Training Act No. 98 of 1998, Education White Paper 4 on Further Education and Training (1998) and the National Strategy for Further Education and Training (1999-2001).* The latter provides the basis for the development of a nationally coordinated further education and training system, comprising the senior secondary component of schooling and further education and training (FET) colleges. It requires these FET institutions, established in terms of the new legislation, to develop institutional plans, while

making provision for programme-based funding, as well as a national curriculum for learning and teaching. Like SASA, it provides for the creation, governance and funding of these institutions, both public and private.

- *The Higher Education Act (1997)* provides for a unified and nationally planned system of higher education. It gives the green light for a statutory Council on Higher Education (CHE), which advises the Minister while being responsible for quality assurance and promotion. The Higher Education Act and Education White Paper 3: A Programme for the Transformation of Higher Education (1999), formed the basis for the transformation of the higher education sector, with implementation being guided by the National Plan for Higher Education (2001).
- A whole spectrum of legislation, including the *Employment of Educators Act (1998)*, regulates the professional, moral and ethical responsibilities of educators, as well as the competency requirements for teachers. The historically divided teaching force is now governed by one act of parliament and one professional council - *the South African Council of Educators Act No.84 of 2000 (SACE)*.
- *The Adult Basic Education and Training Act (ABET) (2000)* provides for establishing public and private adult learning centres, funding for ABET, the governance of public centres, as well as for quality assurance mechanisms.
- *The South African Qualifications Authority (SAQA) Act of 1995* provides for the establishment of the National Qualifications Framework (NQF), which constitutes the scaffolding for a national learning system that integrates education and training at all levels. The joint launch of the Human Resources Development Strategy by the Minister of Labour and the Minister of Education on 23 April 2001 reinforces the resolve to establish an integrated education, training

and development strategy that will harness the potential of our adult learners.

- *The National Curriculum Statement (Grades R to 12)* embodies the vision for general education to move away from a racist, apartheid, rote model of learning and teaching, to a liberating, nation-building and learner-centred outcomes-based initiative. In line with training strategies, the reformulation is intended to allow greater mobility between different levels and between institutional sites, as well as to promote the integration of knowledge and skills via learning pathways. Its assessment, qualifications, competency and skills-based framework encourage the development of curriculum models that are aligned to the NQF in theory and practice.
- *The White Paper on Education and Training (1995)*. The attrition of Science and Mathematics students in black schools is a special case of the broader problems of student retention, teacher preparation, inadequate facilities and materials, inadequate guidance on curriculum choice, and examination strategy. For a variety of reasons, only one in five black students chooses Physical Science and Mathematics in Grade 10, and the trend of performance in the senior certificate examinations has been low overall. The consequence is a dearth of black students with Science and Mathematics qualifying for normal entry to higher education, fewer still continuing in Mathematics and Science-based programmes, and a trickle entering Mathematics and Science-based professional and technological fields in the economy. Mathematics and science programmes in universities therefore have a perennial shortage of high quality black candidates in these subjects. In particular, the number of Science and Mathematics teachers graduating from the higher institutions of learning, is far too small to make an impression on the need in schools, and their subject knowledge and professional confidence is generally poor.

- A cycle of mediocrity perpetuates itself through their efforts in the classroom. If this cycle is wasteful from an educational point of view, it is catastrophic from the perspective of national developmental needs. The Ministry of Education is committed to make its contribution to the broader field of NSMSTE policy through its special responsibility for national standards in the fields of curriculum and teacher education. In particular, without derogating from the value of the many existing intermediate and academic development programmes in Science and Mathematics, from which much has been learnt, the Ministry of Education will give full support to a new intervention that started in 1995 to recover Science and Mathematics students, and upgrade both their knowledge and attitudes to these subjects.

- *The Education White Paper on Early Childhood Development (2000)*, provides for the expansion of, and full participation by 5 year-olds in pre-school reception grade education by 2010, as well as for an improvement in the quality of programmes, curricula and teacher development for 0-to-4-year-olds and 6-to-9-year-olds.

- *White Paper on Science and Technology (1996)*. Science and Technology are considered to be central to creating wealth and improving the quality of life in contemporary society. To facilitate this function it is accepted that the government has a prime responsibility in creating an enabling policy environment in terms of regulatory and funding mechanisms This White Paper promotes the full spectrum of science and technology within the context of problem solving in service of national needs, best expressed by the Growth and Development Strategy (GDS) of the government.

- *Education White Paper 6 on Inclusive Education (2001)* explains the intention of the Department of Education to implement inclusive education at all levels in the system by 2020. Such an inclusive system will allow for

the inclusion of vulnerable learners and reduce the barriers to learning by means of targeted support structures and mechanisms. This, in turn, will improve the participation and retention levels of learners in the education system, particularly with regard to those learners who are prone to dropping out.

- *The General and Further Education and Training Quality Assurance Act, Act 58 of 2001*, provides for the establishment of Umalusi, which is charged with the provision of quality assurance in general and further education and training, the issuing of certificates at the various exit points, control over norms and standards of curricula and assessment practices, as well as conducting the actual assessment.
- *The National Student Financial Aid Scheme Act, Act 56 of 1999*, provides for the granting of loans and bursaries to eligible students attending public higher education institutions, as well as for the administration of such loans and bursaries.
- *The Further Education and Training Colleges Act, 2006 (Act No. 16 of 2006)*, provides for the regulation of FET, the establishment of governance bodies and the funding of public FET colleges, the registration of private FET colleges and the promotion of quality in further education and training (Department of Education annual Report 2009/10:16 -18).
- *Admission Policy:* South Africa's Bill of Rights (chapter 2 of the Constitution of the Republic of South Africa, Act 108 of 1996) prohibits all forms of direct and indirect discrimination and thus provides the general framework for all educational policies, including the policy on admission to public schools, while at the same time protecting certain rights, such as language rights. Guided by the Bill of Rights, the admission of learners into public schools is governed and regulated by the Admission Policy for Ordinary Public Schools (hereafter referred to as the Admission Policy) (DoE 1998) and Section 5 of the South African Schools Act (Act 84 of 1996) (hereafter referred to as the Schools Act or SASA). Section 5(5) of the

Schools Act grants schools and school governing bodies' authority regarding admission of learners to public schools. This section states that the admission policy of any public school must, at all times, be consistent with the Constitution of the Republic of South Africa, the Schools Act and all applicable provincial laws (DoE 1998). Section 5(1-4) of the Schools Act and Sections 9 to 13 of the Admission Policy detail the requirements and limitations for the admission of learners to public schools.

The Admission Policy, also, states that the Department of Education may, in consultation with school governing bodies, create school feeder zones in order to prioritise schools for purposes of learner admission. According to Section 34(d) (1-111) of the Admission Policy, the objective of school feeder zones is to ensure that learners who live in the feeder areas or whose parents work and/or live close to where the school is located are prioritised for admission to public schools (DoE 1998). Section 33 of the Admission Policy empowers the Minister of Education, in consultation with governing bodies, to determine feeder zones for public schools. This section states that such feeder zones need not be geographically adjacent to the school or each other, and is aimed at regulating the number of learners per school (DoE 1998).

Critical areas in which school governing bodies are expected to make decisions include the levying of school fees, development of school language policy, access policy and code of conduct for learners (Soudien and Sayed 2004:104). However, given their inherited privileges, school governing bodies of former Model C schools have the financial and human resources capacity to exercise the authority and powers given to all school governing bodies (Pampallis 2003: 148). Karlsson *et al.* (2001: 77) found it ironic that the very decentralisation that has led to greater democratisation of schooling through the creation of school governing bodies in South Africa is in effect recreating inequities in schools, albeit unintentionally. However, they assert that inequities seem increasingly to reflect class rather than race, but emphasise that race continues to be a significant factor in limiting the opportunities of black children seeking admission to former white schools (Karlsson *et al.* 2001: 177).

Some of the defunct repressive laws that prompted a shift towards the adoption of the more progressive laws of the current democratic order in South Africa are also mentioned in this chapter. Whenever reference is made to any provision of the Constitution of the Republic of South Africa Act No. 108 of 1996 in this chapter, legislative citations are included in parentheses in the text. The analysis of the legislative framework for the administration of education in this chapter is significantly guided by the following three pertinent policy questions. Each question is stated in concomitance with two follow-up sub-questions:

QUESTION 1: What is the constitutional basis for the administration of education in South Africa? Specifically:

- What are the provisions of the Constitution of South Africa Act No. 108 of 1996 regarding the division of powers between the national, provincial and the local governments with respect to public administration in general and education in particular?
- What are the legal provisions regarding entrenched human rights which affect the administration of education in South Africa?

QUESTION 2: How is the administration of public education in South Africa structured? More specifically:

- To which policy actors (groups or individual stakeholders) does national and provincial legislation confer specific authority or voice with respect to public administration in general and education in particular and what are the general powers and duties of these bodies?
- Are there any significant differences in the governance framework across provinces and the national government and are there any apparent conflicts between national and provincial legislative provisions or between either of these and the Constitution?

QUESTION 3: How does the administration framework deal with the exercise of authority and voice with respect to the various domains of the

administration of education in South Africa? Specifically, and for each domain:

- What authority does the government retain and what authority or voice does each delegated body have with respect to this domain?
- To what extent is the authority and voice so assigned constrained by parameters set by national or provincial legislation, including pre-determined conditions, stakeholder rights and provision for accountability (Smith and Foster 2001:5).

In recognition of the confusion in terminology which abounds internationally with regard to terms such as governance, management and administration, it is important to point out at the outset that the scope of discussion is only limited and restricted to an analysis of the legal framework of educational administration. It is also important to underscore right from the beginning of the discussions in this chapter what this analysis does not attempt to do. First, this analysis of the legal framework does not deal with the most advanced level of policy-in-action of the administration of education in South Africa, but merely deals with policy-in-intent. This analysis of the legal framework provides insight into the rules of the game but not on how the game is played. Furthermore, this chapter provides a complete understanding of the administration of education which includes a diagnosis of the effects it has on the schools education system, learners and other stakeholders as well as the results achieved- policy-in-effect. This analysis is an attempt to make a contribution in an on-going discourse to better understand how the legal provisions can be optimally used for the effective and efficient administration of education in South Africa.

4.5 THE CONSTITUTIONAL BASIS FOR THE ADMINISTRATION OF EDUCATION IN SOUTH AFRICA

The first element for the administration of education is the Constitution of the Republic of South Africa Act No. 108 of 1996 which replaced the Interim Constitution of the Republic of South Africa (1993) that brought an end to

apartheid. The Constitution fulfils two basic roles in establishing a legislative framework. The first role is that it provides for the structuring of government and the distribution of legislative authority among the various tiers of Government. The second role is that by virtue of entrenching the Bill of Rights, the Constitution stipulates certain fundamental principles, rights and freedoms which must be respected by the government when it is enacting legislation and public officials when they are implementing policy. Section 29 of the South African Constitution Act No. 108 of 1996 consists of a cluster of education rights and has consequently been called a hybrid right. This is because Section 29(1) characterises the socio-economic nature of the right whereas Sections 29 (2) and (3) are civil and political rights. As a socio-economic right, Section 29(1) obliges government to make education available and accessible to everyone. Section 29(1) (a) in particular entitles everyone to a basic education (Arendse 2011:97).

4.5.1 The structures and distribution of legislative authority over education amongst the spheres of Government in South Africa

The formulation of general education policy in the form of norms and standards and the administration of education in the national sphere are the responsibilities of the Minister of Basic Education (National Education Policy Act, No. 27 of 1996: Section 2-7). A minister, assisted by a deputy minister is charged with the political responsibility to ensure that the policies of the government are implemented, and for this reason, ministers and deputy ministers are almost invariably chosen from the rank and file of the dominant political party. The political leaders in the provinces are called Members of the Executive Council (MECs). The department of education also has a head of department, known in the national sphere as a Director-General (Joubert and Prinsloo 2011:13).

Three distinct spheres of government exist according to Section 40 (1) of the Constitution of South Africa Act No. 108 of 1996, namely the national, provincial and local spheres. In the national sphere of government, there is a full range of political structures, such as the Cabinet, the General Assembly and the National Council of Provinces. In the provincial sphere of government, each province has

its own legislature which is empowered to make laws on matters which fall within the competence of the province. Each province also has a premier and elected political representatives. In the local sphere of government, there are mayors and municipal councils. The characteristics of these three spheres of government are that they are distinctive, interdependent and interrelated. Although each sphere has its own unique characteristics and place in the constitutional system, each is dependent on the other spheres of government, which form a system of cooperative government. Simply put, no sphere is subordinate to another. The spheres of government participate and co-operate in mutual and reciprocal relationship. South Africa may share the ‘democratic’ label with other countries, but this does not mean that these countries’ constitutional systems are identical. Four key characteristics of the South African constitutional dispensation are listed below to facilitate an understanding of the uniquely South African features:

- (i) The Constitution contains an entrenched Bill of rights.
- (ii) The right to basic education is a fundamental right entrenched in the Bill of Rights of the Constitution.
- (iii) Education (excluding higher education) is a functional area of concurrent national and provincial legislative competence (Schedule 4 of Constitution of South Africa Act No. 108 of 1996. There are provisions in the Constitution dealing with conflicts between national and provincial legislation on concurrent matters. National legislation does not automatically prevail over provincial legislation.
- (iv) The common notion of hierarchically-structured levels of government does not fit in well with the South African constitutional dispensation. In South Africa, government is constituted as national, provincial and local spheres. A reading of this provision reveals the possibility of disputes and contestations of power among the various spheres of government. However Section 41 of the Constitution provides for a system of cooperative government and spells out, inter alia, the following principles of such government: All spheres of government

and all organs of state within each sphere must co-operate with one another in mutual trust and good faith by:

- Fostering friendly relations;
- Assisting and supporting one another;
- Informing one another of, and consult one another on, matters of common interest;
- Coordinating their actions and legislation with one another;
- Adhering to agreed procedures; and
- Avoiding legal proceedings against one another.

An organ of state involved in an intergovernmental dispute must make every reasonable effort to settle the dispute by means of mechanisms and procedures provided for that purpose, and must exhaust all other remedies before it approaches a court to resolve the dispute. The Constitution of South Africa Act No. 108 of 1996 assigns the national government legislative authority over all functional areas other than those identified as falling within the executive domain of the provinces (Section 44). These include among others the power to enact or amend provincial constitutions.

According to Bray (2005:271) a province is for all practical purposes in charge of all matters relating to school education in that province, and provincial laws will generally prevail over national laws adopted by the national legislature. However, in a case where conflict arises as to which law should prevail, a national law prescribing school norms, policy and standards which apply uniformly in the country such as the SASSA will prevail over a provincial law. National legislation will also apply when aimed at preventing unreasonable action by a province that could harm the interests of another province or the country as a whole. The principle of cooperative government binds the three spheres of government together in their inter-governmental relations. The unique character of each province is recognised and both the provinces and the national Department of Basic Education are seen as equal partners. A simplified representation of how the administration of education is structured and

distributed amongst the three spheres of government in the administration of education in South Africa is given in figure 4

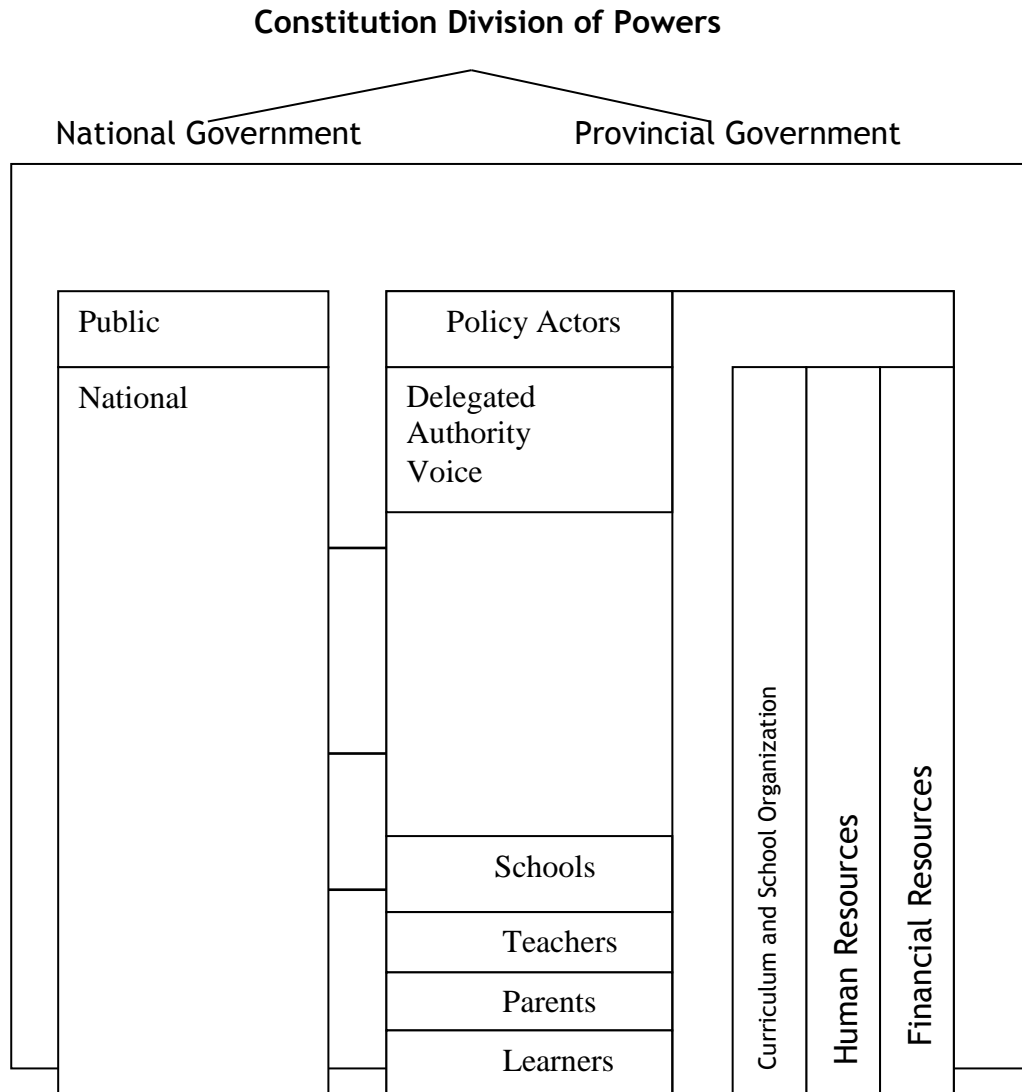


Figure 4.1 South African context of the administration of Education

Source: Educational governance in Canada: A model for Comparative Analysis: Smith W.J, Paquette J.E and Bordonaro T. 1995.

The national government may also assign any of its legislative powers to one or more provinces, as indicated by (Section 44 (1) (iii)) of the Constitution of South Africa Act No. 108 of 1996. Provinces are also assigned legislative authority over the functional areas falling within the exclusive domain of the province, as enumerated in Schedule 4 (Section 104 (1) (b) (iii)). Education (except higher education) is one of the functional areas enumerated in Schedule 4 of the

Constitution wherein the national and provincial governments exercise concurrent jurisdiction. By contrast, the Constitution assigns the national government exclusive legislative jurisdiction over the regulation of all collective bargaining (Section 23 (5)) of the Constitution of South Act No. 108 of 1996; the recognition of union security arrangements (Section 23 (6), in both public and private sectors. It also assigns the national Government legislative jurisdiction over the national and provincial Public Administration and Public Service (Section 197 (1); and the terms and conditions of employment in the Public Service (Section 197 (2)). Provincial governments are assigned certain managerial functions (Section 197 (4)), but not legislative competence (Smith and Foster 2001:20).

There is one further provision of the Constitution of South Africa (1996) that must be taken into account when dealing with the division of powers over education and related matters. Despite the concurrent national and provincial jurisdictions in education and the specific managerial responsibilities for public administration accorded to province, section 100(1) stipulates that when a province cannot or does not fulfil an executive obligation in terms of legislation or the Constitution, the national executive may intervene by taking any appropriate steps to ensure fulfilment of that obligation. These steps may include assuming provincial executive responsibility for the matter concerned. Two provincial education departments namely; Limpopo and the Eastern Cape were put under administration in the year 2012 because of abysmal administration within the school education system (Smith and Foster 2001:21).

The Constitution also provides for various procedures that need to be followed if the national government intervenes in the administration of the province (subsection (2)) of the Constitution of South Africa Act No. 108 of 1996, namely; the tabling of notice in the National Council of Provinces (NCOP), the required approval of the notice within 30 days of the beginning of the intervention and the subsequent role of the NCOP in monitoring the scenario. Finally, (Subsection (3)) allows for the national legislation to regulate the process. These measures are extraordinary, however, given the commitment of the government and the

new ministers of the national departments of education to deal with the serious problems plaguing the administration of education in South Africa; it does not mean that extraordinary measures will not be exhausted when the administration of education in the provinces is in chaos. In 2012, Section 100(1) was put into effect when the two provincial education departments (i.e., Eastern Cape and Limpopo) encountered irretrievable administrative problems and were subsequently placed under administration.

4.6 THE BILL OF RIGHTS

Chapter 2 of the Constitution of South Africa Act No. 108 of 1996 entrenches the Bill of Rights to all law, and binds the legislature, the executive, the judiciary and all organs of state. The Bill of Rights guarantees a range of fundamental rights and freedoms that are relevant in the context of the administration of education. According to Bray (2005:41), it would be grossly erroneous to single out certain human right that is relevant to education, because human rights do not exist in isolation and very often more than one human right is involved in a particular issue. The applicability of a right in a specific scenario will hinge upon the issue that is at stake and the context in which it takes place. The rights that are deemed to be relevant for the discussions in this chapter are the right to equality, the right basic to education, and the right to just administrative action.

4.6.1 The right to equality

According to Vandeyar (2003:194), ten core principles are embedded in the Constitution of South Africa Act No. 108 of 1996 that creates an enabling environment for a transforming, equitable and culturally more communicative education system in South Africa. They are: Democracy, Social Justice and Equity, Equality, Non-racism and Non-sexism, Ubuntu (Human Dignity), an Open Society, Accountability, the Rule of Law, Respect and Reconciliation. These Constitutional imperatives bind all South Africans and all schools to the establishment of a society based on democratic values, social justice and

fundamental human rights. The Constitution is unequivocal on equality, stating that everyone is equal before the law, and may not be unfairly discriminated against on the basis of race, gender, sex, pregnancy, marital status, ethnic or social origin, colour, sexual orientation, age, disability, religion, conscience, belief, culture, language and birth (Constitution of South Africa Act 106 of 1996).

The implications of what is known as the equality clause on schooling are spelt out in the South African Schools Act of 1996. SASA committed the country to an educational system that would not only redress past injustices and contribute to the eradication of poverty and the economic well-being of society, but would also advance the democratic transformation of society, combat racism and sexism and all other forms of discrimination and intolerance, [and] protect and advance our diverse cultures and languages (Preamble to the South African Schools Act, Act 84 of 1996). The ten core principles imply profound transformation of the model of societal organization that was instituted during apartheid.

Equal access to education is an internationally guaranteed right. In countries such as Belgium and India equal access is guaranteed by express provisions relating to education, whereas in Germany and the United States of America (USA), equal access is enforced through the general equality principle. In the USA the principle is instrumental in the elimination of racial segregation gender discrimination and unjustified differences in funding and in the creation of equal opportunities for the disabled. Separate schools for boys and girls are not held to be unconstitutional in South Africa. Under the South African equality principle it could probably be argued that although such schools differentiate on the basis of a ground listed in Section 9(3) of the Constitution of South Africa of 1996, this does mean unfair discrimination. The equality principle can indeed be called into action to challenge discriminatory measures and practices in South African education, and promote equal educational opportunities (Malherbe 2004:25).

According to Joubert and Prinsloo (2011:45), the constitutional guarantee of equality must be construed in the context of the historical understanding of the type South African society once was and against which the Constitution of the Republic of South Africa Act No. 108 of 1996 has set itself. The apartheid political and legal system in South Africa was based on inequality and discrimination. Hence, it is expedient to enforce the right to equality in the post-apartheid constitutional order. The equality principle underpins other rights in that it guarantees the full and equal enjoyment of all other rights; its protective ambit therefore overlaps with those of other rights. The infringement of a specific right very often also amounts to a violation of the equality principle and may even be challenged on the latter ground alone. The equality principle is thus closely linked to and supportive of other rights and accordingly, impacts on education in different ways. In a country that has a history of oppression like South Africa, the principle relates directly to equality of access to education and educational opportunities and facilities.

Auluck (2001: 66) remarks that equality is based on the notion of equal treatment, which is guaranteed by Subsection 9(1) of the Constitution. Clearly, equality implies that all people are on par with one another, and enjoy equal opportunities, including education. The Green Paper on Equality distinguishes between two categories of equality, namely formal and substantive equality (Republic of South Africa 1997b: Chapter. 1). Formal equality ‘implies: ‘The removal of laws that result in discrimination and segregation, whereas substantive equality ‘necessitates the acknowledgement and eradication of the actual social and economic conditions that generate inequality’ (Republic of South Africa 1997b: Chapter. 1). Substantive equality is thus only possible in an environment of equity.

Related to the concept equality are the concepts ‘equal opportunities’ and ‘equal employment opportunities’. The implication of the concept ‘equal opportunities’ within the context of government institutions is to have the opportunity to be treated equally, especially with regard to employment (Republic of South Africa 1997b) hence the concept ‘equal employment

opportunities’. The Green Paper on equality attaches two characteristics to the concept ‘equal opportunities’, namely that of a ‘principle enshrined within the ideal of a representative public service to ensure equality in employment for the equal enjoyment of rights, opportunities, benefits and access in the workplace’ and a ‘tool to eradicate discrimination and unfairness in the workplace in pursuit of a representative public service’ (Republic of South Africa 1997b: Chapter. 3).

Equal employment is thus a condition characterised by fairness and representativeness. The implication of this definition of ‘equal opportunities’ as a principle is a foundation of human resource management in South African public institutions. However, the second part of the Green Paper’s definition refers to the concept ‘equal opportunities’ as a tool to eradicate discrimination and unfairness in the pursuit of a representative public service. It may be argued that the authors of this Green Paper were imprecise in their application of the various concepts. It is difficult to understand how a concept can simultaneously be a principle and a tool. ‘Equal opportunities’ within the context of the employment of public officials is more of a principle than a tool. Policy interventions such as affirmative action (AA) and managing diversity are the tools to pursue equality in the work situation.

While affirmative action as a policy intervention is usually strongly supported by a variety of legislation and other programmes, diversity management strategies seem to be somewhat different in nature, as they essentially go beyond the basic legal requirements. The process of valuing diversity views people’s differences as an asset, rather than a burden to be tolerated (Auluck 2001: 66). Rice (2001:103) shows that in managing diversity the emphasis is on the behavioural aspects in terms of getting the best from every employee, and is strategically driven.

Diversity management is aimed at utilising the diverse status quo to the benefit of the organisation. As a concept, representativeness is closely related to the concept affirmative action as affirmative action programmes are usually accompanied by guidelines on the representation of the various population

groups in the public service. These guidelines frequently include targets or quotas to be met, as illustrated by the following statement in a report of the Public Service Commission (Republic of South Africa 2004: viii):

The quantitative analysis of AA revealed that although a general improvement in representation of blacks at national departments has taken place in middle management (56% blacks as opposed to 44% Whites) and senior management (68% Blacks as opposed to 32% Whites), departments still have a long way to go to meet the 75% target. As far as gender representation is concerned, women make up 56% of all employees within the Public Service whilst they only represent 30.5% at middle and senior management level.

Representativeness as a measuring criteria for the success of the transformation of the South African public service, is derived from the White Paper on the Transformation of the Public Service (Republic of South Africa 1995: Section 10.1), which states that representativeness is one of the main foundations of a non-racist, non-sexist and democratic society, and as such is one of the key principles of the new government. Representativeness needs to be counter-balanced by the rights (Republic of South Africa 1996: Chapter. 2) of everyone in the country, as promoted and protected by those very same public institutions which are supposed to be characterised by their representativeness. Representativeness in South Africa is mostly geared towards addressing the needs of the historically disadvantaged or designated groups.

The concepts of historically disadvantaged and designated groups or persons have different but related meanings. Authors do not use the two concepts simultaneously, but either the one or the other. The Employment Equity Act (Republic of South Africa 1998) defines the concepts 'designated groups' and designated employer. In terms of the Employment Equity Act No. 55 of 1998 (Republic of South Africa 1998: s (1)), 'designated groups' means 'black people, women and people with disabilities' - with 'black people' as a generic term which means blacks, Coloureds and Indians. Some scholars (Klug 1991; Mello 2000; Adam 2000) and official documents (Republic of South Africa 2001;

Republic of South Africa 1993) appear to prefer the concepts historically disadvantaged groups and previously disadvantaged groups (Wessels 2005: 136). In this study 'previously disadvantaged' groups is used.

If it is true that affirmative action is intended to discriminate in favour of members of the previously disadvantaged groups, it is not because they are black or female, but because they were disadvantaged, it would be more correct and equitable to define the designated group for affirmative action purposes as 'individuals disadvantaged on the grounds of race, gender and disability' (Republic of South Africa 1997b: Chapter 1; Mello 2000:32). The implication of this definition would be that when candidates are considered for appointment or promotion, only those who can prove that they were disadvantaged on the grounds of race, gender or disability will be regarded as part of the designated group. This principle is reflected in the Preferential Procurement Regulations, 2001 (Republic of South Africa 2001: 1(h)) which restricts the meaning of the concept 'historically disadvantaged individual' within the context of procurement to specific people, dates and citizenship. Although it may be true that the majority of members of the designated groups may be previously disadvantaged, it may also be true that designated groups include members who are not historically disadvantaged individuals (Wessels 2005: 137). Examples of such individuals are members of designated groups who obtained South African citizenship after 1994, or went to school or were born after 1994.

4.6.2 The Right to Basic Education

Basic education enjoys recognition as both a fundamental human right and a development priority in terms of international, regional and national legal instruments and development frameworks. On the legal front, the Universal Declaration of Human Rights (1948), the International Convention on the Elimination of all forms of Racial Discrimination(1969), the Convention on the Elimination of Discrimination against Women (1979), the Convention on the Rights of the Child (1989), the African Charter on the Rights and Welfare of the Child (1989), and the Constitution of the Republic of South Africa Act No. 108 of

1996 recognise the right to basic education, with a specific focus on securing the education rights of the most vulnerable and marginalised people.

On the international and regional development front, United Nations Education, Scientific and Cultural Organisation's (UNESCO's) Education for All (2000), the UN's Millennium Development Goals (2000), the African Union's (AU's) New Partnership for African Development agenda (NEPAD, 2001), and (South African Development Community) SADC Regional Indicative Strategic Development Plan (RISDP) recognise the fundamental link between the realisation of the right to education and improved and sustainable social and economic development. More locally, whilst South Africa's national development plans have consistently recognised the importance of education, in recent years, access to quality education has acquired an ever-increasing priority status on the national development agenda. Recently, improving the quality of basic education was identified as one of 12 development outcomes on which government will focus between 2010 and 2014 (Department of Basic Education: Delivery Agreement for the Basic Education Sector, 2010).

The South African Human Rights Commission (SAHRC) has various powers that enable it to fulfil its mandate as a Chapter 9 institution established to guard democracy in South Africa. One of these powers includes the power to annually monitor progress made by all organs of the state in the realisation of constitutional rights of children. This is achieved through the provision of an annual report by the organs of the state to the SAHRC on measures these organs have taken towards realising the rights in the Bill of Rights (South African Human Rights Commission, 2010). One of the challenges experienced by the SAHRC in fulfilling this monitoring role is the lack of a common and consolidated national statement of the scope and content of the right to basic education, or conversely, of the scope of the obligations on the government to realise the right.

A variety of factors underlie the poor quality of education and educational outcomes in South Africa. These include social and economic factors such as

poverty and low literacy levels and low levels of formal education in children's families; insufficient levels of educational support at home; insufficient school infrastructure such as school buildings, water, sanitation and electricity; lack of learning resources and materials such as libraries, laboratories and text books; the cost of schooling; poorly trained teachers and insufficient subject knowledge by teachers; and a lack of access to early childhood education, amongst others (Centre for Development and Enterprise (CDE), 2011) (Spaull, 2011) (Strasburg, Meny-Gibent, & Russell, 2010) (Taylor, 2011).

The Department of Basic Education is acutely aware of these shortcomings and the implications for the realisation of the constitutionally guaranteed right of all children to basic education. It has, in addition to the numerous pro-equity education laws promulgated over the last fifteen years, introduced an array of innovations in the past two to three years. These include:

- The review and repackaging of the National Curriculum Statement so as to make it more accessible to educators;
- The development of an integrated strategy on assessment of learners that seeks to ensure regular testing of the skills of the learners and competencies against international benchmarked standards and to facilitate the use of results in the development of strategies to remedy gaps and inadequacies;
- A new and integrated teacher education and development strategy which makes provision for revised minimum qualifications, support to educators, and incentives to attract young quality educators into the sector;
- the development and improved distribution of literacy and numeracy learning and support materials to ensure all children have access to their own texts;
- Improved teaching and learning through the Quality Learning and Teaching Campaign in terms of which all stakeholders, including teachers, principals, parents and learners have committed to take steps to improve

the quality of education such as timely delivery of materials and punctual attendance at schools;

- Improved planning, monitoring and evaluation against quality-focused indicators in the form of the long-term Action Plan to 2014: Towards the Realisation of Schooling 2025;
- Programmes such as the Accelerated Schools Infrastructure Delivery Initiative (ASIDI) for improved infrastructure development;
- Establishing of the sectoral coordinating, evaluation and planning units such as the Planning and Delivery Oversight Unit (PDOU) which will be assume responsibility for national planning and coordination between the national and provincial departments to ensure the implementation of policies and programmes at school level. The National Education Evaluation and Development Unit (NEEDU) have also been set up to review the status of the education system from a policy, coordination, and quality point of view. (Department of Basic Education, 2011b) (Department of Basic Education, 2011a) (Department of Basic Education: Delivery Agreement for the Basic Education Sector, 2010) (Department of Basic Education's Quality Learning and Teaching Campaign).

In looking forward, the National Development Plan (NDP) seeks to chart the way forward to realise a virtuous cycle of growth and development in South Africa. It identifies the poor quality of education as one of the two fundamental barriers that must be addressed if there is any prospect of realising Vision 2030. The plan accords the highest developmental priority to improving the quality of education. It states that while all the development challenges need to be tackled in an integrated manner, improving the quality of education must be the highest priority (National Planning Commission, 2011a).

The International Covenant on Social, Economic and Cultural Rights (ICESCR), Article 13(2) (a) and (b), obliges states to make primary education compulsory and free. All of the governing international and regional legal instruments require that the state take all necessary legislative, administrative and other

steps to realise the right to basic education. The 4A Framework: Availability, accessibility, acceptability and adaptability stipulates that in order for these steps to realise the right to education, as prescribed, they must ensure that education is available, accessible, acceptable and adaptable (Tomaševski 2001), (UN CESCR. General Comment No. 13, 8 December 1999) (Right to Education Project, 2010).

(i) Availability

Basic education must be made available by the state to all children (Right to education Project, 2010). According to the South African Human Rights Commission (2006), availability of education refers to what must be in place before the right to education is accessed. This requires that the state develops and funds primary and secondary education systems and that there is adequate infrastructure and trained teachers to support education delivery. (Right to Education Project, 2010) (Tomasevski 2001). The state has to take the necessary steps to ensure a national education system that:

- Is founded on an overarching national recognition of the right to education.
- Provides early childhood education.
- Makes primary education universal and compulsory for all children.
- Makes different forms of secondary education generally available to all children.
- Ensures the provision of functional educational institutions in sufficient quantity.
- Ensures the provision of sufficient, qualified and available teachers.
- Ensures the provision of teaching and learning support materials and equipment.

As a way of mitigating against the adverse effects of school zoning and inequitable allocation of resources for education, the school quintile has been introduced (Department of Education 1997). The quintile system is a strategy to

provide a framework to operationalise the National School Funding Norms and Standards (NSFNS) as amended in 2006 (Department of Education 1997). The NSFNS guides the allocation of resources according to quintiles ranging from 1 to 5 for 2008/9. Quintiles 1 and 2 comprise weak schools in terms of resources that enrol learners from impoverished families, and are what are called ‘no-fees’ schools in the Free State. These schools are mostly in rural areas, in informal settlements and on farms, most of which service poor learners. Quintile 5 schools are all former Model C schools, most of which service wealthy communities and admit white learners not only from the neighbourhood, but also white learners who travel from outside, with few black learners. Most of these schools are found in affluent communities. The examples of some these schools are Eunice Secondary School, The Beacon Secondary, Sasolburg and Welkom High Schools (Department of Education 1997).

Former model C schools were state-aided schools that were run by a management committee. The principal and teachers were paid by the state, while the rest of their expenses were borne by the school governing bodies (Naidoo 1996a: 20). Carrim and Mkhwanazi (1993:117) identified additional conditions under which Model C schools operated:

- All schools had to maintain a 51% white majority in their school population.
- The cultural ethos of the school was to remain intact.
- The management council of the school had the right to determine selection criteria.
- No school was necessarily bound to consider curricular changes.
- The opening of schools did not necessarily mean the employment of black teachers on the staff of such ‘open’ schools.

Accordingly, desegregating white schools, as Christie (1990: 130) has suggested, entailed working with an existing legacy of assumptions and practices in the location and buildings of schools, their staffing patterns, sporting and other extramural activities. Jansen (2011:113) notes the following about the characteristics of former Model C schools in post-apartheid schools.

- Afrikaans as the only language of learning and instruction.
- Schools are normally situated in a conservative white rural community.
- School fees are often beyond the reach of local black communities.
- There is the bussing-in of white learners from peripheral areas to boost the number of white learners and in this way ‘crowd out’ other learners.
- Schools have hostels that are ‘fully occupied’ by white borders, and have a school ethos including sporting codes, religious activities, extramural practices and initiation rites that are alien to black learners.

(ii) Accessibility

Once education is made available, it must be accessible to all. Meaningful access to education requires more than just getting through the school gates. It requires that learners access, remain in and complete their schooling to a point of matric. (Strasburg, Meny-Gibent, and Russell, 2010). To ensure this, the first step is for the law to make enrolment, attendance and completion compulsory. However, the law cannot be enforced and parents and learners cannot be expected to comply with the law if their circumstances bar them from doing so. This places further obligation on the state to identify and address barriers that prevent children from accessing education (Tomasevski 2004). Accessibility requires that the system is non-discriminatory and accessible to all, and that positive steps are taken to include the most marginalised (Right to Education Project, 2010). According to the Constitution of South Africa Act No. 108 of 1996, the state is obliged to ensure that all children can access education by outlawing discrimination within the education system and by putting in place and adequately funding policies, laws and programmes to identify and proactively address barriers to access to, retention and completion of education. The state is thus obliged to:

- Ensure universal access at an appropriate age, progression through the system and completion of education cycles by all children.

- Prohibit discrimination on the grounds of disability, health status, gender, race, as well as geographical location and actively promote the inclusion of vulnerable children.
- Address economic barriers to education by making primary education free and secondary education progressively free.
- Address physical barriers to schools, such as distance and access for children with disabilities.
- Address administrative obstacles such as onerous documentation requirements (Right to Education Project, 2010).

(iii) Acceptability

The school curriculum, teachers, teaching methods, educational outcomes and teacher and learner behaviour must be acceptable. The right to education calls for regulation by the state, regulation which may vary in time and place according to the needs and resources of the communities. The state is obliged to ensure that all schools conform to the minimal criteria which it has developed, thus ensuring that education is acceptable. (Tomasevski 2001) (Tomasevski 2004) (UN CESCR. General Comment No. 13, 8 December 1999). This translates into an obligation by the state to regulate the form and substance of education so as to ensure:

- The provision of quality education through appropriate teaching methods and curriculum.
- The acquisition by learners of necessary and internationally comparable literacy, numeracy and problem solving skills as measured against international and regional standards.
- The curriculum and teaching is linguistically responsive so that language does not become a barrier and is non-discriminatory.
- A learning environment that is not harmful to children.

(iv) Adaptability

The education system must be inclusive, flexible and responsive to the different circumstances and learning needs of children. It must be sufficiently diverse and flexible so as to be able to meet the needs of children in differing circumstances. This requires the education system to be adaptable (Tomasevski 2004:109)(Tomaševski 2001:109). It must:

- Be designed and implemented to include children precluded from formal schooling, such as children deprived of their liberty, or working children, and children with disabilities.
- Promote human rights through the curriculum, such as quality and freedom from gender or HIV-linked discrimination and prejudice. (Arendse 2011:112 - 113).

The Convention on the Rights of the Child (CRC) protects the right to education in article 28. Article 28(1) (a) obliges states to make primary education compulsory and free, whereas Article 28(1) (b) requires states to make secondary education available and accessible to the child.

The international law on education prioritise basic education above other levels of education by requiring of states to make it compulsory and free. The rationale is that education, if guaranteed, unlocks the enjoyment of other human rights and ultimately empowers a person to play a meaningful role in society. For example, an educated person has the ability to make informed political choices, such as choosing a suitable political representative or political party or even standing for public office. Education also plays a crucial role in the fulfilment of socio-economic rights: education enhances a person's prospects of securing employment, which in turn, secures access to food, housing and health care services.

The South African Constitution Act No. 108 of 1996 recognises the right of everyone to basic education, including adult basic education. Article 1 of the

World Declaration on Education for All (1990:34) defines basic education as an education which provides essential learning tools (such as literacy, oral expression, numeracy, and problem solving) and the basic learning content (such as knowledge, skills, values and attitudes) required by human beings to be able to survive, to develop their full capacities, to live and work in dignity, to participate fully in development, to improve the quality of their lives, to make informed decision, and to continue learning (UN CESCR. General Comment No. 13, 8 December 1999).

The South African government however, views basic education as schooling from Grade R to Grade 12 (Department of Basic Education, 2011a). It has, in fact, established a dedicated and separate department, the Department of Basic Education, with the mandate to prioritise and focus on basic education through the formal primary and secondary schooling system - that is, schooling from Grades R - 7 and Grades 8-12 (Department of Basic Education, 2011a). The South African Government regards basic education as the cornerstone of any modern, democratic society that aims to give all citizens a fair start in life and equal opportunities as adults. It has consequently committed itself to the provision of free, compulsory primary education by becoming a signatory to the Dakar Framework (EFA 2000:iii), which calls upon participating countries to realise six goals by developing or strengthening national plans of action for the realisation of the right to primary education. These goals include:

- (i) Expanding and improving comprehensive early childhood care and education, especially for the vulnerable and disadvantaged children;
- (ii) Ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities have access to and complete free and compulsory primary education of good quality;
- (iii) Ensuring that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programme;

- (iv) Achieving a 50 per cent improvement in levels of adult literacy by 2015 especially for women, and equitable access and continuing education for all adults;
- (v) Eliminating gender disparities in primary and secondary education by 2005, and achieving gender equality in education by 2015, with a focus on ensuring girl's full and equal access to and achievement in basic education of good quality;
- (vi) Improving every aspect of the quality of education, and ensuring their excellence so that recognised and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills (World Education Forum 2000: 15).

By virtue of it being a signatory to the ICESCR and the Dakar Framework, South Africa has committed itself to achieving basic education for its children. However, the realisation of its commitment depends on meeting the obligations engendered by the right to basic education.

Education and democracy are inextricably linked and in a free society. Education must be both public and democratic for the preservation of democracy in a public space. The promotion of equal learning opportunities is crucially important for the improvement of the quality of life of millions of people around the world. The virtues of education in preparing learners for life, for meaningful interaction with other human beings, for constructive civic and political involvement, and for successful economic participation stands beyond reason. In South Africa in particular, questions of equality in education are naturally intertwined with the redress of the racial discrimination and inequalities of apartheid (Schoeman 2010:132).

The fundamental assumptions of democratic life is not that citizens are automatically capable of living both freely and responsibly, but that an environment is created wherein citizens are likely to get education for freedom and responsibility. Democracy is less the enabler of education than education is the enabler of democracy. A re-examination of the relationship between schools

and political institutions, between the classroom and civil society, between education and democracy is expedient (Kuye 2007:598 -599). In well-functioning democracies, this relationship is likely to be taken for granted, when schools, colleges and universities expressed a common commitment to education as a concomitant of democracy. Historically, the meaning of public education was precisely education into what it meant to belong to the public: education in the republic- in commonality, in community, in the common constitution that made plurality and difference possible (Dewey 1916:113). Dewey (1916) firmly believes in the civic role of schools, colleges and universities in fostering citizenship and preparing the young for life in a democratic culture. According to Dewey (1916:415-416) the measure of the worth of the administration, curriculum and methods of instruction of the school is the extent to which they are animated by a social spirit. In the first place, the school must itself be a community life. In this day and age, however, the link between schooling and community and between education and democracy seems to have been lost (Schoeman 2010:133).

The Constitution of South Africa Act No.108 of 1996 provides, *inter alia*, that everyone has the right to basic education (Section 29). According to Beckmann *et.al.*, (1995:20), the term basic can be construed to imply rudimentary or basic skills. The White Paper on Education defines basic education as compulsory schooling from pre-school through to the ninth grade and further education. Under the *Constitution* the right to education is a right that can be asserted regardless of the state's other budgetary imperatives. The right to basic education imposes a positive duty on the state to provide such education in order for the right to be enjoyed and fulfilled. It is an unqualified right requiring the priority attention of the state. The right requires the state to provide sufficient schools, educators and support and other incidental services in order to ensure reasonable access to basic education for everyone. Unlike further education, which the government need only make progressively available through reasonable measures, the right to basic education appears absolute (Malherbe 2004:15).

The quality of education in South Africa, particularly in many predominantly black areas, is poor (Jansen 2011:112). The right to basic education was put into practice in a case law in Limpopo in May of 2012. One secondary school in that province, represented by the Centre for Applied Legal Studies (CALS) filed a High Court application against the Department of Basic Education and the Limpopo Provincial Education Department for failing to exercise the right to education by providing textbooks for the learners five months after the school year started. Judge Kollapen of the High Court ruled that the failure of the Department of Basic Education to provide textbooks to learners in Limpopo from the start of the school year was a violation of learner's constitutional right to a basic education. Judge Kollapen ruled that the matter was urgent and ordered the respondents to supply the learners with textbooks by June 2012. The Department of Education in Limpopo has since failed to meet the set deadline. This is an example of the infringement of the public's constitutional rights to basic education.

The Department of Basic Education and the Limpopo Provincial Education Department were also ordered to devise a catch-up plan to help learners who had fallen behind their curriculum. The litigation action by civic organisation in this case was important in highlighting the importance of the constitutional obligation that the government has in providing textbooks to its citizens. Quality learning and teaching cannot take place without adequate access to textbooks. Learners require textbooks to access information, to do homework and to study for tests and examinations. Textbooks are also of vital importance to teachers. For many of them, they are their main source of subject content. Limitations on the right to basic education must comply with the general limitation clause in Section 36 (1-2) of the Constitution but any limitation should be closely scrutinised and the state should not be allowed, for example, to justify a limitation merely on the ground of a lack of resources.

4.6.3 The right to administrative action

In terms of Section 33 of the Constitution of South Africa Act No. 108 of 1996, *inter alia* every person is entitled to lawful and procedurally fair administrative action where any of their rights or interests are affected or threatened. The Promotion of Administrative Justice Act No.3 of 2000 (PAJA) was promulgated to give effect to these rights. PAJA applies to any decisions taken, or any failure to take a decision of bodies (e.g., Department of Education) and individuals (e.g., departmental officials) exercising authority in education, which adversely affects the rights of any person and which has a direct, external legal effects. The purpose of PAJA is to give effect to the Constitutional right to administrative action that is lawful, reasonable and procedurally fair. The Act serves as a basis to promote efficient public administration and creates a framework for the valid execution of all administrative actions. The Act contains a number of definitions of the concept administrative action, all of which strongly suggest that administrative action entails much more than mere actions and means, in fact, a decision and an activity of an administrative nature. When carrying out specific administrative functions, public officials often face the dilemma of having to distinguish between the three types of administrative actions dealt with in the Promotion of Administrative Justice Act, 2000. This is largely due to a misconception, among officials, that the executive component of the government and its administration has on the authority to perform extensive administrative, legislative and judicial functions when they put laws and policy into practice (Van Heerden 2009: 183-184).

The Constitution of the Republic of South Africa Act No. 108 of 1996 serves as a framework within which the government and its administration should exercise its authority. Public institutions and functionaries are governed by the democratic values and principles enshrined in the 1996 Constitution of the Republic of South Africa Act No. 108 of 1996. It is these values and principles that promote the spirit of the Constitution (Burns and Beukes, 2006:27-28). The Constitution therefore regulates public administration and includes the Bill of Rights, which serves as a framework for public administration. Besides the

Constitution, administrative law is concerned with one branch of the government system: the executive and its administration (Devenish, Govender and Hulme, 2001:7). Administrative law's areas of focus is therefore, the day-to day business of government (implementing laws and policy) and, the actions of organs of state such as ministers (when they perform administrative actions), directors, municipal managers, and other public officials. The right to just administrative action is entrenched in the Bill of Rights and reads as follows (South Africa 1996: Section 33):

- (1) Everyone has the right to administrative action that is lawful, reasonable and procedurally fair.
- (2) Everyone whose rights have been adversely affected by administrative action has the right to be given written reasons.
- (3) National legislation must be enacted to give effect to these rights, and must - (a) provide for the review of administrative action by a court or, where appropriate, an independent and impartial tribunal; (b) impose a duty on the state to give effect to the rights in subsections (1) and (2); and (c) promote an efficient administration (Van Heerden 2009:185-186).

Section 33(3) of the Constitution of South Africa Act No. 108 of 1996 states that the national legislation must be enacted to give effect to the rights mentioned in Subsections (1) and (2), namely, the right to administrative action that is lawful, reasonable and procedurally fair, and when a person's rights have been adversely affected by such action, the right to be given written reasons to that effect. Thus, the Constitution of South Africa Act No. 108 of 1996 demands that such national legislation must prescribe how public officials should act lawfully, reasonably and procedurally fair). If such prescribed action is not forthcoming from public officials, provision must be made for the complainant to take the public officials' action on review by a court or, where appropriate, by an independent and impartial tribunal (Van Heerden 2009:185)

Section 33(3) (c) of the Constitution of South Africa Act No. 108 of 1996 requires that the proposed national legislation promote an efficient administration to ensure a democratic, accountable, open and transparent government (Burns and

Beukes, 2006:7-8). The public has a right to know how public institutions apply the power and resources entrusted to them; public scrutiny should therefore be facilitated by transparent and democratic processes, which include overseeing by the legislature and access to public information (Vyas-Doorgapersad and Muller, 2006: 342).

In giving effect to the Constitutional instruction contained in Section 33(3), and as part of administrative law, the Promotion of Administrative Justice Act No. 3 of 2000) was passed by parliament and serves as a basic set of principles to which public officials should adhere in the execution of all administrative actions (Burns and Beukes, 2006:6). Section 33(3) is an example of where the Constitution of South Africa Act No. 108 of 1996 contains only the broad framework of a particular matter, but it has been left to the legislature (parliament) to provide details to deal with that specific matter. Parliament has thus been instructed to give effect to the mentioned constitutional provision. Accordingly, the phrase to give effect to the rights means to make them effective by providing an elaborated and detailed expression of the rights to just administrative action and providing remedies to vindicate (to uphold or to defend) them (De Waal, Currie and Erasmus, 2001: 495).

In order to understand what administrative action implies and which actions are regarded as administrative action, careful consideration needs to be taken of the various definitions contained in section 1 of the PAJA Act No. 3 of 2000, because this influences the scope, content and application of the concept administrative action. All the definitions in section 1 of the Constitution of South Africa Act No. 108 of 1996 represent elements of the rather cumbersome definition of administrative action. With the aid of these elements, administrative action could be summarised as follows (Burns and Beukes, 2006:128): Administrative action means a decision, or a failure to take a decision, that is of an administrative nature, made in terms of an empowering provision but not specifically excluded by the PAJA Act No. 3 of 2000, by an organ of state (or private person exercising public power), that adversely affects

rights and that has a direct, external legal effect (De Waal *et.al.*, 2001: 501-508; Burns and Beukes, 2006:128-136).

Action will qualify as administrative action when it takes the form of a decision. Section 1(v) of the Constitution of South Africa Act No. 108 of 1996 sets out what constitutes a decision, namely, doing or refusing to do any other act or thing of an administrative nature. Section 1(vii) makes it clear that action also qualifies as an administrative action when it involves a failure to take a decision. To qualify as an administrative action, decisions must have a real impact on a person's rights in that the decision has a legal effect which is direct and external. The functionaries and institutions capable of taking decisions and of performing administrative action are set out in section 1(i) of the Constitution of South Africa Act No. 108 of 1996, namely, that they include both organs of State and private persons exercising public power, that is, an administrator such as a school principal, educator or any system level official (Oosthuizen *et.al* 2003:24).

When public activities are performed, it must be determined exactly what administrative action implies and whether the administrative action is involved in a particular situation. This is necessary, because it is only when the action of an official, institution or functionary is classified as administrative conduct or activities that the provisions of Section 33 of the Constitution of South Africa Act No. 108 of 1996 come into effect. Administrative justice then ensures justice for every person who interacts with the public administration, because it ensures the transparency and accountability of such activities (Devenish *et.al.*, 2001: 126).

Administrative action is, simply stated, the conduct of the public administration. This means the conduct of all organs of state except: the legislatures when exercising legislative functions; the judiciary when exercising judicial functions; the president when exercising constitutional powers; and the cabinet when making political decisions (De Waal *et.al.*, 2001:499-500). The following are a

few practical examples of officials, functionaries and institutions carrying out administrative functions or actions:

- The president makes a proclamation or a minister issues regulations (namely, administrative legislative actions).
- An administrative official implements legislative actions (for instance, applies disciplinary measures).
- An administrative institution or official exercises control over administrative actions in order to determine whether this conduct is lawful or lawfully executed (for example, the Publication Appeal Board or other administrative tribunals performing an administrative judicial action).
- Any other executive or administrative institution or official (for example, the president, premier, ministers, directors-general and other officials in state departments).

Other public institutions that are described as organs of state in Section 239 of the Constitution of South Africa Act No.108 of 1996 are public schools and universities. The expression state administration or administrative institutions includes the following (Devenish *et.al*, 2001: 10-11):

- **The national administration**

The national public administration includes departments such as the Department of Police Services, the Department of Defence, the Department of Home Affairs, the Department of Finance and the Departments of Basic Education and the Department of Higher Education and Training.

- **Provincial administrations**

The provincial administration includes provincial departments that deal with matters such as provincial libraries, provincial roads, licensing of dogs, and municipal parks.

- **Local government administrations**

Local government sphere of public administration includes the administration of municipalities and their substructures.

When dealing with the public administration and activities of public institutions, there are reasons why it is essential to establish whether administrative action is involved: First, the application of the right to just administrative action (South Africa 1996: Section 33) depends on whether an administrative action has been performed by either an organ of state or any person exercising public power or performing a public function in terms of legislation. Second, whether a particular decision qualifies as administrative action will determine whether the PAJA is applicable or not. Third, there is much exclusion to the list of what constitutes administrative action in the PAJA, particularly the actions that appear to be administrative action, but do not qualify as administrative action. (Oosthuizen *et.al.*, 2003:25).

4.7 PUBLIC STATUTORY SUPPORT OF EDUCATION IN SOUTH AFRICA

Legislation in South Africa advocates for the effective and efficient administration of education. Equally important, a clear, regulated, freely accessible interaction amongst the national government, the Departments of Basic and Higher Education, provincial Education Departments and their public statutory partners in education are key factors in the continued systemic rollout of the education policies. This will cater for the greater good of the communities in which the education system operates. The establishment of bodies and committees that have long-term vision and sustainability is crucial to a country's social, political, educational, economic, and moral development. These bodies are capable of building a citizenry that is able to devolve the benefits of democracy now and long into the future for the generations to come. With the guidance offered by the Constitution, the establishment of these bodies becomes necessary to ensure that the constitutional mandates are attained and maintained for the benefit of South Africa and all who live inside its borders. The National Education Policy Act of 1996 (NEPA) makes for provision for the

system of governance in the education system. NEPA further establishes the main bodies responsible for governance of the system. These bodies are:

4.7.1 Committee of Education Ministers (CEM)

The Committee of Education Ministers (CEM) exists (National Education Policy Act: Section 9). The Committee consists of the National Minister, the Deputy Minister of Education, and every provincial political head of education (Member of the [provincial] Executive Committee for Education). The national Director-General of Education reports on the proceedings of the Department, and advises The CEM on any other matter relating to the responsibilities of the Department. Meetings of the CEM may also be attended by the chairperson of the Portfolio Committee on Education in the National Assembly.

The functions of the Committee are:

- To promote a national education policy, which takes full account of the policies of the government, the principles, education interests and the needs of the provinces as well as the respective competence of parliament and the provincial legislatures in terms of the national Constitution;
- Share information and views on all aspects of education in the Republic; and
- Co-ordinate action on matters of mutual interest to the national and provincial governments.

4.7.2 Heads of Education Departments Committee (HEDCOM)

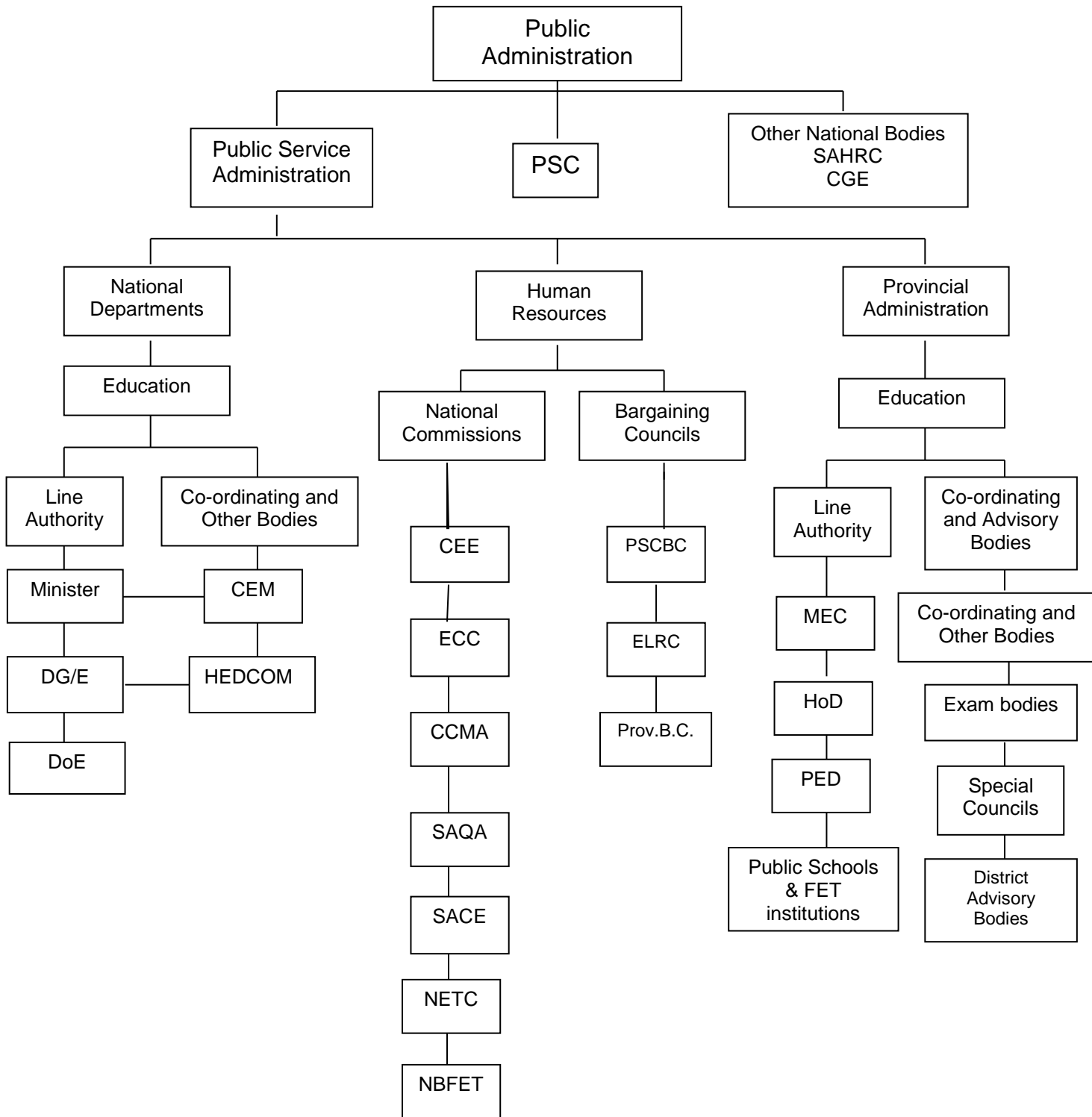
This is a structure that ensures that the education system works in practice (National Education Policy Act: section 10). HEDCOM consists of the national Director-General of the Department of Education, the Deputy Directors-General of the Department; and the heads of the PEDs. The functions of the Committee are as follows:

- Facilitate the development of a national education system in accordance with the objectives and principles provided for in the NEPA;
- Share information and views on national education;
- Co-ordinate administrative action on matters of mutual interest to the education departments; and
- Advise the department of education on any matter contemplated in respect of education, or on any other matter relating to the proper functioning of the national education system.

The Committee has the power to establish different subcommittees to assist it in the performance of its functions, and may appoint persons who are not members of the Committee to be members of a subcommittee. The organized teaching profession is entitled to nominate representatives as members of each subcommittee. In addition to these bodies, the Ministers of Education is empowered to establish a National Education and Training Council, whose membership should reflect the main stakeholders in the national education system. This Council advises the ministers on broad policy and strategy, for the advancement of an integrated approach to education and training.

4.8 NATIONAL AND PROVINCIAL STRUCTURES DEVOTED TO THE ADMINISTRATION OF BASIC EDUCATION IN SOUTH AFRICA

There are a number of intricate national and provincial structures that are devoted to matters related to the administration of education in South Africa. Figure 4.2 below, graphically represents this complex set of structures:



Source: Public Service Administration

Figure 4.2: Organogram of the National, Provincial and Local Structures for the administration of education in South Africa.

Refer to the key below:

KEY:

PSC: Public Service Commission
SAHRC: South African Human Rights Commission
CGE: Commission on Gender Equality
CEM: Council of Education Ministers
HEDCOM: Heads of Education Department Committee
DG/E: Director General of Education
DoE: Department of Education
CEE: Commission for Employment Equity
ECC: Employment Condition Commission
CCMA: Commission for Conciliation, Mediation and Arbitration
PSCBC: Public Service Co-ordinating Bargaining Council
ELRC: Education Labour Relation Council
Prov. B.C: Provincial Bargaining Council
MEC: Member of the Executive Council
HOD: Head of Department
PED: Provincial Education Department
FET: Further Education and Training
SAQA: South African Qualification Authority
SACE: South African Council of Educators
NETC: National Education and Training Council
NBFET: National Board for Further Education and Training
SGB: School Governing Bodies

The school education system is comprised of other support structures within the Department of Basic Education and of public statutory entities. These support structures include:

4.8.1 South African Certification Council (SAFCERT).

This council is currently known as UMALUSI. UMALUSI comes from Nguni word meaning shepherd or guardian of the family, belongings, resources and valuables. As such UMALUSI in the context of quality assurance in education means to take care or shepherd the nation's valuable assets which comes from

education and training. It sets and monitors standards for general and further education and training in South Africa in accordance with the National Qualification Framework Act No. 67 of 2008 and the General and Further Education and Training Quality Assurance Act No. 58 of 2001. The Council is primarily responsible for issuing certificates to candidates who have successfully completed school or technical college education. It ensures that such certificates represent consistent standards of education and of examination. This public entity is self-funded and does not benefit from government subsidies or transfers. Revenue comprises fees charged for issuing certificates and interest on investments. The council has responsibility for assuring the integrity and quality of the Senior Certificate examination process. It is in charge of curricular norms and standards, moderation of assessment, and the certification of school-leaving qualifications. Quality assurance authorities such as UMALUSI ensure that the qualifications obtained in South Africa are recognised anywhere in the country and by overseas institutions.

4.8.2 The South African Qualifications Authority (SAQA):

This is a statutory body established in terms of the South African Qualifications Act of 1995. It actively oversees the development and implementation of the National Qualifications Framework (NQF). As part of its functions it focuses on ensuring access, quality, redress and development for all learners through an integrated national framework of learning achievements. SAQA provides accreditation to bodies responsible for monitoring and auditing achievements in terms of such standards and qualifications. SAQA also oversees the implementation of the NQF by ensuring the registration, accreditation and assignment of functions to the bodies, as well as registration of national standards and qualifications on the framework.

4.8.3 The Council on Higher Education (CHE):

The CHE was established in terms of the Higher Education Act of 1997. It is responsible for advising the Minister of Education on all aspects of higher education, in particular the new funding arrangement, language policy and the

appropriate shape and size of the higher education system. The CHE is also responsible for designing and implementing a system for quality assurance in higher education, as well as establishing the Higher Education Quality Committee. It promotes access of students to higher education; publishes an annual report on the state of higher education for submission to Parliament; and convenes an annual summit of higher education stakeholders.

4.8.4 National Student Financial Aid Scheme (NSFAS):

The Scheme was established in terms of the National Student Financial Aid Scheme Act of 1999. Its role is to allocate loans and bursaries to eligible students in public higher education; develop criteria and conditions for the granting of loans and bursaries to eligible students in consultation with the Minister of Education; raising funds; recovering loans; maintaining and analysing a database; undertaking research for the better utilisation of financial resources; and advising the minister on matters relating to student financial aid. This fund plays an important role in funding access to teacher training, by affording them quality education to become effective practitioners. If this fund was not available, many young, aspiring teachers would not enter institutions of higher learning.

4.8.5 The South African Council for Educators (SACE):

Established in terms of the South African Council for Educators Act No. 31 of 2000, SACE is responsible for the registration and de-registration, promotion and professional development of educators, and for setting, maintaining and protecting the ethical and professional standards of educators. SACE acts to enhance the status of the teaching profession through the promotion of the development of educators and their professional conduct. The powers of SACE include taking disciplinary measures against teachers who are guilty of professional misconduct. It may also strike teachers from its register. This is an important step towards making teaching a respected profession. SACE does not receive direct funding from government but relies on employees' membership fees as its main source of revenue. This body provides a quality function towards the attainment of EFA goals.

4.8.6 The Education Labour Relations Council (ELRC):

This administrative body comprises representatives from the Department of Education, SACE and all educator unions. Its role is to provide a quality, effective, efficient and non-partisan administrative and facilitative mechanism for labour peace and for the development of a quality education sector.

4.8.7 School Governing Bodies (SGB):

On assuming the reins of government in 1994, the African National Congress envisaged that democratic school governance structures were needed in order to fully develop the potential of the human resources of the country (ANC 1994:60). Kallaway (2003:11), in support of this system, argues that education, in whatever form, is a fundamental component of democracy. In this management system, the school governing body would consist of elected representatives from the parent body of the school, the staff members of the school as well as participation from the learners of the school in the form of consultation.

Since education, as pointed out by Bray (2002:514), is vitally important for meaningful human existence, the state is bequeathed with an enormous duty in this regard. Given the vastness of the task, Beckmann (2006:182) emphasises that the state alone cannot provide a high quality of education to all. To lighten the state's burden, the Constitution provides, *inter alia*, for the establishment of organizations of structures and institutions (sections 91 and 92) as well as the distribution of its functions (Section 104). Basic education has, accordingly, been designated as a concurrent functional area for which both national and provincial governments are responsible while complying with the constitutional principles of cooperative government when exercising their authority over education (Section 40(2)). Cooperative governance thus entails an interactive approach in which all role-players are represented and take co-responsibility for the efficient operations of schools (Van Wyk 2004:53).

Clase *et.al.*, (2007:244) stress that the vision aspired to by political leaders for education must be mutually shared by all. The success of any country's education system is dependent to a great extent on the mutual trust and

collaboration existing between all partners. It can be argued that transformation and reform of the education landscape in South Africa has indeed influenced all parties involved, including the Department of Education (DoE), school governing bodies (SGBs), principals, educators, learners and the community in which the school is situated. In this regard, Bisschoff (1997:2) proposes that successful transformation is entirely dependent on whether the vision aspired to by political leaders for the education of the country, is mutually shared and embodied in their daily activity by people at grass-roots level.

In terms of South African legislation, more governing powers in schools are allocated to SGBs. These powers are, according to Clase *et.al.* (2007:248), reflected in the fact that SGBs legally have the power to establish the overall character and ethos of public schools. Most significant, is the democratic governance of schools which is concerned with the distribution of powers through the active involvement of all role-players. According to Maile (2002:1) and Ngidi (2004:261), school governance is an act of determining policy and rules by which schools are to be organized. According to Kuye and Kakumba (2008:632) governance refers to the manner in which power and resources are applied towards the realisation of objectives. Sound governance, consequently, entails the use of power in a manner that respects human rights, while promoting democracy and accountability. A much broader definition is provided by the United Nation's Commission for Global Governance: governance refers to the sum of the ways institutions manage their common affairs. It is a continuing process through which conflicting or diverse interests may be accommodated and cooperative action may be taken. Accordingly, sound governance implies the creating of well-functioning and accountable institutions that citizens regard as legitimate, through which they participate in decisions that affect them, and by which they are empowered.

According to Squelch (in Lemmer, 1999:128-129) an essential feature of agendas for education reform has been the devolution of education management to schools, which implies that at school level more decentralised decision making responsibility and abilities are developed. Decentralising power to govern

schools and to be involved in decision-making is aimed at decreasing centralised bureaucratic management of schools. Although it seldom occurs in practice that a government in power rolls back all powers and responsibilities concerning school governance and management to school level, it is nevertheless desirable that a balance be struck between the authority of the state and the authority of the SGB at school level.

Decentralization of governance implies that decision-making responsibilities have devolved from central government to self-governing school communities (Fareed and Waghid 2005:25), it is evident, as stated by Kuye and Kakumba (2008:633), that governance is not a preserve of the state or the wielders of state power, but rather, a partnership between the leaders and the led to promote the entire society's well-being. The South African Schools Act No. 84 of 1996, consequently, proposes a partnership between the state, parents, educators and learners concerning the funding, governance and organization of schools which led to the creation SGBs for public schools. By devolving powers and concomitant responsibilities, the state ensures, as avowed by Visser (2003:340), the fulfilment of the right to a basic education at a macro level through the provision of schools by provincial authorities and at a micro level through SGBs exercising their statutory powers.

Despite the significant difficulties facing the education system in South Africa, governing bodies provide a good prospect of enhancing local democracy and improving the quality of education for all learners. However, recent studies on school governance have revealed that, although most schools have competent SGBs, many of them seriously lack capacity, especially in financial management. In many rural areas there is a high rate of illiteracy and lack of knowledge and skills to ensure the effective functioning of these governance committees.

Many SGB members have a low level of education. Some do not appreciate the importance of their involvement in school matters. There are indications that, in many cases, the parent component of the SGB does not attend meetings because members do not get paid for their services. Intense training for SGB members on

their roles and responsibilities is critical. This training should be conducted on an ongoing basis, to enhance appreciation of the critical role that can be played by an SGB, and to eradicate any out-dated perceptions of a school committee mentality based on the “bossing” of principals. Other concerns about uneducated SGB members being involved in selection and appointment of staff; this can result, in some cases, in unfair practices. The role played by SGBs in the schools is, according to Davidoff and Lazarus (1999:66), essentially a management role to ensure functionality of schools. According to Davidoff and Lazarus (1999:67) state that successful school management implies the creation of certainty, trust, security and also opportunities for repose in the aspirations towards a school vision. The management role that SGBs play in schools requires a thorough knowledge of the following management aspects, as identified by Davidoff and Lazarus (1999:67):

- Management of systems (ensure that the appropriate structures and procedures are in place and function well).
- Management of time (setting of priorities, time limitations, and rules to abide by).
- Management of tension/stress (the creation of a work environment without unnecessary tensions).
- Management of conflict (the design of mechanisms to handle conflict successfully).

Mashile (2000:79) is more particular with regard to the role of SGB and stresses the fact that the day-to-day management of the school is not the task of the governing bodies, but of the school principal and the SMTs. The role they should play, is to

- execute the specific functions assigned to them by SASA and the other legislation and regulations;
- set up, improve and develop rules and policies within which the school functions in the framework of the SASA;

- supervise and manage the development and maintenance of the infrastructure and property of the school; and
- establish and develop partnerships in the school between all the role players in the education process. Such partnerships consist of parents, learners, teachers and non-teaching staff at the school, the local community and the education authorities.

Devolving school governance to communities has given the communities a larger voice in the education of their children. It also provides opportunities for the communities to augment government's resourcing and provisioning of schools. However, this seems to be a benefit enjoyed mostly by wealthier communities and therefore perpetuates a trend of unequal access to quality education. This apparent paradox is because the wealthier communities who have predominantly educated members of the community on the SGBs can often influence decision-making processes with a view to maintaining the status quo inherited from the previous unjust era. Because of a greater ability to raise their own funds than is the case of rural schools or schools serving less affluent communities, SGBs of well-endowed schools are also in a better position to afford SGB appointments of teachers and other support staff. This would therefore have the effect of increasing the disparity that the well-intended policy and legislation is designed to reduce and eliminate.

4.9 CONCLUSION

Basic education in South Africa is a public service and the law prescribes that the government is the main provider of basic education. In the spirit of cooperative governance and with the aim of establishing a democratic public school education system, a partnership between the government and the community is immensely important. This partnership forms a vital link in the achievement of the needs and aspirations of a diverse, multicultural country such as South Africa.

Every education manager, including school principals, teachers and system level officials, parents and various stakeholders in education should know the education law in order to enhance learning and teaching and to implement the policies of the government. In support of this assertion, Joubert and Prinsloo (2011:29) advance some of the reasons why it is imperative for the bureaucrats to know educational law; as follows:

- To understand processes and principles. Sufficient knowledge of the laws of education processes and principles would assist public officials and various other stakeholders not to be involved in unnecessary lawsuits.
- To determine the legality of decisions. Knowledge of the law of education would assist principals, teachers and parents to know when they can safely make a decision on their own when they need to seek for advices from the legal experts regarding the issues relating to education.
- To create a safe environment for learners. This would assist managers of schools to make decisions that will not cause legal problems for the school or for the Department of Education.
- To look after their interests. Public officials who know their rights and duties will be able to look after their own interests. They will be able to carry out their duties with aplomb and also ensure that others fulfil their duties likewise.
- To keep abreast with legal requirements. Public officials who are active in the public education sector are expected to be well informed about the legal provisions and principles that will regulate or govern their activities in the field of public education.
- To have a better decision-making framework. Public officials who know what legal considerations have to be taken into account when decisions are made will be able to make better decisions than those who do not know these considerations.

It also emerged from the discussions that provincial and national legislation complement each other and need to work together and in the true spirit of cooperative governance. This chapter also attempts to interlock a set of

structures at various levels, whose responsibilities derive from an intricate web of national and provincial laws and regulation. These structures are the result of a change from the old to the new system of the administration of education in South Africa. In analysing the legislative framework, one also gets the impression that, in keeping with the goals of transformation to a democratic and participatory system of government, great care has been taken by the law-makers in South Africa to include a myriad of structures at all levels in order to encourage the involvement of stakeholders in the administration of education. With so many structures in place, the analysis of the legislative framework is a daunting task and pales in comparison with the actual task of administering the education system in South Africa and making the transformation agenda in the school system a reality.

CHAPTER 5

ANALYSIS OF CASE

5.1 INTRODUCTION

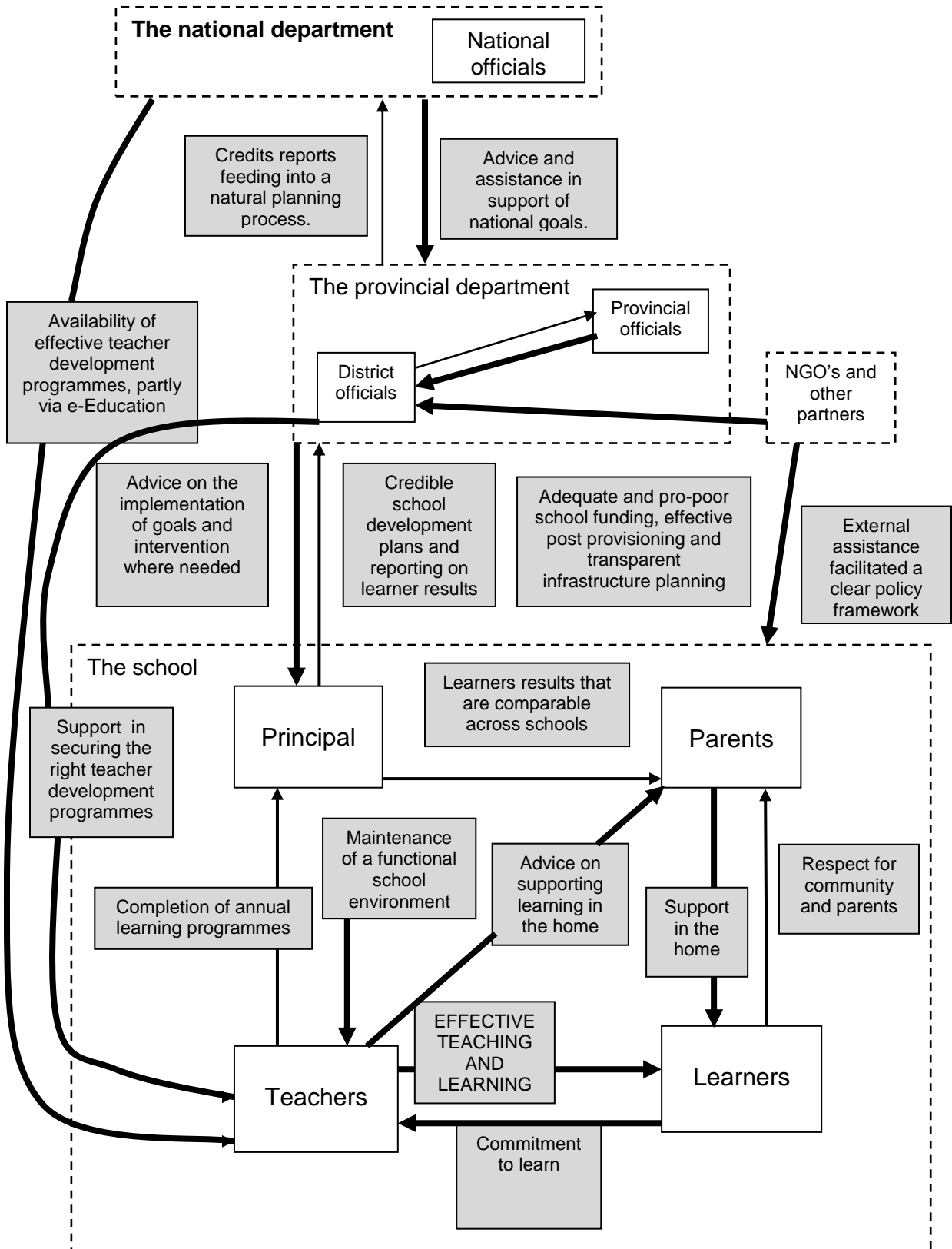
The adoption of the *National Development Plan (NDP)* by the cabinet of South Africa as a strategic framework to form the basis of a detailed blueprint for the future represents a significant development for the country. The NDP presents clear principles that are rooted in the Constitution of the Republic of South Africa Act No. 108 of 1996 for developing a competent, skilled and professional public service. The NDP places obligations on government ministers as well as Provincial Members of Cabinet (MECs) in all departments to work towards achieving definite targets set for the year 2030. This obligation is further cascaded to institutions such as schools which are the initiators of policy implementation. The NDP is focussed largely on outcomes. For it to be implemented efficiently, the NSMSTE policy must therefore be aligned to the NDP.

The NDP is cogent on the quality of public education hence it highlights *human capacity, school management, district support, infrastructure and results-oriented mutual accountability between schools and communities* as the main priorities to ameliorate school-based education in South Africa. These priorities are also captured in the Action Plan to 2014 of the Department of Basic Education: *Towards the Realisation of Schooling 2025*. In this chapter, the alignment of basic education's Action Plan to 2014 with the National Development Plan (NDP) shall be analysed. The analysis of the reasons behind the low productivity of outcomes in school education shall be included. The feedback on the data gleaned from the field work conducted is also analysed in this chapter.

The Action Plan to 2014 of the Department of Basic Education outlines the 27 national goals. Thirteen of these goals are output goals dealing with better academic performance and results as well as higher enrolment of learners in schools. The remaining 14 goals deal with the actions that must be taken for the output goals to be realised. The goals do not capture everything that must be done, however they are expedient because for a plan to work, it is important to identify few key goals that can provide guidance. Each goal is explained, adding what the government is doing, and what citizens can do to ensure success in schools.

The 2014 Action Plan of the Department of Basic Education (DBE) - Vision 2025 sets initial targets for improved Grade 12 pass rates and better Mathematics and Numeracy results based on testing at Grades 3, 6 and 9. Goals 5 and 6: The increase in the number of Grade 12 learners who pass Mathematics and Physical sciences is relevant to the theme of this study. A very serious problem in South Africa is that there are insufficient numbers of youth that leave school with good Mathematics and Science results. This has caused a shortage of people who specialise in professions such as engineering and other science related careers. According to the Government Gazette No. 33434 of 2 August 2010, there is only one in seven youths leaving school with a Grade 12 pass in Mathematics. The number is lower for Physical Sciences. The aim of the Action Plan 2014 is to increase this figures to one in five by 2014 and one in three by 2025, for both Mathematics and Physical Sciences.

A broad participation of all the stakeholders is required for Action Plan 2025 to be actualised. For a wide participation to be effective, participants need to be well versed of what is happening in their schools as well as in the schooling system as a whole. Figure: 5.1 depict a framework that might help in discerning how different people and actions can contribute towards better schooling



Source: Government Gazette No. 33434 - Action Plan to 201: Towards the Realisation of Schooling 2025.

Figure 5.1: The framework for a better schooling system

The vision for schooling in 2025 envisages a better schooling system in South Africa wherein the following role-players work hard to realise the vision:

- **Learners** who attend school regularly and are always on time for school. These learners take pride in their schoolwork, in school or at home. They know that their school will do everything in its power to see to it that they learn what should be learnt. They also know that they can depend on their teachers for advice and guidance.
- **Teachers** who have gone through the training that is required for the teaching profession. These teachers continue to improve their qualifications in order to be confident in their profession. They understand the importance of the teaching profession for the development of the nation and do their best to give their learners a good educational start in life. These teachers are satisfied with their salaries and their conditions of service in general are decent and correspond to those of their counterparts in other departments.
- **Principals** who ensure that the quality teaching and learning is very high in the schools they manage. These principals understand their roles as the leaders whose responsibilities are to promote harmony, creativity and a sound work ethic within the school community and beyond.
- **Parents** who are well informed about what transpires in the school, and receive regular information about their children's progress against clear standards that are shared by all schools in South Africa. These parents know that they deserve to be informed by the principal, school management teams or district officials on matters concerning the education of their children.

The NDP calls for the well-run and effectively constituted state institutions such as schools, with skilled public servants who are committed to the public good

and are capable of delivering consistently high quality services, while prioritising the country's developmental objectives. The NDP deals with detailed interventions in all areas of governance and puts forth suggestions on how those interventions have to be carried out. Most notably, and for the purpose of this study, are the suggestions that the plan moots in *Chapter Nine* of the NDP document on how education can be turned around in order to create high-quality schooling. The suggestions in the plan are: Increasing the number students eligible to study Mathematics and Science at universities; improving performance in international comparative studies, improving community ownership of public schools, developing result-oriented mutual accountability amongst various stakeholders, improving district support for schools and developing teacher's skills and commitment and the appointment of appropriately qualified and competent school principals (NDP 2030: 304 - 314).

The analysis of case in this chapter hinges upon the suggestions mooted in *Chapter Nine* of the NDP document as well as the Action Plan to 2014 of the Department of Basic Education. These are the two national plans that are aimed at improving the standard of school-based education in South Africa. There are similarities between the priorities highlighted in *Chapter Nine* of the NDP and the outputs stated in the Action Plan to 2014. These priorities and outputs are infused in this discussion in order to analyse the implementation of these for the prospects of an improved administration of school education in South Africa. This chapter also highlights the reasons for the low productivity of outcomes in the school education system of South Africa (Jansen 2011:105-112).

Suggestions on what is to be done to turn the situation around will be discussed in Chapter 6 as part of the overall recommendations.

5.2 HUMAN CAPACITY

Education and development of human resources in organisations is extremely important to society (Vincent & Ross, 2001:36; Ho-Ming and Ping-Yan1999:32). It may be attributed to changes in societies that force adaptations in economies and labour markets (National Skills Development Strategy, 2001:5). In many

countries the economy and labour market are challenged by poverty and unemployment (Tager, 2003:90). Globalisation also pressures markets to provide the necessary knowledge and skills to be economically, politically and socially competitive in a rapidly changing environment. Education and training during apartheid in South Africa was characterized by the under-development of human potential, generally and that of blacks in particular. The teaching and learning of Mathematics, Science and Technology were the hardest hit.

All professions require a continuous update of knowledge and skills, school management and teaching are no exceptions (Sparks & Richardson, 1997:2; Somers & Sikorova, 2002:96). It is universally acknowledged that an educator's professional development does not end with the initial pre-service training (Ho-Ming & Ping-Yan, 1999:32; Somers & Sikorova, 2002:103). Over time the knowledge and skills of staff members in schools are subject to deterioration, whilst new developments in educational thinking render their skills out dated or inefficient (Campbell, 1997:27). Moreover, managers in education will not change the way they manage the schools unless they learn new ways to teach (Sparks & Richardson, 1997:3).

In 1994, the government in South Africa inherited the apartheid public service which was designed in such a way that it mostly served the interests of the white minority. It reflected elements of poor and out-dated management practices as well as poorly paid and de-motivated staff (Bernstein; 1999:65). Since 1994, increased emphasis has been placed on transformation and improving the public service delivery (Patterson, 2008:324). The South African government's vision is to have a transformed public service which is representative, coherent, transparent, efficient, effective, accountable and responsive to the needs of all (Bernstein, 1999:65). This vision has not yet been achieved. One of the most important mechanisms available to the state in its quest to achieve its mandate of better service to all is its human capacity. Molekane (2008:231) attests that this effort could be viable if employers were equipped with the necessary attitude, information, skills and competencies to enable it to perform the tasks needed. One way to improve and strengthen

capacity of individual employees of the state and make them more effective in their roles is through skills development. The government has also prioritized training and education as a means to build its human resources capacity. Since 1994 the government has adopted the following legislation, strategies and policy frameworks, as a means towards capacity building in the South African public service:

- South African Qualification Authority (SAQA) Act, 1995: that provides the ways of ensuring training in South Africa is of a high quality.
- The White Paper on Human Resource Management in the Public Service (WPHRMPS),
- The White Paper on Public Service Training and Education (WPPSTE), 1997: its purpose is to provide a policy framework that will enable public service training and education to be appropriate, adequate, and accessible and will meet the current and future requirements of public servants, the public service and public.
- Skills Development Act (SDA), 1998: provide an institutional framework to devise and implement national, sector and workplace strategies to develop and improve the skills of the South African workforce.
- Public Service Sector Education and Training Authority (PSETA), 2000: its mission is the development of a coordinated framework for ensuring the provision of appropriate and adequate public service education and training, which will meet the current and future needs of the public service.
- The National Skills Development Strategy (NSDS), 2005: its mission is to contribute to sustainable development of skills growth, development and equity of skills development institutions by aligning their work and resources to the skills needs for effective delivery and implementation.

In the Strategic Framework Vision 2015 HRD Resource Pack, the Department of Public Service and Administration in South Africa identifies capacity development initiatives as the *Pillar One* on which the capacity of the public service is built. It also states that capacity development is at the centre of

Human Resource Development as a profession and that interventions related to capacity development seeks to identify strategic interventions which could add the highest value to the public infrastructure for developing the capacity of people (DPSA, 2008:12). The main focus of the human capacity development strategies identified in *Pillar One* is leadership development management strategies. This study focuses on this area of NDP.

The *International Institute for Educational Planning* (IIEP) (2006:34) defines capacity as the ability of individuals, organisations and systems to perform appropriate functions effectively, efficiently and sustainably. Bolger (2000:1) defines capacity as abilities, skills, understanding, attitudes, values, relationships, behaviours, motivations, resources and conditions that enable individuals, organisations and broader social system to carry out functions and achieve the development objectives over time. Linnel (2003:1) defines capacity building as activities that improve an organisation's ability to achieve its mission or a person's ability to define and realise his/her goals or to do his/her job more effectively. Breen, Jaganyi, Van Wilgen and Van Wyk (2004:430) refer to it as a process whereby people are enabled to better perform defined functions either as individuals, through improved technical skills and/or professional understanding; or as a groups aligning their activities to achieve a common purpose. According to Molekane (2008:233), the common deductions that can be made from the definitions of capacity and capacity building are that:

- both are concerned about ability to perform tasks in a sustainable manner;
- they are more about development of enabling skills, competencies and behaviours; and
- they are more about achievement of objectives and goals in an efficient and effective manner.

Building human resource capacity is an essential developmental intervention which is directed towards strengthening the public service. Appropriate and adequate human resource capacity building, training and education strategies

provide the backbone of accessibility, high quality and sustainably service to the society at large (Molekane 2008:234). In South Africa, the government considers itself as playing a direct and active role in building public sector capacity. The effective mobilisation, development and utilization of human resource capacity within the public service will be critical for the success of institution building and management (White Paper on the Transformation of the Public Service (WPTPS) 1995: 52). ‘Any public service institution that intends to provide service in an effective and efficient manner needs to realise that human resource capacity building should be directed to improving knowledge and changing people’s behaviour so that they can make more informed decisions, adapt better to changing conditions and be more effective in carrying out decisions towards the achievement of organisational goals and objectives’ (Breen *et al.*, 2004:430).

According to Bolger (2000:2), the objectives of capacity building are to enhance or more effectively utilize skills, abilities and resources, strengthen understanding and relations, and address issues of values, attitudes, motivations and conditions in order to support sustainable development. In order to achieve these objectives, public service institutions are compelled to create a flexible environment that will take into account the needs of the employee and his/her work into consideration. Suitable organisational conditions to perform tasks should be created because state capacity rests on its people and its success and failure relies on its labour force. Issues such as motivation, attitudes and performance are critical for the success of any institution (Antwi and Analoui, 2008:506). Investing in capacity building initiatives like training and education assists towards better functioning of the public service. (Wakely, 1997: 1) points out that capacity building initiatives must ensure the following:

- Empowerment - increasing efficiency, enhancing the effectiveness and ensuring the sustainability of development by passing responsibility to those people, communities and enterprises to whom efficiency, effectiveness and sustainability matter.
- Enablement - ensuring that those who are empowered have the information, technology skills and support to exercise their new authority

(power) responsibly. It is also about role: who should do what and in partnership with whom. Therefore it is about relationships and interfacing between the different fields and the different levels of responsibility.

- Partnerships and support - this is the business of equipping all actors in the public service with skills to perform effectively both in their own field and/or levels of operation, and in working in collaboration with others operating in other fields and at other levels.

Human resources with skills and imaginations to improve the lives of society are the most important resources for the public service. Thus, the availability and existence of an informed and educated human resource corps is a prerequisite for sustainability, development, value-adding and competitiveness of the public service. The achievement of the above objectives will depend on the conditions upon and within which human resource capacity building is undertaken. According to Godden *et al.*, (1996: 9), building the capacity of individual managers requires a shift in emphasis from training the individual towards support for individual development within the context of organizational development. Education management development can be seen as a process whereby the achievement of organisational goals and the meeting of individual development need to become harmonized. Management development is placed within the context of whole-school management and becomes an integral part of the day to-day management of schools.

Improved human resource capacity building in the public service will be realised if public managers and institutions can create favourable conditions for such an objective. The White Paper on Human Resource Management in the Public Service (WPHRMPS), (1997:3) indicates that delivery is enhanced within an environment characterised by employment justice, cultural diversity and transparency. Hence a multi-skilled, flexible, adaptable and versatile public service workforce, capable of undertaking the task of implementing its objectives while embracing a culture of service is essential (Patterson, 2008:325). Human resource capacity building requires public managers to observe and accept the positive impacts of capacitated human resources as well

as being aware and sensitive to those conditions that will pose a threat to such a state of affairs.

The absence of capacity necessitates capacity building. Hence, effective capacity building must be preceded by an assessment of existing capacity (Antwi and Analoui, 2008: 506). The public service should be encouraged to build their own capacity even though it will be a timely and costly process and exercise. It is important also to realise that capacity building is likely to be more effective and sustainable in the long term. Human resources within the public service will need to undergo fundamental changes in order to be more effective and efficient in performing their work. This can only be achieved if stakeholders involved in providing capacity building realise that it should be based on:

- broad-based participation and a locally driven agenda;
- build on local capacities;
- on-going learning adaptation;
- long term investment; and
- integration of activities at various levels to address complex problems (Molekane 2008:234).

The IIEP (2006: 39) suggests the following additional principles that would add value to capacity building process:

- Capacity building is a continual process of improvement within an individual, organisational or institution, not a one-time event.
- It is essentially an internal process, which only may be enhanced or accelerated by outside assistance, for instance by donors.
- Capacity building emphasizes the need to build on what exists, to utilise and strengthen existing capacities, rather than arbitrarily starting from scratch. However, in some situations radical and extensive changes may be needed.

- Human-centred development strategies emphasize that besides being a means to an end (i.e. improvement of performance), capacity building has an intrinsic value of its own in fostering job satisfaction and self-esteem.
- An essential aspect of capacity building should be to build capacity to cope with change and to include an integrated and holistic approach rather than traditional, narrowly sectorial ways of thinking in addressing problems at hand.
- Capacity building takes a long time and requires a long-term commitment from all involved. Success of capacity building efforts should not be measured in terms of disbursements or outputs with little attention to sustainability. Long-term change takes into account not only short-term but also intermediate -and long-term results.
- These results can be measured, but they require a broader selection of measurements and indicators than only quantitative ones.

The deductions that can be made from these principles are that the roles and agreements about who should be enabled and by whom are very important; the principles support long-term, coordinated and systematic approach; principles are guided by available capacity; and strategic capacity building partnerships. Human capacity in basic education is pronounced in teaching, management and district support structures. The education system as a whole has been affected by changes taking place globally. South African schools have in turn become sites for radical change. The expectations of principals have moved from demands of management and control to the demands for an educational leader. There are principals who are either not coping with the numerous changes or do not have the necessary skills, knowledge and attitudes to manage their schools effectively and efficiently. South African school principals have a multifaceted and enormous task of establishing an environment that could lead to effective schooling. Perhaps one of the major challenges that principals face is the range of expectations that are placed on them. This ranges from the demand for management and control to that of an educational leader who can foster staff development. South African principals are not appropriately skilled and trained for school management and leadership (Mathibe 2007:523).

There is increasing recognition that effective leadership and management are vital if schools are to be successful in providing appropriate learning opportunities for students. There is also emerging evidence that high quality leadership makes a significant difference to school improvement and learning outcomes. Huber (2004:1-2) claims that schools classified as successful possess a competent and sound school leadership' and adds that 'failure often correlates with inadequate school leadership. Leithwood *et. al.* (2006:4) indicates that school leadership is second only to classroom teaching as an influence on pupil learning. They conclude that 'there is not a single documented case of a school successfully turning around its pupil achievement trajectory in the absence of talented leadership' (Leithwood *et.al.*, 2006:5). There is a significant body of South African literature supporting the view that effective leadership and management are essential to develop good schools (Bush *et al.*, 2010, Christie, 2001; 2010, Department of Education, 1996, Roberts and Roach, 2006).

While there is an increasing body of evidence that leadership makes a significant difference, there is less agreement about what preparation is required to develop appropriate leadership behaviours. In many countries, including South Africa, school leaders begin their professional careers as teachers and progress to headship via a range of leadership tasks and roles, often described as 'middle management'. This leads to a widespread view that teaching is their main activity and that teaching qualifications and teaching experience are the only requirements for school leadership (Mestry & Singh, 2007). Bush and Oduro (2006:362) note that:

'Throughout Africa, there is no formal requirement for principals to be trained as school managers. They are often appointed on the basis of a successful record as teachers with the implicit assumption that this provides a sufficient starting point for school leadership'.

However, as Kitavi and Van der Westhuizen (1997:252) note in respect to Kenya, good teaching abilities are not necessarily an indication that the person appointed will be a capable educational manager'. Van der Westhuizen *et al.* (2004) reach a similar conclusion following their research in Mpumalanga. 'Wide-

ranging changes in the education system have rendered many serving school principals ineffective in the management of their schools. Many of these serving principals lack basic management training prior to and after their entry into headship. In the 21st century, there is a growing realisation that headship is a specialist occupation that requires specific preparation'. Bush (2008; 2010) notes the following reasons for this shift:

- The expansion of the role of school principal; which means that in decentralised systems, the scope of leadership has increased.
- The increasing complexity of school contexts; principals have to engage with their communities to lead and manage effectively.
- Recognition that preparation is a moral obligation; it is unfair to appoint new principals without effective induction.
- Recognition that effective preparation and development make a difference; principals are better leaders following specific training.

In many countries, including South Africa, a teaching qualification and teaching experience are the only requirements for school principals. In the 21st century, there is a growing realization that being a school principal is a specialist occupation that requires specific preparation. In 2007, the Department of Education introduced a new threshold qualification for aspiring school principals as part of its wider strategy to improve educational standards. This course is an Advanced Certificate in Education (ACE). The course was piloted in six provinces from 2007-2009. The pilot was open to serving principals as well as to deputy principals and school management team members aspiring to become principals. Participants were nominated by the provincial departments of education. The ACE is being delivered by universities, through a common framework agreed with the national Department of Education and the National Management and Leadership Committee (NMLC).

The first pilot group involved only five universities. Presently the course is offered at most universities throughout the country. The intention of the course is that it should be different from typical university programmes in being

practice-based. Its primary purpose is to ascertain how much of the course learning has been internalised, made meaning of and applied in practice in the school. This emphasis on practice resulted from the evidence that, although many school leaders hold university qualifications in management, their collective impact on school outcomes had been minimal. Their focus appears to have been on achieving accreditation rather than improving their schools. The government's Task Team on Education Management (Department of Education, 1996), described as not only a turning point, but also a starting point, for building the capacity of education leaders in South Africa (Van der Westhuizen and Van Vuuren 2007:436).

5.3 SCHOOL MANAGEMENT

The concept of management overlaps with that of leadership. However Kuye (2001:5) admonishes that to manage is not necessarily to control. Education leadership and education management relate to the administration of education. Cuban (1988:xx) provides one of the clearest distinctions between leadership and management by linking leadership with change while management is seen as a maintenance activity. Leadership means influencing others' actions in achieving desirable ends. Leaders are people who shape the goals, motivations, and actions of others. Frequently they initiate change to reach existing and new goals. Leadership takes ingenuity, energy and skill. Managing is maintaining efficiently and effectively current organizational arrangements. While managing well often exhibits leadership skills, the overall function is towards maintenance rather than change. 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 in the administration of schools (Bush 2007:392).

In the past few decades there has been an international trend to devolve the control and management of education from a central authority to state, provincial and regional (sub-state or sub-province) units. The decentralisation of management (and sometimes policy functions) has also been accompanied by

moves to provide schools with greater autonomy and to grant to them management functions previously held by state bureaucratic organs. The late 1980s and 1990s saw the rise in popularity of a global shift towards site-based management. The education system as a whole has been affected by changes taking place globally. The rationale for devolving power to schools, district and provincial structures is that it will improve the quality of schools by ensuring that management structures are closer to the action and able to be more responsive to local needs and problems (Joyce, Calhoun and Hopkins 1998: 214).

In South Africa a similar process of educational decentralisation has taken place. The promulgation of the South African Constitution Act No. 108 of 1996 and the South African Schools Act (SASA) No. 84 of 1996 marked a radical departure from the previous ways of managing and structuring the education system. Provinces were given the power to make and implement policy concerning schools education, in line with national frameworks. SASA instituted devolution of power to schools and school governing bodies. The process of devolution has been entrenched by legislation concerning the funding of public schools and the fact that schools have far greater financial control over their budgets and expenditure than before. Schools have also been given the power to determine a school vision, mission, development plan and policies on various issues including admissions, religious observances and language matters. The legacy of the past education system was characterised by fragmentation, inequity in provisions, and a crisis of legitimacy in many schools, and the demise of a culture of learning and teaching. There was resistance to change in creating serious managerial problems at schools that, in turn, led to deterioration in the standards of education (Gallie and Sayed, 1997:461).

South African schools have been confronted with educational reform since the mid-nineties and the process is continuing. The gradual shift towards site-based (school-based) management in schools is one of such example of that reform. This has been a world-wide phenomenon, driven by the dual imperatives of changing societal values and the rate of change (Walker, 1994:38). Site-based management is seen as having the potential to reflect social values of

democratic participation as well as to respond quickly and flexibly to contextual challenges. The increased emphasis on participation in management has resulted in a renewed interest in teamwork, and in team management and leadership in particular. Concurrent with this development has been the evolution of leadership approaches which de-emphasise the individual leader and stress group or team leadership and/or management. Shuping (2007:83) concurs with this when he mentions that the Constitutional principles of equity and redress can only be operationalised, wherein communities form inclusive and participatory networks.

The South African Schools Act (SASA) No. 84 of 1996 has decentralised school management. SASA stipulates that parents need to be involved in the education of their children. The underpinning philosophy of the South African Schools Act No. 84 of 1996 (SASA) is that that schools are encouraged to become self-managing as well as self-reliant (Mathonsi, 2001:1). The principal is no longer expected to carry the burden of managing the school alone. In terms of the amended provision of Section 16 of the South African Schools Act No. 84 of 1996, an SMT must be formed to assume responsibility for the day to day running of the school and for the implementation of the school's policies. It is the task of SGBs to determine such policies and it is this new understanding of governance is at the centre of the re-organization of the school system.

There is strong support for management through teamwork in literature by (Everard and Morris, 1996:156; Hayes, 1997:28; Belbin, 2000:219; Drach-Zahavy & Somech, 2001:52; Sheard and Kakabadse, 2001:133), and in this sense the move towards formalizing team management in school contexts through establishing (School Management Team) SMT is justified. The advantages of teamwork are also fully documented. Indeed, Stott and Walker (1999:51-52) suggest that the advantages of teamwork are taken almost for granted, given the extensive coverage in recent education literature. Stott and Walker, (1999:51) cite arguments that teamwork provides teachers with a significant role in school decision making, control over their work environment and opportunities to contribute to a range of professional roles. Finally, (Stott & Walker, 1999:52)

record the claims that teams can solve problems more creatively than individual leaders and that modern organisations need processing machines to deal with the overwhelming flow of information. More importantly, there is growing understanding of the conditions necessary for effective teamwork, and the characteristics of effective team functioning.

A significant development in the South African education system over the past decade has been the move towards this site-based management and its associated management approaches, chiefly those that stress participation. Sergiovanni (1984:13) points to the importance of a participative leadership approach in the management of schools. Sergiovanni (1984:113) contends that the burdens of leadership will be less if leadership functions and roles are shared and if the concept of leadership density were to emerge as a viable replacement for principal leadership. Leithwood *et.al.* (1999:12) concurs by pointing out that this model is underpinned by three assumptions:

- participative leadership increases school effectiveness;
- participative leadership is justified by democratic principles; and
- in the context of site-based management, participative leadership is potentially available to any legitimate stakeholder in school education.

The participative model is consistent with the democratic values of the new South Africa. The introduction of SGBs for all schools, and the greater prominence given to SMTs, suggests a firm commitment to participative decision making. In a work entitled 'Leadership in Administration', a revered Public Administration scholar, Philip Selznick points out that 'Leadership... is a slippery phenomenon' (Selznick, 1957:25). However, Selznick (1957:25-26) continues to indicate that it is futile to discern leadership apart from the broader organizational context of which it forms a part. For the purpose of this study, the concepts of management and leadership are explored within the school as an organisational structure. The tendency to regard school principals as solely responsible for leadership and management of schools is gradually being

replaced by the notion that leadership and management are the prerogative of many, if not all, stakeholders in education (Department of Education, 1996:19).

The approach to a strategic site-based school management in South African schools has been given added impetus by the shift to greater self-management and, in particular, the acquisition of Section 21 status (South African Schools Act 1996), which gives more autonomy to schools. The greater the authority exerted by the SMT, the Representative Council of Learners (RCLs) and the SGB, the greater the potential for a truly strategic approach to emerge. Thurlow (2003b) refers to the 1996 Ministerial Task Team Report (DoE, 1996:189) to argue that strategic management and planning represent a radical culture shift for school that previously focused on short-term tasks and adopted a culture of dependency. The new challenge is that the SMTs, RCLs and SGBs are required to think and act strategically in order to align school policies and practices to national legislation. The main focus of management as one of the priorities in the NDP document is placed on school principals and SMT.

The discussions on school management in this chapter excludes the role of SGB as the role thereof has already been discussed in greater details in Chapter 4 of this study. A lot of emphasis is put on the role of the principal as prescribed by the proposals set out in the NDP document (NDP 309-310). The NDP document describes the core business of the school as that of teaching and learning and entrusts the principal with the responsibilities of providing leadership for schools to fulfil.

Mestry and Singh (2007:477) warn that the task of being a principal is demanding; requires energy, drive, as well as many personal qualities and attributes. The expectations of principals have moved from demands of management and control to the demands for an educational leader who can foster staff development, parent involvement, community support, and learner growth, and succeed with major changes and expectations. Mestry and Singh (2007:477) point out that principals who are involved in the day-to-day management of the schools, need to take time to reflect on their personal

growth as leaders and managers in order to do their tasks effectively and efficiently.

According to Mestry and Grobler (2006:126-127) school principals have a multifaceted and enormous task of establishing an environment that leads to effective schooling. Perhaps one of the major changes in analysing the role of the principals has been the range of expectations placed on them, from the demand for management and control to that of an educational leader who can foster staff development. These demands include:

- Establishing a culture of teaching and learning;
- Improving and maintaining high standards of education;
- Working more closely with parents;
- Coping with multicultural school populations;
- Managing change and conflict;
- Coping with limited resources; and
- Ensuring more accountability to the community they serve.

The scope of the principals' role can be further complicated by factors outside their control, for example, unions and the Department of Education negotiating provisions pertaining to class size, employee discipline, grievances, leave for educators, teaching loads, implementing outcome national policies and many more. The principals can no longer simply wait for instructions or decisions from the Department of Education or the government. They are required to act proactively. The pace of change and the need to be adaptable and responsive to local circumstances requires school managers to develop new skills and working styles. They must be capable of providing leadership for teams, and be able to interact with communities and stakeholders, both inside and outside the education system. They should also manage and use information to promote efficiency and to support democratic governance. Thus, the task of being a school principal is demanding, requiring energy, skills, drive and personal qualities such as commitment, dedication and resilience. It becomes necessary for principals to take time to reflect on their personal growth as leaders and

managers. By identifying those areas of personal development and management style that can be developed, the principal is able to improve the management of the school and increase his/her career satisfaction (Mestry and Grobler 2006:127).

The school is regarded as the locus for improvements. School principals therefore have the key role in designing, developing, monitoring and evaluating these improvements. Principals should possess skills, knowledge, attitudes and values to manage their schools effectively and efficiently. There are principals who have left the profession because there are no careers or promotional opportunities, and have been replaced by educator with very few management qualifications and little experience in the teaching environment. This has resulted in concerns by communities for total quality education and the urgency to improve the overall learner achievements. Principals are faced with situations in which effective and efficient school management requires new and improved skills, knowledge and attitudes to cope with a wide range of demands and changes. Thus, it is necessary to provide principals with the necessary skills, knowledge and attitudes, through a development and training programme, so that they can manage their schools effectively and efficiently.

According to Trotter and Ellison (1997:2-3), while school effectiveness has been researched over several decades across many countries, the interest in management competency is relatively recent, particularly in education. Past managerial competence went hand-in-hand with the possession of specific skills and abilities. Managerial competence presently involves much more. It rests on the development of attitudes, values and mind-sets that allow principals to confront; understand and deal with a wide range of forces within and outside schools. In the quest for quality education, competent principals are urgently required to manage such increasingly complex and heterogeneous tasks. Principals are often not well prepared for the tasks they must undertake and not given sufficient training to perform these tasks. At the very least, a competent principal should be able to:

- Manage and deploy school resources efficiently;
- Allocate school accommodation appropriately;
- Ensure satisfactory standards of maintenance and cleanliness of school facilities;
- Organize staff development in school;
- Guide curriculum implementation and change;
- Manage the developmental appraisal system, whole school evaluation and the integrated quality management system;
- Create a professional ethos within the school by involving staff members in decision-making; and
- Manage restructuring and redeployment of educators.

Various authors and educationists have identified key role functions that principals require to manage their schools effectively. For example, the Scottish Qualification for Headship Programme (Reeves *et.al.* 2001:38) identifies the following to form the basis for competent principals:

Professional values

- Commitment to educational values
- Commitment to critical reflection
- Commitment to extending knowledge and understanding

Management functions

- Managing teaching and learning
- Managing people
- Managing policy and planning
- Managing resources and finances

Professional abilities

- Interpersonal abilities
- Intellectual abilities

According to Godden *et.al.*, (1996:9), building the competences of individual managers requires a shift in emphasis from training the individual towards support for individual development within the context of organizational development. Education management development can be seen as a process whereby the achievement of organisational goals and the meeting of individual development need to become harmonized. Management development is placed within the context of whole-school management and becomes an integral part of the day-to-day management of schools. Everard and Morris (1996: ix) make a critical point when they state that principal development must lead to greater understanding and competence. Thus, while it may be appropriate for a programme to include the acquisition of techniques or skills, or the learning of data, it must lead to a higher level of intellectual and creative performance. The process of development is primarily concerned with helping principals to acquire and improve the competencies necessary to manage schools effectively.

5.4 DISTRICT SUPPORT

It is necessary to offer a working definition of an education district, as the term has slightly different meanings when used in different provinces (Mphahlele, 1999: 27 and Narsee 2006:4). For the purpose of this study, education district will be used to refer to administrative and managerial units within the education system which are located closest to the schools, forming an intermediate layer between individual schools and larger components of the education system, such as regional or provincial bodies. In the context of the South African education system, school districts are the intermediaries between the National and Provincial Departments of Education and the local schools. The officials who serve in school districts play a fundamental role of overseeing the implementation of all the new policies developed by the National Department of Education and implemented by the nine Provincial Departments of Education in South Africa.

Narsee (2006:4) avers that the role of the districts is not very clear, the roles of districts in the South African education is somewhat contentious. He advances

two reasons to that effect; first, districts exist as a base for professional service to schools; and second, districts are established to ensure policy and administrative control. In this study, the discussion revolves around districts as the hubs of policy implementation and administrative control. The position of school districts in the educational hierarchy means that they have great potential to be a vehicle for medium-to large-scale educational reform. The school district is the lowest level of the educational system at which individual schools are brought together under the authority of some sort of coordinating structure.

The decentralisation of authority to provinces and schools has implications for the way in which districts operate. Districts need to understand the extent to which schools are able to translate policies into reality. This requires a detailed knowledge of the functioning of schools within the district's area of operation. The district's potential to be a force for change is linked to its proximity to schools, allowing it to be responsive to local needs, yet able to introduce changes linked to system-wide or province-wide reform efforts. Reform initiatives can be tailored to suit the needs of local schools and district office staff can be responsive to difficulties faced by individual schools and intervene to resolve such problems far quicker than if problems were referred to a superior structure responsible for many more schools in a larger geographic area. (Jansen 1995:246).

Education districts are the links between education sites and the provincial education departments. Various views on the school district role and their officials indicate the existence of various views regarding the role that school districts and their officials play. These views include those that endorse the critical role played by the district and its officials; those that raise some concerns about districts; and those that speak to the neglect in the studying of districts as essential players in the systemic reforms. According to Narsee (2006:3), the current literature on the role of district is fraught with limitations, however he highlights two of these limitations: The first is that the research that has been undertaken thus far on education districts has not been able to capture

the recent changes that have come about as a result of the restructuring that is prevalent in provincial departments (DoE, 2003). The second limitation is that the research on education districts focuses entirely on district-school relationships. The relationship between other role-players such as the provincial head offices, particularly from the decentralisation perspective has not been explored sufficiently in either the normative or the empirical literature.

The districts are responsible for ensuring that education needs are understood and addressed, and that national learning objectives are realised. In addition, they provide direct services to schools, educators and learners. These services include: administration, curricular and procedural support to schools, institutional development and support, human resources development, quality control and resource allocation to schools, education-support services, and sport, culture and values in education. In some education systems, districts may have the authority to develop policies concerning learner achievement, learning goals, curriculum frameworks, resource allocation and staffing. Mphahlele's (1999:27) work on school districts in South Africa showed that district sizes vary according to the density of schools in a particular area, with rural districts typically covering a far larger area than urban districts. District size is generally determined by the number of learners that the district serves.

It has been noted that the primary function of school districts is to support the delivery of the curriculum in schools and to monitor and enhance the quality of learning experiences offered to learners. While this is arguably the function of the entire education system, district offices have a particular role to play in working closely with local schools and ensuring that local educational needs are met. In supporting the primary function of the district, five possible areas of operation for districts are identified. These include:

- Policy implementation;
- Leading and managing change;
- Creating an enabling environment for schools to operate effectively;
- Intervening in failing schools; and

- Offering administrative and professional services to schools and teachers.

These different areas of operation should be aligned to support the district's primary purpose.

The primary implementing agents (who are closest to the site of implementation) of these policies is the district office. It is in the country's interests to ensure these policies are implemented in such a way that the outcomes determined by the national and provincial governments are achieved.

Several policy analysts have noted that as policy is implemented, it is reformulated (Spillane, 1996: 64; McLaughlin 1979; Pressman and Wildavsky 1973). The final outcomes of a policy are determined by the manner in which it is implemented, by the agent who is closest to the final site of implementation. The degree of cooperation between different implementing agencies needs to be very high in order to ensure that a number of small deficits do not cumulatively create a large shortfall. This requires close cooperation between provincial departments of education, districts and schools. If implementation outcomes are to be in line with the intended policy outcomes, then it is in the state's interests to ensure a high degree of support for these policies from those who will be implementing them. This implies that district staff must be conversant with national and provincial policies, be able to explain them to others and know how to translate them into action. Spillane (1996: 64) writes that district administrators have an important role to play in mobilising support for the implementation of state policies.

In a transforming education system, the district office also has a key role to play in leading and managing change. Due to the district's proximity to schools, it is possible for district staff to not only inform schools about new ways of operating, but also to model new types of behaviour and offer support to teachers and principals. In order for the district office to offer instructional leadership and to facilitate a process of change and adaptation in schools, district staff needs to understand the nature of the change process and the

content of the change which they wish to introduce (e.g. a new curriculum framework or new style of school management and governance). They also need to understand the way in which these policies impact on previous styles of interaction between the district office and schools.

Legislation on the governance and management of school education in South Africa has followed the international trend of granting functions previously held by bureaucratic bodies to schools and lower levels of government. The Constitution of South Africa Act No. 108 of 1996 allows for the existence of provincial departments of education and allocates particular powers to these departments. The South African Schools Act No.84 of 1996 allocates the power to develop policies on matters which were previously decided by national statute (e.g. language policy and policies on religious observances) to school governing bodies. One of the problems with current legislation is that the powers and role of school districts is not clearly spelled out (Narsee 2006:28). It could be argued that granting policy making powers and management functions to schools undermines the need for coherent and consistent policy implementation. In order for effective implementation of policy, schools need to have the internal capacity to exercise these powers and a sound understanding of the extent and limitations of their powers. The district has a role to play in ensuring that school-initiated policies adhere to national guidelines and that disputes and problems which school-based managers are unable to resolve are dealt with expeditiously in order to ensure that institutional problems do not derail the teaching and learning process that must take place in schools.

It is essential that district offices be granted sufficient power to intervene in schools and resolve problems when the need arises. Because the legal powers of districts are not clearly spelled out by legislation, it is not uncommon to read about problems in individual schools being referred to the highest authority in provinces, the MEC. If districts were granted greater authority to act on behalf of the provincial department of education, such problems could be resolved more quickly and both time and money could be saved, as high-level personnel would not be required to settle local disputes.

The importance of the district office as an administrative centre ought not to be taken lightly. The district office needs to maintain accurate information systems on the number of learners attending its schools, school-related data, personnel-related information and information on school and learner performance. The use of quantitative data in decision-making is one of the features of effective districts. The maintenance of accurate records is also essential if districts are to act as service centres to teachers (Taylor and Vinjevold, 1999:116).

Teachers, as employees of the Department of Education, require that accurate personnel information is maintained and that personnel-related queries can be resolved as quickly as possible. The professional development of teachers is one of the critical challenges facing the education system. Research has shown that many teachers require professional development in both teaching methodology and subject content knowledge (Taylor and Vinjevold, 1999:119). District offices need to be able to offer professional development programmes for both the teachers and the educational managers.

5.5 ANALYSING THE REASONS FOR THE LOW PRODUCTIVITY OF OUTCOMES IN SCHOOLS

According to Jansen (2006:105-112), there are five major reasons behind the low productivity of the school education system in South Africa. These are:

- (i) Lack of systematic routines and rituals;
- (ii) Knowledge problem;
- (iii) Bureaucratic and administrative ineptitude;
- (iv) Lack of accountability; and
- (v) Lack of capacity and expertise.
- (vi)

5.5.1 Lack of systematic routines and rituals

Many schools in South Africa are devoid of systematic routines and rituals that account for productive schools elsewhere in the world. There are small pockets

of schools, middle-class white or middle-class integrated where these routines and rituals are still practiced. Examples of these routines and rituals include: the schools programme for a day start and end on time; teachers, pupils and principals are present on daily basis; class attendance is monitored and promptly reported; homework is given regularly and on a planned, school-wide basis; regular tests are scheduled and parents are informed in advance; feedback on assessment tasks is given to the learners speedily, carrying high formative-value for individual learners over the course of the school year; sports and sporting events are held regularly, with required attendances for non-participating learners; disciplinary codes are enforced and disciplinary cultures are not questioned; teachers carry multiple tasks of which classroom teaching is but one; parents are given report cards on regular basis; the SGB receives regular results on school and learners performance (Jansen 2011:106).

Absenteeism from school or any form of truancy is deemed as a serious matter, and it is dutifully recorded and thoroughly explained by the absentee learner. Individual care is balanced with individual discipline. Schedules are set long in advance. Errant teachers and learners are confronted about their behaviours and corrective measures are put in place. Budgets are meticulously drawn and fundraising activities are regularly undertaken. School premises are clean and facilities are repaired whenever they are broken. Security is visible and tight. Awards are bestowed to deserving individuals and a culture of achievement from academics to sports to the arts is instilled in every classroom. These routines establish productive teaching and learning cultures that explain the significant gap in academic performance between a handful of excelling schools and the large majority of underperforming schools.

5.5.2 Knowledge problem

Jansen (2011:107) avers that the majority of teachers and principals in many schools in South Africa have a knowledge problem. Jansen (2011:107-108) expounds that teachers and principals lack different kinds of knowledge required

in a professional setting like a school in order to impact learning and to influence change. These kinds of knowledge are:

- Knowledge of the subject matter (content knowledge);
- Knowledge of teaching methodology (pedagogy);
- Knowledge of learners and their socio-economic backgrounds (psychology);
- Knowledge about knowledge (epistemology);
- Knowledge of communities from which the learners come from (anthropology, sociology of learning);
- Knowledge of classroom organisation and discipline (managerial knowledge).

At the summit of the knowledge problems, two stand out for the purpose of this study namely; content knowledge and pedagogical knowledge particularly in the learning areas of Mathematics and Science. The weakness of the knowledge and skills of many teachers of Mathematics and Science has been known for many years. Programmes to address this problem are classed as in-service trainings. These programmes have been initiated mostly either by the government or by NGOs. These had varied objectives, ranging from developing more progressive teaching styles and better conceptual understanding to drilling and practice in the core syllabus content. With the change of regime since 2009 one would have expected these activities to be intensified. However, the introduction of the National Curriculum Statement (NCS) over the past few years has diffused the very necessary attention the curriculum needs for improved understanding and teaching methodology (Jansen 2011:114).

This has frustrated some teachers, who are aware of their real needs. Compounding the problem has been the limited capacity of subject advisers. These are key individuals in the district offices who should be in a position to support teachers who may be struggling to improve. Unfortunately these subject advisers usually have too many schools to support and too many other bureaucratic duties to perform. In addition, in many cases, they themselves lack

the knowledge and skills which teachers need help with. With these limitations of the government system, the potential role of NGOs and High Education Institutions (HEIs) is amplified. NGOs, often funded by local companies, have filled the gap with varied initiatives. The quality and effectiveness thereof has been very variable. Learning how to be effective has, however, slowly taken place. For example, short, isolated interventions are generally now seen as ineffective. But many funders (including government) still budget for minimum cost interventions, which in many cases leads to low quality and wasted effort (Bradley and Scheiber: 2010:18).

In contrast to the non-formal programmes provided by the NGOs, the HEIs have primarily offered the formal Advanced Certificate in Education (ACE). These are 2-year part-time qualifications providing either for re-skilling or for up-skilling; re-skilling means learning to teach a subject you were not previously qualified for, whilst up-skilling means improving your knowledge and skills in a subject you are already qualified to teach. Once again these are of variable quality, with some HEIs enrolling large numbers of teachers and operating their courses with high teacher to lecturer ratios to maximise the ratio of income to expenditure. Also, too many mathematics and science teachers actually enrol for ACE programmes that are directed at subjects other than Mathematics and Science. Albeit all these initiatives being put in place, the central problem of Mathematics and Science knowledge needs to be prioritised. It is also true that ameliorating programmes have their place; it is also true that pre and in service training of teachers could be improved. But the fact remains that the majority of Mathematics and Science educators need substantial help to increase their competence, and they need it now. This must be a priority (Bradley and Scheiber: 2010:19).

5.5.3 Bureaucratic and administrative ineptitude

Another reason for the lack of productivity in the school can be attributed to the problem of bureaucratic and administrative ineptitude in both the national and the provincial governments. After 1994, a lot of emphasis was placed on policy-

making and less on planning. At the national level of government, schools were bombarded by score of policies which were routinely produced and amended. This bombardment of policies resulted into what Jansen (2011:108) describes as a 'policy overload'. These policies were not only constantly made but they were reviewed with every subsequent administration. The case in point is the Outcome Based Education (OBE) curriculum policy. This policy failed to live up to expectations and it was abandoned. Some of the reasons advanced for the failure of OBE include the fact that many of the teachers did not understand it; most of the schools did not have the resources to implement it; many districts did not have officials who possess the much-required deftness to interpret it; and officials at the highest national echelon did not have the curriculum expertise to devise means and turn-around strategies to improve the performance of the dysfunctional schools.

5.5.4 Lack of accountability

The notion of accountability implies that politicians and public servants should be answerable for their actions to their constituencies and their superiors and more broadly to the public. Such answerability pertains to compliance with regulatory frameworks, ethics and the achievement of results (van Niekerk, van der Waldt and Jonker, (2001: 125). Accountability in broad terms is distinguishable from public accountability. Public accountability is associated with representative democracy and the rights of citizens that accompany it. Accountability relates to the obligation of a person, group or institution to report to another for a responsibility conferred. South Africa has a weak system of accountability in schools.

Section 195(1)(e), (f) and (g) of the Constitution of the Republic of South Africa Act No. 108 of 1996 provides that public administration must be responsive to people's needs and the public must be encouraged to participate in policy-making; it must be accountable and must foster transparency. There are conflicting views on the role of individuals in promoting accountability. In line with democratic theory with its positive outlook about the inherent capacity of

mankind to do that which is good, one approach advocates internal agency of the individual conscience. The opposing view favours external control over individuals. A third view distinguishes between objective and subjective or psychological responsibility. The former connects the responsibility of the individual to someone else outside for performance and is associated with accountability and external punitive controls in the event of failure to perform. Psychological or subjective responsibility is personal and appeals to the individual's conscience and loyalty rather than with answerability (Kuye and Mafunisa, 2003).

5.6 ANALYSIS OF THE DATA GATHERED FROM THE QUESTIONNAIRES

The analysis of data emanates from the field work, which involved the self-administering of research questionnaires to the participants in 36 sampled schools and four district offices in the Free State. The questionnaires were aimed at garnering data on the administrative capacity of school managers, system level officials and Mathematics and Science HODs to implement the scarce skills policy in Mathematics and Science dedicated schools. The questionnaires comprised of 49 questions which were divided into three sections: *Section A*: Biographical information, *Section B*: Awareness of other skills development policies and relevant official documents and *Section C*: Finding more about the degree knowledge and abilities that school managers possess in order to perform certain tasks that are part of their lines of duties or job descriptions.

The data gleaned from these questionnaires is summarised and analysed making use of a Statistical Package for the Social Sciences (SPSS) programme. The software package called the SPSS Statistics Chart Builder Version 20 has been used to draw the graphs in this chapter. Data are only summarised by means of pie and bar charts. The findings stemming from the questionnaires and based on the data analysed in this chapter are discussed in Chapter Six. Recommendations shall also be proposed with regards to the challenges identified in Chapter Six.

The questionnaires were disseminated to the 36 schools for the principal and two HODs of Mathematics and Physical Sciences); two were sent to Mathematics and Sciences subject advisors and one to the provincial NSMSTE programme coordinator. The total number of instruments that were disseminated is 111. Out of that total, 96 were returned to the researcher, four of which were filled-in partially, they were deemed to be spoiled. This analysis is therefore based on the responses garnered from 92 respondents. This a response rate of 82.9%. The Questionnaire is attached as Addendum C.

SECTION A: ANALYSIS OF BIOGRAPHICAL INFORMATION OF THE PARTICIPANTS

1. *In which age group do you fall ?*

The researcher wanted to establish the dominant age groups of males in relation to their female counterparts.

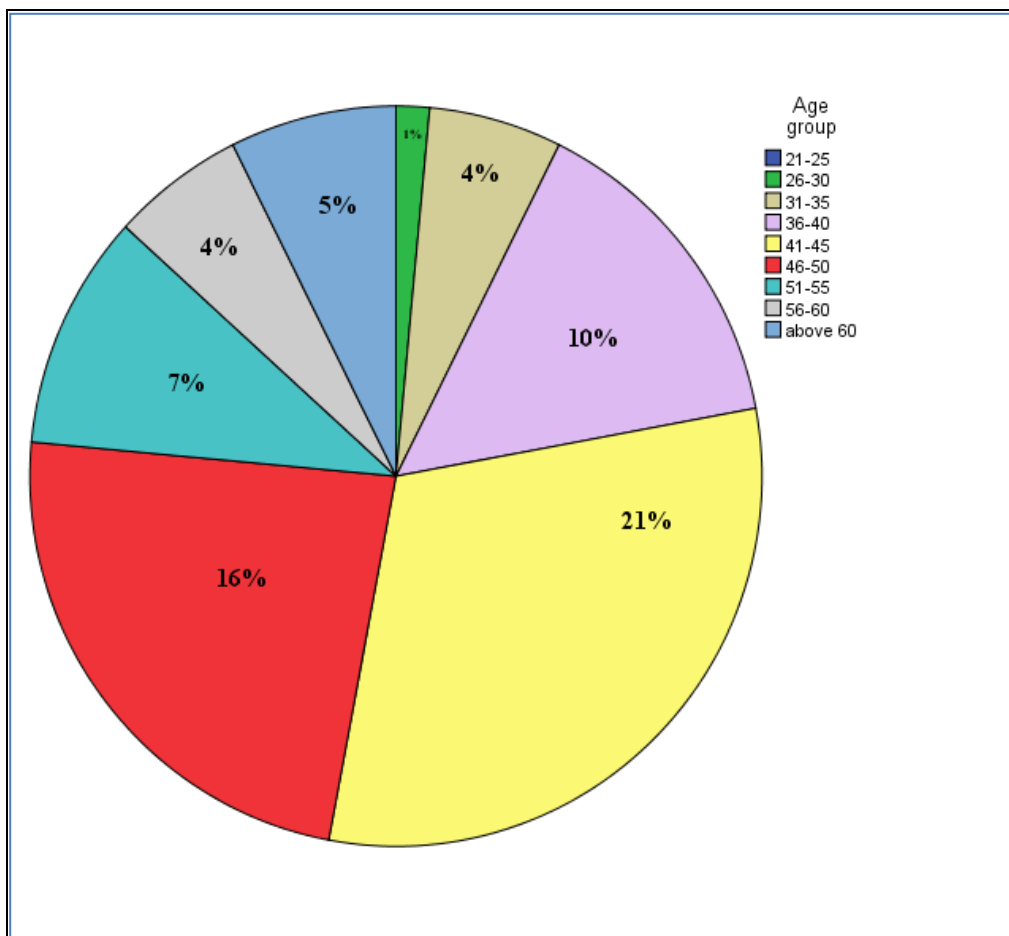


Figure 5.2: Age groups of the males

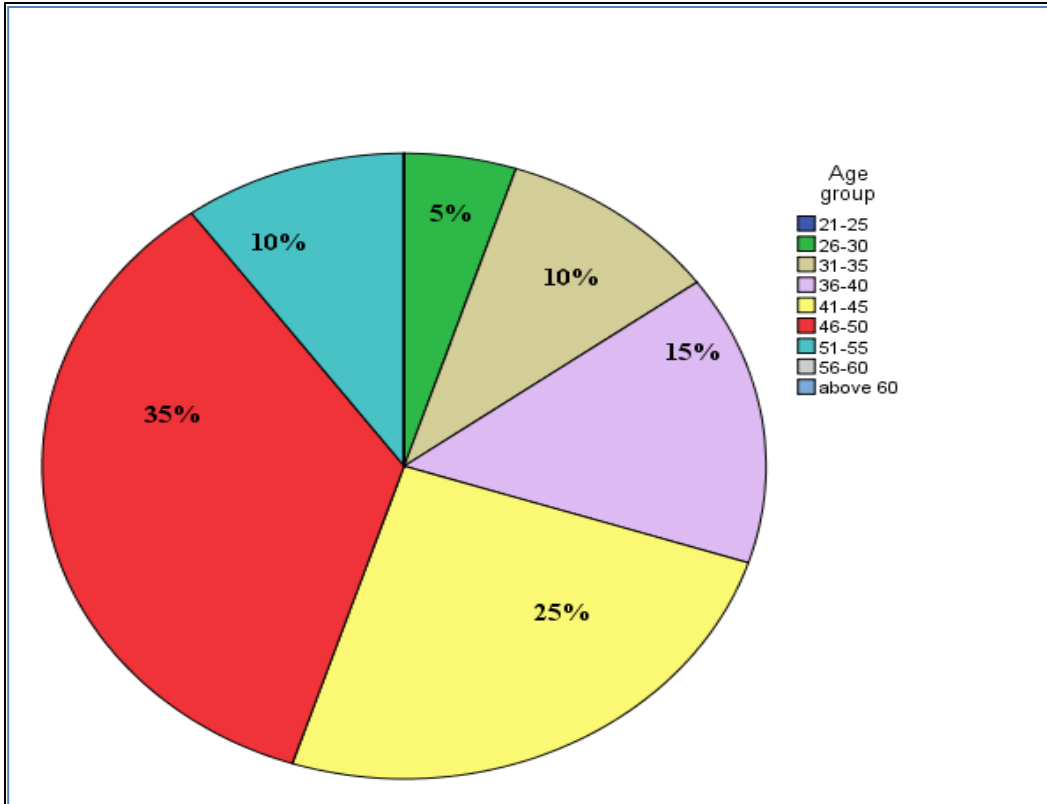


Figure 5.3: Age groups of females

Figure 5.2 and 5.3 show that the majority of respondents about (twenty one and twenty five percent) of both males and females respectively) are between 40 and 45 years of age. These statistics bear testimony to the fact that many school managers are middle-aged. This places them in a better position to be re-trained and re-orientated on the advanced models of the implementation of government's policies because they still have about 20 years to serve in the department.

2. *What is your highest academic qualification?*

The intention of this question was to establish whether the respondents hold any qualification that is relevant to their line of work as school managers.

Figure 5.4 sets out the percentages of the responses for the question on the highest qualifications obtained by respondents:

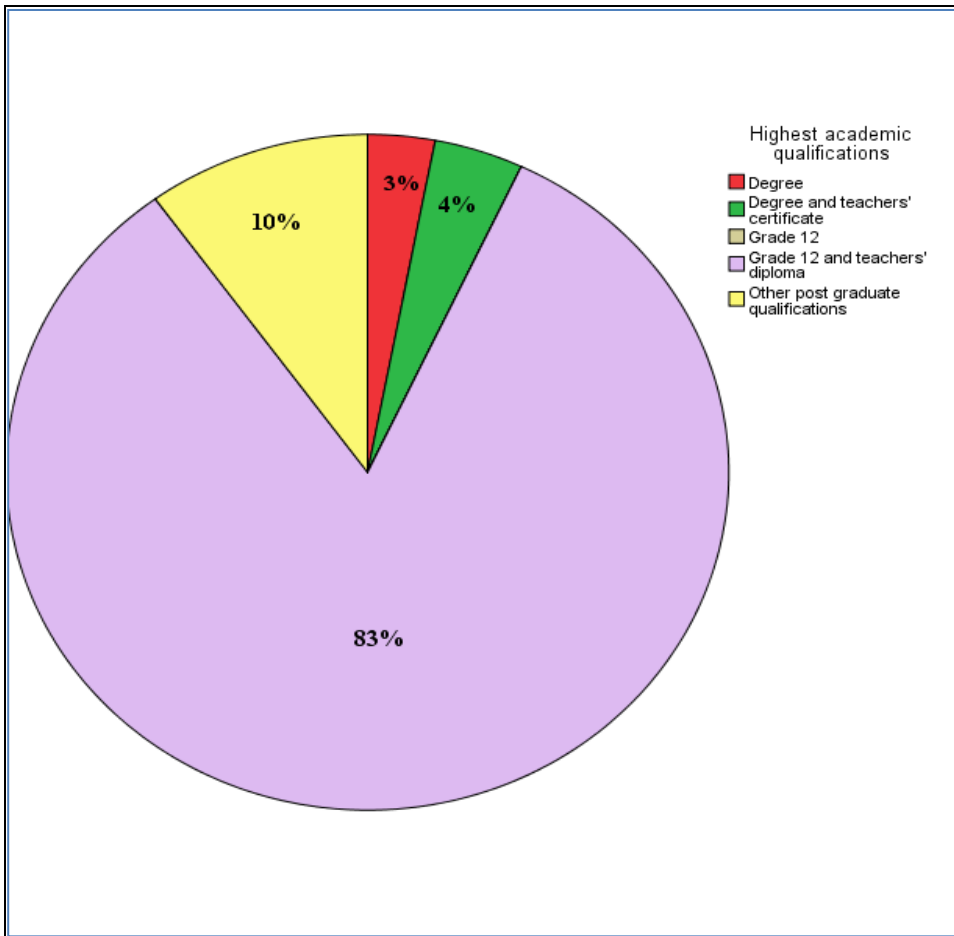


Figure 5.4: Highest academic qualifications

In terms of figure 5.4, a staggering eighty three percent of school principals and head of departments at school level indicated that they have a Grade 12 and teachers' diploma, only three percent and four percent hold a bachelors' degree. Ten percent hold a post graduate qualification that is necessarily management aligned. These statistics are bound to have an impact on their day to day work as managers of the schools. Furthermore those statistics are consistent with the exigency for re-skilling and re-training that was mentioned earlier in the analysis of figure 5.2 and 5.3.

3. *Please indicate the subject(s) that you are managing and/or offering in Grades 10 - 12.*

- The reason behind this question was to gather information on the workload of school managers and find out as to whether this workload has any bearing on their daily management work routines.

Figure 5.5 outlines the distribution in terms of percentages of subjects that the respondents are managing and/or teaching in the FET band.

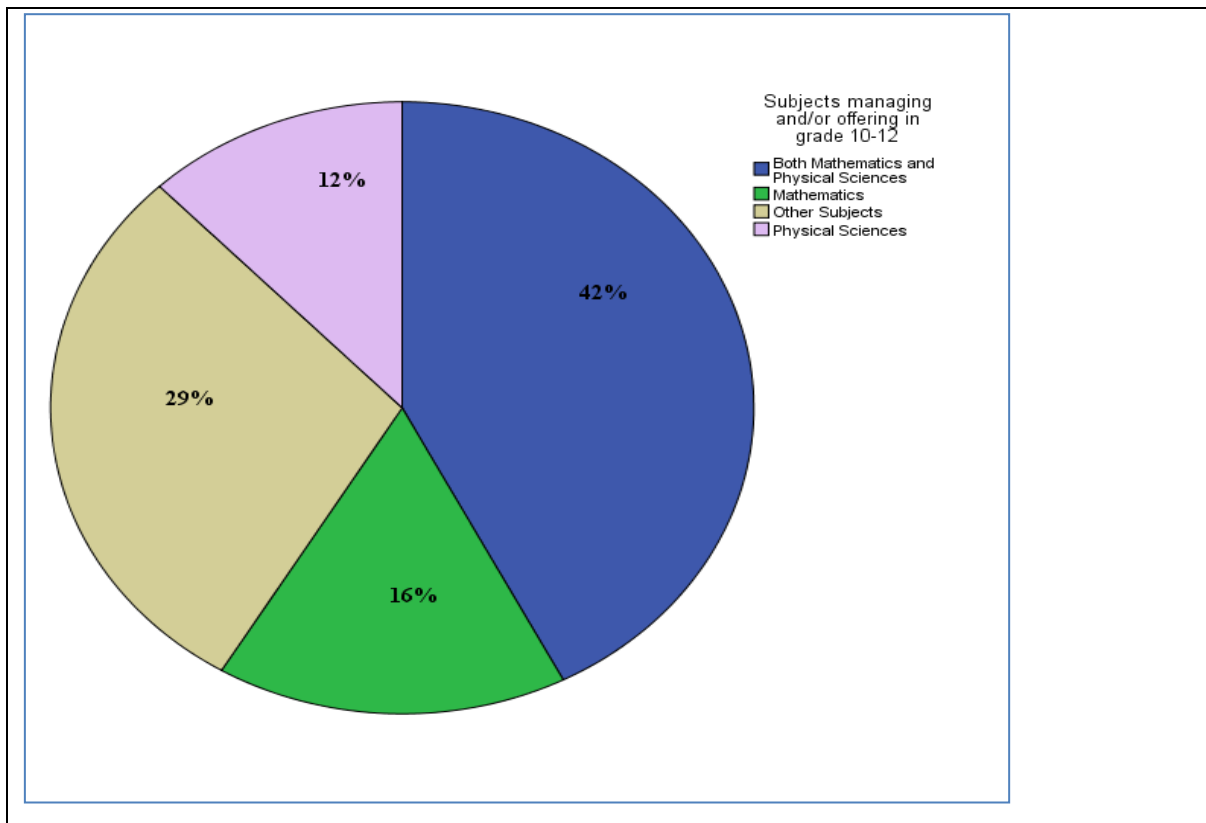


Figure 5.5: Subjects managing and/or teaching

About forty two percent of the respondents reported that they manage and/or teach both Mathematics and Physical Science, whilst twenty nine percent manage and/or teach other subjects. Mathematics is managed and/or taught by sixteen percent of the respondents and Physical Science is managed and/or taught by twelve percent of the respondents. These statistics imply that the respondents find it difficult to thoroughly focus on one of these gateway subjects as they are expected to manage and/or teach other subjects as well. This may impact negatively on the management of their own subjects.

5. Please indicate your highest qualification in the subject(s) you listed in the previous question.

This question was intended to gain insight in the relevant qualifications of the respondents. This was done in order to determine that teachers who are recruited to manage schools have the appropriate qualifications for the subjects they teach and/or manage. Figure 5.6 shows the percentage of the responses on the question about the highest qualification held by the respondents on the subjects they manage and or offer:

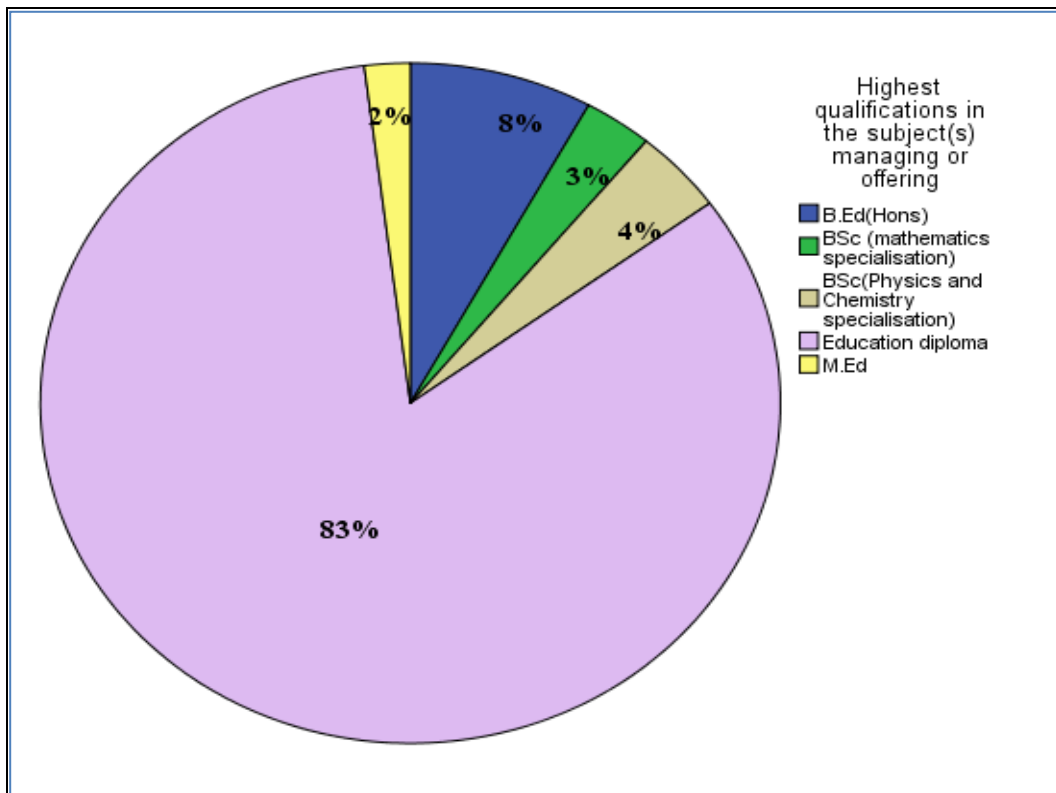


Figure 5.6: Highest qualifications in the subject(s) managing or teaching

Eighty three percent of the responses affirm the views expressed by the respondents in figure 5.4 that a large group of school managers hold diplomas. Between two percent and eight percent of the respondents have Mathematics and/or Physical Sciences qualifications (i.e. Bachelors of Science (BSc)). This has a negative impact in managing the subject efficiently and calls for the need to

equip school the managers with knowledge and skills in order to manage these key subjects.

With regards to figures 5.2 - 5.6, it is worth noting that in terms of age, most managers are male and middle-aged. In terms of qualifications, a large percentage of the respondents have diplomas. Most of them do not have the highest qualifications in the subjects that they teach or manage.

5. Please indicate your position in the organisational structure of the school education system.

Table 5.1 below show the positions of personnel in the school education system organisational structure. The numbers represent only the population of this study.

Table: 5.1: Positions of personnel in the school organisational structure

Various position held by the respondents	Numbers within the organisational structure
School Principals/Deputy Principals	31
Head of Department/senior or master teachers	45
Teachers	14
System level officials/Subject advisors	2

SECTION B: ANALYSIS OF THE AWARENESS OF THE MATHS SCIENCE AND TECHNOLOGY EDUCATION (MSTE) POLICY AND OTHER RELATED POLICIES AND/OR ACTS.

Please read the following statements carefully and indicate which policy document/ act address the statement. Rate your awareness of policy and/or act on a scale of 1- 4. The ratings are as follows:

- 1 = No idea;
- 2 = Not clear;
- 3 = Clear understanding; and
- 4 = Excellent Understanding

The questions in this section were meant to establish as to whether school managers are informed about the legislation that is relevant to their work as agents of policy implementation. The questions also investigate as to whether the school managers know other skills development policies that are closely related to the scarce skills policy. A variety of policies, acts and programmes were used in this regard. Some of these are national while others are provincial. It was important to investigate as to whether some of the provincial policies and programmes are over- emphasised at the expense of those that are national.

Figure 5.6 below illustrates the percentages of the responses when the respondents were asked to rate their awareness of the Constitution of the Republic of South Africa Act No. 108 of 1996.

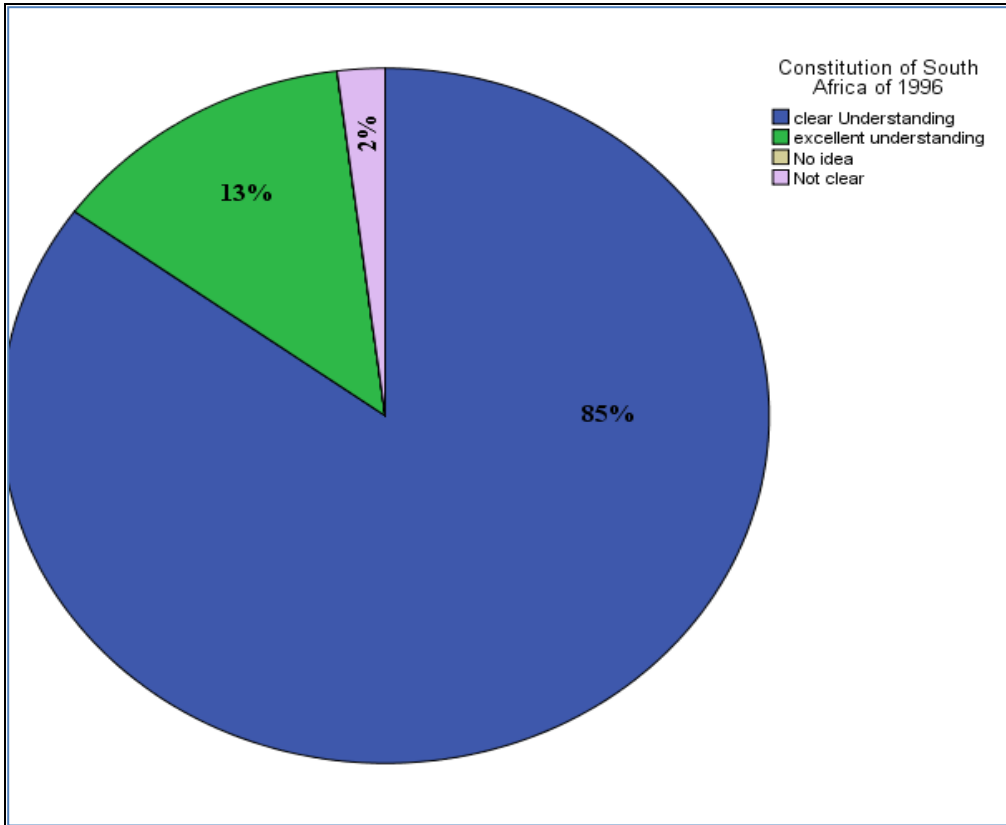


Figure 5.7: Constitution of South Africa

Figure 5.7 reveals that the majority of the respondents (eighty five percent) reported they have a good sense of what the Constitution of the Republic of South Africa Act No. 108 entails. Only two percent of the respondents claimed that they do not have any idea while thirteen percent of the respondents reported that they have an excellent understanding.

Figure 5.8 shows the percentages of the responses when the respondents were requested to rate their awareness of the National Education Policy Act No. 27 of 1996.

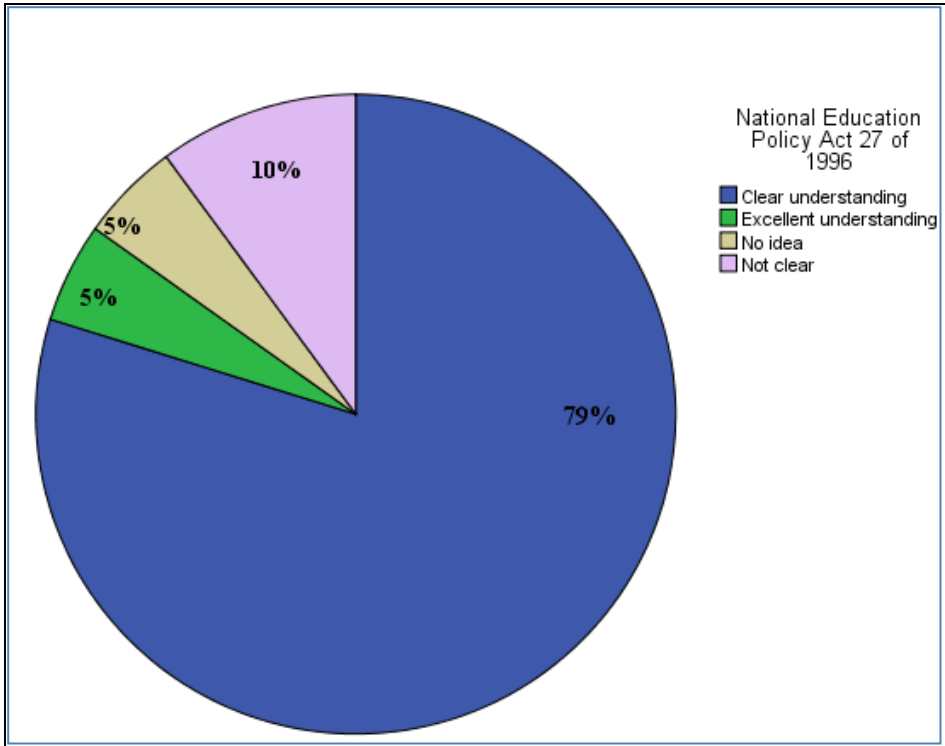


Figure: 5.8: National Education Policy Act

In figure 5.8 it can be seen that seventy nine percent of the respondents reported that they are aware of the National Education Policy Act No. 27 of 1996. Five percent reported that they have excellent understanding, and five percent reported that they do not have an idea about the policy, whilst ten percent reported that they are not clear about the policy.

Figure 5.9 below illustrates the percentage of the awareness of the Public Service Act No. 103 of 1994 among the respondents.

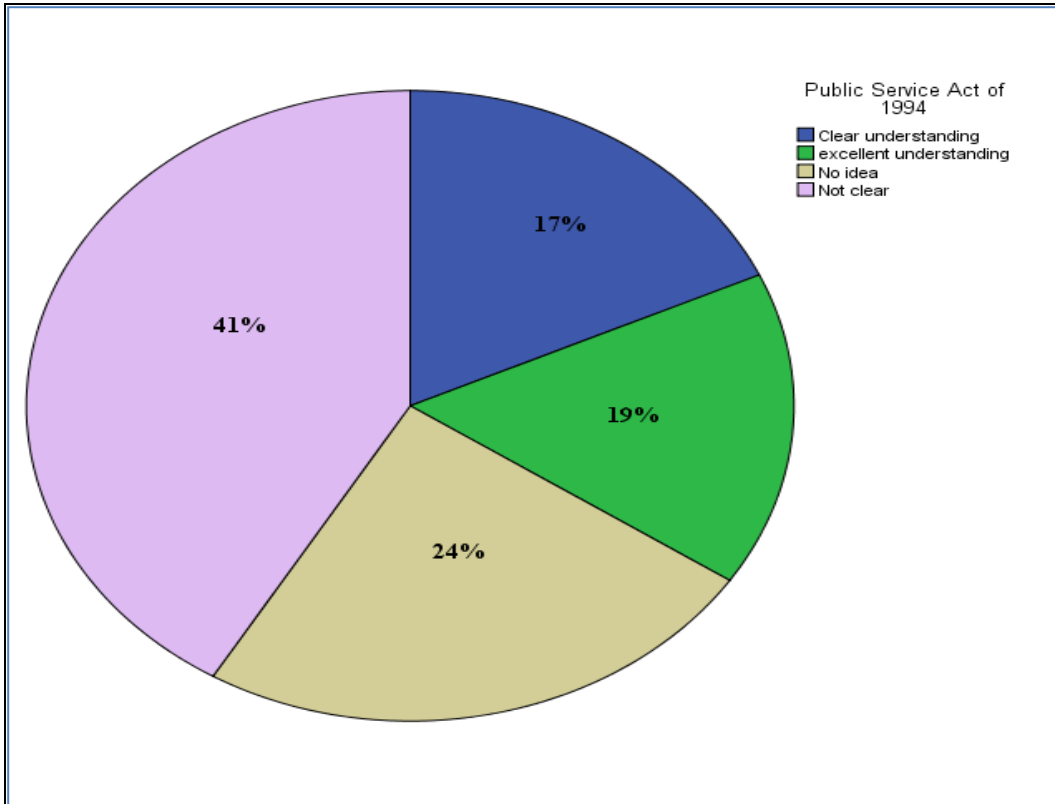


Figure 5.9: Public Service Act

Figure 5.9 represents the percentages of responses which reveal that forty one percent of the respondents are not clear about the Public Service Act No. 103 of 1994. Twenty four percent of the responses indicate that they have no idea about the act; while nineteen percent and seventeen percent of the responses show an excellent understanding and a clear understanding of the act respectively.

Figure 5.10 shows the percentages of the responses given by the respondents rating their awareness of the White Paper on Science and Technology - Vision and Strategies for the Development of Science and Technology (2003 - 2006) of 1996.

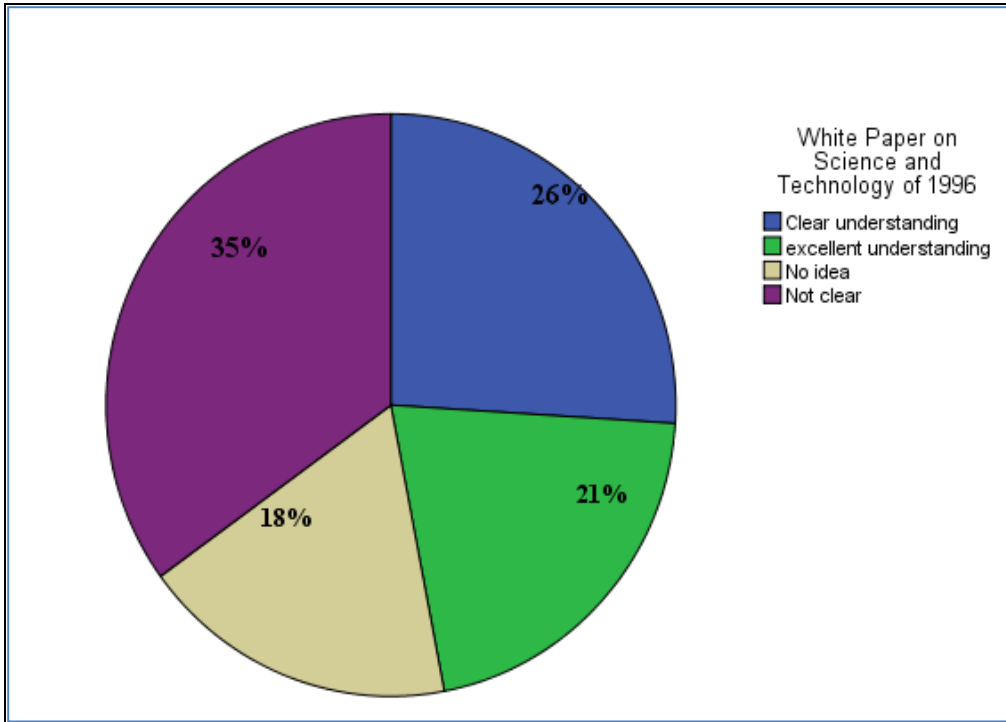


Figure 5.10: White Paper on Science and Technology

Figure 5.10 indicates that twenty six percent and twenty one percent of respondents reported that they have a clear and an excellent understanding of the White Paper on Science and Technology of 1996 respectively. Thirty five percent of the responses indicate that they are not clear and eighteen percent reported that they have no idea about the policy.

Figure 5.11 shows the percentages of the respondents' responses when they were requested to rate their awareness of the Skills Development Act No.97 of 1998.

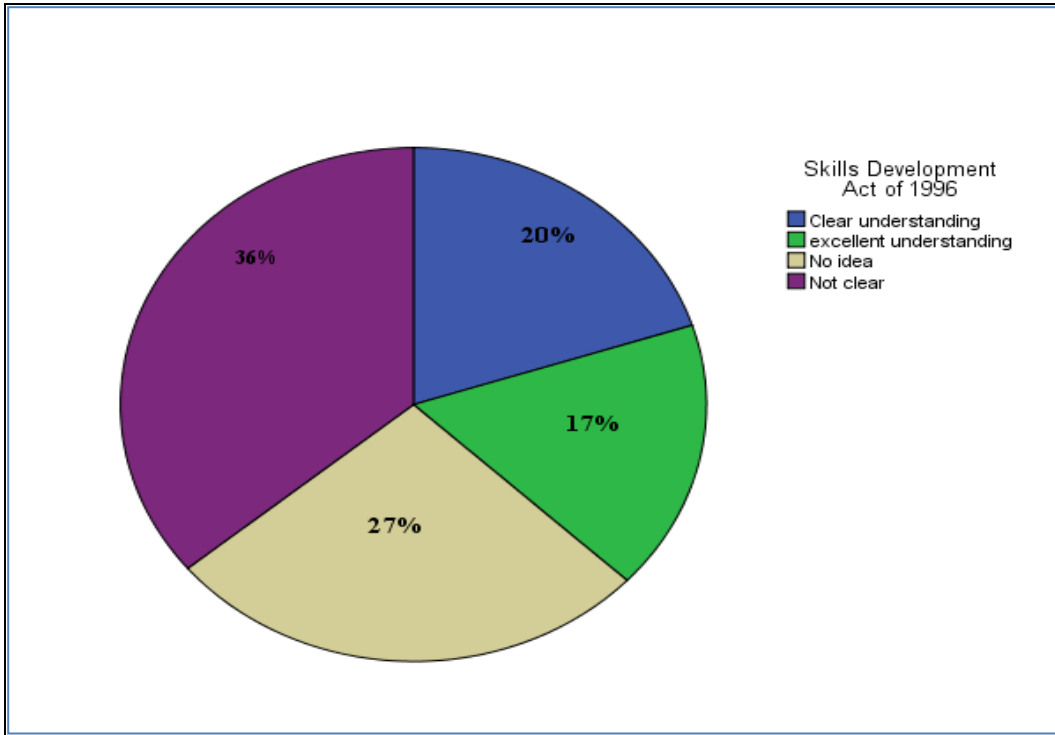


Figure 5.11: Skills Development Act

Figure 5.11 indicates that thirty six percent and twenty seven percent of the responses show that respondents have no idea and are not clear about this act. Twenty percent of responses indicate a clear understanding and seventeen percent reported an excellent understanding.

Figure 5.12 presents a percentage analysis of the awareness of the South African Schools Act No. 84 of 1996.

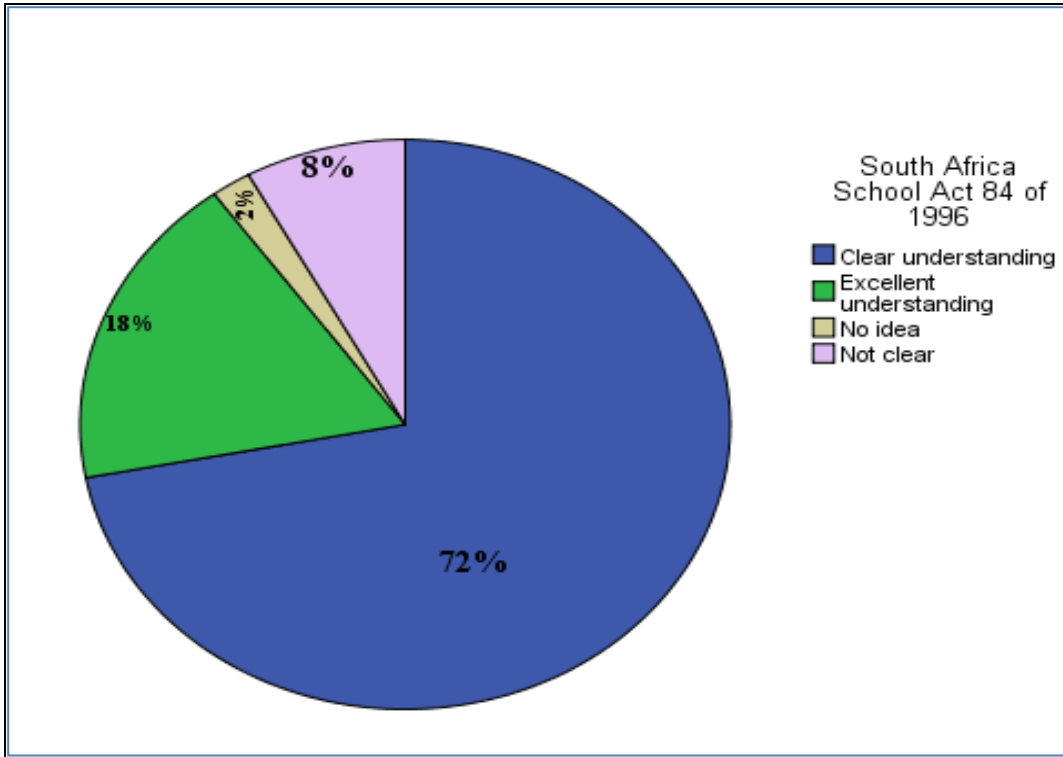


Figure 5.12: South African Schools Act

Figure 5.12 indicates that the majority (seventy two percent) of the responses reported a clear understanding of the Act. Eighteen percent of responses reported an excellent understanding of the Act. Only eight percent of the respondents reported that they are not clear and 2% reported that they do not have an idea.

Figure 5.13 represents the percentages of the responses gathered when the respondents were requested to rate their awareness of the Further Education and Training Act No. 98 of 1998.

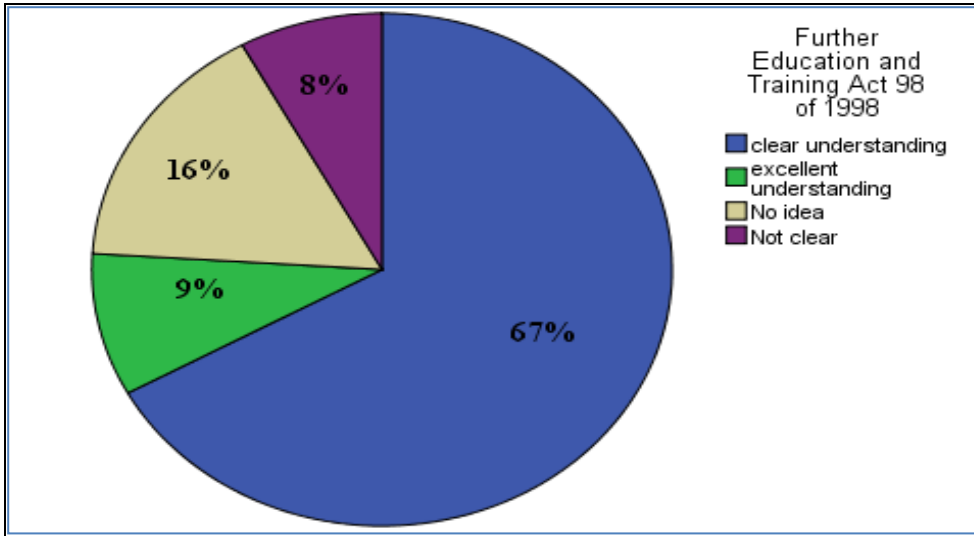


Figure 5.13: Further Education and Training Act

Figure 5.13 illustrates that sixty seven percent of the respondents have a clear understanding and nine percent have an excellent understanding of the Further Education and Training Act. Sixteen percent of the respondents have no idea and 8% of the respondents reported that they were not clear about the act.

Figure 5.14 indicates the percentage of the responses given by the respondents when they were requested to rate their awareness of the Community Education Forums in the Free State.

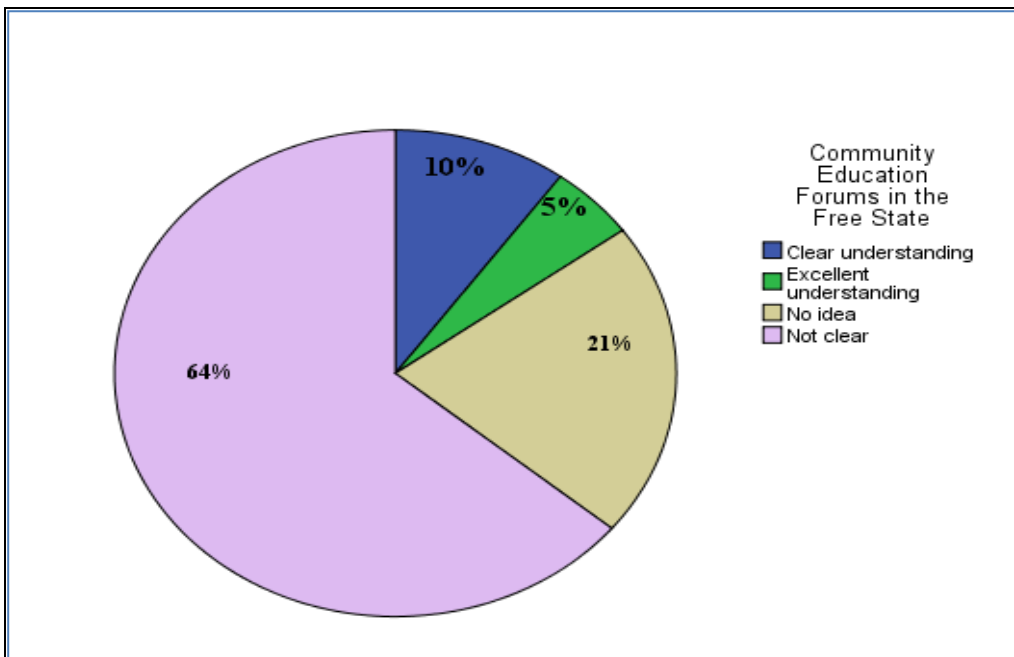


Figure 5.14: Community Education Forums in the Free State province

Figure 5.14 shows that sixty four percent of the responses indicate that they are not clear about the local community forums for education that take place throughout the Free State. Twenty one percent of the respondents reported that they do not have any ideas; whilst ten percent and five percent, respectively, reported a clear and excellent understanding.

Figure 5.15 illustrates the percentage rate of awareness when the respondents were requested rate of their awareness about a threshold qualification programme for aspiring school principals namely, the Advanced Certificate in Education (ACE programme).

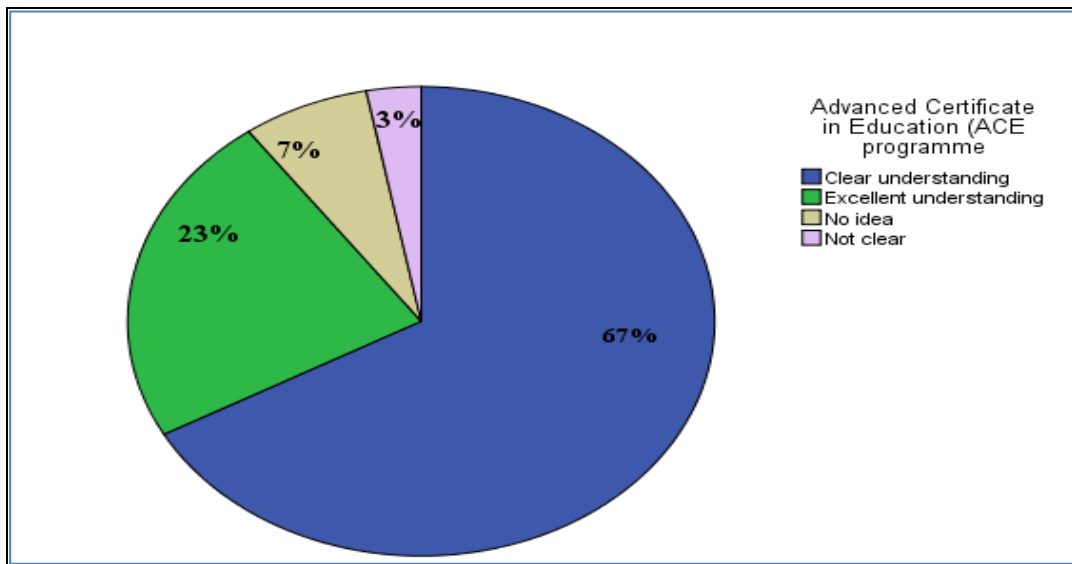


Figure 5.15: Advanced Certificate in Education programme

Figure 5.15 shows that sixty seven percent of the responses reported a clear understanding and twenty three percent reported an excellent understanding of the ACE programme. The remaining seven percent and three percent have no idea and are not clear.

Figure 5.16 provides the percentage rates of the awareness of Chapter 9 of the National Development Plan (NDP).

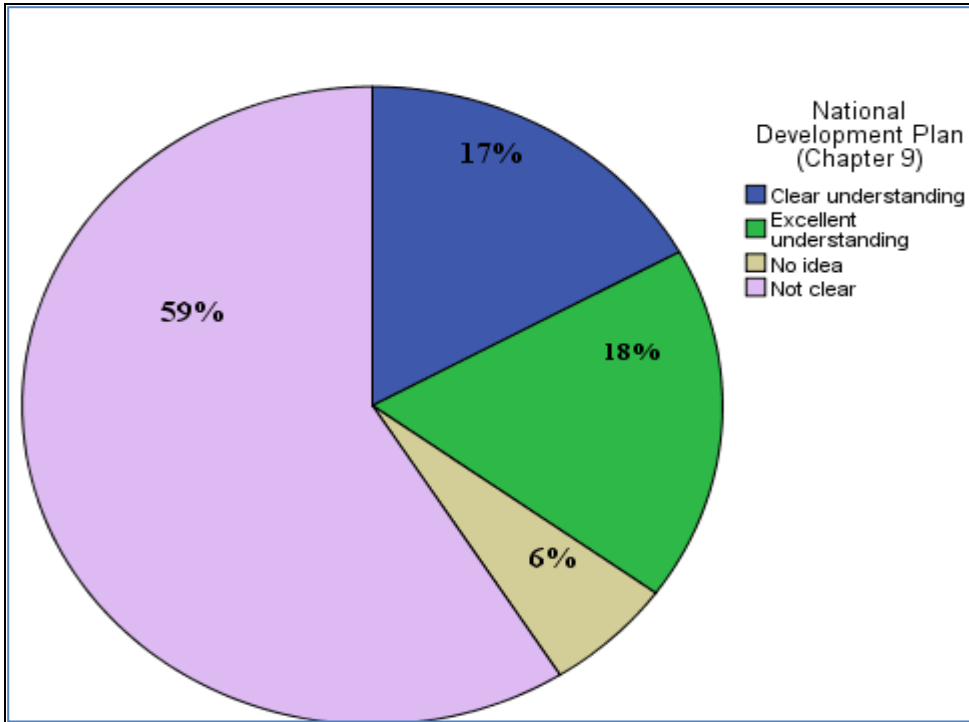


Figure 5.16: National Development Plan (Chapter 9)

Figure 5.16 shows that fifty nine percent of the respondents were not clear about Chapter Nine of the National Development Plan. Seventeen percent and eighteen percent of the responses reflect a clear understanding and an excellent understanding respectively. Six percent indicate that they do not have any idea about the plan. Whilst fifty nine percent of the responses do not have a clear idea. This is a worrying factor, considering that the NDP is the Government’s 2030 vision for development in South Africa.

Figure 5.17 gives the percentages of the responses rating their awareness about the Quality Learning and Teaching Campaign (QLTC) code for Quality Education pledge and Basic Education Accord.

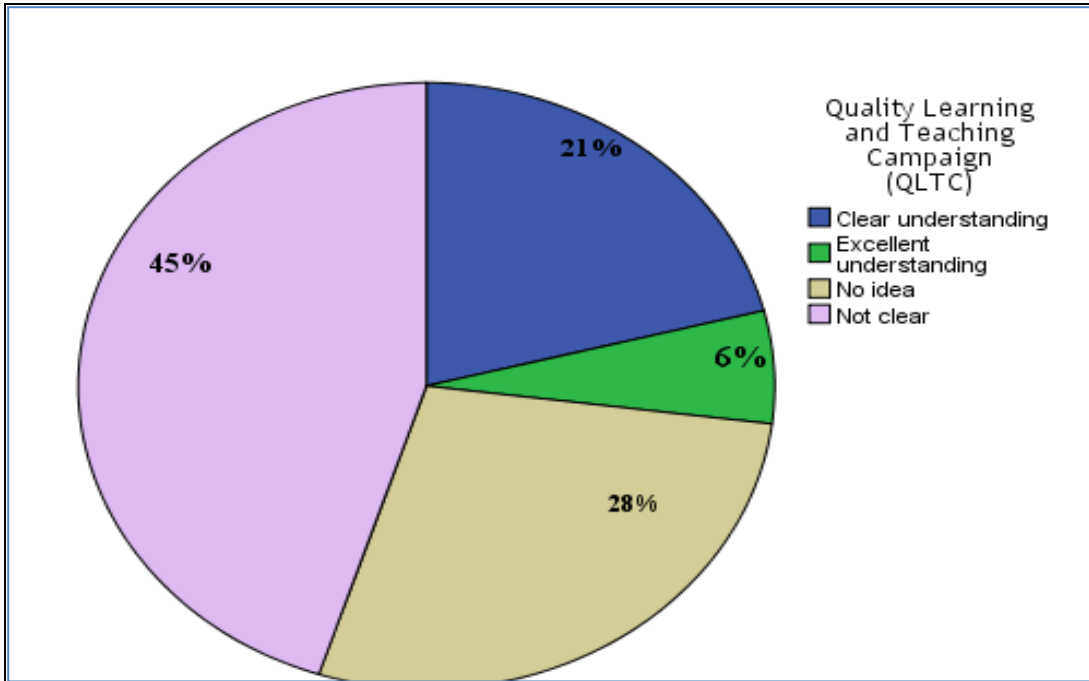


Figure 5.17: Quality Learning and Teaching Campaign

Figure 5.17 shows that forty five percent indicate an unclear response. Twenty eight percent of the responses show that they do not have an idea about the Quality Learning and Teaching Campaign (QLTC). Twenty one percent of the responses reported that they have a clear understanding of the campaign and six percent responses indicated an excellent understanding.

Figure 5.18 is a representation of the percentages of the responses when the respondents were requested to rate their awareness of the Integrated Strategic Planning Framework for Teacher Education and Development in South Africa 2011 - 2025.

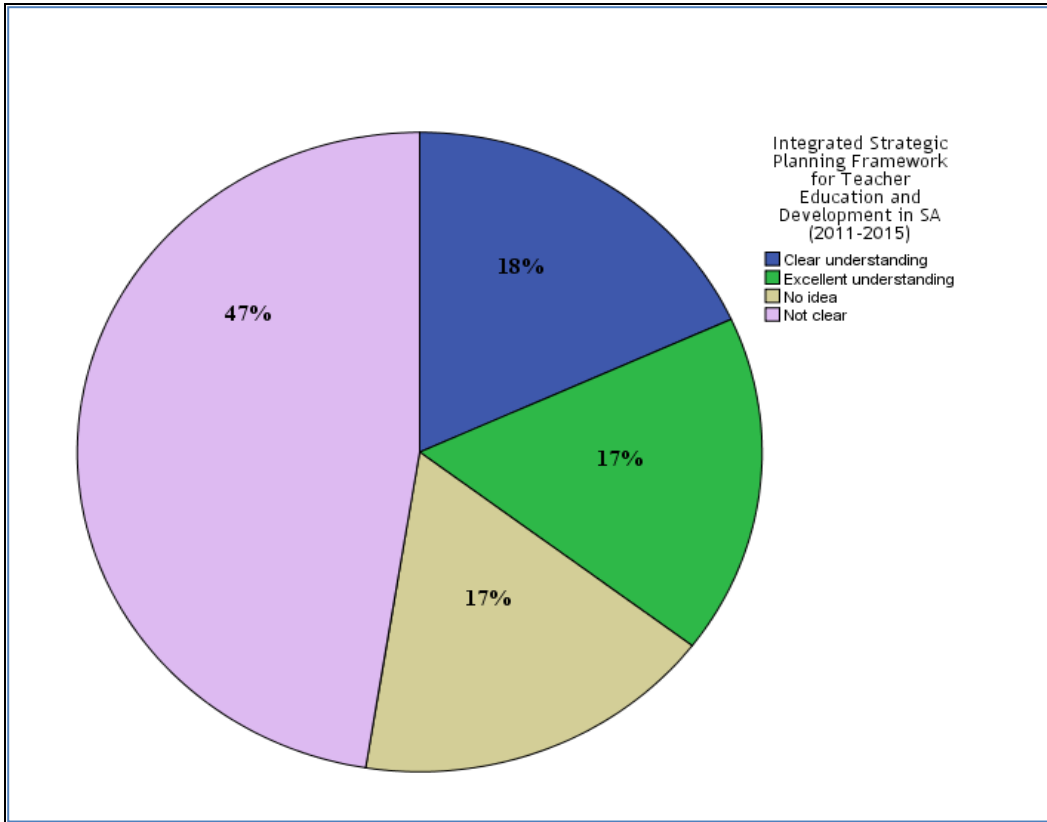


Figure 5.18: Integrated Strategic Planning Framework for Teacher Education and Development in South Africa

Figure 5.18 indicates that forty seven percent of the responses were not clear about the Integrated Strategic Planning Framework for Teacher Education and Development in South Africa (2011 - 2015). Seventeen percent have no idea. Whilst eighteen percent reported clear understanding and seventeen percent reported excellent understanding.

Figure 5.19 gives the percentage ratings of the responses on the awareness of the respondents about the Provincial Growth and Development Strategy, Free State Vision 2030 and Operation Hlasela programme.

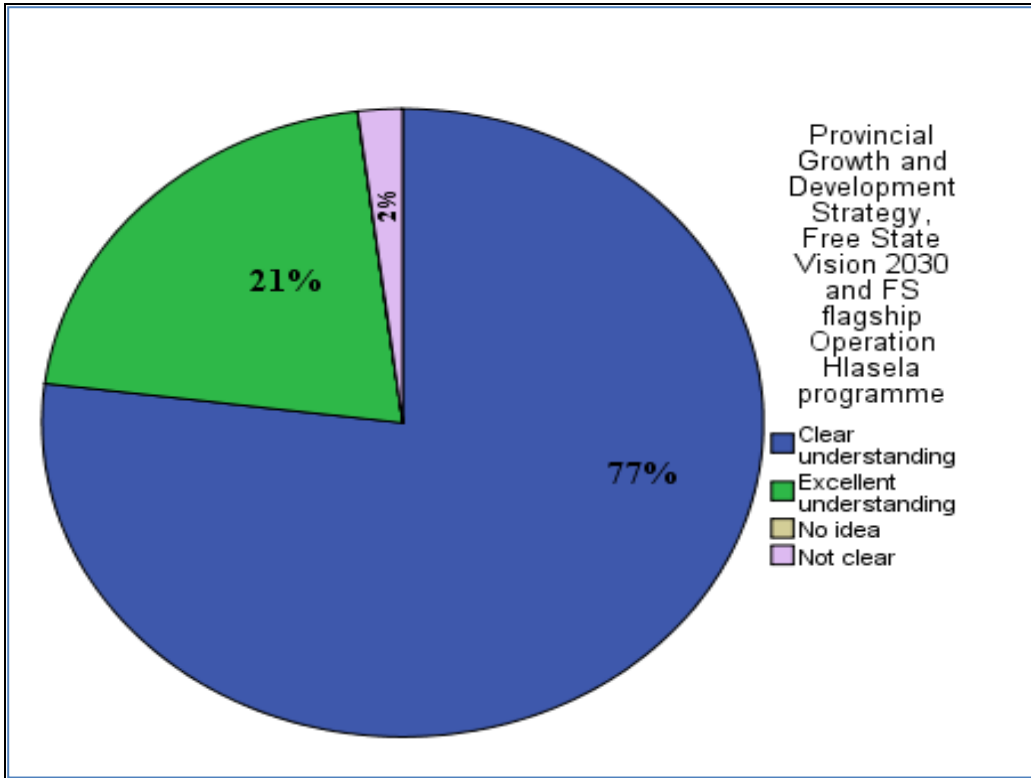


Figure 5.19: Provincial Growth and Development Strategy, Free State Vision 2030 and Operation Hlasela

Figure 5.19 shows that seventy seven percent of the responses reported that they have a clear understanding of provincial programmes. Twenty one percent reported that they have an excellent understanding, and only two percent indicated that they are not clear about these programmes. None of the respondents indicated that they do not have an idea about the programmes.

Figure 5.20 shows a percentage analysis of the responses when the respondents were asked as to whether they are aware of the South Africa’s performance ratings on Mathematics and Science Education in international comparative studies such as SACMEQ TIMSS.

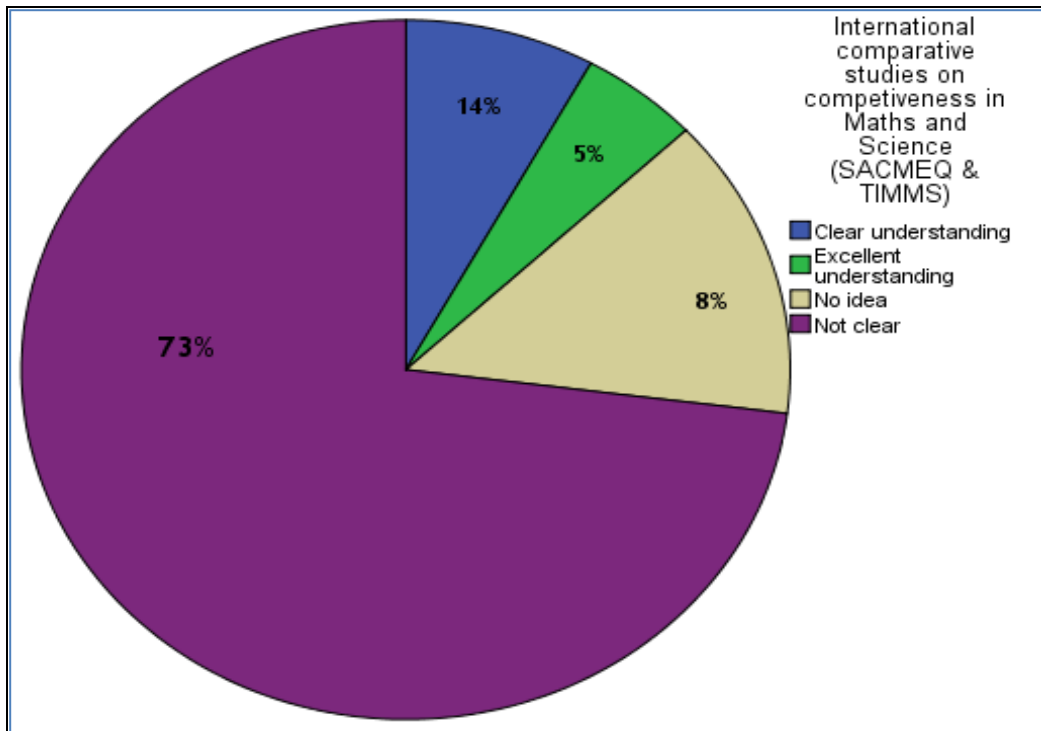


Figure 5.20: International Comparative Studies on the competitiveness in Mathematics and Science (SACMEQ & TIMMS)

Figure 5.20 shows that seventy three percent of the responses pointed to the fact that they are not clear about comparative studies on South Africa's competitiveness in the Mathematics and Science. Eight percent of the respondents indicated that they do not have any idea about these studies. Fourteen percent of the respondents reported that they have a clear understanding whilst five percent reported an excellent understanding.

Figure 5.21 shows the percentage ratings of the responses elicited from the respondents when they were requested to rate their awareness about the Employment of Educators Act No. 76 of 1998.

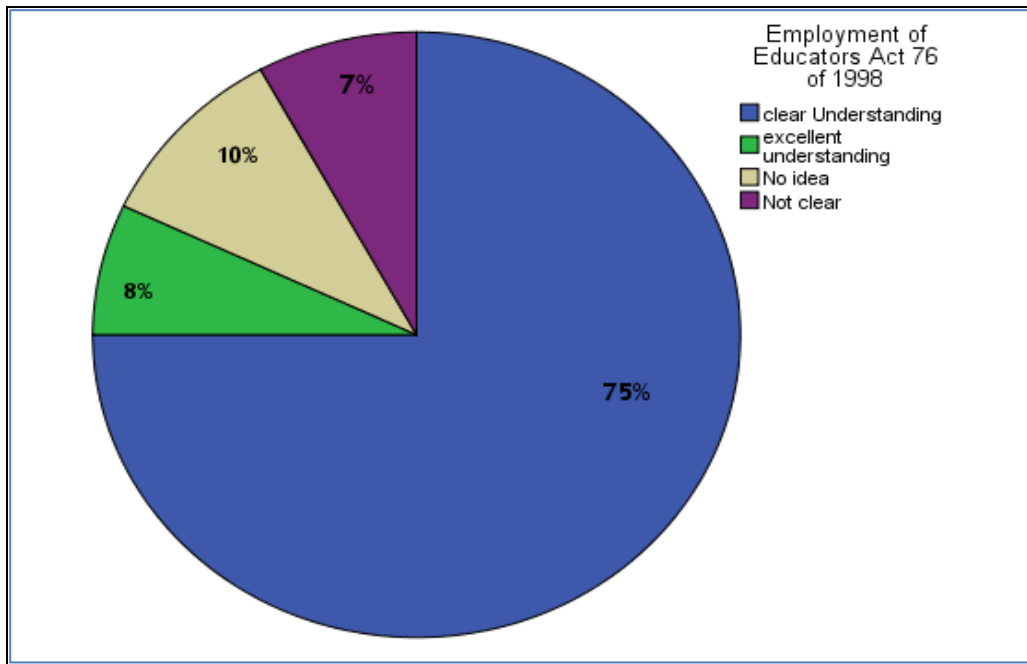


Figure 5.21: Employment of Educators Act

Figure 5.21 illustrates that the responses for the clear understanding of the Employment of Educators Act stands at seventy five percent. Eight percent reported an excellent understanding of the Act and ten percent and seven percent respectively reported no idea and not clear responses.

Based on figures 5.8 - 5.21, it is worth making further critical observations. The views expressed by the respondents about their awareness of various policy issues and some of the official documents of the government are skewed. Many of the respondents are only familiar with the programmes, campaigns and activities that are based within the province. Many of the respondents reported that they were not aware of national policies. This lack of awareness of legislations and programmes that are geared towards skills development is a drawback on the implementation of the NSMSTE policy. School managers need to be well versed in national programmes and in other national legislation if they are to be *bona fide* agents of the implementation of policy.

SECTION B: DATA ANALYSIS CONTINUED

Please read the following statements carefully and rate the support you have received on NSMSTE policy on a scale of 1-4 for each category.

Please put a CROSS (X) in the appropriate box against each statement to indicate your rating:

1 = Poor; 2 = Inadequate 3 = Adequate 5= Very good

Figure 5.22 shows the percentages of the responses when the respondents were requested to rate the support they receive from the District Curriculum Support Services (DCSS) in order to implement the NSMSTE policy.

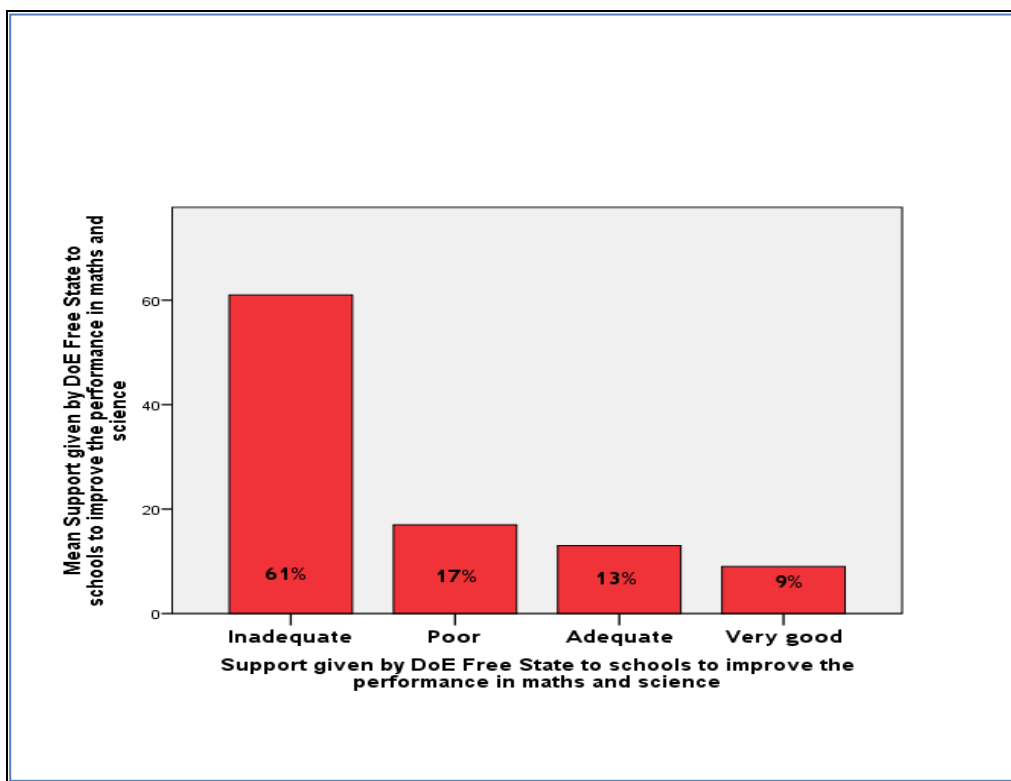


Figure 5.22: Rates of districts' curriculum support services

Figure 5.22 shows the responses obtained when the respondents were asked to rate the support given to schools in order to improve the performance of Mathematics and Physical Sciences. Sixty one percent of the responses reported that support was inadequate, seventeen percent rated support to be poor,

thirteen percent rated support to be adequate and nine percent rated support to be very good.

Figure 5.23 depicts the percentages of the responses from respondents when requested to rate the frequency of visits they received from curriculum experts and subject advisors, so as to give clarity on content knowledge.

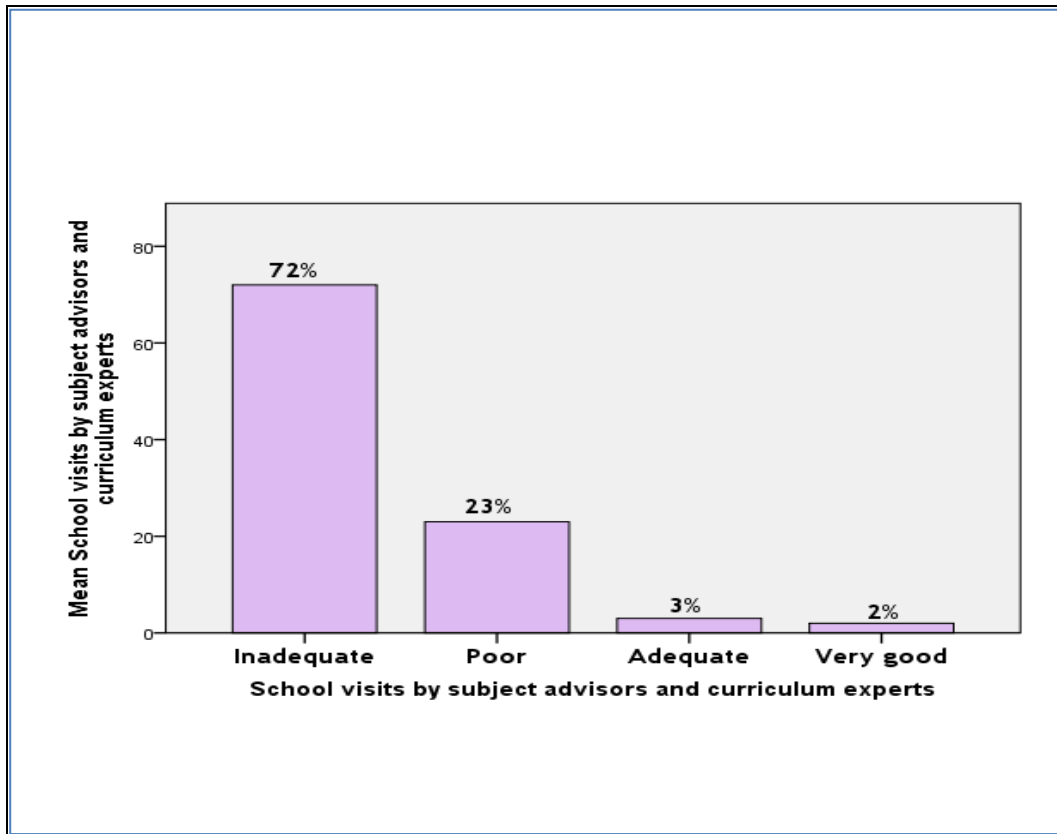


Figure 5.23: Rates of visits by curriculum experts and subject advisors

Figure 5.23 shows the responses drawn from the responses in terms of percentages when asked to rate the frequency of visits undertaken by subject advisors and curriculum experts to their schools. The main objective of the visits is to give guidance on how policy should be implemented and give clarity on the subject content. Seventy two percent of the responses reported that visits were inadequate, twenty three percent of the responses reported that the frequency of the school visits was poor. Three percent and two percent of the responses reported that the visits were adequate and very good, respectively.

Figure 5.24 illustrates the percentages of the responses when the respondents were asked to rate frequency at which assessment principles and policies were broadly explained or clarified.

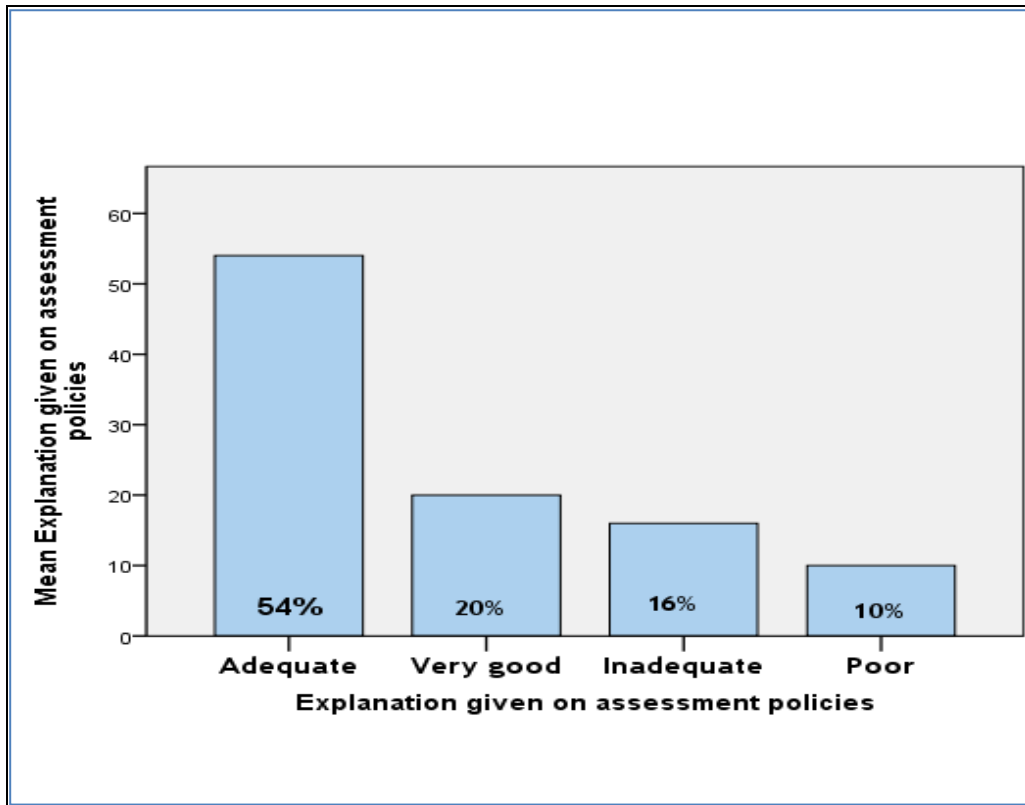


Figure 5.24: Rates of clarifying assessment principles and policies

Figure 5.24 shows the responses garnered when respondents were requested to rate the frequency of the explanations given on issues of policies pertaining to assessments. The graph reveals that fifty four percent of the responses reported that the explanations were adequate. Twenty percent of the responses rated the explanations as very good. Sixteen percent said that the explanations were inadequate, whilst ten percent of the responses reported that the explanations were poor.

Figure 5.25 depicts a bar graph showing the percentages of the responses when the respondents were requested to rate the frequency with which the district office updates and informs them about policies that impact on the development of Mathematics and Science education.

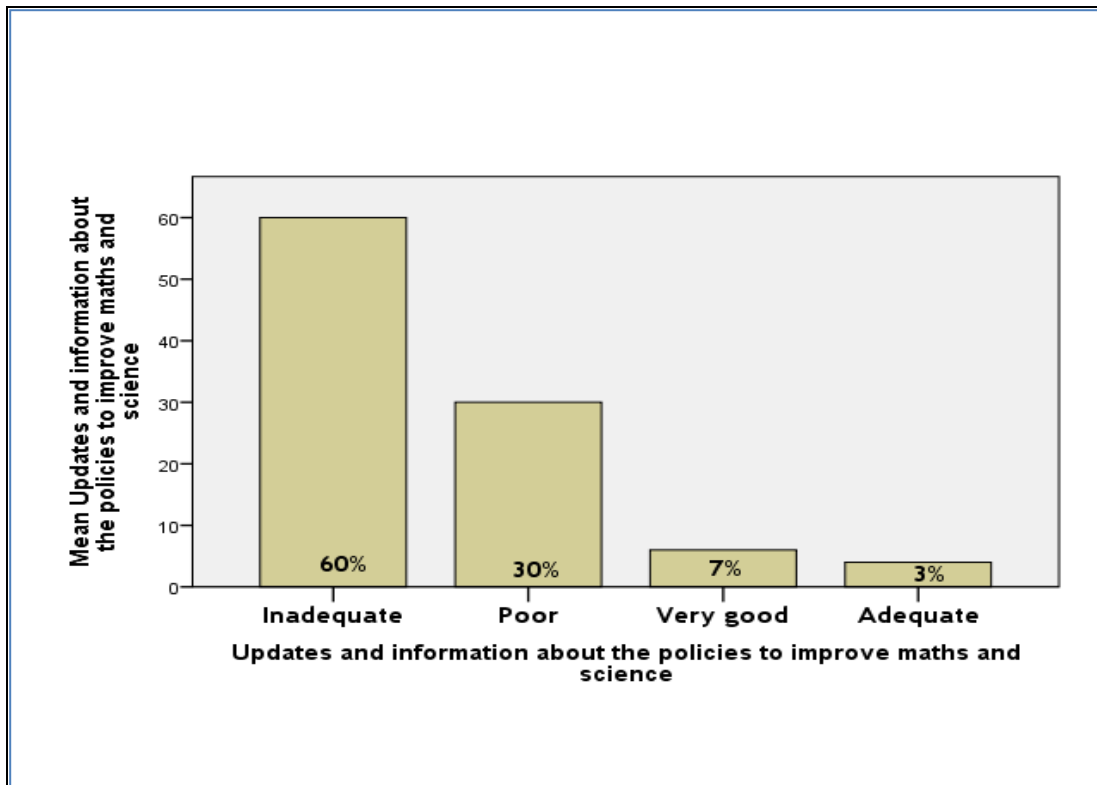


Figure 5.25: Rates of updates and distribution of information from the district office

Figure 5.25 shows the percentages of the responses when the respondents were requested to rate the frequency at which the updates and important information about policies are disseminated to schools in order to improve the state of Mathematics and Science. Sixty percent of the respondents indicate that information that is filtering through to schools is inadequate. Thirty percent of the respondents reported that updates and information about the policies is poor. However seven percent of the respondents said that the updates and information were very good. Three percent of the responses indicated that updates and information were adequate.

Figure 5.26 below shows the percentages of the responses gathered from the respondents when they were requested to rate the frequency of training workshops they receive on content and as to whether these workshops are in line with the objectives of the department of education in Free State province.

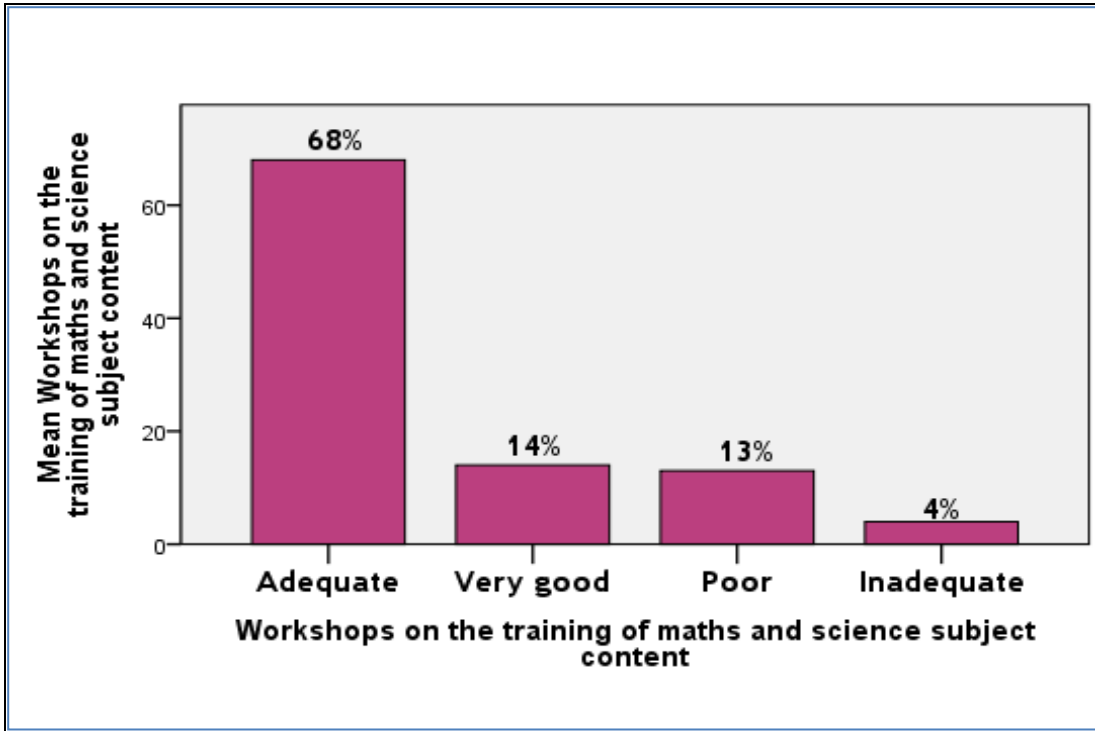


Figure 5.26: Rates of conducting content workshops

Figure 5.22 reveals the percentages of the responses obtained from the respondents when they were requested to rate the frequency at which trainings and/or workshops were held for Mathematics and Science teachers of Dinaledi Schools in the Free State. Sixty eight percent of the responses reported that the workshops were adequate. Fourteen percent of the respondents rated the frequency of the workshops as very good. Thirteen percent of the respondents reported that the rate was poor. Only four percent of the respondents rated the workshops as inadequate.

Figure 5.27 shows the percentages of responses given by the respondents when they were asked to rate the ability of School Improvement Plans (SIPs) to provide room for the development of teachers’ subject knowledge and targets those areas where subject knowledge is the weakest.

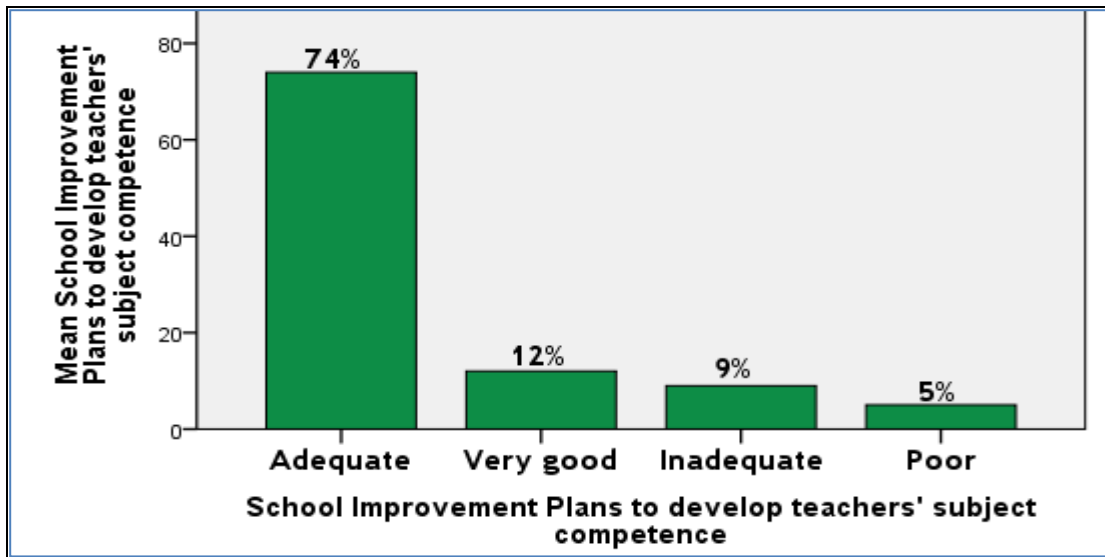


Figure 5.27: The role of School Improvement Plans

Figure 5.27 shows that seventy four percent of the responses reported that the School Improvement Plans were adequate to develop subject competence amongst the teachers. Twelve percent of the responses rated the School Improvement Plans very good. Nine percent and five percent of the responses rated the School Improvement Plans inadequate and poor respectively.

Figure 5.28 shows the percentages of responses given by the respondents when they were requested to rate the frequency of the responsiveness and relevance of the NSMSTE in addressing scarce skills challenges in the region.

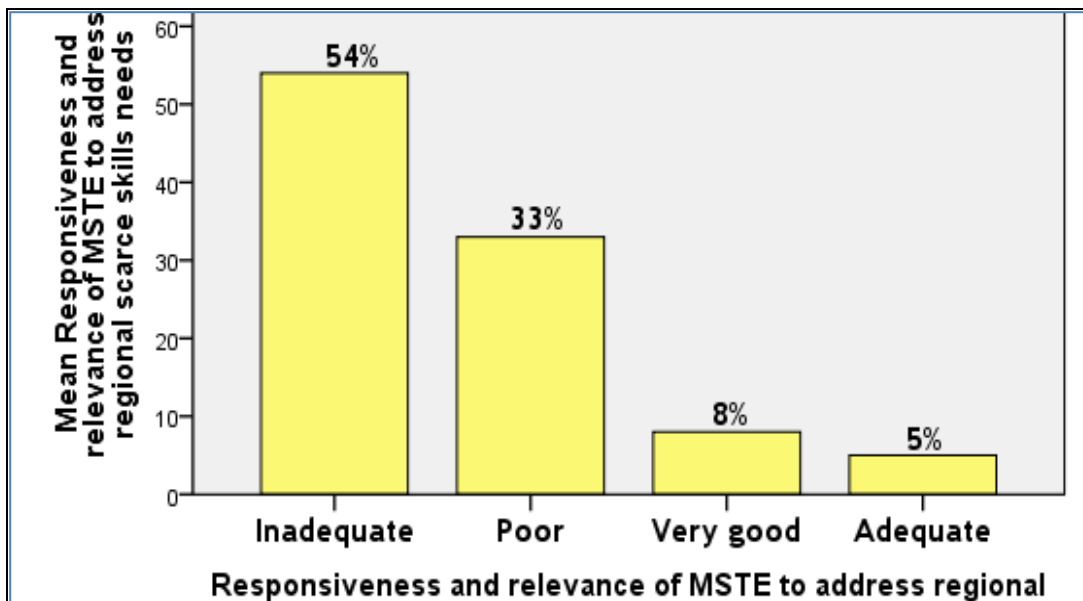


Figure 5.28: Responsiveness and relevance of the NSMSTE to address regional scarce skills needs

Figure 5.28 depicts fifty four percent of the responses reported that the responsiveness and relevance of NSMSTE in addressing the regional scarce skills needs was inadequate. Thirty three percent of the responses reported that the responsiveness and relevance of NSMSTE in addressing scarce skills needs in the region was poor. Eight percent of the responses reported that the responsiveness and relevance of the NSMSTE to address regional scarce skills needs is very good. Five percent of the responses reported that the responsiveness and relevance of NSMSTE was adequate.

SECTION C: ANALYSIS OF THE UNDERSTANDING OF SOME OF THE STATEMENTS CONTAINED IN THE POLICY HANDBOOK FOR THE TEACHERS

Please read the following statement carefully and rate your skills on a scale of 1-4 for category where:

- 1. Not clear 2. Need help 3. Clear 4. Excellent

The aim of the questions in this section was to garner information on the depth of the knowledge and the abilities of the respondents to carry out the prescribed duties, responsibilities and tasks of the school manager. The intention was to determine as to whether the managers of the Mathematics and Science dedicated schools in the Free State are fit-for-purpose.

Figure 5.29 shows the frequency in percentages, of the responses when the respondents were asked if they are able to ensure that the school is managed satisfactorily and in compliance with applicable legislations, regulations and personnel administration measures as prescribed.

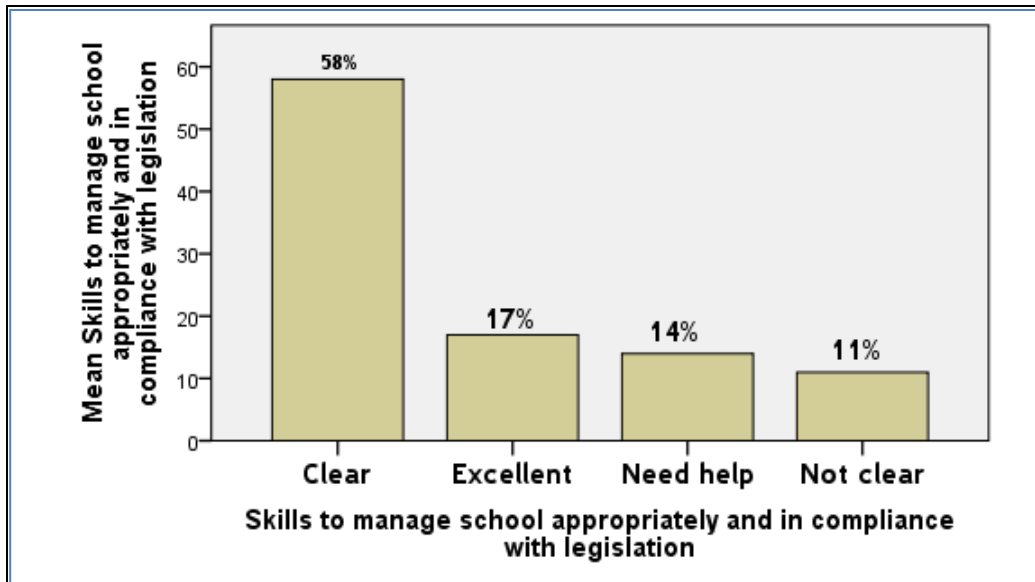


Figure 5.29: Management of the schools according to applicable regulations and personnel management

Figure 5.29 shows that fifty eight percent of the responses reported a clear rating. Seventeen percent of the responses reported an excellent rating. Fourteen percent of the respondents indicated that they need help hone their skills to manage schools appropriately and in compliance with the legislation. Eleven percent of the responses indicated that the respondents were not clear about how to ensure that they acquire skills to manage their schools satisfactorily and in compliance with applicable legislation, regulations and personnel administration measures as prescribed.

Figure 5.30 depicts the frequency of the responses in terms of the percentages when the respondents were requested to rate their ability to ensure that the education of the learners is promoted in a proper manner and in accordance with approved policies.

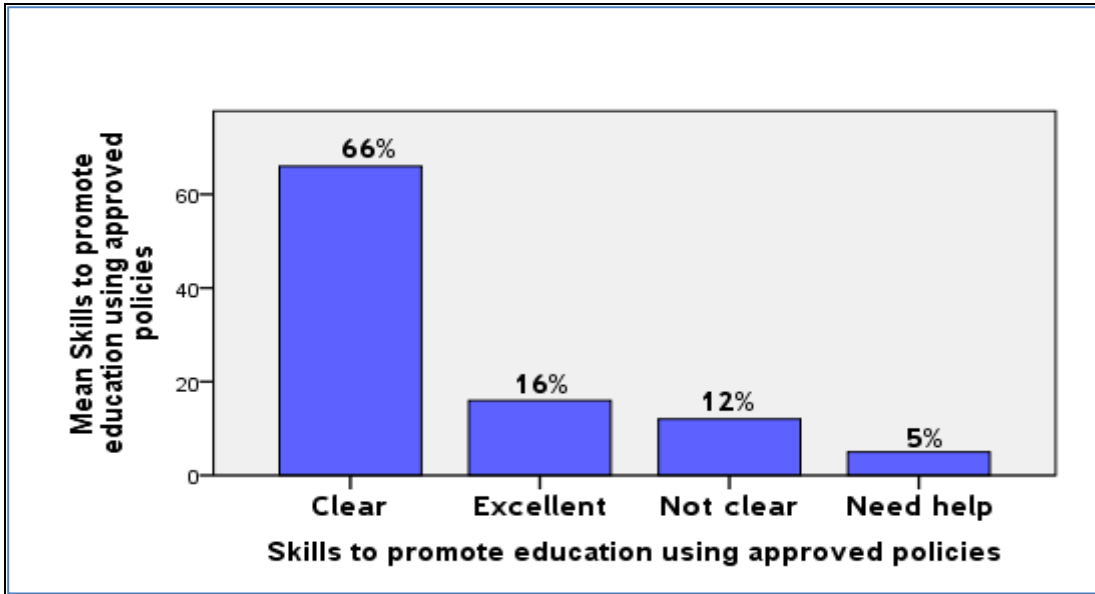


Figure 5.30: Rates of the ability to promote education in accordance with approved policies

Figure 5.30 shows that sixty six percent of the respondents are clear about how to ensure that the education of the learners is promoted in a proper manner and in accordance with approved policies. Sixteen percent of the frequency of the responses indicated that the respondents possess excellent skills to promote education using approved policies. Twelve percent of the respondents were not clear and five percent said they need help to equip themselves with the skills to promote education utilising approved policies.

Figure 5.31 shows the frequency in terms of the percentages of the responses when the respondents were requested to rate their abilities to use the equipment (electronic or manual) that has been given to their schools from the Free State Department of Education’s conditional grant.

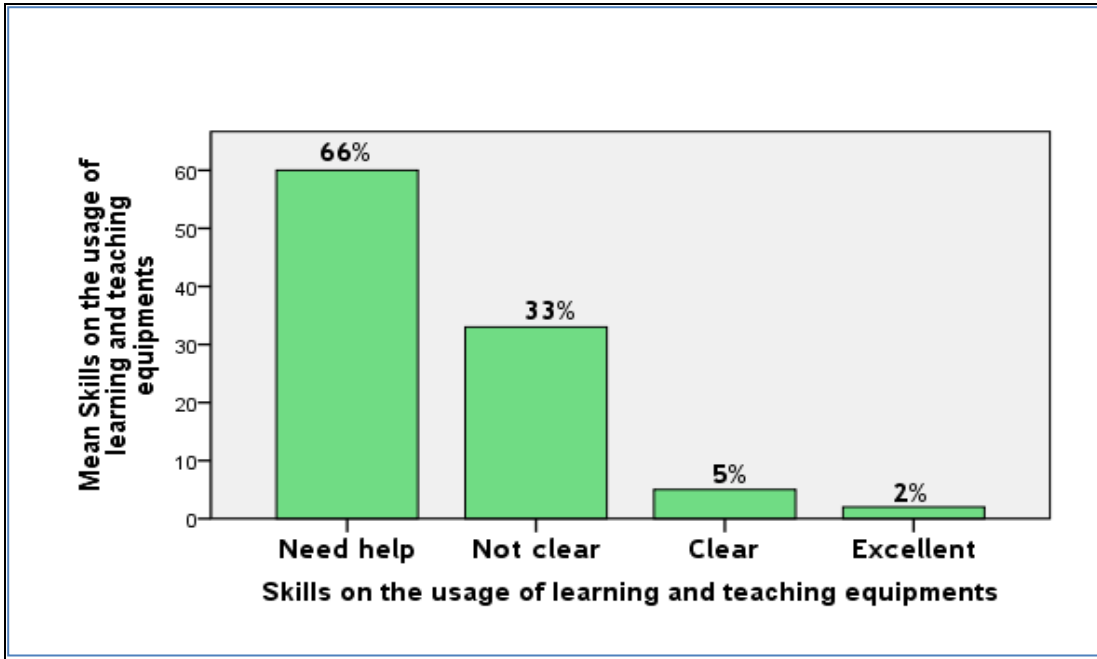


Figure 5.31: Abilities to utilise the resources

Figure 5.31 indicates that sixty six percent of the respondents reported that they need help to use the learning and teaching materials supplied to their schools. Thirty three percent of responses indicated that the respondents were not clear about how to use the learning and teaching equipment at their schools. Only five percent and two percent of the responses indicated the ratings between clear and excellent respectively.

Figure 5.32 shows the frequency of percentages of the responses when respondents were asked to rate their skills to do stocktaking and/or keep a logbook for all the equipment of the school as well as the learning and teaching support materials (LTSM).

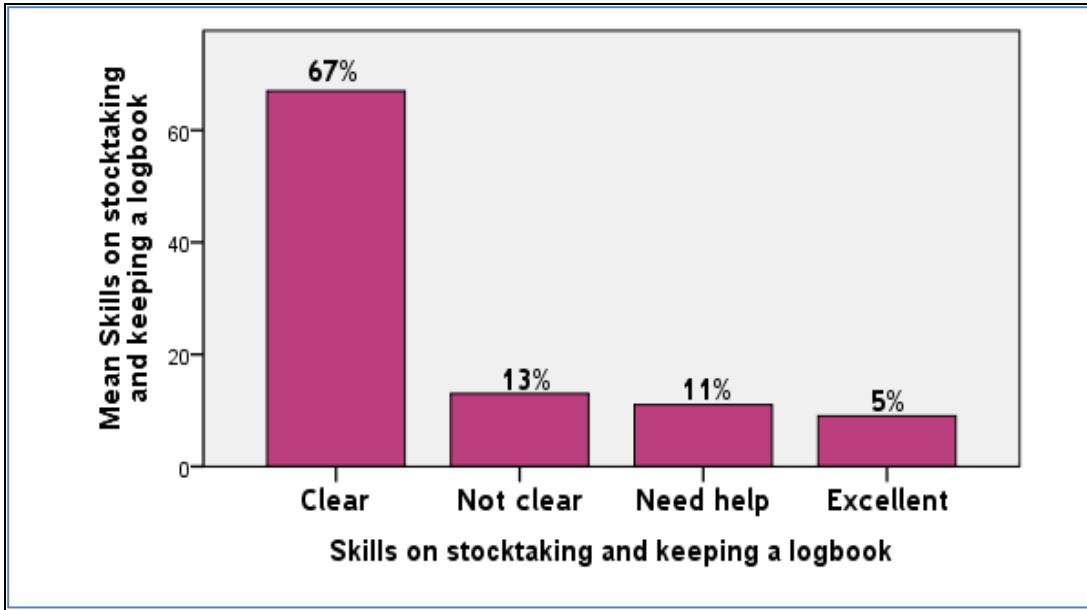


Figure 5.32: Skills to do stock-taking, keep and update logbooks

Figure 5.32 shows that sixty seven percent of the respondents indicated that they are clear about the skills to do stocktaking and keeping a logbook. Thirteen percent of the responses indicated that the respondents were not clear. Eleven percent of the respondents reported that they need help and five percent of the respondents reported that their skills to do stocktaking and keeping a logbook were excellent.

Figure 5.33 indicates the frequency in terms of the percentages of the responses when the respondents were asked as to whether they are able to liaise with the Further and Higher Education institutions on issues relating to keeping the learners' records, learners' academic performances and career opportunities.

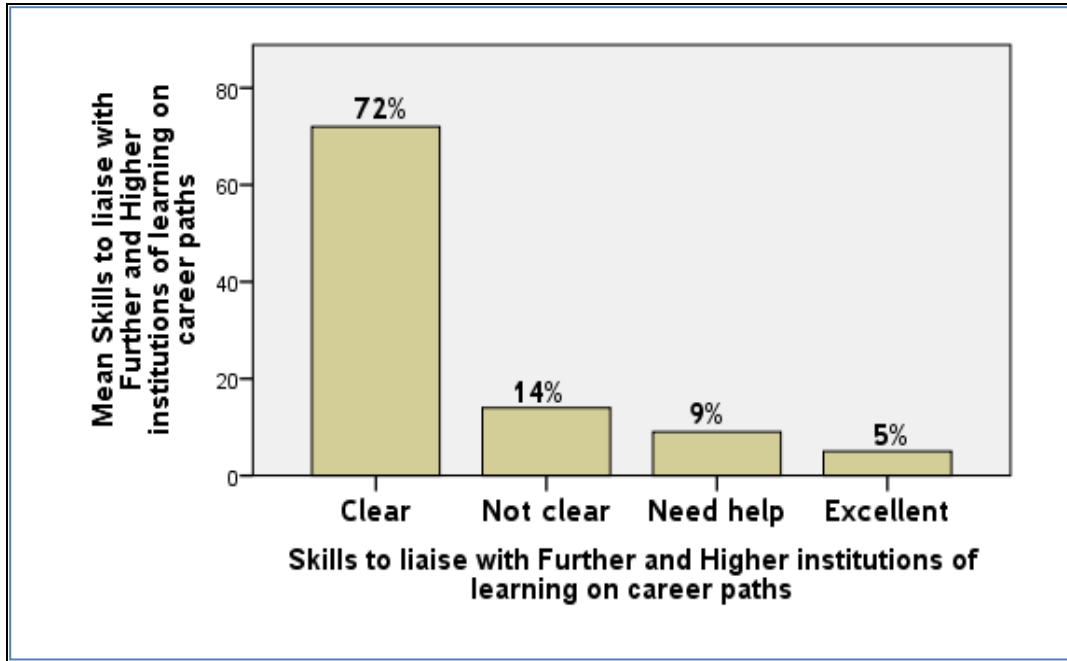


Figure 5.33: Abilities to liaise with other institutions of education

Figure 5.33 shows that seventy two percent of respondents reported that they possess clear skills in liaising with further and higher institutions of learning to guide the learners to follow careers that match their potentials. Fourteen percent of respondents gave a ‘not clear’ response. Nine percent of the responses indicated that they need help and five percent rated the skills they have to liaise with further and higher institutions of learning as excellent.

Figure 5.34 illustrates the frequency of the responses in terms of percentages when the respondents were requested to rate their skills of developing assessment programmes and assessment tasks that are based on learning outcomes and assessment standards for the subject they are managing.

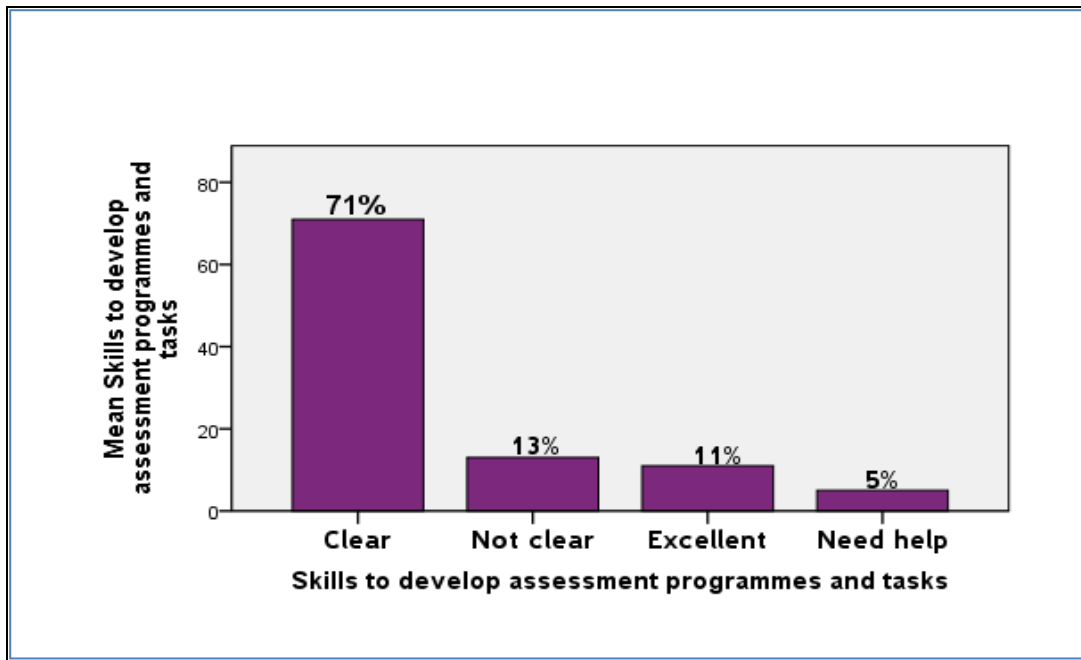


Figure 5.34: Skills to develop assessment programmes and tasks

According to figure 5.34, seventy one percent of the respondents indicated that they possess clear skills to develop assessment programmes and tasks. Thirteen percent of the respondents were not clear about developing assessment programmes and tasks. Eleven percent of the responses reported that they possess excellent skills. Five percent of the responses reported that they need help on how to develop those assessment programmes and tasks.

Figure 5.35 shows the frequency of the responses generated from the participants as indicated in the form of percentages when they were asked to rate their skills of establishing a direct contact with the general public on behalf of their schools and the department of education of the Free State.

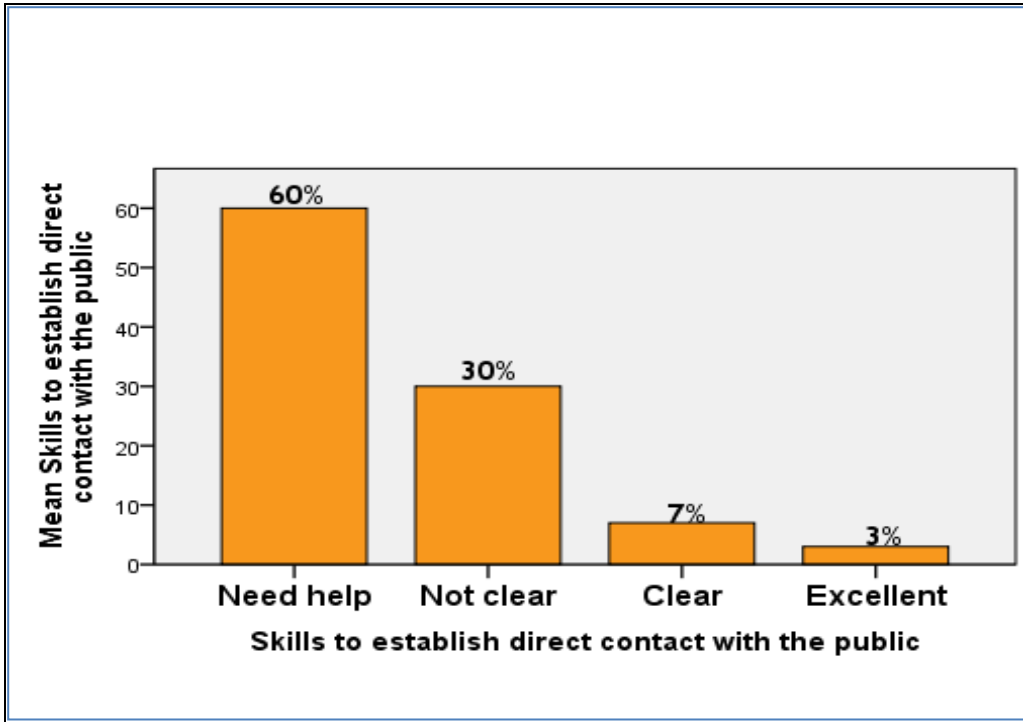
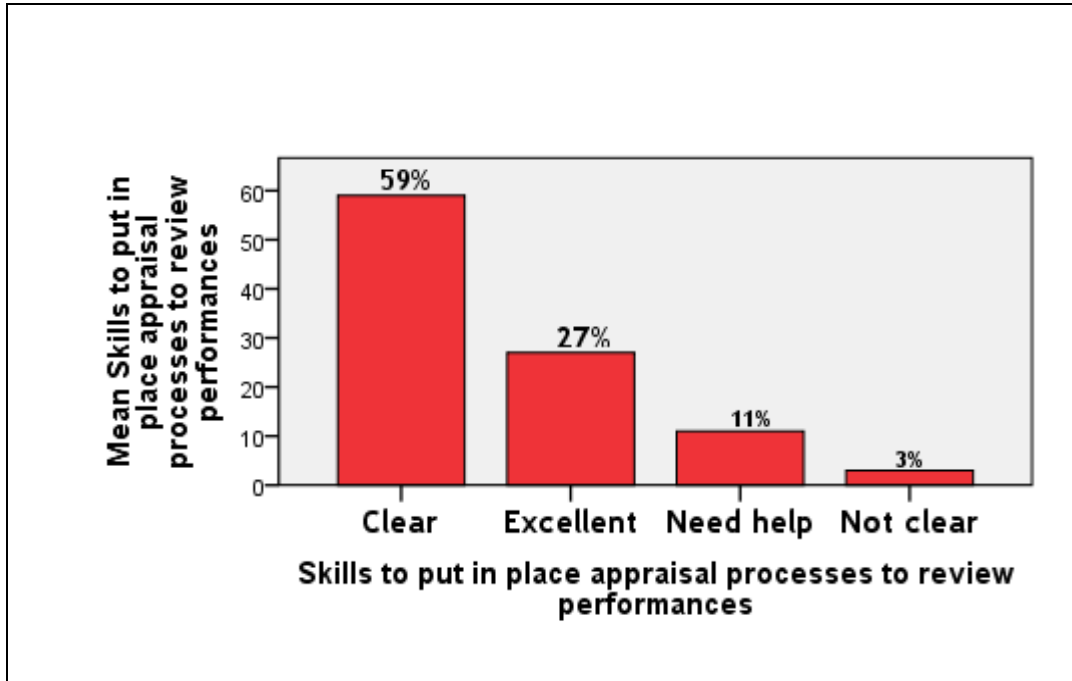


Figure 5.35: Skills to establish a direct contact with the public

Figure 5.35 shows that sixty percent of the respondents need help with how to develop skills to establish a direct contact with the public. Thirty percent of the responses indicate that they are not clear on how to develop skills to establish direct contact with the public. Seven percent of the responses indicate a clear rating and three percent indicated an excellent rating.

Figure 5.36 shows the frequency of the percentages of the responses when the respondents were quizzed about the skills to put appraisal processes in place at their schools. These appraisal processes are meant to improve the overall performances of the teachers. The model that is presently used in South African public schools is called Integrated Quality Management Systems (IQMS).



5.36: Skills to implement appraisal processes for performance review

Figure 5.36 shows that fifty nine percent of the respondents were clear about how to put appraisal processes in place so as to review the performances of teachers. Twenty seven percent of the respondents rated their skills to put in place appraisal processes excellent. Eleven percent of the responses indicated that they need help and three percent of the respondents reported that they were not clear about how to put appraisal processes in place.

Figure 5.37 shows the frequency of responses when respondents were asked to rate their skills on how to ensure that circulars and other correspondence received from the Department of Education in the Free State reaches the staff and it is kept where it is easily accessible.

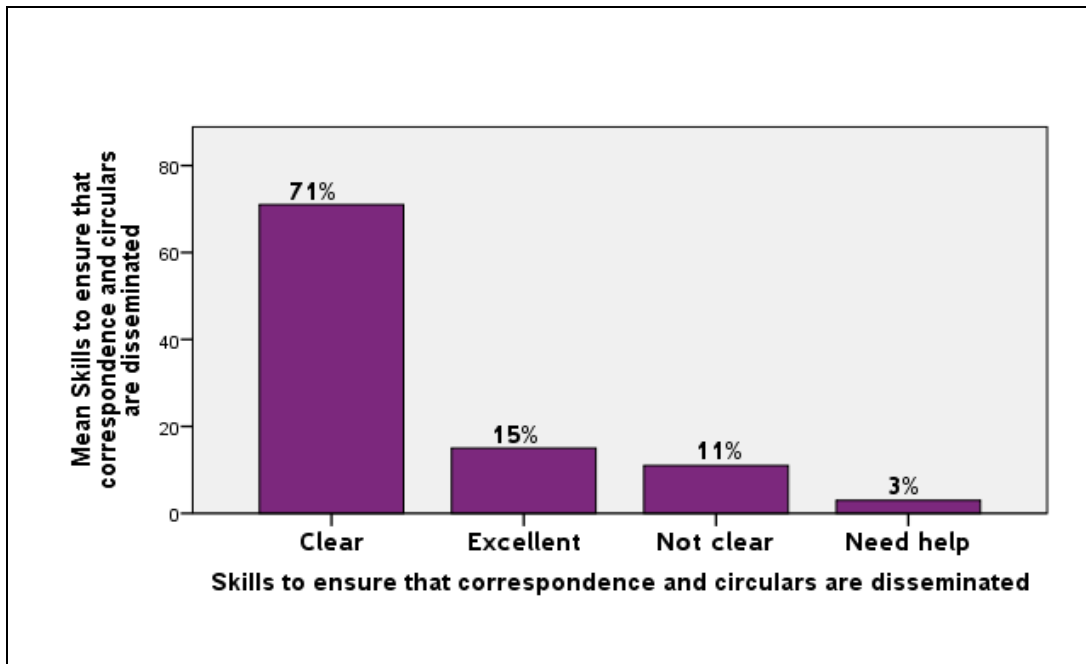
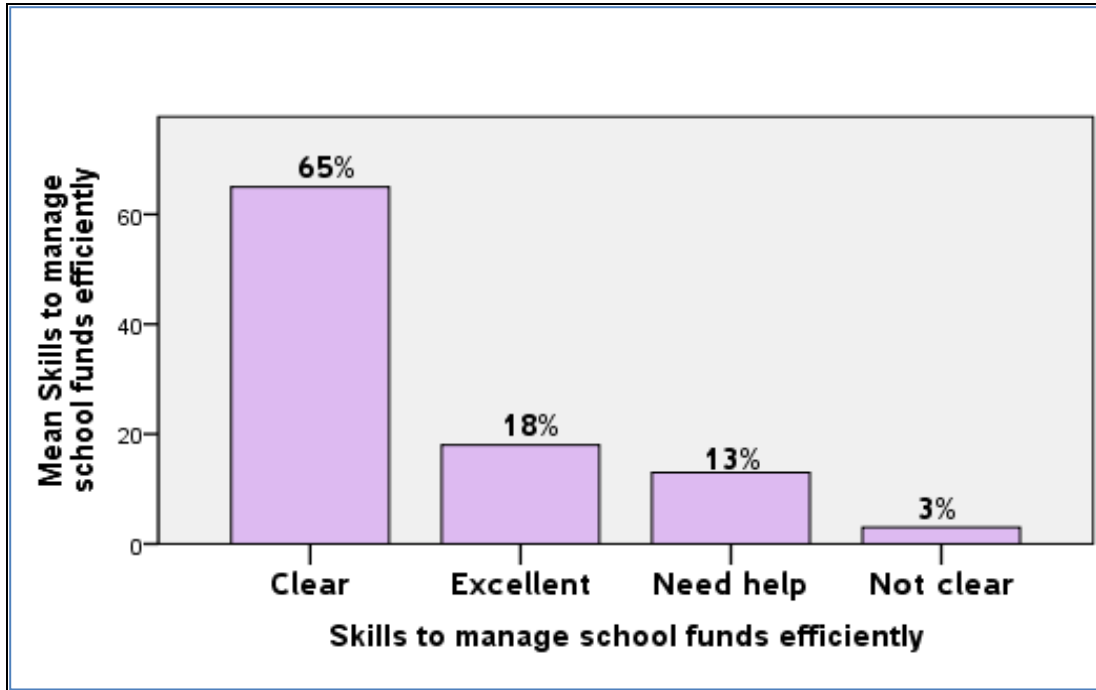


Figure 5.37: Skills to circulate valuable information to the staff members

Figure 5.37 shows that seventy one percent of the participants were clear about how to ensure that the departmental circulars and correspondence reaches the staff and are kept where they are easily accessible for future references. Fifteen percent of the responses indicated that these skills are excellent. Eleven percent of the respondents were not clear about how to ensure that correspondence reaches its intended recipients and three percent of the respondents reported that they need help.

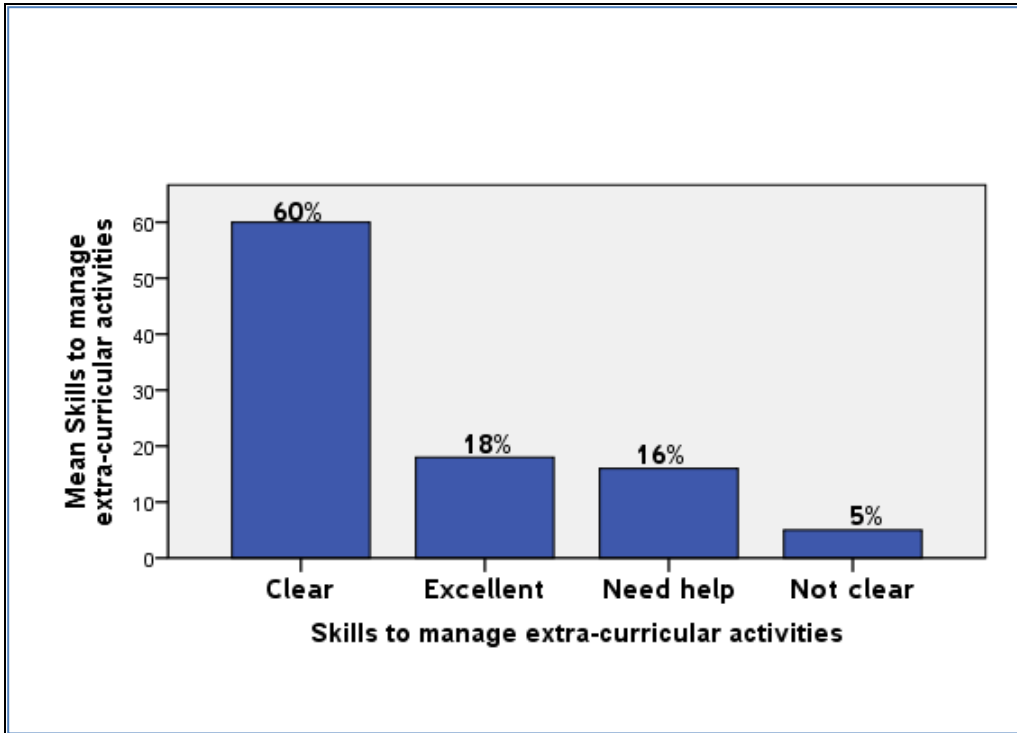
Figure 5.38 illustrates how the participants rate their skills to ensure that schools' funds benefit the learners in consultation with other governing structures (i.e. SGBs and RCLs) within the school.



5.38: Skills to manage the finances of the school

Figure 5.38 shows that sixty five percent of the responses reported that they were clear about how to ensure that the funds of the school are managed efficiently. Eighteen percent of the respondents rated their skills to manage the funds of the school as excellent. Thirteen percent said they need help and three percent reported that they were not clear about how to manage the finances of the school.

Figure 5.39 shows the frequency of the respondents' abilities to share in the responsibilities of planning, organizing and conducting extra and co-curricular activities in the school. Planning and organizing are the core functions of any manager. The graph depicts the rating of their skill to manage extra-curricular activities.



5.38: Skills to manage extra-mural and extra-curricular activities

Figure 5.39 reveals that sixty percent of the responses indicate that the participants were clear about how to manage extra-curricular activities. Eighteen percent show that the participants rate their skills as excellent. Sixteen percent indicated that they need help and five percent were not clear.

Figure 5.40 show the frequency of the responses in terms of percentages, when respondents were asked to rate their abilities to oversee counselling and guidance, career choices, discipline and the general welfare of learners.

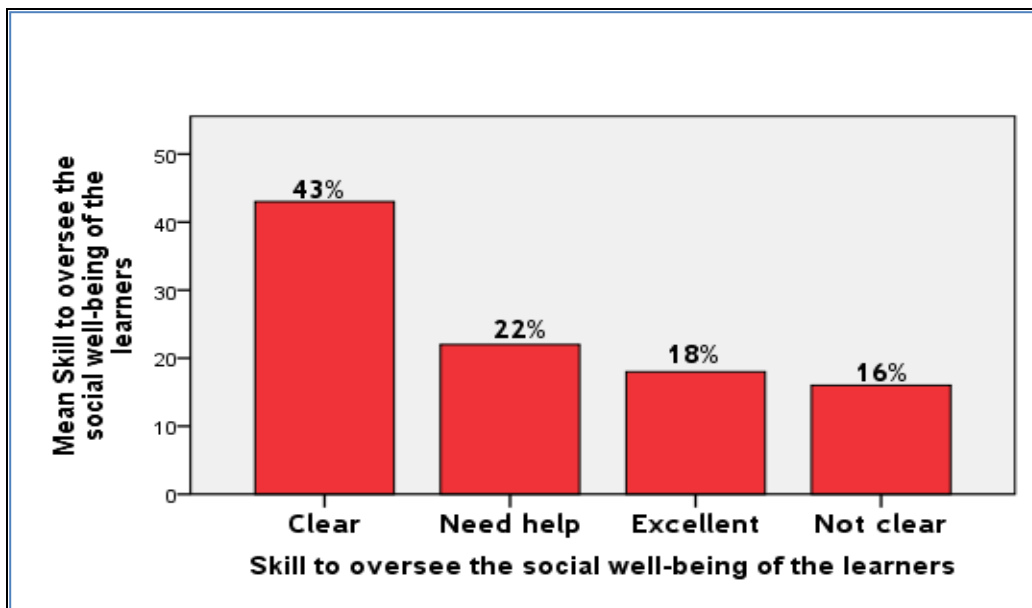


Figure: 5.39: Skills to oversee the general social well-being of the learners

Figure 5.40 shows that forty three percent of the respondents reported they have a clear grasp on the skill to oversee the general social well-being of the learners. Twenty two percent of the respondents said they need help. Eighteen percent of the responses indicate an excellent possession of skill to oversee the social well-being of the learners. Sixteen percent indicated that they are not clear.

5.7 CONCLUSION

This chapter highlighted many of the challenges that are endemic in the schooling system. The solutions for these problems are largely in tandem with the suggestions documented in Chapter 9 of the National Development Plan titled: Improving Education, Training and Development. Other suggestions are documented in the Action Plan 2014 of the Department of Basic Education: Towards the realization of schooling 2030. Many of the challenges resonate with the data collected from the questionnaires which have been analysed graphically in this chapter. All the problems in the school education systems which were raised in this chapter and also featured prominently in the analysis of data in this chapter can be summarized into two main factors. Weak technical capacity amongst school managers to manage schools effectively and efficiency hamper

school education system. This is made worse by foul practices such as nepotism and the appointment of unsuitable personnel to manage public schools.

This create a culture of impunity around public schools in the country wherein it is almost difficult to find the schools that delivers excellent learning opportunities leading to good outcomes in Mathematics and Science education. There are however, pockets of excellence which provide positive lessons for the entire school education system, unfortunately most of these schools are found in the most affluent suburbs in South Africa and they do nothing to influence the achievement of the same outcomes in rural and township schools. In South Africa, children from impoverished families attend worst schools, which ensure that they are taught by teachers who have poor content knowledge of Mathematics and Sciences. This gives these young people a scant chance of being able to pursue higher skills in the national and global economy (Biko 2013:293).

The primary cause is that teachers, heads of departments, subject advisors, principals and system level officials who work in the Department of Basic Education do not have technical expertise to implement policy efficiently as their job descriptions prescribes. The results of this are poor schooling outcomes as well as a lack of respect for the schools as public institutions. This point is attested by the results of the data collected in which school managers appear to have limited knowledge of the legislation that governs the management of the schools. In some cases, it was rather odd to discover that some of the managers are not aware of their tasks and responsibilities as stipulated in the *Policy Handbook for Educators* and other insightful resources that are used by the government to assist these school managers to implement policy.

CHAPTER 6

FINDINGS AND RECOMMENDATIONS

6.1 INTRODUCTION

During the presidency of Jacob Zuma, education has come to be regarded as a top priority for improving the social and economic status of the people of South Africa. To have a technologically advanced country, the government must invest in Mathematics and Science. There is no doubt that the country needs to do a lot better in these subjects. These subjects are still relevant to the children albeit them still battling with basic literacy and numeracy. The recent awarding of the Square kilometre Array (SKA) project is one example why Mathematics and Science are critical to the development of learners in South Africa. With South Africa ranked the second-to-worst country globally when it comes to competence in Mathematics and Science, it would be fair to put school managers under the spotlight. Although it is easy to point out the many educational challenges in South Africa, the focus must be on finding practical solutions to these challenges. The problems in Mathematics and Science teaching and learning are long-standing, multifaceted and challenging, and so the solutions to them will need to be too. One solution from the Public Administration point of view is to create strong management and leadership in schools, develop a culture of learning and teaching as well as supporting Mathematics and Science teachers to strengthen their subject knowledge.

South Africa prides itself on excellent policies to enforce transformation across the board; the primary drawback is the lack of institutional and administrative capacity to implement those policies. If South Africa is to succeed in providing world-class education to its citizens then those who are entrusted with the responsibilities to implement these policies must be well equipped with institutional and administrative capacity. A weakness in human resources and skills capacity of personnel has been identified by the government as one of the

key binding constraints of policy implementation. This has the potential of hindering the efforts of making education top priority. This chapter details the findings of this research. The findings are based on management practices of the school managers and system level officials as implementing agents of the NSMSTE. Despite the considerable progress that has been made to transform education, there are concerns that school management is lacking in a number of key aspects. Intervention is needed in the short and medium term to improve the way that NSMSTE policy is conceptualised, supported and managed. Mathematics and Science education are flashpoints of the outcomes of the education system that is globally competitive. To this end, this study presents both generic recommendations that apply across the school system and specific recommendations that apply to particular areas of the system. The purpose of this chapter is to express many of the central themes of this study in a brief manner. Recommendations to the challenges identified are proposed.

6.2 SYNOPSIS OF THE CHAPTERS

Chapter One deals with the generic overview of the background of education in South Africa and the motivation for carrying out this study. It also discusses the achievements and some notable weaknesses in post-apartheid education. It covers the objectives of the study. The key objectives of the study are:

1. Determine whether the teaching and learning practices in the Mathematics and Science dedicated schools in the Free State are in line with the national policy on the development of scarce skills.
2. Determine whether the implementation of the scarce skills policy is managed in a way that would ensure that the envisaged growth and development plan of the province is attained.
3. Provide a broad framework of public policy analysis as a context within which to understand scarce skills in the mathematics and science showcasing schools, as indicated in the national policy known as the NSMSTE.

4. Critically analyse the current practices of learning and teaching for the development of scarce skills in the selected schools.
5. Propose a model for scarce policy implementation for the school managers as the agents of education policy in schools. This model can also assist the entire school education system.

Chapter Two describes the research methodology that was followed for garnering and analysing data. In this chapter the method and the design of research are discussed. This chapter also includes the statement of the research problem, research questions, purpose and population of the study.

Chapter Three reviews some of the relevant literature on policy implementation and how it relates to the practices and the theories of Public Administration. The history of Public Administration is traced. Public Administration definitions are expanded upon. Scholarly definitions of policy implementation are also provided. Policy implementation as a core function of public administration is elucidated. Critical variables for the implementation of policy are discussed. Policy implementation is linked to skills development. Models of community participation in education are encapsulated. The first model of community participation that is used in this regard is the parent participation in schooling through the Parent Learning Support System (PLSS) in the Philippines. The second community participation model that is used is the Malian Community Basic School-‘*Ecole de Base*’. The third model of community participation that is used is the community selection of school principals in the state of *Minas Gerais*, Brazil. The lesson for the administration of public education in countries such as Finland and Singapore are also modelled. The significance of Public Administration theories in providing models for policy implementation is expanded upon.

Chapter Four explores the legal frameworks that guide the administration of school education in South Africa. The analysis of the legislative framework for the administration of education is guided by the following three pertinent policy questions:

1. What is the constitutional basis for the administration of education in South Africa?
2. How is the administration of public education in South Africa structured?
3. How does the administration framework deal with the exercise of authority and voice with respect to the various domains of the administration of education in South Africa?

The discussions in this chapter attempt to unpack the inextricable synergy between democracy, education and law. This relationship is captured in the international law and education legislation and the Constitution of the Republic of South Africa Act No. 108 of 1996. Chapter 2 of the Constitution of South Africa Act No. 108 of 1996 titled: *The Bill of Rights* guarantees everyone a range of fundamental rights and freedoms that are relevant in the context of the administration of education. Some of these rights that are discussed include the right to equality, the right to basic education as well as the right to administrative action. Some of the legislations that are applicable to Public Administration and have a direct bearing on the theme of this research are discussed. A list of key policies and legislation in South Africa since 1994 are stated and discussed. The structure and distribution of legislative authority over education between the three tiers of government are discussed. Interaction amongst the national government, the Department of Basic Education and the Department of Higher Education and Training, Provincial Departments of Education and their public statutory partners in education are identified as key factors in the continued systemic rollout of the education policies.

NEPA of 1996 makes for provision for the system of governance in the education system. NEPA further establishes the main bodies responsible for promoting the implementation of policy and ensuring that the school education system in general works efficiently. Two of these bodies in this chapter are the Committee

of Education Ministers (CEM) and the Heads of Education Departments Committee (HEDCOM). A number of National, Provincial and local structures that are devoted to matters related to the administration of education in South Africa are also given in the form of an organogram. The roles of other support structures in education system are also discussed.

Chapter Five aims to give an analysis of the relationships between the scarce skills policy and National Development Plan (NDP) as well as Action Plan 2014: Towards the Realisation of Schooling 2025. Chapter 9 of the NDP is cogent on the quality of public education and highlights the following as the main priorities to improve school-based education in South Africa: Human capacity, school management, district support, infrastructure and results-oriented mutual accountability between the schools and the communities. Action Plan 2014.

According to Soobrayan (2012:3), the *Action Plan 2014* is not intended to repeat all the details provided in other national plans and policies dealing with specific matters, such as teacher development, the curriculum, school funding infrastructure and Grade R provision. Soobrayan (2012:3) summarises the importance of the *Action Plan 2014* by listing two purposes of the plan. The first purpose is to provide specific guidance in the preparation of other plans and the second purpose is to reflect the best practices described in those other plans.

Finding 1

There is an institutionalised culture of non-compliance in South Africa's schooling system. Teachers are consistently absent without valid reasons, some arrive late, while some leave early, and others are perhaps at school but not in class. Fridays are early closing days and on paydays non-attendance is the norm in many schools. Pupils display similar traits and principals and parents are unable to exercise authority. The state has no effective way of knowing those things because the state is unable to monitor compliance in every school. As a result, many of the schools fail to reach the desired standards.

Recommendation 1

Communities around the schools must serve as school inspectors. Parents, pupils and members of the broader community must serve as the eyes and ears of the state, as well as to demand greater accountability from public servants, including teachers, principals and other officials. They live in the vicinity of the schools, they are at the school regularly, and they know and talk about what is going on in the schools. The communities must speak up about every wrongdoing that they see occurring in schools. Communities must also speak up about every collusive action that undermines the constitution or the rights of learners to learn. They must report to a nearby district about any issue relating to the quality of teaching and learning in the school, the effectiveness of school organisation and the promotion of constitutional principles and values. The schools will be rated in all these areas.

Finding 2

While former white Model-C Dinaledi schools produce uniformly better results in Mathematics and Science, black rural and township Dinaledi schools are battling, suffice to mention that they overwhelmingly survive through the efforts of a small number of good and committed teachers and principals. Over half of the in-take that start school in black rural and township schools never reach Grade 12, with Grade 9 being a major drop out point. This study has found out that it is not only resources and physical infrastructure that impact negatively on these schools, but how the education process in these schools is ordered, managed and translated into classroom practice.

Only a relatively small number of black students acquire an education of any meaningful quality, and there is a wide gap between the top quintile of learners and the rest. Poor schools effectively produce fewer numbers of Mathematics and Science learners that are readily absorbed into higher institutions of learning, with some notable exceptions. The degree to which the black learners are disadvantaged on account of their background is worsened by marked

inequality in outcomes between schools. This large shift in outcomes between the most affluent schools and the poor schools reflects the fact that a major part of the educational performance disparity in South Africa is between rich schools (urban and historically white) on one hand, and the black and rural schools on the other hand. In short, former white Model-C schools form the first system of education and the black rural and poor township schools effectively form a second system of education. Out of 36 Dinaledi schools investigated, 12 are former model-c schools with most of the learners coming from the middle class family backgrounds.

Recommendation 2

Socioeconomic factors in South Africa have created the so called dual system of school education wherein the children coming from rich backgrounds attend better schools than those coming from impoverished backgrounds. The problem with the so called dual school system in South Africa can only be resolved by political will. Many underperforming black schools require political authority that can effectively hold teachers, principals and system level officials accountable for re-establishing teaching and learning routines that makes schooling productive. Without teaching and learning firmly established in every Dinaledi school, the wheels of the scarce skills policy will find little or no traction.

Finding 3

There is a lack of coordination and coherence between the DBE and other departments with regards to the implementation of scarce skills policy. Albeit the DST has signed cooperation agreements with the DBE. This agreement offers a potential for improving Mathematics and Science education, but it appears that that this potential is not sufficiently exploited. For an example, the DST maintains a database of unemployed science graduates. These graduates are highly competent in the area of content mastery and might be productive if they are deployed to Mathematics and Science dedicated schools. The DBE has not taken full advantage of this.

Recommendation 3

The DBE should establish a task team of experts to set up guidelines of how the departments such as the DST and the DPSA can optimise cooperation in order to thwart silos in policy implementation and to improve coherence in the implementation of scarce skills policy.

Finding 4

There is insufficient alignment between national and provincial levels of the Department of Education. National government has concurrent legislative responsibility with the provinces for the basic education sector. National government formulates national policy. Provincial governments must, however, implement nationally determined policy. The national government has no authority over schools, since this is a provincial competence. It can make allocations from treasury to provinces, but has little say over how provinces re-allocate the funds to schools.

Recommendation 4

Provinces know their educational needs better than the national government. The provinces are not always obliged to observe all the national priorities. The provinces must decide what is locally relevant and implement those programmes they have designed and chosen themselves.

It is important to point out that policy formulation and implementation are not necessarily consecutive processes, but are in many cases parallel processes where policy design or redesign and revision can take place even during the formal implementation stages of the policy project. In fact policy success is in most cases attributable to such redesign or customization of the original design during implementation, because the original policy designers did not or could not foresee specific complications at regional and local levels. This holds true

for the implementation of scarce skills policy in the Free State province. It is only during the formal implementation stage of this policy that the government must realize that because Free State province is the agricultural hub of South Africa, schools need to produce more learners that should study farming. It is, therefore, recommended that the NSMSTE policy or scarce skills policy must be redesigned to include Agricultural Science in order to cater for the future regional needs of the Free State province.

Finding 5

Dinaledi schools require effective leaders and managers who are clued up about Mathematics and Science content and knowledge if they are to implement the scarce skills policy efficiently and/or provide the best possible Mathematics and Science education for learners. Dinaledi schools need trained and committed Mathematics and Science teachers but they, in turn, need the leadership of highly effective principals and support from other senior and middle managers.

Recommendation 5

An effective instructional leadership model is most likely to produce favourable outcomes in Dinaledi schools. Internationally and locally, there is growing emphasis on the importance of effective school management and leadership in contributing towards good learner achievement outcomes. Instructional leadership has become a key concept in the research literature.

According to Blase and Jo Blase (2000:130-131), literature on instructional leadership falls into four broad models. First, prescriptive models describe instructional leadership as the integration of the tasks of direct assistance to teachers, group development, staff development, and curriculum development and action research. Second, studies of instructional leadership, though only a handful in number, include exploratory studies of indirect effects of principal-teacher instructional conference and behaviours such as the effects of monitoring learner's progress. Third studies of direct effects of principal

behaviour on teachers and classroom instruction include synthesis of research that demonstrates the relationship between certain behaviours of the principal and teacher commitment, involvement and innovation. Fourth, studies of direct and indirect effects on learner achievement include studies investigating the principal's role (e.g. use of constructs such as participative leadership and decentralised decision-making) in school effectiveness. The first and the fourth models are recommended for the effective implementation of the scarce skills policy.

Finding 6

The decentralisation of policy implementation to schools has the potential to recreate and reproduce historical inequities and inequalities in education in post-apartheid South Africa. Although geographical school zoning and school choice policies in South Africa were ostensibly introduced to regulate admission to public schools, these policies have not had their intended effects. On the contrary, they have become a means of barring learners of certain races, classes, languages, religious groupings and socio-economic background from admission to certain schools, either intentionally or by implication.

Recommendation 6

Well-off and high performing Free State Dinaledi schools such as Eunice High School, Welkom High School, Beacon High School and Sasolburg High School must open their doors to accommodate learners coming from previously disadvantaged communities. School managers of those schools must mentor SMTs of township and rural Dinaledi schools. The powers of SGBs to determine admission policies must not be abused to deny equal access to basic education. South Africa's Constitution Act No. 108 enshrines the *Bill of Rights* chapter 2) of the Constitution of the Republic of South Africa, Act 108 of 1996), which prohibits all forms of direct and indirect discrimination and thus provides the general framework for all educational policies, including the policy on admission to public schools, while at the same time protecting certain rights such as language

rights. Guided by the *Bill of Rights* (Chapter 2 of the Constitution of South Africa Act No. 108 of 1996), the admission of learners into public schools in South Africa is governed and regulated by the Admission Policy for Ordinary Public Schools and Section 5 of the South African Schools Act (Act 84 of 1996).

Section 5(5) of the South African Schools Act No. 84 of 1996 grants schools and the SGBs authority regarding admission of learners to public schools. This section states that the admission policy of any public school must, at all times, be consistent with the Constitution of the Republic of South Africa Act No. 108 of 1996, the South African Schools Act No.84 of 1996 and all applicable provincial laws (DoE 1998:84). Other critical areas in which SGBs make decisions in the governance of the schools include the levying of school fees, development of school language policy, access policy and code of conduct for learners. However, given their inherited privileges, SGBs of former Model C schools have the financial and human resources capacity to exercise the authority and powers given to all School Governing Bodies.

Section 5(1-4) of the South African Schools Act No. 84 of 1996 and sections 9 to 13 of the Admission policy for ordinary public schools detail the requirements and limitations for the admission of learners to public schools. The Admission policy for ordinary public schools states that the Department of Basic Education may, in consultation with SGBs, create school feeder zones in order to prioritise schools for purposes of learner admission. According to Section 34(d) (1-111) of the Admission policy for ordinary public schools, the objective of school feeder zones is to ensure that learners who live in the feeder areas or whose parents work and/or live close to where the school is located are prioritised for admission to public schools (DoE 1998). Section 33 of the Admission policy for ordinary public schools empowers the head of the Department of Education, in consultation with governing bodies, to determine feeder zones for public schools. This section also states that such feeder zones need not be geographically adjacent to the school. All the Dinaledi schools must have their own primary schools operating within the same premises to serve as feeder schools.

Finding 7

Most of the participants in the study implied the implementation of scarce policy differently. This is not peculiar because implementation will always be subjected to diverse interpretations, even if the law and policy are clear and unambiguous.

It was also found that policy frameworks (e.g., curriculum frameworks) are in place for a quality Science and Mathematics education. However, like other sectors of the society, it seems that implementation of policy has not proceeded according to the initial intentions. Importantly, competent school managers needed for the implementation of this policy are scarce, especially in township and rural schools. There is the parallel challenge of developing human resources to manage the educational system and ensure that there is quality support for the implementation of the policies. Since 1994, there have been many interventions by the government, the private sector and non-governmental organisations to support the implementation of the NSMSTE policy. These interventions provide creative programme plans but often lack a detailed implementation plan to effect the innovations. The interventions were abandoned after a few years because it did not demonstrate the expected results. For this study, it was found that the reasons for the lack of progress in the implementation of scarce skills policy were that the intervention project has not been implemented with the necessary support and that there has not been enough time and plan to embed it in the entire education system.

Recommendation 7

Implementation is not simply a managerial or administrative problem, it is a political process, it is concerned with who gets what, when, how, where, and from whom. However education managers must out of their own volition establish and assume leadership roles in education structures and become outspoken participants in education leadership and activism in general and not

take it for granted that this is the role of the political leaders. Not only is implementation influenced by multiple actors, it operates at multiple levels. For example, a national education policy like the NSMSTE policy may operate on the national, provincial, and local spheres/levels (Brynard 2005:657).

Implementation moves from originally set political goals to results on the ground (service delivery). The 5C protocol, namely; Content, Context, Commitment, Capacity, Clients and Coalition as proposed by Brynard (2005:659) provide a useful vehicle for making the implementation policies successful. As has been highlighted in Chapter 3, all five variables act together. This interconnectedness of the variables creates both a challenge and an opportunity. What the interlinked dynamic 5C protocol implies is that implementation cannot be considered as an activity to be planned and carried out according to a carefully predetermined plan; rather, it is a process that can only, at the very best, be managed and lessons learnt as one proceeds through the different implementation stages. Managing it, and steering it towards a more effective outcome, entails strategically correcting those variables over which implementers have some direct or indirect influence so as to induce changes in the ones over which they do not have such influence. The strategic imperative is to identify which, amongst the five, are the defining variables and how it might best influence them to arrive at the desired results.

Finding 8

In South Africa, the poorer the family backgrounds that the children come from, the worse the school they are likely to attend. This was evident on the infrastructural differences that were glaring when the researcher visited Dinaledi schools in the townships and Dinaledi schools in towns. This ensures that children coming from these poor families are taught by teachers who have poor Mathematics and Science skills themselves, giving children a slim chance of being able to pursue higher value skills. Poverty dynamics in South Africa indicates that blacks are the poorest group and it is in black schools where there are vast backlogs with regards to the provision of basic infrastructure, learning

materials and qualified teachers, all of which affect Mathematics and Science participation and achievement.

Recommendation 8

The government must invest in black schools which show the potential to succeed, to improve Mathematics and Science education in the country. There are many black schools such as Mbilwi High School, which have achieved some successes and the strategy must be to invest in them so that they consistently produce quality results. This will involve a whole school development and then a specific focus on Mathematics and Science.

At the moment these schools have to contend with the legacy left by apartheid as well as the migration of probably the more resourced and better performing learners to better schools. People will continue to migrate to better schools, but the systemic level of intervention must be to strengthen as many schools as possible. Because the system is big and it is not possible to strengthen all schools at the same time, it is more strategic to start with emergent schools and ensures that they consistently produce good results and then slowly expand the intervention to schools. This strategy of investment in schools mirrors the present Dinaledi strategy.

Independent committees that look into the distribution of education resources to Dinaledi schools must also be established. This must be a stakeholder-driven structure which would be a watchdog on acquisition, storage and distribution of education resources in schools, including textbooks, without necessarily interfering with the application of legislated procurement practices, regulations and applicable policies and procedures. This would circumvent a scenario where learning and teaching resources are not available on time in schools for teaching and learning to take place.

An equal, quality education system, implemented among civil society which is not equal, has a predisposition of rendering the impact thereof unequally. It is

important to mention that in order to ensure that quality and equality education processes and outcomes are attained in Dinaledi schools; inequalities within communities must first be eradicated. This is indeed a mammoth task which cannot be left to the Department of Basic Education alone. For its part however, the education department's resolve must be that under any circumstances of inequity, quality education and outcomes must still be positive.

Finding 9

Teachers in rural and township schools generally exhibit poor subject knowledge in Mathematics and Science, and as a consequence they have an incomplete understanding of the requirements and the challenges of the curriculum. Teachers' content knowledge has been called into question as the quality of teaching is central to the crisis in education. The problem of subject content knowledge is even more serious issue than under-qualification of the teachers.

Recommendation 9

The weakness of the knowledge and skills of many teachers of Mathematics and Science can be curbed by introducing in-service training programmes. These programmes must be initiated either by the government or by NGOs. These programmes must have varied objectives, ranging from developing more progressive teaching styles and better conceptual understanding to drilling and practice in the core syllabus contents of Mathematics and Science.

A competency examination for all Mathematics and Science teachers and principals must be established to determine where they fit on a pre-determined scale of competence. The benchmark has to be a common standard of teaching Mathematics and Science. Having established this benchmark and designed the examination, adequate time must be given to all teachers to participate in the examination process. Those who obtain scores within a certain predetermined percentage of the pass mark must be given the opportunity to go for intensive in-service training and retesting within a short period of time. Those who fail the

examination must be asked to take voluntary retrenchment that will include a retirement pension and a funded skills development programme. Those who pass must be eligible for increased remuneration and benefits. Competent teachers and principals are needed so that learners can learn effectively. With such outcomes, learners will be better able to contribute to society and be gainfully employed.

Qualified Mathematics and Science teachers who for whatever reason have left the teaching profession must be asked and encouraged through financial incentives to apply to participate in the competency examination process. If they pass the examination they must be placed in needy schools to fill the gap in areas where there are shortages. Foreign qualified teachers from all nationalities must also be encouraged to apply and given residency on condition that they pass the same competency examination.

Finding 10

Training courses on content knowledge are gratuitously thrown at Dinaledi schools teachers, principals and system level officials with no follow-ups to verify and ascertain effectiveness. According to Jansen (2011:107), South Africa spends more money on teacher and principal training than any other country in Africa. The national and provincial governments plan amply for teacher and leadership training. Training inputs are generous, but they do not address the problems of implementation of policy. In this study, it has been found that the training budgets from the coffers of the Dinaledi conditional grant are often approved with few stated measurable objectives and simply because it is considered that it will be the right thing to do. This leads to un-assessed wastage and often to inadequate training programmes which end up in being assessed largely on the teacher's enjoyment of the training sessions. In these circumstances, teachers and principals often resent being sent on training courses, cynically expecting that once again the time spent on these trainings will have little or no effect on their daily work as there are no systems in place to measure the effect of these trainings.

Recommendation 10

Training courses for Dinaledi schools teachers must be measurable, objective, and result-orientated. These training courses must also include school managers. A means of actualising the bottom-line objective is recommended as a model to be used to measure the effectiveness of these training courses. Such an approach is formalised and given the title of the Positive Actualisation of Bottom Line Objectives (*PABLO*) solution. According to Barnet (2011:88), *PABLO* principles as applied to training can be measured by the following five ingredients:

- I. Defined and quantified skill and performance objectives
- II. Decision-maker input in setting the quantum targets
- III. Performance audit
- IV. Measurement of progress of individual trainees
- V. Management accounting link between functional performance and profitability

The verification of results can be achieved by testing for two outcomes namely; competence and performance. Competence can be measured by the writing of assignments, tests and examinations. Performance can be measured by assessing work results in the work situation. The *PABLO* solution approach is applied in the development of a systematic tool in response to demand for objective methods of measuring the bottom-line effect of training and development activity. It is marketed as Training Return Acknowledged (*TRACK*). Track is a method of ascertaining the returns on a training activity (Barnet 2011:232).

For training to be genuinely effective, the trainee needs to succeed through a sequence of four measurable outcomes:

1. Improved skill
2. Improved knowledge

3. Competence
4. Performance

Tracking progress through each sequential step enhances the link between training input and performance. The task of ensuring that trainees proceed through all the steps is largely one of giving tests, examinations and finally proof in the workplace. Barnet (2011:234) asserts that tests and examinations are not very perfect, but they are useful in tracking performance. The TRACK system is also recommended as the means of ascertaining the results of any training activity undertaken by the teachers and school managers who are entrusted with the responsibilities of implementing policy in a schooling system.

Finding 11

There are too few subject advisors for in-class support for teachers. Many do not have sufficient knowledge and skills to offer the teachers the support that they require to improve learner performance. These are key individuals in the district offices who should be in a position to support the teachers in Dinaledi schools who may be struggling to improve themselves. Unfortunately these subject advisers usually have too many schools to support and too many other bureaucratic duties to perform. In addition, and in many cases, they lack the knowledge and skills which teachers need help with. Most of the subject advisers intrinsically do not have the required potential. These individuals are employees of provincial departments with the position and potential to make an impact. However, they are also handicapped by a lack of resources, poor direction, too much administration, and lack of subject competence.

Recommendation 11

The current schooling system is dependent on subject advisors and district staff to act as intermediaries between policy and implementation in the classroom. The subject advisers must have both the classroom experience and the subject knowledge that will make them the advisers that teachers require. To improve

the chances that they will achieve this status, they need development programmes specifically designed for this purpose. As they gain competence, so they increasingly deserve to be provided with resources. They need to be mobile, equipped with the latest electronic devices and the skills to use them, and provided with a small library of reference books, teaching aids and equipment. Their visits to schools should be frequent and supportive.

As in many cases they have far too many schools and teachers to provide for adequately, more subject advisers must be appointed specifically for supporting the Mathematics and Science dedicated schools. They need to arrange effective workshops for Mathematics and Science teachers. Above all they need to lead by example, demonstrating a love of both the subjects of Mathematics and Sciences as well as the learner. Subject advisors need to be assisted to focus on the quality of Mathematics and Science in the classroom.

Finding 12

There are no adequate intervention plans to use as learning tools to guide the future efforts in the implementation of scarce skills policy.

Recommendation 12

It is important that when an intervention is introduced into the system, a clear implementation plan is in place. Adequate resources also need to be made available to support the intervention. Realistic time frames regarding when the impact of the interventions are expected to be attained need to be set and lessons for ways to improve the process need to be derived.

Findings 13

The majority of the school management teams of Dinaledi schools do not have at their disposal relevant information about some of the best practices and lessons that account for productive schools locally and elsewhere in the world. This

makes it difficult for the schools to benchmark themselves against some of the best practices applied elsewhere.

Recommendation 13

There is a need to benchmark South Africa's school education system with some of the best practices in the world. However, it is worth mentioning that no matter how world-class the South African education system may aspire to be, most communities which receive this education are themselves not world-class, nevertheless they are potentially world-class material. The formation of community education forums by the portfolio committee on education, sports and culture in the Free State legislature in the year 2012 was a step in the right direction towards community participation and stakeholder involvement in education. All relevant stakeholders participated in those forums in their various capacities and roles - for example, professionals, graduates, community and traditional leaders, labour, law-enforcement agencies and others to ensure success in the education process and management at all level.

The models of community participation (i.e. parent participation in schooling through the parent learning support system (PLSS) of the Philippines, Brazilian *SECOM* programme and Malian *Ecole de Base* programme) discussed in Chapter 3 of this study are recommended as the best practices of community participation which must be put in place to encourage community participation in schools.

The Parent Learning Support System (PLSS) is a school-based initiative which aims at organizing parents, guardians, and community members to assist in the upgrading of the quality of education generally, and in the raising of achievement levels of pupils specifically. Operationally, the PLSS is a grass-roots strategy which represents collective effort in co-ordinating school management with the principal and teachers.

The Brazilian state of Minas Gerais, has a special way of choosing school principals for public schools. This is done by combining the criteria of knowledge

and professional competence with leadership and the development of school improvement plans, which implies wide participation from the school community and communication with society through the mass media. Parents and pupils from schools are involved in the SECOM programme. This programme selects school principals on the basis of candidates' proposals with regard to a future work plan and school improvement. Through a School Council, they work with the chosen principal in its implementation an innovation forming part of a wider-scale reform in Brazilian public education system.

The Community Basic School in *Mali-Ecole de Base* is another model of community participation that is part of the recommendation in this study. The Malian system of basic education is characterised by a scenario where some authority is devolved to the level of the village or neighbourhood. A school is created and managed by a village or a group of villages, a neighbourhood or a group of neighbourhoods, or a group of parents-that is by local communities.

Other lessons of good practice for the implementation of Mathematics and Science policy in public schools are derived from a local Mbilwi Secondary School, Finland and Singapore. A model of recruiting and grooming young BSc graduate to teach Mathematics and Science at Mbilwi High School is recommended for other Dinaledi schools. The lessons of good practice from Mbilwi High School, the Finnish mathematics and sciences education policy (LUMA) and the Singaporean Skills Development System (SSDS) discussed in Chapter 3 give some valuable lessons that must be indigenised and be applied to the implementation of the NSMSTE.

A model of charter schools is also recommended for the management of Dinaledi schools. The Dinaledi schools should be completely run by the private sector, but follow the same curriculum as other schools in South Africa. The teachers' and the administrators' salaries must not be regulated by the government. The government must select the worst-equipped schools from all the Dinaledi schools in South Africa to be auctioned off to corporate sponsors who should take them over and run them through regulated section 21 companies. Tuition fees for all

the learners in these identified schools should also partly be covered by the corporate sponsors.

Finding 14

There are no structured learning materials and standard tests for all the Dinaledi schools. Every school manager relies on the teaching and learning materials that seem to best work for his or her school environment.

Recommendation 14

Given the challenges of Mathematics and Science teacher shortages and teacher quality, it would be essential to consider providing high quality structured learning materials (e.g., workbooks) to the learners. Structured learning materials, especially in poorer learning environments can provide a mechanism for learners to acquire knowledge. Given that the nature of Mathematics and Science knowledge is cumulative, the structured learning materials can provide a way to acquire this knowledge even if there is no teacher or the teacher's content knowledge is poor. These materials can also allow communication between the school and the community so that other individuals within the broader community can assist in the learning process.

Unified standards must also be established. These standards should include a tracking mechanism on nation-wide learner testing that resembles a national synchronised, standardised test that the learners must write in order to measure mathematics and science skills. Taking these tests every year will give the system a one-year national feedback as opposed to the Grade 12 standardised examinations. The questions of these tests should be designed so that they measure how well the learners in Dinaledi schools are mastering essential skills and answering complex questions in Mathematics and Science.

Finding 15

There is no specialised unit that has been assigned to monitor the state of learning and teaching in Dinaledi schools.

Recommendation 15

The National Education Evaluation and Development Unit (NEEDU) must be given more leeway and budget to exercise its authority in monitoring the state of learning teaching in schools, especially in the Dinaledi schools. This unit must be given powers to carry out its tasks in the same way as the school inspectors of the previous system did. NEEDU is a unit which is independent of the civil service responsible for the administration of schools. It should report directly to the Minister of Basic Education. The need for a unit of this kind was first formally articulated in a resolution passed at the ANC's Polokwane conference in 2007. The Ministerial Committee recommended that NEEDU should provide the Minister of Basic Education with an authoritative, analytical and accurate account on the state of schooling in South Africa and, in particular, on the status of learning and teaching.

Finding 16

Most of the school managers' route to qualification is through teacher training colleges. At such colleges, three years of study leads to a teacher's diploma, which is endorsed for selected school subjects other than Mathematics and Science. The majority of the school managers hold such qualifications. It was found that teaching qualifications and/or any formal degrees are not sufficient to manage schools. The Advanced Certificate in Education (ACE) programme, which was conceived as a form of continuing professional development bore very little outcomes for school managers. Many principals who have completed the Advanced Certificate (ACE) course cannot translate the theory they learnt into practice. It would appear that an ACE course is also not sufficient to run successful schools.

Recommendation 16

School managers must attend schools of public management and administration such as the SPMA to hone their skills in school management and leadership. The ACE programme has not made salient inroads in improving the quality of managing schools. A standard qualification other than an ACE course is required for school management and leadership. The expectations of school managers have moved from demands of management control to the demands for an educational leader who has to foster staff development, parent involvement, and community support and learners growth.

Finding 17

English, as a medium of instruction has a negative effect on the performance of non-English home language speaking learners who are taking Mathematics and Physical Science as their major subjects.

Recommendation 17

The current policy for English as a medium of instruction must be reviewed. Research should be undertaken by the DBE to inform this review of language policy. DBE should consider providing resources to support the teaching and learning of Mathematics and Physical Science in English in rural and township schools.

Finding 18

The Dinaledi programme has achieved many important gains, but has not achieved the level of positive results that were intended. Some of the gains include:

- Major improvements in the Mathematics and Science infrastructure in Dinaledi schools;
- A higher pass rate in Dinaledi schools than in other schools. Dinaledi schools have been responsible for a significant higher percentage pass rate of the annual national Grade 12 examinations.

Recommendation 18

It would appear that the Dinaledi programme hold a potential to contribute meaningfully towards the improvement of Mathematics and Science education at school level. However a review is necessary if the potential is to be exploited optimally. In this regard, the following is recommended:

- Increasing the number of non-fee paying Dinaledi schools in rural and township schools
- Putting in place a stronger system of curriculum support, planning, management and monitoring in the district offices
- Local private and public partnerships must be strengthened to support Mathematics and Science curriculum activities in Dinaledi schools.

6.3 CONCLUSION

In the early 1950s, the South Africa's minister of native affairs, Hendrik Frensch Verwoerd questioned the use of teaching black children Mathematics when they cannot use it in practice. This prejudice drove the Bantu education policy that denied black children the same standard of education as white children. Today the legacy of Bantu education continues to haunt policy makers tasked with providing a decent education to children whose parents were denied it in the past. Despite spending a large portion of its national budget on education, South Africa is not producing enough learners with Mathematics and Science skills that can compete in the global economy. This is clear from South Africa's poor performance in international benchmark tests. High rates of teacher and learner absenteeism, administrative abyss on the part of school managers and officials, crumbling infrastructure and shortage of LTSM are some of the examples that are often cited to illustrate a dysfunctional education system.

The common thread that runs through all the findings of this research is that poor performance in Mathematics and Science, which is largely experienced in black schools, is attributed to a greater extent to abysmal leadership and management skills of school managers and to a lesser extent to a lack of

resources. The remnants of apartheid education are still prevalent among the historically marginalised communities where some of these schools are found. It is important to point out that while it is crucial to reflect on the negative consequences of apartheid and Bantu education, this should not be used as a perpetual context within which to address the issues around school management, going forward. Hypothetically, the damage caused by Bantu education is too ghastly to contemplate and also difficult to quantify, thus making it also difficult to contemplate an appropriate remedial framework for the education system in the country. This study proposes an approach wherein education should be based more on what the society and the country desires and little on the negative attributes of the erstwhile Bantu education system.

Society needs to be mobilised towards positive contribution to the effective and efficient management of school education system. Where negative and critical views are expressed about the school education system, suggestions must be made for workable alternatives and private public participation can play a major role in this regard. It remains the responsibility of every citizen of South Africa to rally around the ANC-led government vision of the stakeholder-driven education system and make their own inputs to ensure a balanced contribution towards a transformed school education system from all sections of the population. By adding voices and constructive criticisms across the political, religious and social divides, a balanced school education system will emerge.

This study argues for a stakeholder-driven approach to all areas of educational management. Managing education which is supposed to be a national asset which yields positive results for the nation must be given national priority, joint responsibility and accountability and be left in the hands of the entire nation, not only on government's hands. Education is too precious to be left in the hands of only a few individuals. The custodianship of an education system and all critical resources that are needed for its implementation must extend beyond the offices of education managers to include strategic stakeholders within communities. These stakeholders are the pools from which learners are drawn.

In conclusion, it would assist the course of giving correct answers to the research questions posed at the beginning of this study by highlighting the following key point. While it is important to understand the history of education in South Africa and its effect on social and economic cohesion, this reality must not be a stumbling block when mapping the way forward. Preoccupation with this history has a danger of usurping the much-needed energy necessary for redress. It is critical to regard the past education system as a given and ensure that the envisaged inclusive education system of the democratic order has a mitigating effect on it. The NDP is a long-term development plan that is aimed at achieving education outcomes through a similar inclusive process. It therefore needs the support of everyone. A functional education system must be able to emancipate the majority of the South African children (mostly black) from the pangs of poverty that often characterise their home and social environments. It must be an education towards equal outcomes and equal opportunities.

LIST OF REFERENCES

Action Plan to 2014: *Towards the Realisation of Schooling 2025*. Government Gazette No. 33434. Department of Basic Education. Republic of South Africa.

Adams, N.D. 2004. A Conceptual Analysis of Teacher Education in South Africa in relation to the Norms and Standards. Unpublished PhD thesis. Stellenbosch: University of Stellenbosch.

African Charter on the rights and welfare of the child. 1999. OAU Doc. CAB/LEG/24.9/49.

African National Congress. 1994. The Reconstruction and Development Programme. A policy framework. Johannesburg: Umanyano.

Aggarwal, Y. 1992. Education for All: internal efficiency and community participation - the Indian experience. Paper presented at the SAARC Workshop on Educational planning and management, National Institute of Educational Planning and Administration, New Delhi.

Anderson, J.E. 1994. Public Policymaking - An Introduction (Second Edition). Boston & Toronto: Houghton Mifflin.

Anderson, J.E. 2006. Public Policymaking - An Introduction (Sixth Edition). Boston & Toronto: Houghton Mifflin.

Ashton, D. & Sung J. 1997. Education, skill formation and economic development: The Singaporean approach. In Halsey AH, Lauder H, Brown P & Wells A (eds), Education: Culture, Economy and Society (207-218). Oxford: Oxford University Press.

Arendse, L. 2011. The obligation to provide free basic education in South Africa: An international law perspective. Public Education Review 14(6)97-217.

Auluck, R. 2001. The management of diversity: the UK civil service journey continues. In *Managing diversity in civil service*, United Nations Department of Economic and Social Affairs (UNESA) and the International Institute of Administrative Sciences (IIAS), 59-80. Amsterdam: IOS Press.

Babbie, E. & Mouton, J. 2001. *The practice of social research*. Oxford: Oxford University Press.

Barnett, G. 2010. *The visible hand for a firm grip on organisational Accountability, Benchmarking, Control*. The Mantech Organisation cc. Helderberg. South Africa.

Beckmann, J.L, Bray E, Foster W F, Maile S, Smith WJ & S quelch J 2000. *The legislative framework for human resources management and development in the education and training sector*. Pretoria: CELP.

Beckmann, J.L., Klopper, J.C., Maree, L.M., Prinsloo, J.G., Roos, C.M. 1995. *Skole en die Grondwet*. Kaapstad: Via Africa.

Belbin, R.M. 2000. *Beyond the team*. Boston, MA: Butterworth-Heinemann.

Bernard, A.K. 1990. *Learning and intervention: The informal transmission of the knowledge and skills of development*. Paper presented at the World Conference on Education for All, Thailand. Ottawa, International Development Research Centre.

Bernard, Van Leer Foundation. 1990. Newsletter. No. 57, January. Bhasin, K. 1979. *Breaking barriers: The South Asian experience of training*.

Bernstein, A. (ed.) 1999. *Policy-making in a new democracy: South Africa's challenges for the 21st century*. The Centre for Development Enterprise.

Bernstein, A. 2011. (Ed.) Value in the classroom. The quantity and quality of South Africa's teachers report. CDE In Depth no. 11. Centre for Development and Enterprise. Parktown Johannesburg.

Bhorat, H. 2001. Some people are more jobless than others. In essays on the South African labour market. Cape Town. University of Cape Town, Development Policy and Research Unit.

Biko, H. 2013. The Great African Society - A Plan for a Nation Gone Astray. Jonathan Ball Publishers. Johannesburg & Cape Town.

Birsschoff, T. 2007. A management framework for training providers to improve workplace skill development. University of Johannesburg. South Africa.

Black, HC. 1979. Black's law dictionary. USA: West Publishing.

Blase, J. & Jo Blase. 2000. The effective instructional leadership - Teachers' perspectives on how principals promote teaching and learning in schools. Journal of Educational Administration. 38(2):130-141. MCB University Press.

Bloch, G. 2009. Getting rid of OBE and other education fixes. New Agenda. South African Journal of Social and Economic Policy. 36(4): 41-43.

Bloch, G. 2009. The Toxic Mix - What's wrong with South Africa's Schools and how to fix it. Tafelberg. Cape Town.

Bloomer, K. 1991. Decentralising the education system. Commonwealth Secretariat Programme. Paper presented to the Commonwealth Secretariat/Zimbabwe Ministry of Education and Culture Teacher management meeting, Kadoma.

Bolger, J. 2000. Capacity Development: Why, What and How. CIDA, Policy Branch, 1 (1).

Botha, C.J. 1996. Statutory interpretation. Kenwyn: Juta.

Breier, M. 1998. The role of the generic skill in lifelong learning: Panacea or pipedream? *Journal of Education* 23:73-100.

Breen, C.M., Jaganyi, J.J., Van Wigen, B.W. & Van Wyk, E. 2004. Research projects and capacity building. Center for Environment and Development. University of KwaZulu-Natal.

Bryman, A. 2001. *Social Research Methods*. Oxford: University Press.

Brynard, P. & de Coning, C. 2006. Policy implementation. In Cloete, F., Wissink, H., and de Coning, C. (Eds.). *Improving public policy: from theory to practice*. 2nd Edition. Pretoria: Van Schaik.

Brynard, P. & Hanekom, S. 1997. *Introduction to research in public administration and related disciplines*. Pretoria: Van Schaik.

Brynard, P. 2005. Policy implementation: lessons for service delivery. *Journal of Public Administration*, 40(4.1):649-664.

Brynard, P. 2007. The policy gap in South Africa. *Journal of Public Administration*, 42(3): 357-365.

Buchberger, F. & Buchberger, I. 2004, Problem-solving capacity of a teacher education system as a condition of success? An analysis of the 'Finnish Case,' in F. Buchberger & S. Berghammer (Eds.), *Education policy analysis in a comparative perspective*.

Bugnicourt, J. 1982. Popular Participation in African Development. In: *Assignment Children*, UNICEF. 2(59/60) 57-77.

Bulmer, M. 2000. General introduction to research. In: Bulmer, M. & Warwick, D.P. (Eds). *Social research in developing countries: Surveys and censuses in the third world*. London: UCL Press.

Burch, M. & Wood, B. 1983. *Public Policy in Britain*. Oxford: Martin Robertson.

Burns, Y. and Beukes, M. 2006. *Administrative law under the 1996 Constitution*. Third edition. Durban: Butterworth.

Bush, T. 2007. Educational leadership and management: theory, policy, and practice. *South African Journal of Education*. 27(3):391-406.

Bush, T. & Oduro, G. 2006. New principals in Africa: preparation, induction and practice. *Journal of Educational Administration*, 44:359-375.

Bush, T. 2008. *Leadership and Management Development in Education*. London: Sage

Bush, T. & Heystek, J. 2006. School leadership and management in South Africa: Principals' perceptions. *Educational Management and Professional Development*, 34(3):63-76.

Bush, T. Joubert, R. Kiggundu, E. & Van Rooyen J 2010. Managing Teaching and Learning in South African Schools. *International Journal of Educational Development*, 30:62-68.

Campbell, B. 1997. Professional development: beyond the on-day serving. *The Practising Administrator*, 19:26-28.

Carino, I. & Valisno, M. 1991. The Parent Learning Support System: A School and Home/Community Collaboration for Raising Pupil Achievement. In Sheldon Shaeffer (Ed.), *Collaborating for Educational Change: The Role of Teachers, Parents, and the Community in School Improvement*. Paris, International Institute for Educational Planning.

Carrim, N. and Mkhwanazi, Z. 1993. From apartheid to modern racism: The case of open schools in South Africa. In Hudson, L, Shalem, Y and Bensusan, D (Eds). Kenton at Broederstroom 1992 Conference Proceedings. Johannesburg: University of the Witwatersrand.

Cheung, W.L. & Sidhu, R. 2003. A tale of two cities: Education responds to globalisation in Hong Kong and Singapore. *Asia-Pacific Journal of Education*, 23(1), 43-68.

Chimwenje, D. 1992. Decentralised Decision-making in Education: An International Perspective. Draft paper, Geneva, International Bureau of Education.

Christie, P. 1990 *Open Schools. Racially Mixed Schools in South Africa, 1976-1986*. Johannesburg: Ravan Press.

Clase, P., Kok, J. & Van der Merwe, M. 2007. Tension between school governing bodies and education authorities in South Africa and proposed resolutions thereof. *South African Journal of Education*. Vol. 27(2) 243-263.

Cloete, J.J.N. 1986. The function of Policy and Policy-making in Public Administration. South African Institute of Public Administration.

Codd, A.J. 1988. The construction and deconstruction of educational policy documents. *Education Policy*, 3(3):235-247.

Coetzee, W.A.J. 1988. *Public Administration, A South African Introductory Perspective*. Van Schaick: Hatfield.

Cohen, L. & Manion. L. 1989. *Research Methods in Education*. Routledge. New York.

Cohen, L., Manion. L. & Morrison. K. 2007. *Research Methods in Education*. Routledge. New York.

Commonwealth Secretariat, 1980. Participation, Learning and Change. London.

Conley, L. 2011. Training of principals is not sufficient. Schools need support. Sowetan. 15 February 2011. Johannesburg.

Commission on Global Governance, 1995. Our Global Neighbourhood. Oxford University Press.

Cresswell, J.W. 2008. Qualitative inquiry and research design: Choosing among five traditions. Thousand Oaks. CA: Sage.

Christie, P. 2001. Improving school quality in South Africa: A study of schools that have succeeded against the odds. Journal of Education, 26:40-65.

Christie, P. 2010. Landscape of leadership in South African schools: mapping the changes. Educational Management, Administration and Leadership, 38:694-711.

Critten, P, 1993. Investing in People: Towards corporate capability. Third Edition. London: Butterworth Heinemann.

Crowson, R.L 1987. Qualitative research methods in higher education. In: Higher Education Handbook of theory and research Volume III J.C. Smart (Ed). New York: Agathon Press.

Cuban, L. 1988. The Managerial Imperative and the Practice of Leadership in Schools. Albany, NY: State University of New York Press.

Denscombe, M. 1998. *The Good Research Guide for small-scale research projects*. Buckingham: Open University Press.

De Kadt, D. 2010. Why human capital matters. *The Journal of the Helen Suzman foundation*, 59(4): 3-9.

De Waal, J., Currie, I. and Erasmus, G. 2001. *The Bill of Rights Handbook*. Fourth edition. Juta: Cape Town.

Denzin, N.K & Lincoln Y.S. 2000. Introduction: The discipline and practice of qualitative research In: *Handbook of qualitative research second edition*.

Denzin, N.K & Lincoln Y.S. 2000. Introduction: The discipline and practice of qualitative research In: *Handbook of qualitative research second edition*. Norman, K. Denzin and Yvonne S. Lincoln (Eds). California, USA: Sage Publications.Inc.

Department of Basic Education, 2011b. *Action Plan to 2014: Towards the Realisation of Schooling 2025*. Pretoria: Government Printer.

Department of Basic Education, 2012b. *Annual Performance Plan 2012 - 2013*. DBE.

Department of Basic Education Annual Report, 2011. *Annual Report 2010/2011*. DBE.

Department of Basic Education: *Delivery Agreement for the Basic Education Sector, 2010*. Delivery Agreement: For Outcome 1: Improved quality of basic education. Pretoria: DBE.

Department of Basic Education's Quality Learning and Teaching Campaign, QLTC. <http://www.education.gov.za/LinkClick.aspx?fileticket=0Lsghxpf4kk%3d&tabid=657&mid=1843>. (Accessed 13/02/2012).

Department of Basic Education briefing to Parliament, 2012. Report on progress on the Accelerated Schools Infrastructure Delivery Initiative (ASIDI). PMG.

Department of Public Service and Administration (DPSA), 1995. White Paper on the Transformation of the Public Service. Available at <http://www.dpsa.gov.za/documents/acts®ulations/frameworks/white-papers/wpstoc.pdf> (Accessed 1 November 2011).

Department of Social Development. <http://www.population.gov.za> (accessed 31 January 2012).

Devenish, G.E., Govender, K. and Hulme, D.H. 2001. Administrative law and justice in South Africa. Durban: Butterworth.

Dixon, B.J. 1989. Survey methods. (In Schneter, J. (Eds) Survey methods and practice. Pretoria: HSRC (13 - 43).

DoE, 1995. White Paper on Education. Education and Training in a Democratic South Africa: First Steps to Developing a New System. Government Gazette, vol 375 No. 16312, 15 March 1995.

DoL, (2007b) National scarce skills list. Accessed 15 December 2011, [online] <http://www.labour.go.za>.

DPSA, 1997. White Paper on Human Resource Management in the Public Service. <http://www.dpsa.gov.za/documents/acts®ulations/frameworks/white-papers/pservedec.pdf> (Accessed 1 November 2011).

DPSA, 1998. White Paper on Affirmative Action in the Public Service. <http://www.dpsa.gov.za/documents/acts®ulations/frameworks/white-papers/affirmative.pdf> (Accessed 1 November 2011).

DPSA, 2008a. Gender Equality Strategic Framework for the Public Service. Available at <http://www.dpsa.gov.za> (Accessed 3 September 2011).

Drach-Zahavy, A. & Somech, A. 2000. Team heterogeneity and its relationship with the team support and team effectiveness. Haifa, Israel: MCP University Publishers.

Du Toit, R. & Roodt J. 2008. Engineers, technologists and technicians. In: Kraak A. & Karen P. (Eds.) Human Resource Development - Education, Employment and skills in South Africa. HSRC Press.

Edwards, G.C. & Sharkansky, I. 1978. The Policy Predicament: Making and Implementing Public Policy. W.H. Freeman and Co: Francesco. Elsevier Science Ltd. World Development 8(30):1492-1498.

Erasmus, J. & Breier, M. (Eds). 2009. Skills shortages in South Africa. Case studies of key professions. Cape Town. HSRC Press.

Everard, K.B. and Morris, G. 1996. Effective Management. Third edition: London: Paul Chapman.

Fareed, F. & Waghid, Y. 2005. In defence of deliberative democracy: challenging less democratic school governing body practices. South African Journal of Education. 25(1): 25-33.

Fayol, H. 1930. General and Industrial Management. London: Pitman.

Fesler, J.W. 1980. Public Administration: theory and practice. Englewood Cliffs. Prentice Hall.

Fourie, D. 2006. The application of good governance in public financial management: Journal of Public Administration. 41(2.2): 493-495.

Fourie, D. 2004. Training needs analysis for middle management: A South African public service experience. *Journal of Public Administration*. 39 (4.1) 493 - 506.

Fox, W. Schwella, E. & Wissink, H. 1991. *Public Administration*. Juta and Company Ltd: Cape Town.

Fox, D.J. 169. *The Research Process in Education*. Holt. Rinehart and Winston. New York.

Free State Provincial Government, 2005. *Free State Growth and Development Strategy 2004-2014*. Bloemfontein. [online] www.environment.gov.za/soer/ecape/files/2004_ec_soer/chapter_14_reference_s.pdf. (Accessed 1 November 2008).

Freedom Charter, 26 June 1955. Sechaba Commemorative Publication. London: African National Congress.

Gallie, M. and Sayed, Y. 1997. Transforming educational management in South Africa. *The Journal of Negro education*, 66.

Gregg, D. 1989. *Collaborative School Management in School District 56 (Nechako)*. Victoria, British Columbia, University of Victoria.

Godden, J., Buckland P., Coombe C., Dladla N., Madisha W., Mahanjana, N., Thurlow M., Ngcongco R. and McClennan A. 1996: *Changing management to manage change in education. Report of the task team on education management development*. South Africa: Department of Education.

Godfrey, D. 1997. *How the Best School Systems Invest in Teachers*. Elsevier Science Ltd. *World Development* 8(30):1493-1499.

Hanekom, S.X. & Thornhill, C. 1993. *Public administration in contemporary society: A South African perspective*. Pretoria: Sigma Press.

Harris, K. 1999. Aims! Whose aims? In: Marples R. (Eds.) The Aims of Education. London, USA and Canada: Routledge, 1-15.

Hartshorne, K. 1999. The making of Education Policy in South Africa. Oxford: Oxford University Press.

Ho-Ming, N.G & Ping-Yan, C. 1999. School-based teacher development in Guangzhou, China. International Studies in Educational Administration, 27:(932-42).

Hoadley, U., & Ward, C. 2009. Managing to learn: Instructional leadership in South African secondary schools. Pretoria: Human Science Research Council Press. <http://www.anc.org.za/ancdocs/policy/white.html#5.6> (Accessed 9 March 2011).

Huber,S.G 2004. Context of research. In: Huber SG (ed.). Preparing School Leaders for the 21st Century: An International Comparison of Development Programs in 15 Countries. London:RoutledgeFalmer.

Jansen, J.D. (1995) "Effective Schools?" in Comparative Education. 31(2): 181-200.

Jansen, J.D. & Sayed, Y. 2001. Implementing educational policy: The South African experience. Cape Town: University of Cape Town Press.

Jipsa (Joint Initiative on Priority Skills Acquisition), 2007. Report on activities March to December 2006. [online] <http://www.Jipsa.org.za>. (Accessed 04/07/2008).

Joubert, R. & Prinsloo, S. 2011. The law of education in South Africa. Van Schaick Publishers. Pretoria.

Joyce, B., Calhoun, E., Hopkins, D. (1998). The new structure of school improvement: Inquiring schools and achieving students. Buckingham: Open University Press.

Kallaway, P. 2003. Government, not schools, to blame for crisis. Cape Times, 29 May.

Karlsson, J, McPherson, G and Pampallis, J. (2001). A critical examination of the development of school governance policy and its implications for achieving equity. In Motala, E and Pampallis, J (eds). *The State Education and Equity in Post-Apartheid South Africa: The Impact of State Policies*. Aldershot: Ashgate, 139-177.

Karlsson, J. 2002. The role of democratic governing bodies in South African schools. *Comparative Education*, 38(327-336).

Khoza, M.M. 2003. *Towards Effective Delivery. Synthesis Report on the project entitled 'Closing the gap between policy and implementation in South Africa'*. Research Report No. 98. Johannesburg: Centre for Policy Studies.

Kitavi, M. & Van der Westhuizen, P.C 1997. Problems facing beginning principals in developing countries: a study of beginning principals in Kenya. *International Journal of Educational Development*, 17:251-263.

Ki-zerbo, J. 1990. *Educate or Perish: Africa's Impasse and Prospects*. Dakar and Abidjan, UNESCO and UNICEF.

Kleyn, D. & Viljoen, F. 1996. *Beginnersgids vir regstudente*. Kenwyn: Juta.

Klug, H. 1991. Rethinking affirmative action in a non-racial democracy. *South African Journal on Human Rights* 7: 317-333.

Kouassivi, A. 1991. The Roles and Responsibilities of Non-Governmental Organizations (NGOs) and Grassroots Communities. *Journal of the African Association for Literacy and Adult Education*. Vol . 5(4) 18-30.

Kraak, A. (Ed). 2009. Sectors & Skills. The need for policy alignment. Cape Town. HSRC Press.

Kros, C. 2010. The seeds of separate development. Origins of Bantu Education. Unisa Press.

Kuruville, S., Erickson, S. & Hwang, A. 2002. An Assessment of the Singapore Skills Development System: Does it constitute a viable model for other developing countries? Elsevier Science Ltd. World Development 8(30):1461-1476.

Kuye, J.O. 2001. The state of research and scholarship in public administration: Strategic leadership and governance parameters impacting on basic and applied research for the 21st century. Professorial inaugural address. School of Public Management and Administration. University of Pretoria.

Kuye, J.O. 2002. Critical perspectives on public administration: issues for consideration. Cape Town: Heinemann.

Kuye, J.O. & Kakumba, U. 2008. Development initiatives and global governance: A continental perspective. Journal of Public Administration. 43(4.1): 631-645.

Kuye, J.O. & Mafunisa, M.J. 2003. Responsibility, accountability and ethics: The case for public service leadership. Journal of Public Administration. 38(4): 421-437.

Kuye, J.O. 2007. The role of Public Administration in leadership and governance: A review of civics, citizenship and political education. Journal of Public Administration. 42(7):597 - 613.

Lawless, A. 2007. Numbers & Needs in local government: addressing civil engineering - the critical profession for service delivery. Halfway House, South Africa.

Leedy, P.D. and Ormrod. J.E. 2005. Practical Research. Pearson Education Inc. New Jersey.

Leithwood, K. Jantzi, D. & Steinbach, R. 1999. Changing Leadership for Changing Times. Buckingham: Open University Press.

Leithwood, K. Day, C. Sammons, P. Harris, A. & Hopkins, D. 2006. Seven Strong Claims about Successful School Leadership. London: Department for Education and Skills.

Lemmer, E. 1999. Contemporary Education. Global issues and trends. Heineman Higher and Further Education (Pty) Ltd.

Levin, L. & Ferman, B. 1986. The political hand: policy implementation and youth employment programs. *Journal of Policy Analysis and Management*, 5(2).

Lidzhade, N. 2011. Mbilwi Secondary School Profile.

Linnel, D. 2003. Evaluation of capacity building: Lessons from the field. Alliance for Non Profit.

Lipsky, M. 1980. Street-level Bureaucracy: Dilemmas of the Individual in Public Services. New York: Russel Sage Foundation.

Mabokela, R.O. 2000. We cannot find qualified blacks: faculty diversification programmes at South African universities. *Comparative Education* 36(1): 95-112.

Madue, S. 2008. Policy implementation in a turbulent environment. *Journal of Public Administration*. 43(3.1): 197-206.

Maile, S. 2002. Accountability: an essential aspect of school governance. *South African Journal of Education*. Vol. 22: 326-331.

Malan, J. & Chijioke, C. 2011. Survey of improving schooling system around the world. In schooling reform is possible. Centre for Development and Enterprise. Parktown. Johannesburg.

Malherbe, R. 2004. The constitutional framework for pursuing equal opportunities in education. *Perspectives in Education*. . 22(3): 9 - 28.

Maluleke, S.M. 2010. Managing the implementation of the assessment policy in the Senior Certificate band. PhD Thesis. University of Pretoria. [Unpublished Research Report].

Mathibe, I. 2007. The professional development of school principals. *South African Journal of Education*, 27: 523-540.

Mathonsi, V. 2001. South African Schools Act and the school governing bodies. Paper presented at the South African Democratic Teachers 'Union National Education Policy Conference, 17-21 April, Midrand.

Mbeki, M. (Ed). 2011. *Advocates for change - How to overcome Africa's challenges*. Northlands Johannesburg. Picardo Africa publishers.

McGregor, M. 2006. A legal-historical perspective on affirmative action in South Africa (Part 1). *Fundamina* 95 (12-2): 87-99.

McKinsey and co, 2007. *The World's Best Performing School System Come out on Top*. London: McKinsey and co.

McMillan, H.H & Schumacher, S. 1989. *Research in education. A conceptual introduction*. Glenview, Illinois, USA: Scott, Foresman and company.

Mello, D.M. 2000. An analysis of the implementation of affirmative action in the South African public sector. *Politeia* 19(1): 31-45.

Mestry, R. and Grobler, R. 2006. The Training and Development of Principals in Managing Schools Effectively. *Journal of Education as change*. 2(7): 126-146.

Mestry, R. and Singh, P. 2007. Continuing professional development for principals: A South African perspective. *South African Journal of Education* 27(3): 477-490.

Molekane, L.P. 2007. Strengthening Human Resource Capacity Building: Challenges, Strategies and opportunities for prosperity. *Journal of Public Administration*.43(3.1): 231 - 244.

More, M. 2012. Deepening the critical debate. *Free State Times*. 3 - 9 August.

Mphahlele, L. 1999. District Development: “What the research says” (Parts one & two). Draft research report, National Centre for Curriculum Research and Development.

Mintzberg, H. 1971. Management work: Analysis from observation. *Management Science* 18(2): B97-110.

Namo de Mello, G. & Neubauer da Silva, R. 1993. The Competitive Selection of School Principals: Case Study of an Innovation in Brazil. Monograph 11, Increasing and Improving the Quality of Basic Education. Paris, International Institute for Educational Planning.

Naidoo, JP. (1996a) The Racial Integration of Schools: A Review of the Literature on the Experience in South Africa. Dulbidge: Education Policy Unit.

Narsee, H. 2006. The common and contested meanings of education districts in South Africa. Doctoral thesis. University of Pretoria. [Published research report]

National Skills Authority, 2007. Briefing paper on scarce and critical skills. Commissioned by the Department of Labour and German Technicak Co-operation

(GTZ). Paper presented at the National Skills Authority Skills Colloquium, 3-4 May 2007, Kopanong Hotel and Conference Centre, Benoni.

National Skills Development Strategy, 2005-2010
<http://www.skillportal.c.za/asgisa/jipsa/993057>. (Accessed on 01/09/2008).

National Skills Development Strategy, 2011-2016 [online]
<http://www.skillportal.c.za/asgisa/jipsa/993057>. (Accessed on 08/04 2011).

New Zealand Department of Labour, 2005. Skills shortages in New Zealand: Key findings from the survey of employers who have recently advertised 2005.
<http://www.Dol.govt.nz/PDFs/sera-key-findings.pdf> . (Accessed on 12/09/2010)

Ndiaye, A. (ed.) 2009. African Researchers and Decision - makers. Building Synergy for Development. Council for the Development of Social Science Research in Africa (CODESRIA) and Canada's International Development Research Centre (IDRC).

Ngidi, D.P. 2004. Educators' perceptions of the efficiency of school governing bodies. South African Journal of Education. 24(4): 260-263.

Nieuwenhuis, J. (ed.) 2007. Growing Human Rights and Values in Education. Pretoria: Van Schaick.

Noah, H J 1986. The use and abuse of Comparative Education . In: Altbach PG & Kelly GP (eds). New Approaches to Comparative Education. Chicago: University of Chicago Press.

Norman, K. Denzin and Yvonne S. Lincoln (Eds). California, USA: Sage Publications.Inc.

NZ DoL (New Zealand Department of Labour), 2007. Occupations in shortage in New Zealand: 2007. <http://www.dol.govt.nz/PDFs/sera-key-findings.pdf>. (Accessed 14/11/2010)

O'Toole, L.J. 1986. Policy recommendations for multi actor implementation. An assessment of the field. *Journal of Public Policy*, 6(2).

Odden, R. (ed). 1991. Education policy implementation. State University of New York Press.

Odden, R. (ed). 1991. Education policy implementation. State University of New York Press.

Oosthuizen, I.J., Botha, P., Mentz, P.J., Roos, M.C, Van der Westhuizen, P.C. & Van Kerken, E.T.(eds). 2003. Aspects of Education Law. Van Schaik Publishers. Hatfield, Pretoria.

Owens, R.G. 1970. Organisational behaviour in schools. Prentice-Hall: New Jersey.

Pease, J. 2012. Get schooling right - now. *Mail & Guardian*. July (6 - 12) 2012.

Palumbo, D.J., Maynard-Moody, S. & Wright, P. 1984. Measuring Degrees of Successful Implementation. *Evaluation Review* 8 (1). 45 - 74.

Pampallis, J. (2003). Educational reform and school choice in South Africa. In Plank, D and Sykes, G (eds). *School Choice in International Perspective*. New York: Teacher College Press, 143-163.

Papagiannis, G.; Easton, P.; Owens, J.T. 1991. The School Restructuring Movement in the USA: An Analysis of Major Issues and Policy Implications. Monograph 6, Increasing and Improving the Quality of Basic Education, Paris, International Institute for Education Planning.

Patterson, A. 2008. Training in the South African public sector. In: Kraak, A. and Press, K. (eds.) Human Resource Development Review 2008: Education, employment and skills in South Africa. Human Science Research Council.

Patton, M. 1990. Qualitative evaluation and research methods. SAGE publications. Newbury Park . London New Dehli.

Pfiffner, J.M. and Presthus, R.V. 1969. Public Administration. Ronald Press. New York.

Potter, D. 2011. On the beauty and genius of science. Sunday Times, 18 December 2011.

Powell, L. & Groenmeyer-Edigheji. S. 2006. The identification of Scarce and Priority Skills: An introduction to the Methodological and Conceptual Challenges involved. Paper presented at a JIPSA Briefing to SETA Chief Executive Officer Park Town. 07 March 2006.

Pressman, J.L. & Wildavsky, 1973. Implementation. Barkley and Los Angeles: University of California Press.

Pretorius, S.G. 2010. The South African education system. (In Lemmer, E. & Van Wyk, N., eds. Themes in South African Education. Cape Town: Heinemann (117-140.).

Punch, K.F. 2000. Introduction to social research: quantitative and qualitative approaches. London: Sage publications.

Quek, G. (Ed) 2007. TIMSS Encyclopaedia: A Guide to Mathematics and Science Education around the World, Vol 1.

Ramphele, M. 1997. Conscientious and diligent, but could do better. Sunday Times, 9 November.

Reeves, J., Morris B., Casteel V. and Barry P. 2001. Testing a Standard for Headship: Outcomes from the Initial Evaluation of the Scottish Qualification for Headship Programme. International Studies in Education Administration. Journal of the Commonwealth Council for Educational Administration and Management. 29: 38-49.

Republic of South Africa, 1995. White Paper on the Transformation of Public Service. <http://www.info.gov.za/whitepapers/1995/transformation.htm#1> (accessed 29 May 2012).

Republic of South Africa, 1996. The Constitution of the Republic of South Africa, 1996. Pretoria: Government Printer.

Republic of South Africa, 1996. The Constitution of the Republic of South Africa, 1996. As adopted on 8 May 1996 and amended on 11 October 1996 by the Constitutional Assembly. Pretoria: Government Printer.

Republic of South Africa, 1997. White Paper on transforming public service delivery. 18 September 1997. Pretoria: Government Printer.

Republic of South Africa, 1997a. White Paper on Human Resource Management in the Public Service, 1997. Pretoria: Government Printer.

Republic of South Africa, 1997b. A Conceptual Framework for Affirmative Action and the Management of Diversity in the Public Service. Green Paper. Pretoria: Department of Public Service and Administration: Government Printer.

Republic of South Africa, 1998. Employment Equity Act, 55 of 1998. Government Gazette No. 19370 of 19 October 1998. Pretoria: Government Printer.

Republic of South Africa, 1998. Skills Development Act (Act 97 of 1998). Pretoria: Government Printers.

Republic of South Africa, 2000 Promotion of Equality and Prevention of Unfair Discrimination Act, No. 4 of 2000. Pretoria: Government Printer.

Republic of South Africa, 2000(a). Promotion of Administrative Justice Act, 3 of 2000. Pretoria: Government Printer.

Republic of South Africa, 2000. Promotion of Administrative Justice Act, 2000 (Act 3 of 2000). Pretoria: Government Printer.

Republic of South Africa, 2000. Report on State of Representativeness in the Public Service. Pretoria: Public Service Commission. Republic of South Africa. 2001. Preferential Procurement Regulations, 2001 (accessed 31 January 2012).

Republic of South Africa, 2001. Human Resource Development (HRD) Strategy for South Africa. 2001. Pretoria: Government Printers.

Republic of South Africa, 2002. Department of Public Service and Administration: Human Resource Development (HRD) Strategy for the Public Service. 2002 - 2006. Pretoria South Africa. Government Printer.

Republic of South Africa, Department of Public Service and Administration. 1995. White Paper on the Transformation of the Public Service. Pretoria: Government Printers.

Republic of South Africa, Department of Public Service and Administration. 2008. Human Resource Development for the Public Service: Strategic Vision Framework 2015. Pretoria: Government Printers.

Republic of South Africa, 2004. Demographical and Statistical Overview: 1994-2004. Pretoria: Government Printer.

Republic of South Africa, .The Presidency. 2007. Policy framework for the Government-wide Monitoring and Evaluation System. Pretoria: Government Printer.

Republic of South Africa, White Paper on Public Service, Education & Training. 1998. Government Printer.

Rice, M.F. 2001. The need for teaching diversity and representativeness in university Public Administration Education and Professional Public Service Training Programmes in sub-Saharan Africa. In *Managing diversity in civil service*, United Nations Department of Economic and Social Affairs (UNESA) and the International Institute of Administrative Sciences (IIAS), 99-110. Amsterdam: IOS Press.

Roberts, J. & Roach, J. 2006. *Leadership Styles and Practices in Effective Schools*. Johannesburg: Matthew Goniwe School of Leadership and Governance.

Rutman, L. (Ed.). 1984. *Evaluation research methods: A basic guide*. 2nd Ed. London: Sage Publications.

Sahlberg, P. 2007, Education policies for raising student learning: The Finnish approach, *Journal of Education Policy*.

Sahlberg, P. 2009, Educational Change in Finland, in A. Hargreaves, M. Fullan, A. Lieberman, and D. Hopkins (Eds.), *International Handbook of Educational Change*.

Sayed, Y. & Jansen, J. (Eds). 2001. *Implementing Education Policies. The South African Experiences*. UCT Press. Lansdowne.

Selznick, P. 1957. *Leadership in Administration*. New York: Harper & Row Publishers.

Sergiovanni, T. 1984. Leadership and excellence in schooling. *Educational Leadership* 41:(94-130).

Shaeffer, S. 1990. *Participatory Approaches to Teacher Training*. In: Val Rust and Per Dalin (eds.), *Teachers and Teaching in the Developing World*, New York, Garland Press.

Shaeffer, S. 1991. A framework for collaborating for educational change. Monograph No. 3, *Increasing and improving the quality of basic education*. Paris, International Institute for Educational Planning.

Shaeffer, S. 1992a. *Collaborating for educational change in non-formal education*. Paris, International Institute for Educational Planning.

Shaeffer, S. 1992b. *Collaborating for educational change: the role of teachers, parents, and the community in school improvement*. Monograph. *Increasing and improving the quality of basic education*. Paris, International Institute for Educational Planning.

Shaeffer, 1994. *Participation for educational change: a synthesis of experience*. UNESCO: International Institute for Educational Planning. 7-9, rue Eugene-Delacroix, 75116 Paris.

Schentler, J. 1989. Principles of constructing questions and questionnaires. In Schentler, J. (Eds) *Survey methods and practice*. Pretoria: HSRC (44-99).

Scharpf, F.W. 1978. *Interorganizational policy studies: Issues, concepts and perspectives*. In Hauf, K.J. and Scharpf, F.W. (Eds.). 1978. *Inter-organisation policy making: limits to coordination and central control*. London: Sage.

Schoeman, M. 2010. Education for Democracy. South African Journal of Philosophy, 29(2): 132 - 139.

Schumacher, S & McMillan. J.H. 1993. Research in Education: A Conceptual Introduction. New York: Harper Collins.

Schutte, L.B., Schwella, E. & Fitzgerald, P. 1995. Changing public and development management: South African cases. Cape Town: Juta.

Schwella, E., Burger, J., Fox, W. & Miller, 1996. Public Resource Management. Juta and Co. Ltd.

Shafritz, J.M. and Hyde, A.C. 1997. Classics of Public Administration. Harcourt Brace College Publishers: Fort Worth.

Sheard, AG & Kakabadse AP 2001. From loose groups to teams: The nine key factors of the team landscape. The Journal of Management Development. 21:133-151.

Sheoraj, R. 2007. The state of skills readiness in the South African public service: An overview of the Department of Provincial and Local Government. Masters Dissertation. University of Pretoria. [Unpublished Research Report].

Shisana, O. & Louw, J. 2006. Translating research into policy: the case of orphans and vulnerable children in South Africa. Journal of Social Aspects of HIV/AIDS, 3(2):235-248.

Shuping, M.C. 2006. The effectiveness of Adult Basic Education and Training in addressing the needs of previously disadvantaged women in Free State province. Masters Dissertation. University of the Free State. [Unpublished Research Report].

Smith, J. & Foster, F. 2001. The governance of education in South Africa, an analysis of the legislative framework. Canadian International Development Agency: McGill University.

Somers, J. & Sikorova, E. 2002. The effectiveness of in-service education on teachers' course for influencing teachers' practice. *Journal of In-Service Education*, 28:(95-114).

Soudien, C. 2004. "Constituting the class": an analysis of the process of "integration" in South African schools. (In Nkomo, M., McKinney, C. & Chisholm, L., eds. *Changing class: education and social change in post-apartheid South Africa*. Pretoria: HSRC. p. 89-114).

Soudien, C and Sayed, Y. (2004). A new racial state? Exclusion and inclusion in education policy and practice in South Africa. *Perspectives in Education*, 22(4): 101-115.

South African Government, 2003. Skills Development Act (Act. 31 of 2003) as amended. Pretoria: Government Printers.

South African Human Rights Commission, 1999. Racism, racial integration and desegregation in South African public secondary schools. Report on a study by the HSRC

South African Human Rights Commission, 2006. Report of the Public Hearing on the Right to Basic Education. Johannesburg: SAHRC.

South African Human Rights Commission, 2010. SAHRC. <http://www.sahrc.org.za/home/index.php?ipkContentID=1&ipkMenuID=28> (Accessed January 2011).

South African Schools Act (SASA), No. 84 of 1996. Government Gazette, No. 17579.

Sparks, D. & Richardson, J. 1997. A primer on professional development. *Journal of Staff Development*, 18:(1-8).

Squelch, J.M 1998. The Establishment of New Democratic School Governing Bodies: Co-operation or Coercion. In: J de Groof, E B ray, S Mothata & R.Malherbe (eds). *Power Sharing in Education: Dilemmas and Implications for Schools*. Amersfoort: Acco Leuven.

Strasburg, S., Meny-Gibent, S. & Russell, B. 2010. Findings from the Access to Education Study. Volume 3. More than getting through the school gates: Barriers to participating in schooling. *Social Surveys Africa and Centre for Applied Legal Studies (CALs)*.

South African Government, 2008. *Human Resource Development (HRD) Strategy for South Africa 2009 - 2014*. Draft Document.

Souza, P.R. 2011. School reform in the state of São Paulo. In *Schooling Reform is Possible - Lessons for South Africa from international experience*. Centre for Development and Enterprise. Parktown Johannesburg.

Spaull, N. 2011. A preliminary analysis of SACMEQ III South Africa. *Stellenbosch Economic Working Papers: 11/11*. Stellenbosch: University of Stellenbosch, Department of Economics.

Stallworth, J.T.; Williams, Jr., D.L. 1983. *A Survey of School Administrators and Policy-Makers*. Washington, D.C., National Institute of Education.

Stewart, V. 2010. *Dream, Design, and Deliver*. Elsevier Science Ltd. *World Development* 8(30):1481-1496.

Stott, K & Walker A 1999. Extending teamwork in schools: Support and organisational consistency. *Team Performance Management*, 5:50-59.

Tager, N. 2003. Bridging the gap: rural education needs to address sustainability of the community. Education Africa Forum. Pinegowrie: Education Africa.

Tandon, R. 1992. Civil Society, the State, and the Role of NGOs. ASPBAE Courier, Asian-South Pacific Bureau of Adult Education, No. 54, August, pp. 23-34.

Tapper, H. 2010. Science and Technology Policies in Networked Environment: Case of Finland and South Africa. African Journal of Science, Technology Innovation and Development. 2(3): 229 - 240.

Taylor, S. 2004. Researching Education Policy and Change in 'New Times' Using Critical Discourse Analysis. Journal of Education Policy, 19(4): 433-451.

Taylor S., Rivsi F., Lingard B., and Henry M. 1997. Education Policy and the politics of change. London & New York: Routledge.

Taylor, N. 2009a. Knowledge and teacher's work. Keynote address to the conference of the Southern African Association for Research in Science, Mathematics and Technology Education (SAARMSTE). Grahamstown: Rhodes University. Available at www.jet.org. (Accessed 02/09/2012)

Taylor, N. 2009b. Standards-based accountability in South Africa. School effectiveness and school Improvement, April: 1-16.

Terre Blanche, M., Durrheim. K. & Painter. D. (eds). Research in practice. University of Cape Town Press (Pty) Ltd.

The Presidency (Republic of South Africa). (2009). Situational analysis of children in South Africa. Pretoria: UNICEF. National Medium Term Strategic Framework: A Framework to Guide Government's Programme in the Electoral Period 2009-2014.

Thornhill, C. 2007. The domain of Public Administration. International Schools and Institutes of Administration, 27th International Conference, Abu Dhabi, July.

Tomasevski, K. (2001). Right to Education Primers No.3 Human Rights Obligations: making education available, accessible, acceptable and adaptable. Gothenburg: Novum Grafiska AB. UN CESCR. General Comment No. 13. (8 December 1999). General Comment 13: Implementation of the International Convention on Economic, Social and Cultural Rights.

Tomasevski, K. (2004). Manual on Rights-Based Education: UNESCO. <http://unesdoc.unesco.org/images/0013/001351/135168e.pdf>. (Accessed 08/04/2012).

Treece, E.W. & Treece, J.W. Jnr. 1986. Elements of Research in Nursing. Toronto: The C.V Mosby Company.

Trotter, A. and Ellison, L. 1997. Understanding competence and competency (in Davies B. and Ellison L (1997): School leadership for the 21st Century. A competency and knowledge approach. London: Routledge.

Turok, B. 2008. From the Freedom Charter to Polokwane. The evolution of ANC Economic Policy. Cape Town. Picasso Headline Pty (Ltd).

UNESCO, 2010. EFA Global Monitoring Report: Reaching the Marginalised. United Kingdom: Oxford University Press.

UNICEF, UN Committee on the Rights of the Child, BVL. 2006. A guide to General Comment 7: Implementing Child Rights in Early Childhood. The Hague: BVL.

United Nations, 2000. Dakar Framework for Action - Education for All: Meeting our collective commitments. Expanded commentary. In Tomasevski 2001. United Nations.

United Nations, 2002. A World Fit for Children - Resolution adopted by the General Assembly. New York: United Nations, A/RES/S-27/2.

United Nations. Towards Inclusive Governance: Promoting the Participation of Disadvantaged Groups in Asia-Pacific. United Nations' Development Programme (UNDP) ISBN 9789740628378.

Van der Walt, G. & Helmbold, R. 1995. The Constitution and a new Public Administration. Kenwyn: Juta & Co. Ltd.

Van der Westhuizen, P.C. 1990. Ontologiese perspektief op onderwysreg. Suid-Afrikaanse Tydskrif vir Opvoedkunde 9(4): 743 - 751.

Van der Westhuizen, P.C, Mosoge, M. & Van Vuuren, H. 2004. Capacity-building for educational managers in South Africa: a case study of the Mpumalanga province. International Journal of Educational Development, 24:705-719.

Van der Westhuizen PC & Van Vuuren H 2007. Professionalising principalship in South Africa. South African Journal of Education, 27:431-445.

Vandeyar, S. 2003. The jagged paths to multicultural education: International experiences and South Africa's response in the new dispensation. South African Journal of Education, 23(3): 193 - 198.

Van Heerden, F.J. & Crosby, A.C. 1996. Uitleg van wette. Durban: Butterworths.

Van Niekerk, D., Van der Waldt, G., and Jonker, A. 2001. Information technology for effective governance. Cape Town: Oxford University Press.

Van Wyk, J.G. 1981. Onderwysreg vir die onderwyser. Pretoria: Academia.

Van Wyk, N. 2004. School governing bodies: the experiences of South African educators. South African Journal of Education. 24(1): 49-54.

Vilakazi, H.W. 2000. The problem of education in Africa. In Higgs P., Vakalisa N.C.G., Mda T.V., and Assie-Lumumba N.T. African Voices in Education. Landsdowne: Juta, 194-214.

Vincent, A. & Ross, D. 2001. Personalize training: determine learning styles, personality types and multiple intelligence online. The Learning Organization, 8:(936-43).

Visser, P.J. 2003. Notes on the contractual capacity of the governing body of a public school and related issues. THRHR. 66(1) 111-115.

Vyas-Doorgapersad, S. and Muller, M. 2006. Partnership between community and government: A tool towards development. Journal of Public Administration, 41(2.2): 341-356.

Waghid, Y. 2002. Democratic Education: Policy and Praxis. Stellenbosch: University of Stellenbosch.

Wakely, P. 1997. Capacity building for better cities. Journal of the Development Planning Unit. University College London. DPUNNEWS.

Walker, A 1994. Teams in schools: Looking below the surface. International Journal of Educational Management, 8:38-44.

World Conference on Education for All (WCEFA), 1990. Meeting Basic Learning Needs: A Vision for the 1990s. New York, WCEFA Inter-agency Commission., 1990a. Framework for Action to Meet Basic Learning Needs. New York, WCEFA Inter-Agency Commission.

Welsh, D. 2009. The Rise and Fall of Apartheid. Johannesburg: Jonathan Ball.

Wessels, J.S. 2005. Equal employment opportunities: a conceptual puzzle. Politeia 24(2): 125-141.

Winberg, C. 1997. Learning how to research and evaluate. The teaching and learning series. Cape Town: Juta & Company Ltd.

World Education Forum. Dakar Framework of Action, 2000. Education for all: Meeting our collective commitments. UNESCO.

Zevounou, I.B. 1993. Collaborer pour changer l'education: la participation des familles et des communautes a l'amelioration de l'education de base en afrique occidentale francophone. Manuscript. Paris, International Institute for Educational Planning.

ADDENDUM A

133 Paul Kruger Avenue
Universitas
Bloemfontein
9301
29 August 2012

The Superintendent General
Free State Department of Education

Request to conduct academic research in 36 Dinaledi schools of the Free State
Province

I, **Mabihi Shuping**, a registered PhD student in Public Affairs at the University of Pretoria under the purview of the Economic and Management Sciences faculty hereby request permission to conduct a research in the Dinaledi schools in all the four districts of the province (i.e. Motheo, Xhariep, Thabo Mofutsanyane, Lejweleputswa and Fezile Dabi).

The focus area of my inquiry is, schools principals, subject advisors, Mathematics and Physical Sciences HODs as well as the CES MST FET-Schools (Curriculum Management & Support). Participants will be requested to complete a questionnaire that shall be used to generate data. Completion of the questionnaire will take them approximately 30 minutes. Records used for assessment shall be requested to assist in the triangulation of data generated.

The objective of the study is to evaluate how MSTE policy in the Mathematics and Science show-casing schools is managed in the Free State province. It is hoped that all the information garnered through this research shall be shared with various stakeholders in the education system. Should you require any additional information concerning my study please contact my supervisor Professor J.O kuye. Tel: (012) 420 3334 / 4203342 E-mail: kuyej@up.ac.za

Sincere

Shuping MC (Student number 29560153).

ADDENDUM B



Enquiries : T. Montso
Reference no. :
From : Chief Directorate: Curriculum Mng & Ed Dev& Support

Tel. : (051) 404 8408
Fax. : (086) 726 7273
e-mail:montsoe@edu.fs.gov.za

**DISTRICT DIRECTORS
PRINCIPALS OF THE DINALEDI SCHOOLS
CES FOR FET MST
SUBJECT ADVISORS FOR FET MATHEMATICS AND PHYSICAL SCIENCES**

**PERMISSION GRANTED TO MR SHUPING TO CONDUCT A RESEARCH IN THE
FREE STATE DINALEDI SCHOOLS**

Mr Mabihi Shuping, Student number 29560153, is a registered PhD student in Public Affairs at the University of Pretoria under the purview of the Economic and Management Sciences faculty. The purpose of his research study is to evaluate how the National Strategy for Mathematics, Science and Technology Education (NMSTE) is implemented in the selected mathematics and science Dinaledi within the Free State Province.

As part of his research study he is granted permission to administer a questionnaire to the principals of the Dinaledi schools including HoDs for Mathematics and Physical Sciences, Subject Advisors and the Provincial FET MST Coordinators. Participants will be requested to complete a questionnaire that shall be used to generate data for completion of his research study. The completion of the questionnaire will take approximately 30 minutes.

The permission is granted with the following additional conditions:

- The names of participants, their responses and the names of the Dinaledi Schools will be treated with utmost confidentiality and as such the research outcomes and reports will not give any reference to an individual or the Dinaledi School.
- The compiler of the questionnaire reserves ownership of the completed research questionnaires and shall be dealt with in accordance with the rules of the Ethics Committee of the University of Pretoria.

Room 2022 Provincial Government Building, 20th Floor, Cnr Magraff and Elizabeth Streets, Bloemfontein
Tel: (051) 404 8408 / 8426 Fax: (086) 726 7273
E-mail: montsoe@edu.fs.gov.za

- 2 -

- The results of the study shall be used solely for academic purposes.

- On completion of the research study, a copy of the Thesis is to be donated to the library of the Free State Department of Education together with a summary of the findings of the research study.

Thank you.


MR. RS MALOPE
HoD: EDUCATION

ADDENDUM C



SCHOOL OF PUBLIC MANAGEMENT
AND ADMINISTRATION

TITLE OF THE STUDY: Implementation of the scarce skills policy with
reference to the Free State Province

Doctoral thesis study by: Mabihi Shuping (Student number: 29560153)

Cell number & E-mail address: 0832889972 mabihishuping@yahoo.com

Dear respondents

You are hereby cordially invited to participate in an academic study conducted by **Mabihi Shuping**, a PhD student from the Faculty of Economic and Management Sciences at the University of Pretoria.

The purpose of the study is to evaluate how the National Strategy for Mathematics, Science and Technology Education (NMSTE) is implemented in the selected mathematics and science dedicated schools (alias 'Dinaledi' Schools) within the Free State Province.

Please take cognisance of the following prior completing the questionnaire:

- The targeted participants are the Provincial coordinator of the 'Dinaledi' programme, Mathematics and Physical Sciences Subject advisors,

Principals as well as the Mathematics and Physical Sciences teachers and HODs.

- Your participation in this inquiry is immensely important to me. However, you may opt not to participate and/or you may discontinue participating at any point during the course of the inquiry without facing any form of consequences.
- Your responses will be treated with utmost anonymity and confidentiality. The research outcomes and reports will not give any reference to an individual. The compiler of this questionnaire solely reserves ownership of the completed questionnaires and undertakes to shred the hard copies of your responses at the end of the stipulated time of analysis as shall be determined by the Ethics Committee of the University after the completion of the study.
- The results of the study shall be used solely for academic purposes only and may be published in an academic journal. A summary of the findings of this study could be furnished to you on request.

Should you have any clarity-seeking questions and/or queries regarding this study, you are at liberty to contact my supervisor and the Director of the School of Public Management and Administration at the University of Pretoria on the following contact details:

Professor J.O Kuye (Director: PhD in Public Affairs Programme & Study Supervisor)

School of Public Management and Administration

University of Pretoria

Tel: (012) 420 3334 / 4203342

E-mail: kuyej@up.ac.za

Please indicate your choice to participate by putting a cross [X] in an appropriate box

ACCEPTANCE

DO NOT ACCEPT



SECTION A: BIOGRAPHICAL INFORMATION

Kindly complete the following personal particulars by crossing the appropriate block.

[PLEASE PUT A CROSS (X) ACROSS THE APPROPRIATE OPTION ONLY]

1. In which age group do you fall?

- | | | |
|------------------|------------------|-------------------|
| <u>1</u> 21 - 25 | <u>4</u> 36 - 40 | <u>7</u> 51 - 55 |
| <u>2</u> 26 - 30 | <u>5</u> 41 - 45 | <u>8</u> 56 - 60 |
| <u>3</u> 31 - 35 | <u>6</u> 46 - 50 | <u>9</u> Above 60 |

2. Gender

- | | |
|--------|----------|
| 1 Male | 2 Female |
|--------|----------|

3. Qualifications.

What is your highest academic qualification?

- 1 Grade 12
- 2 Grade 12 and a teachers' diploma
- 3 Degree
- 4 Degree plus a teachers' certificate
- 5 Other postgraduate qualifications. (Please specify)_____

4. Please indicate the subject(s) that you are managing and/or offering in grade 10 - 12.

- | | |
|----------|----------|
| 1 _____ | 5 _____ |
| . _____; | . _____; |
| 2 _____ | 6 _____ |
| . _____; | . _____; |

3 _____	7 _____
• _____;	• _____;
4 _____	8 _____
• _____;	• _____;

5. Please indicate your highest qualifications in the subject(s) you listed in 4 above.

1 _____	5 _____
• _____;	• _____;
2 _____	6 _____
• _____;	• _____;
3 _____	7 _____
• _____;	• _____;
4 _____	8 _____
• _____;	• _____;

6. Please indicate your position in the school education system organisational structure.

1. School Principal/Deputy Principal. 2. Head of Department
3. Educator 4. System level official

SECTION B

Please read the following statements carefully and rate your awareness of the following policy issues and some of the official documents on a scale of 1-4 for each category. Please **CROSS (X)** in the appropriate box against each statement to indicate your rating, where:

- 1 = No idea; 2 = Not clear 3 = Clear understanding 4 = Excellent Understanding

No 1	Awareness of Policies and relevant official Documents	Rating			
1.	The Constitution of South Africa of 1996	1	2	3	4
2.	National Education Policy Act of 1996	1	2	3	4
3.	Public Service Act of 1994	1	2	3	4
4.	White Paper on Science and Technology (1996)	1	2	3	4
5.	Skills Development Act of 1998	1	2	3	4
6.	South Africa Schools Act 84 of 1996	1	2	3	4
7.	National Education Policy Act No. 27 of 1996	1	2	3	4
8.	Free State School Education Act of 2000	1	2	3	4
9.	Advanced Certificate in Education (ACE programme), a threshold qualification for aspiring school principals	1	2	3	4
10.	National Development Plan 2030 (Chapter 9)	1	2	3	4
11.	Quality Learning and Teaching Campaign (QLTC) Code for Quality Education pledge and Basic Education Accord	1	2	3	4
12.	Integrated Strategic Planning Framework for Teacher Education and Development in South Africa 2011 - 2025	1	2	3	4
13.	Provincial Growth and Development Strategy, Free	1	2	3	4

	State Vision 2030 and FS flagship Operation Hlasela programme				
14.	Performance ratings on Maths and Science in international comparative studies (i.e. SACMEQ and TIMMS)	1	2	3	4
15.	South Africa Qualification Authority Act 1995	1	2	3	4
16.	Employment of Educator Act No.76 of 1998	1	2	3	4



Please read the following statement carefully and indicate which Policy document/ Act addresses the statement

Please CROSS (X) in the appropriate box against each statement to indicate the document/ Act, where:

- | | |
|---------------------------------------|-----------------------------------------------------------------------------|
| 1 = The Constitution of South Africa; | 5 = White Paper on Science and Technology; |
| 2 = South African Schools Act; | 6 = The National Education Policy Act; |
| 3 = Public Service Act; | 7 = Government Gazettes on the development of scarce skill in South Africa; |
| 4 = South African Qualification Act; | 8 = Employment of Educators Act. |

No.	Uses of Documents	Acts and Policies								
		1	2	3	4	5	6	7	8	9
17.	This is the supreme law of the Republic of SA that									

	espouses amongst others the right to basic education and also outlines basic values and principles governing public administration.									
18.	Stipulates the specific functions assigned to the principal and the School Management Teams (SMTs).	1	2	3	4	5	6	7	8	9
19.	Promotes cohesion and prevents silos between South Africa's Science and Technology institutions and their programmes in the interest of the National System of Innovation.	1	2	3	4	5	6	7	8	9
20.	Outlines the job descriptions and responsibilities of school principals, Heads of Departments at school level and teachers.	1	2	3	4	5	6	7	8	9
21.	Documents that prioritise the learning and teaching of mathematics and science in the schooling system.	1	2	3	4	5	6	7	8	9
22.	Indicates the roles, their associated set of applied competences (norms) and qualifications (standards) for the development of educators.	1	2	3	4	5	6	7	8	9
23.	Identifies a list of matters on which the national Minister of Education may determine national policy.	1	2	3	4	5	6	7	8	9
24.	Provides for a distinction between governance, granted to the School Governing Bodies (SGBs) and the professional management delegated to the school principal and School Management Teams.	1	2	3	4	5	6	7	8	9
25.	Describes the regulations, rules and provision for the award of the National Senior Certificate at Level 4 of the NQF.	1	2	3	4	5	6	7	8	9
26.	Requires that Education and Training Qualifications Assurance bodies be established to monitor and audit achievements in terms of national standards and qualifications.	1	2	3	4	5	6	7	8	9

Please read the following statements carefully and rate the support received on Mathematics, Science and Technology Education policy (MSTE) on a scale of 1-4 for each category

Please **CROSS (X)** in the appropriate box against each statement to indicate your rating where

1 = Poor; 2 = Inadequate 3 = Adequate 4 = Very good

No.2	Support by District Curriculum Support Service pertaining to training and development	Ratings			
		1	2	3	4
27.	Training on the implementation of MSTE provides specific guidance on how to implement the new approach in the school.				
28.	Support given provides the necessary information that could be used in improving learner's performance in mathematics and Science.				
29.	School visit by Curriculum and Subject Advisors helps to give clarity on any problem areas regarding mathematics and science education.				
30.	Assessment principles and policies are broadly explained/ clarified.				
31.	The district office updates and informs the school about other related policies that impact on the development of mathematics and science education in the schooling system.				
32.	Training workshops organised by the Provincial Department of Basic Education on the subject content are in line with objectives of the national Departments of Education and are supported by the school.				
33.	Regulation sets realistic deadlines to cover all the				

	Learning Outcomes and the Assessment standards as stated in the curriculum statement.				
34	School policies complement National and Provincial Government policy directions.	1	2	3	4
35.	School Improvement Plans provides room for the development of teacher's subject knowledge and targets those areas where subject knowledge is the weakest.	1	2	3	4
36.	The school calendar enables the school to have sufficient time to cover all Learning outcomes and Assessment standards thus having enough time left for remedial education.	1	2	3	4
37	The district office provides schools with an opportunity to contribute in the process of setting questions for common assessment tasks.	1	2	3	4



SECTION C

Please read the following statement carefully and rate your skills on

Scale of 1-4 for category where:

1 = Not clear 2 = Need help 3 = 4 = Excellent

Clear

	I HAVE KNOWLEDGE OF; I AM ABLE TO:-	Rating			
38.	Ensure that the school is managed satisfactorily and in compliance with applicable legislation, regulations and personnel administration measures as prescribed in policy handbook for educators.	1	2	3	4
39.	Ensure that the education of the learners is promoted in a proper manner and in accordance with approved policies.	1	2	3	4
40.	Use all the equipment (electronic or manual) that have been provided to my school from the coffers of the	1	2	3	4

	Dinaledi conditional grant.				
41	Do stocktaking and/or keep a logbook for all these equipment	1	2	3	4
42	Liaise with Further and Higher Education institutions in relation to learner's records, academic performances and career opportunities.	1	2	3	4
43	Develop assessment programmes and tasks based on learning Outcome & Assessment Standard for the subject(s) I manage.	1	2	3	4
44	Establish a direct contact with the public on behalf of the school and the Free State Department of Basic Education.	1	2	3	4
45	Appraisal processes in order to regularly review the professional practice of my subornate staff members with the aim of improving teaching and learning.	1	2	3	4
46	Ensure that Departmental circulars and other correspondence received which affect members of staff are brought to their notice and it is kept where it is easily accessible for future reference.	1	2	3	4
47	Ensure that the school funds benefit the learners in consultation with the appropriate structures within the school.	1	2	3	4
48	Share in the responsibilities of planning, organising and conducting of extra and co-curricular activities in the school	1	2	3	4
49	Oversee learner counselling and guidance, careers, discipline and the general welfare of all learners	1	2	3	4