LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF
EDUCATION

REPORT ON LEARNER PERFORMANCE IN GRADES 3, 6 AND 9

DECEMBER 2011

MONITORING AND EVALUATION DIRECTORATE

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Your contribution to the development of this document is herein acknowledged and valued. We trust that the report will enhance evidence based planning in the Department and ensure that we uplift the standard of education by enhancing learner performance.

Thank you very much.

Mabitsi TM

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EXECUTIVE SUMMARY

1. INTRODUCTION

Limpopo Department of Education constantly endeavours to provide quality education and training in an attempt to improve the quality of life of its citizens and hence facilitate the process of attainment of high levels of peace, unity and prosperity.

Educational quality is usually measured using several indicators, the key ones being **learner achievement** and **educator qualifications**. To make informed judgment on the performance of the education system in Limpopo Province, the Department of Education participated in a number of systemic evaluation studies since 2001.

In 2007 the Province took part in a national study for evaluating grade 3 learners on literacy and numeracy. Mrs Naledi Pandor, the minister of education during that time raised serious concerns about poor performance of grade 3 learners country-wide. Of special significance were the low levels of reading, writing and counting. Despite education interventions to address these deficiencies, we have not made significant progress. The President of South Africa, His Excellency, Mr JG Zuma, in his State of the Nation Address, at the joint sitting of Parliament in Cape Town on the 11 February 2010 that said "we will not improve the quality of education unless we improve the ability of our children to read, write and count in the foundation years." Consequently, reading, writing and counting were also prioritised in Limpopo. The Curriculum Branch subsequently divided all primary schools into performance categories and introduced a reading efficiency programme in the lower performing schools.

Monitoring and Evaluation Directorate evaluated learner performance in grades 3, 6 and 9 in 2011. Provincially developed instruments (tests) were used in the evaluation of learners in Life Skills (gr. 3), Natural Sciences (gr. 6) and Natural Sciences and Economic and Management Sciences (EMS) in grade 9. The results of these tests will be compared with learner scores of 2009 in grade 9 and scores of grades 3 and 6 in 2009 and 2010.

2. RESEARCH QUESTIONS

Research questions guiding the study were:

(i) What percentage of learners in Grade 3 attains acceptable levels in Life Skills?

(ii) What percentage of learners in Grade 6 attains acceptable levels in Natural Sciences?

(iii) What percentage of learners in Grade 9 attains acceptable levels in Natural Sciences?

(iv) What percentage of learners in Grade 9 attains acceptable levels in Economic and Management Sciences?

(v) What is the gap in performance between school quintiles?

(vi) What is the difference in performance between boy and girl learners?

(vii) Which factors are likely to contribute to underperformance in Life Skills (gr. 3), Natural Sciences (gr. 6) and Natural Sciences as well as Economic and Management Sciences (gr. 9)?

(viii) Which intervention strategies can possibly improve learner performance in Life Skills (gr. 3), Natural Sciences (gr. 6) as well as in Natural Sciences and Economic and Management Sciences (gr. 9)?

MAIN FINDINGS

(i) The percentage of learners in Grade 3 attaining acceptable levels (>50%) in Life Skills, is 26%

(ii) The percentage of learners in Grade 6 attaining acceptable levels (>50%) in Natural Sciences, is 16.2%

(iii) The percentage of learners in Grade 9 attaining acceptable levels (>50%) in Natural Sciences, is 1.89%

(iv) The percentage of learners in Grade 9 attaining acceptable levels (>50%) in Economic and Management Sciences, is 6.78%

(v) The gaps in performance between school quintiles, are

Grade and quintiles	Grade 3 Quintiles 1&2 vs 4&5	Grade 6 Quintiles 1&2 vs 4&5	Grade 9 Quintiles 1 vs 5	
Learning Area	Life Skills	Natural Sciences	NS	EMS
Performance difference	30.2%	25.7%	13.6%	19.9%

(vi) The differences in performance between male and female learners, are

Grade	Grade 3		Grade 6		Grade 9			
Learning Area	Life Skills		Natural Sciences		NS		EMS	
	Male	Female	Male	Female	Male	Female	Male	Female
Outperforming Gender by %		4.5%		2%	0.9%			0.8%

- Only the gender of highest performance and the difference in performance are indicated

(vii) Contextual factors likely to contribute to underperformance in Life Skills (gr. 3), Natural Sciences (gr. 6) as well as Natural Sciences and Economic and Management Sciences (gr. 9), are

a) Poor or inappropriate linkage between the educator's lesson planning, teaching and assessment.
b) Inadequate formal assessment – in some instances formal learner assessment is conducted once in a term
c) Inadequate support and guidance to educators
d) Learners results are never analysed and used by educators to adjust their lesson planning, teaching and assessment;
e) Non-completion of work schedules
f) Educators within a phase (e.g. Gr. 1-3) planning in isolation, without taking previous knowledge/challenges into consideration
g) Non-functional subject committees
h) Poor time utilization
    i) during periods
    ii) irregular class attendance
    iii) late-coming
    iv) absenteeism

(viii) The following intervention strategies can possibly improve learner performance in Life Skills (gr. 3), Natural Sciences (gr. 6) as well as Natural Sciences and Economic and Management Sciences (gr. 9):

a) Lesson planning, teaching and development of formal assessment instruments must be linked and adjusted to CAPS.
b) Regular and frequent formal assessment will enable educators to identify learners' weaknesses and strength and hence facilitate remedial teaching process.
c) Learners' results need to be analysed and interpreted to help educators to reflect on their quality of planning, teaching and assessment.
d) Schools must adhere to pace-setters/milestones
e) Regular support and monitoring of the educators' work is necessary
f) Improvement on time usage is very important. Minimize time-wasters
g) Co-planning and sharing of successes and challenges on the part of educators

The background of the studies is discussed in Chapter 1.

Use of acronyms in the report

ANA	**Annual National Assessment**
CAPS	**Curriculum and Assessment Policy Statement**
DBE	**Department of Basic Education**
DoE	**Department of Education**
EB	**Earth and Beyond**
EC	**Energy and Change**
ELSEN	**Learners with Special Education Needs**
EMIS	**Education Management Information System**
EMS	**Economic and management Sciences**
FFLC	**Foundations for Learning Campaign**
IQMS	**Integrated Quality Management System**
LDoE	**Limpopo Department of Education**
LL	**Life and Living**
LOLT	**Language of Learning and Teaching**
LS	**Life Skills**
MCQ	**Multiple choice question**
MM	**Matter and Materials**
MTQ	**Matching type questions**
NEPA	**National Education Policy Act**
NS	**Natural Sciences**
OEQ	**Open-ended Question**
PIRLS.	**Progress in International Reading literature Study**
QIDS-UP	**Quality, Improvement, Development, Support and Upliftment Programme**
SAQ	**Short Answer Questions**
SE	**Systemic evaluation**
SRN	**School Register of Needs Survey**
TIMS	**Trends in Mathematics and Science Studies**

SECTION A

CHAPTER 1 – Background

1.1 INTRODUCTION

South Africa is one of the countries that conduct national assessments to determine the health of the education system, and in particular, the level at which learners is performing. To determine the quality in education, the school system as a whole is continuously evaluated.

The health of the education system at the General Education and Training Band (GET) is an issue of great concern for the Limpopo Department of Education (LDoE), and the country as a whole. The low levels of learner performance have been confirmed by various studies that were done since 2001, e.g. Systemic Evaluation Gr.3 study in 2007, TIMMS (2007) and PIRLS (2006). National and provincial researches on learner performance indicate that learners do not perform at the expected levels in primary and secondary schools in Limpopo. It was noted that learner performance in primary schools has gone down in the key learning areas/subjects in Grades 3 and 6 in the years since 2001. The following table illustrates the levels of learner performance as were found in the National Systemic Evaluation studies:

Figure 1.1 Level of learner performance between 2001 and 2009 in Limpopo Province

NATIONAL STUDIES			MEAN SCORES					
STUDY	NATURE OF STUDY	YEAR	LITERACY	NUMERACY	LANGUAGE	MATHEMATICS	NATURAL SCIENCES	ECONOMIC AND MANAGEMENT SCIENCES
Gr. 3	National (baseline)	2001	35%	26%	-	-		
Gr. 6	National (baseline)	2004	-	-	25,54%	19,38%		
Gr. 3	National (re-evaluation)	2007	26%	24%	-	-		
Gr. 9	National	2009			27.2%	20.8%	21.4 %	
Gr. 9	Provincial Study	2011					21.7%	31.4%

The National Systemic Evaluation results in 2007 highlighted the fact that learners cannot read, write and count at the expected levels. Consequently intervention programmes were nationally designed through which the National Curriculum Statement (NCS) is being implemented, e.g.The Foundations for Learning Campaign (FFLC) and the Dinaledi and Dinaletsana Programmes.

These programmes aim to address the repeated low performance levels in literacy and numeracy in the GET Band. In the Dinaledi and Dinaletsana programmes learner performance in Natural/Physical Sciences is supported.

1.2 PROVINCIAL QUALITY ASSURANCE UNIT

The Quality Assurance Sub-Branch in the Department of Education (LdoE) oversees the performance of the provincial education system. Monitoring and Evaluation Directorate is one of the two Directorates in Quality Assurance. This Directorate manages three Sub-Directorates, which are

- Monitoring of Standards - which deals with standards across the education system;
- Whole-School Evaluation - which deals with intensive evaluation of specific sampled schools;
- Systemic Evaluation – dealing with evaluation of the effectiveness of the entire education system.

The provincial Systemic Evaluation Sub-Directorate evaluated Grades 3 and 6 in 2009, 2010 and in 2011. Learner performance was evaluated by using provincially designed instruments in Life Skills (Gr. 3) and Natural Sciences (Gr. 6). Literacy and Numeracy were not evaluated, since the Annual National Assessment (ANA) instruments were used to evaluate performance in Literacy and Numeracy (Gr. 3) and Language and Mathematics (Gr. 6).

A study was also done in 2011 to evaluate learner performance in Grade 9 in Natural Sciences as well as in Economic and Management Sciences.

The findings of the 2009, 2010 and 2011 studies are indicated in Table 1.2 below:

Table 1.2 Mean learner performance from 2009 to 2011

PROVICIAL STUDY								
STUDY	NATURE OF STUDY	YEAR	LITERACY	NUMERACY	LIFE SKILLS	LANGUAGE	MATHEMATICS	NATURAL SCIENCES
Gr. 3	Provincial Study	2009	19.1%	16.5%	25.3%	-	-	
Gr. 6	Provincial Study	2009	-	-	-	22.9%	14.4%	35.1%
Gr. 3	Provincial Study	2010			29.0			
Gr.6	Provincial Study	2010						34.4%

1.3 SYSTEMIC EVALUATION STUDIES IN SOUTH AFRICA

The overall goal of Systemic Evaluation is to evaluate the effectiveness of the entire education system and to measure the extent to which the vision and the transformational goals of the education system, i.e. quality, access, efficiency, effectiveness and equity are realised. Systemic Evaluation uses learner performance (the output of the education system) as the point of reference against which the rest of the system is evaluated. The learner achievement component of Systemic Evaluation seeks to establish trends with respect to acquisition of key knowledge, skills, values and attitudes by learners at different points (e.g. Gr. 3, 6, 9)in the system. The contextual component is set to provide insight into the environment in which teaching and learning takes place, and to establish the performance of the education system with respect to the principles of access, redress, equity and quality. The contextual information is collected through questionnaires, which are completed by principals, educators, learners and some district officials.

The results of these studies are intended to provide regular information to policy makers in their decision-making processes and to relevant directorates in supporting schools. These results are not intended to target individuals or institutions that were not able to reach the provincial education targets, i.e. confidentiality should always be respected. The information can also be used to continuously raise educational standards and the quality of learner performance as well as for capacity building on the part of all stakeholders in education.

1.4 CAMPAIGN TO IMPROVE LITERACY AND NUMERACY

In response to the low level of learner performance, as was described in par. 1.1 and 1.2 of this report, the Foundations for Learning Campaign (FFLC) was gazetted on the 14 March 2008 as a

four-year initiative aimed at improving learner performance in reading, writing and numeracy. The framework based on the FFLC Gazette requires that, by 2011, all learners should be able to demonstrate age-appropriate levels of knowledge in literacy and numeracy (DoE: 2008). Based on continuous low performances in these grades, the DBE extended the lifespan of the Campaign to that of a Programme until learners are performing to the expected levels. Through this programme, learner performance will be analysed through the Annual National Assessment in Grades 1 to 6 for the duration of the programme.

Monitoring and Evaluation Directorate undertook a quantitative research study in 2011 to perform a statistical analysis of learner performance in Life Skills and Natural Sciences in a 05% sample of schools across all districts. Simultaneously, a quantitative study was done in Grade 9 focusing on learner performance in Natural Sciences as well as Economic and Management Sciences.

The findings of these studies are meant to suggest interventions so that provincial performance targets for learner performance can be realised.

1.5 STRUCTURE OF THE REPORT

The analysis and findings of the reports are presented with the view to providing information that will support all stakeholders in education towards quality learner performance. The report is structured as follows:

Chapter 2: Design and implementation

This chapter outlines the research design and methodology used in the Grades 3 and 6 studies. It also describes the development of research documents, how sampling was done, how data was collected and how analysis was done. The design and implementation of the Grade 9 study is discussed in Chapter 5.

Chapter 3: Learner performance in Grade 3 (2011)

In this chapter learner performance is discussed as was found in Grade 3. The level of the gap in performance between school quintiles is also given.

Chapter 4: Learner performance in Grade 6 (2011)

In this chapter learner performance in Grade 6 is presented.

Chapter 5: Learner performance in Grade 9 (2011)

Learner performance in Grade 9 is discussed.
In this chapter some contextual factors influencing learner performance are discussed.

Chapter 6: Conclusion

This chapter provides concluding comments and recommendations based on the findings.

CHAPTER 2 – Design and implementation

Primary Schools

2.1 INTRODUCTION

This chapter focuses on the design and implementation of the Grades 3 and 6 data collections undertaken in 2011. An overview is given of the design of the study. Instrument development, sampling, data collection and how analysis and interpretation was done are also discussed. Lastly, some limitations of the study are noted.

2.2 DESIGN OF THE STUDY

The initial design of all Systemic Evaluations in South Africa was done by the Department of Basic Education (DBE). Key elements of the design included the development of assessment instruments, how sampling should be done to be representative of the total population, how the data collection process should be structured and how to analyse and interpret results.

Limpopo Department of Education has embarked on a process of monitoring learner performance since 2010. Evaluation was done through instruments that were developed provincially for Life Skills (Gr. 3) and Natural Sciences (Gr. 6) in 2010 and 2011.

2.3 SAMPLING METHOD OF SCHOOLS

Primary schools were sorted according to their quintiles to make it possible for the Directorate to report on the gap in performance between quintiles. A simple random sampling method was then used to sample 5% of the primary school population across all districts. Using this method, every twentieth school was selected from the data base. This method was used to ensure that schools across all quintiles had an equal chance of being selected. The sample, therefore, includes farm schools, rural and urban schools; both previously advantaged and previously disadvantaged schools. The number of schools to be selected was 120. Table 2.1 indicates the total number of schools sampled in each quintile:

Table 2.1 Schools in the sample

Quintiles	Total Population	Sample size	Total number per Q
Q1	1032	5%	52
Q2	895	5%	45
Q3	400	5%	20
Q4	12	5%	1
Q5	42	5%	2
Total schools	2381	5%	120

The Directorate will report on the difference in performance between quintiles 1 & 2, and quintiles 4 & 5 schools. The quintile 5 schools were represented by only three schools. An additional eight (08) schools were included in the sample to report on the difference in performance between the quintiles. These schools were excluded in determining the mean performance of learners in the province in Grade 3 and in Grade 6.

Additional schools to the original sample also include 8 State- of-the- Art primary schools and Muyexe Primary. These additional schools were included in determining the mean percentages. The total number of schools in the final sample was 137. Table 2.2 reflects the spread of the schools across the province.

Table 2.2 Sampled schools per district and quintiles

District	Q 1	Q 2	Total Q1+2	Q3	Q4	Q5	Total Q4&5	Additional Q5	Additional other*	Total
Capricorn	8	12	20	6	-	-	-	2	2(Q3,4)	30
Sekhukhune	23	4	27	1	1	-	1	2	2(Q2), 2 (Q1)	35
Mopani	12	4	16	6	-	1	1	1	1(Q1)	25
Vhembe	4	19	23	5	-	1	1	1	1 (Q2)	30
Waterberg	5	6	11	2	-	1	1	1	1 (Q2)	16
Total	52	45	97	20	1	3	4	7	9	137

*State-of-the-Art Primary Schools and Muyexe Primary School

2.4 LEARNER ASSESSMENT TASKS

Learner assessment tasks in Life Skills (Gr. 3) and in Natural Sciences (Gr. 6) were developed provincially. District Curriculum Advisors were invited to develop a framework for testing in the two Learning Areas. Consequently, learner assessment tasks were developed based on the framework. Tasks were then translated in the appropriate languages found in Limpopo for

Grade 3 learners and also in Afrikaans for Grade 6 learners. The tests were finally presented to the provincial curriculum section for endorsement.

The formats of the final instruments are given in Table 2.3 (Gr. 3) and Table 2.4 (Gr. 6). A distinction is made between multiple-choice questions (MCQs) and open-ended questions (OEQs).

Table 2.3 Item types for the final Grade 3 assessment instruments

Learning Area	MCQ	OEQ	Total
Life Skills (items)	9	4	13

Table 2.4 Item types for the final Grade 6 assessment instruments

Learning Area	MCQ	OEQ	Total
Natural Sciences (items)	25	17	42

2.5 VALIDITY OF INSTRUMENTS

2.5.1 Validity of the learner achievement instruments

Any assessment instrument must reflect the construct it intends to measure in a valid way. The most important form of validity for a scholastic assessment instrument is content validity. It is important that the content, all Learning Outcomes and a variety of Assessment Standards be covered to produce a valid report.

The tasks in this survey were designed with the intention of assessing only those competencies that could be tested through pen-and-paper evaluation. Scientific investigations (LO1) in Natural Sciences could only be evaluated on a limited scale using a pen-and-paper approach.

The distribution of items across Learning Outcomes for each Learning Area and Grade is listed below. **Table 2.5 Classification of the questions in the Life Skills instrument**

Learning Outcome (LO)	No of items	Percentage of items
LO1: Health Promotion	4	30.7%
LO2: Social Development	4	30.7%
LO3: Personal Development	5	38.5%
Total	**13**	**99.9%**

Table 2.6 Classification of the questions in the Natural Sciences instrument

Learning Outcome (LO)	No of items	Percentage of items
LO1: Scientific Investigations LO2: Science knowledge LO3: Science and society	8 25 11	18.2% 56.8% 25%
Total	**44**	**100%**

The assessment instruments adequately reflect the knowledge and skills specified in the RNCS. All the items in the instruments align to the RNCS and can contribute to understanding the degree to which learners have mastered aspects of the curriculum.

2.6 DATA COLLECTION PROCEDURE

Systemic Evaluation officials trained all data collectors and monitors at a central venue. The purpose of the training was to ensure consistency across districts. Each of the data collectors was provided with a manual with detailed instructions to guide them during the data collection process.

The Province developed the data collection time-table to suit the availability of data collectors who were recruited from the Quality Assurance Sub-Branch.

The data collection process was advocated in all sampled schools and notification of the dates for data collection was given to schools.

All instruments were submitted to the project coordinators at Head Office in preparation for coding and scoring.

2.7 DATA CODING, SCORING AND CAPTURING

Coding and scoring of the instruments was done in the districts under the supervision of provincial Systemic Evaluation officials.

Provincial officials captured the data on school templates that were designed to capture the performance of each learner per test item. Total scores per item in the school were then transferred to a similar template designed for each district. District scores were transferred on to a provincial template.

2.8 DATA ANALYSIS AND REPORTING

The provincial Systemic Evaluation Sub-Directorate statistically analysed the data that were captured on the provincial template by using the framework for the test items. Data were then interpreted and analysed at provincial level. A four-point scale was used to determine the performance levels of learners.

The DBE declared their intention in November 2010 to implement the Curriculum and Assessment Policy Statement (CAPS), which is a revised national curriculum, in 2012. The assessment policy is likely to bring about certain changes, including for instance a seven-point scale for learner performance. The four-point scale is, however, maintained until the implementation of CAPS in 2012.

Learner achievement scores in this report are presented as percentages and are reported using means. Scores are reported at provincial level and then aggregated by districts, taking the provincial targets, as stated in Table 1.3 above, into account. In addition, the performance of learners in each learning area is reported against achievement levels suggested in the Assessment Guidelines (2002: DoE). Results are presented in tables and graphs. The description of the four levels and their interpretation are shown in Table 2.8 below:

Table 2.8 Percentage at each achievement level

Achievement level	Description	Percentages
1	Not Achieved	0% - 34%
2	Partially achieved	35% - 49%
3	Achieved	50% - 69%
4	Outstanding	70% - 100%

LIMITATIONS OF THE STUDY

The data that was collected give an indication of learner performance in the province. However, a few limitations, as outlined below, should be noted:

(i) Sampling was influenced by the inclusion of the school in the presidential nodal village and the State-of-the Art schools as well as arranging all the schools in the population according to quintiles to provide for the performance measure on the gap in performance between Q1 and 2, and Q4 and 5 primary schools in the Provincial Annual Performance Plan.

(ii) The gap in performance relating to quintiles, reflect the school classification of quintiles for 2010 as captured by the EMIS section. Schools have been re-classified in quintiles, which mostly affected the quintiles 4 and 5 schools. This must be considered when the difference in performance between quintile 1 and quintile 5 schools are compared to the results in 2009 and 2010.

(iii) The assessment instruments could only contain a limited sample of the tasks from the curriculum. Not all the Learning Outcomes could be tested as the study relied on pen-and-paper questions.

(iv) Questionnaires were administered in all sampled schools. Information was collected from educators and principals, expressing their feelings, concerns and learner attitudes. Some of the information might be tainted as interviewees might not have expressed their true feelings at all times. The findings in the chapter on contextual factors can therefore only give an indication of conditions in our schools, but should also be researched further.

SECTION B

CHAPTER 3 – Learner performance in Grade 3: Life Skills

3.1 INTRODUCTION

In this chapter, the achievement of Grade 3 learners in terms of the instruments that were used to assess Life Skills, is presented.

All scores are presented as percentages and disaggregated by district. Percentage scores are converted to achievement levels as stipulated in the Curriculum 2005 Assessment Guidelines (Table 2.8) . Results are also reported by the difference in performance levels between Q1 & Q2 and Q4 &Q5 schools and by gender.

Learners were assessed in the LOLT of the school. In the Foundation Phase learners are being taught in their mother tongue. The languages, in which learners were assessed in Grade 3, were Sepedi, Tshivenda, Xitsonga, English, Afrikaans and isiZulu.

3.2 SAMPLING

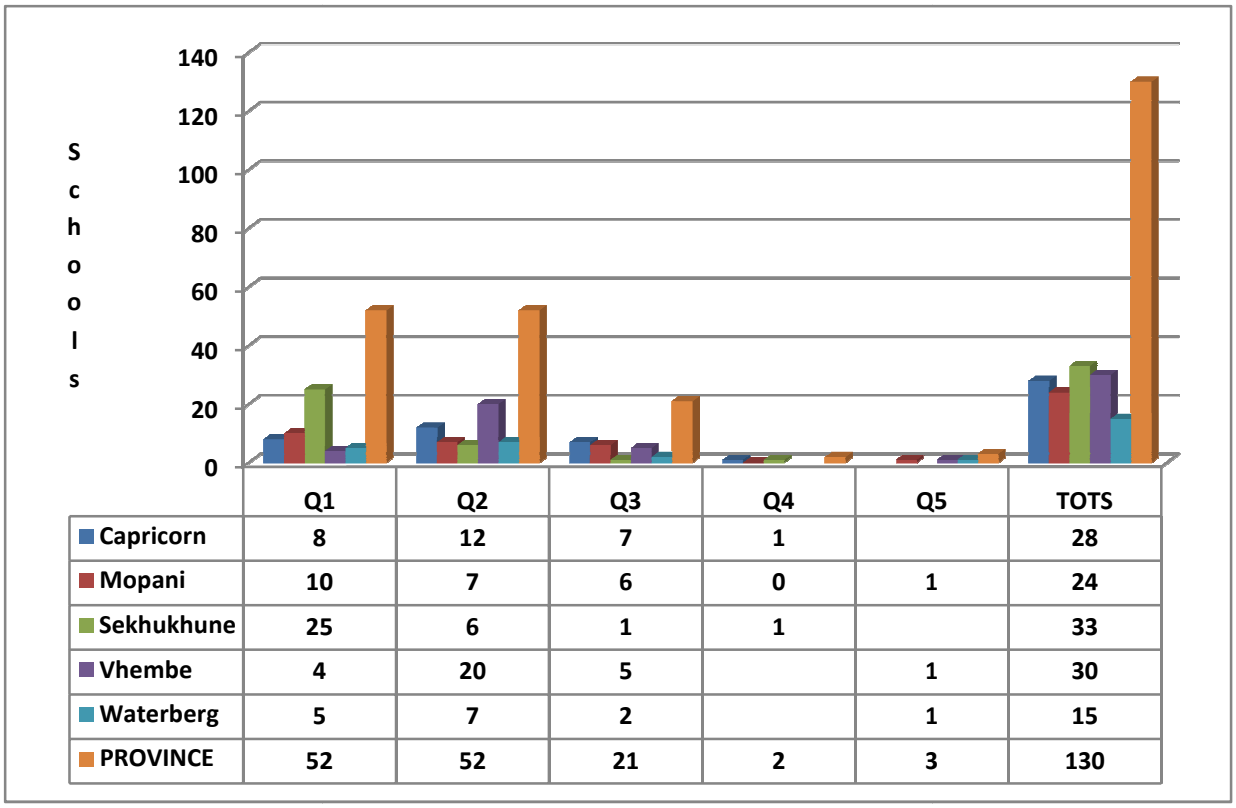
3.2.1. School sample

One hundred and thirty (130) schools were sampled. Seven additional quintile 5 schools were added exclusively for the comparison between performances of quintiles 1 & 2 with that of quintiles 4 & 5. In 2011, data could only be collected from 136 of these schools (i.e. 129 sampled

and 7 additional quintile 5 schools). One school, namely Alma Primary, was not accessible due to bad roads and heavy rains. The coverage percentage is 99%.

School representation is presented in the following graph:

Graph 3.1: Sampled schools per district according to quintiles



	Q1	Q2	Q3	Q4	Q5	TOTS
Capricorn	8	12	7	1		28
Mopani	10	7	6	0	1	24
Sekhukhune	25	6	1	1		33
Vhembe	4	20	5		1	30
Waterberg	5	7	2		1	15
PROVINCE	52	52	21	2	3	130

The majority of schools in the province are classified under quintiles 1 and 2. Our 5% sampling of schools per quintile therefore came up with more schools selected from quintiles 1(52) and 2 (52) and few schools from quintiles 4(2) and 5(3). The largest number of schools representing a single quintile was in Sekhukhune (Q1-25), Vhembe (Q2-20) and Capricorn (Q3-7). Not more than one school was sampled per district in quintiles 4 and 5. The total numbers of schools sampled per district are 28 for Capricorn, 24 for Mopani, 33 for Sekhukhune, 30 for Vhembe and 15 for Waterberg.

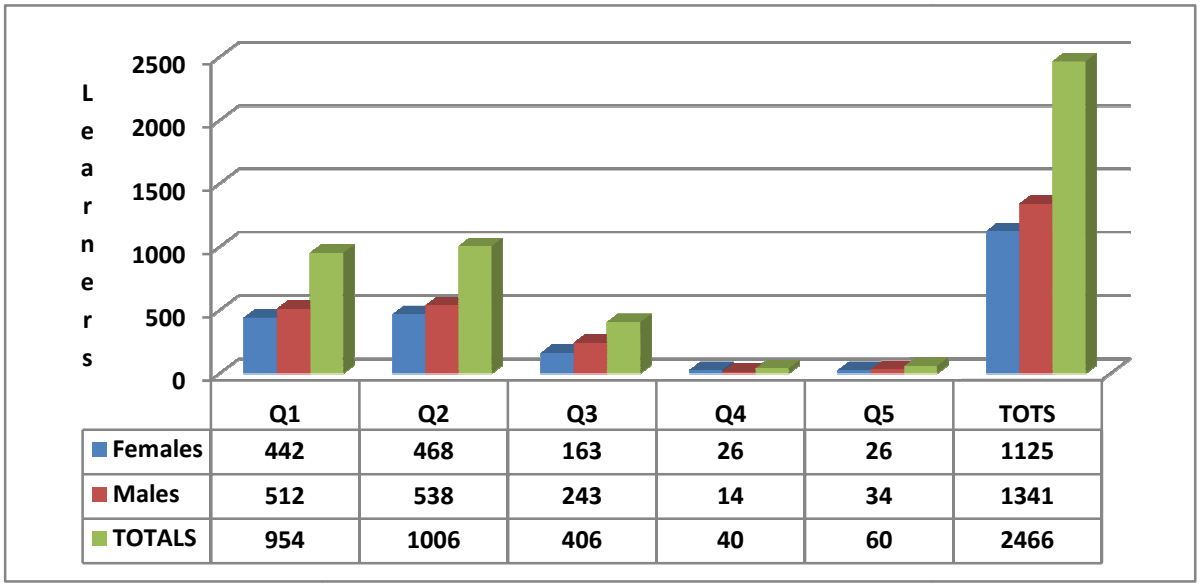
3.2.2. Learner sample

The number of learners sampled in each school is 20. In a few instances, where a school had less than twenty learners in Grade 3, the number of learners that wrote the test, is between fifteen and nineteen. The total number of learners sampled from the 129 schools was 2 466 and this consisted of 1 125 females and 1 341 males.

3.2.2.1 Sampled learners per quintile

Quintile representation is the largest in quintile 2 with 1006 learners sampled, followed by quintile one with 954 learners. Few learners were sampled in quintile 4(40) and quintile five (60).

Graph 3.2: Sampled learners per quintile

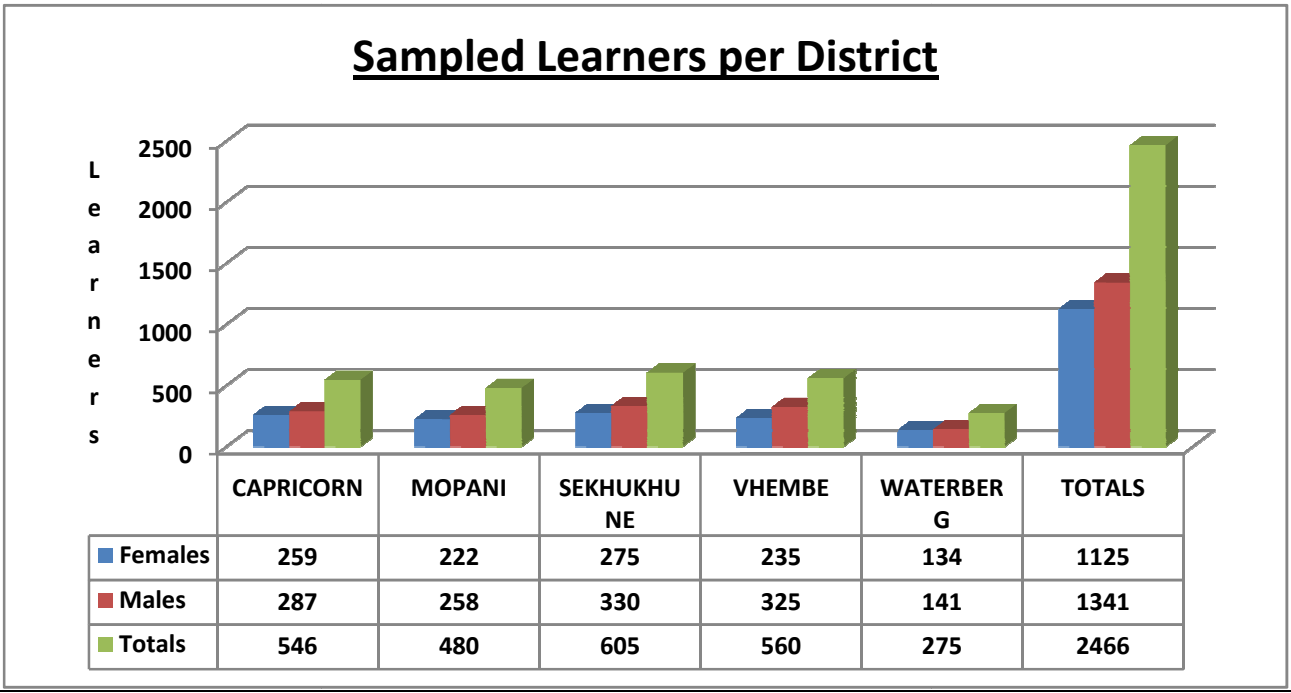


	Q1	Q2	Q3	Q4	Q5	TOTS
Females	442	468	163	26	26	1125
Males	512	538	243	14	34	1341
TOTALS	954	1006	406	40	60	2466

3.2.2.2 Sampled learners per district according to gender

A random sampling method was used to select 20 learners regardless of gender at each school. The total learners sampled per gender are therefore coincidental, giving us a total of 1 341 boys and 1 125 girls - 38 more boys than girls. Most learners are in the lower quintiles, due to larger population of schools in these quintiles.

Graph 3.3 Sampled learners per district according to gender



3.2.2.3 Learner distribution by age

Learners should enter Grade 1 when they are six years old. Learners should therefore be between eight and ten years old in Grade 3. The majority of learners sampled were born between the years 2000 and 2003. There are few cases of learners in Grade 3 who were born between the years 1997 and 1999 as well as between 2004 and 2005. This implies that 26 learners are over-aged and 20 learners are too young for the grade. Learner distribution by age is presented in Figure 3.1 below:

Figure 3.1 Learner distribution by age

Year	1997	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2008
No.s	1	1	3	3	18	112	275	1267	776	17	3	0	0

3.3 LIFE SKILLS INSTRUMENT ANALYSIS

The life skills instrument consisted of thirteen items, each derived from a specific learning outcome and an assessment standard, covering three items on Health Promotion, five items on Personal Development and four items on Social Development. The learning outcomes and assessment standards covered in the instrument are indicated in Figure 3.2 below:

Figure 3.2 Life Skills instrument analysis

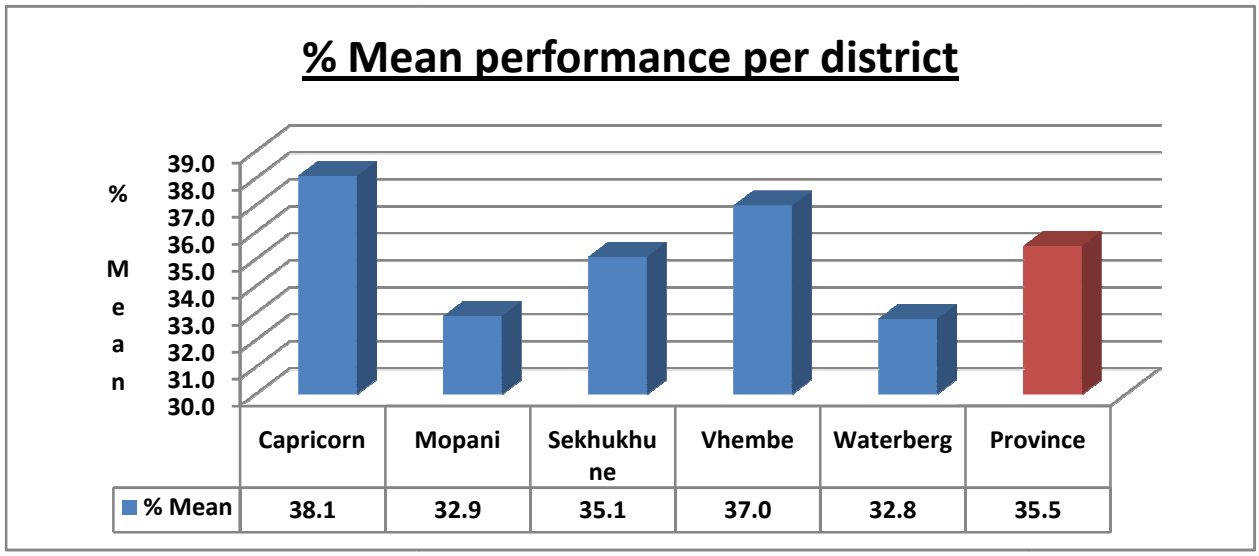
Item No	Learning Outcome	Assessment Standard
1	Health Promotion	Compares healthy and poor dietary habits & describes the effects of such habits on personal health
2	Health Promotion	Participate in recycling project, and explains how recycling contributes to environmental health
3	Health Promotion	Discuss myths surrounding communicable diseases, & the causes & prevention of these
4	Personal Development	Identifies group work skills & applies them consistently
5	Social Development	Explains leadership quality in the school context & participates in school voting
6	Social Development	Tells stories of female & male role models from a variety of local cultures
7	Personal Development	Explains how she or he cope with challenging emotions, including dealing with people living with disease or illness
8	Health Promotion	Identifies relevant people & their contact details, to report cases of accidents, abuse, crime, fire, illness & injury
9	Personal Development	Describes own abilities, interests and strengths
10	Social Development	Explains the meaning of and sings the South African national anthem
11	Personal Development	Explains why own body should be respected
12	Personal Development	Demonstrates assertiveness appropriate to a situation
13	Social Development	Discusses diet, clothing & decorations in a variety of religions in South Africa

3.4 LEARNER PERFORMANCE IN LIFE SKILLS

3.4.1 District mean performance in Life Skills

The provincial mean for Life Skills (Grade 3) is 35.5%. The % mean performance per district ranged between 32.8% and 38.1%. Capricorn district had the highest mean performance at 38.1%. and Waterberg district the lowest (32.8%) with a difference of 5.3% between the highest and lowest performing districts. Vhembe and Capricorn districts scored above the provincial mean, whereas Waterberg (32.8%), Mopani (32.1%) and Sekhukhune (35.1%) districts are performing below the provincial mean. District percentage mean performances are reflected in Graph 3.4 below:

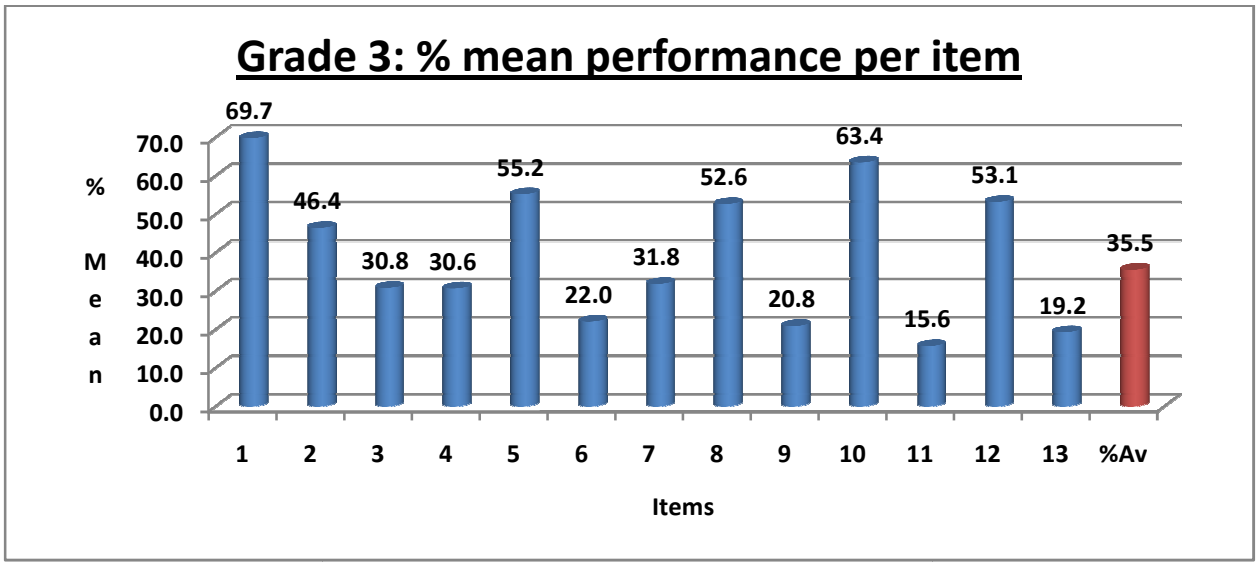
Graph 3.4: % mean performance per district



3.4.2 Mean performance in Life Skills per test item in 2011

Learners performed better in test items that were based on work that was done in grades 1 and 2(Item 1 was from Grade 1, where learners scored 69.7%). Learner performance per test item is presented in Graph 3.5 below.

Graph 3.5 Mean performance in Life Skills per test item in 2011



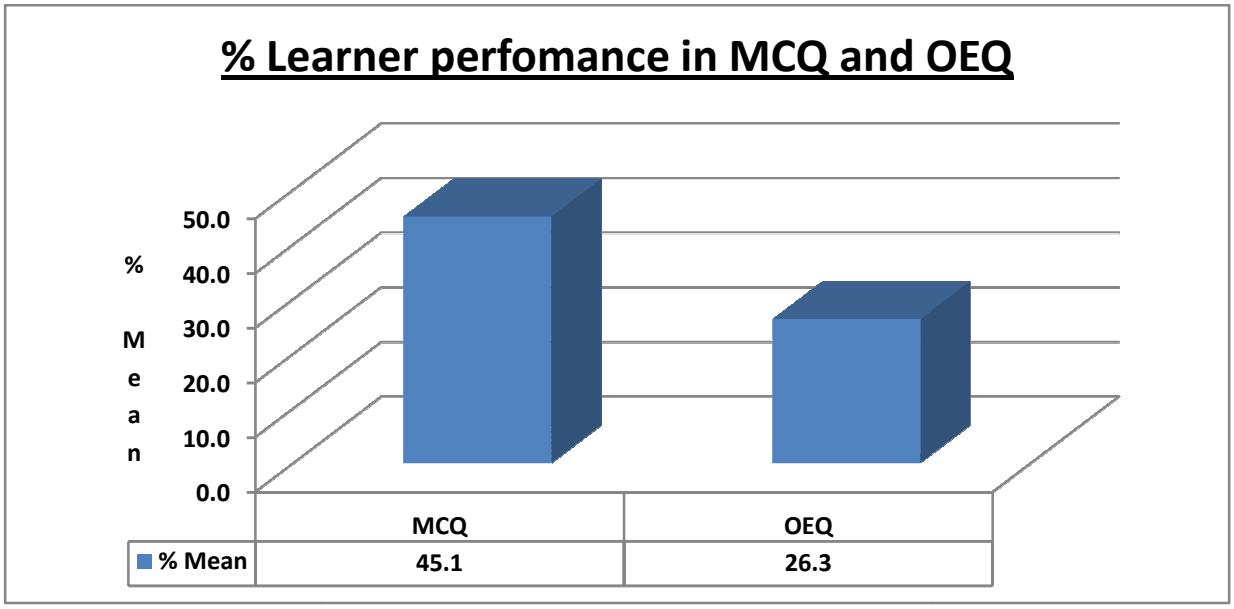
3.4.3 Learner performance in question type

Learners performed better in lower order multiple choice questions in items 1, 2, 5,8,10 and 12. In the rest of the items learners are rated at the ***Not Achieving*** levels (0-34%). The lowest performance was in

items 11, followed by 13, then 9 and 6, where learners had to write sentences, use some reasoning skills and interpret pictures.

The life skills test consisted of 09 MCQs and 04 OEQs. Learners scored higher in the MCQs (45.1%) than in OEQs (26.3%). The highest mean was recorded for a MCQ on Health Promotion (Gr. 1) with a mean of 69.7%. The lowest score (15.6%) was on Personal Development where learners had to match columns. The information in Column B had then to be copied next to Column A. Questions 6 and 9 required learners to write their own sentences. The difference in performance between question types is presented in Graph 3.6 below:

Graph 3.6 Percentage learner performance in MCQ and OEQ



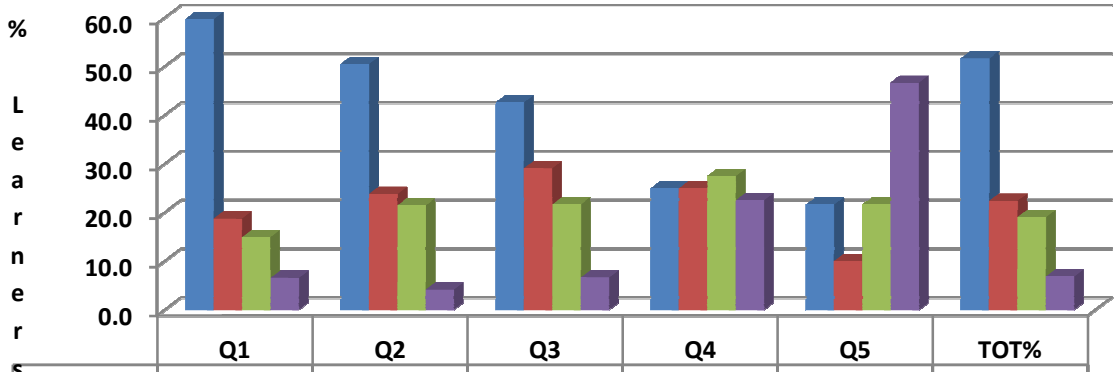
3.4.4 Learner performance in achievement levels

The rating scale that was used, is according to the NCS (pre 2012) for the Foundation Phase:

Performance level	Not Achieving	Partially Achieving	Achieving	Outstanding.
Percentage scale	0-34%	35-49%	50-69%	70-100%

Most (51.7%) learners perform at performance level one (*Not Achieved).* Only 6.9% learners across all quintiles perform at 80% or higher, where 53.9% of these learners come from quintile 5 schools, 25.9% from quintile 4, 7.7% from quintile 3, 4.8% from quintile 2 and 7,6% from quintile 1. Learners performing better in the lower quintiles should receive attention and support through higher order questions and advanced assessment tasks. Learner performance in achievement levels is presented in Graph 3.7 below:

Graph 3.7 Learners per achievement rating per quintile

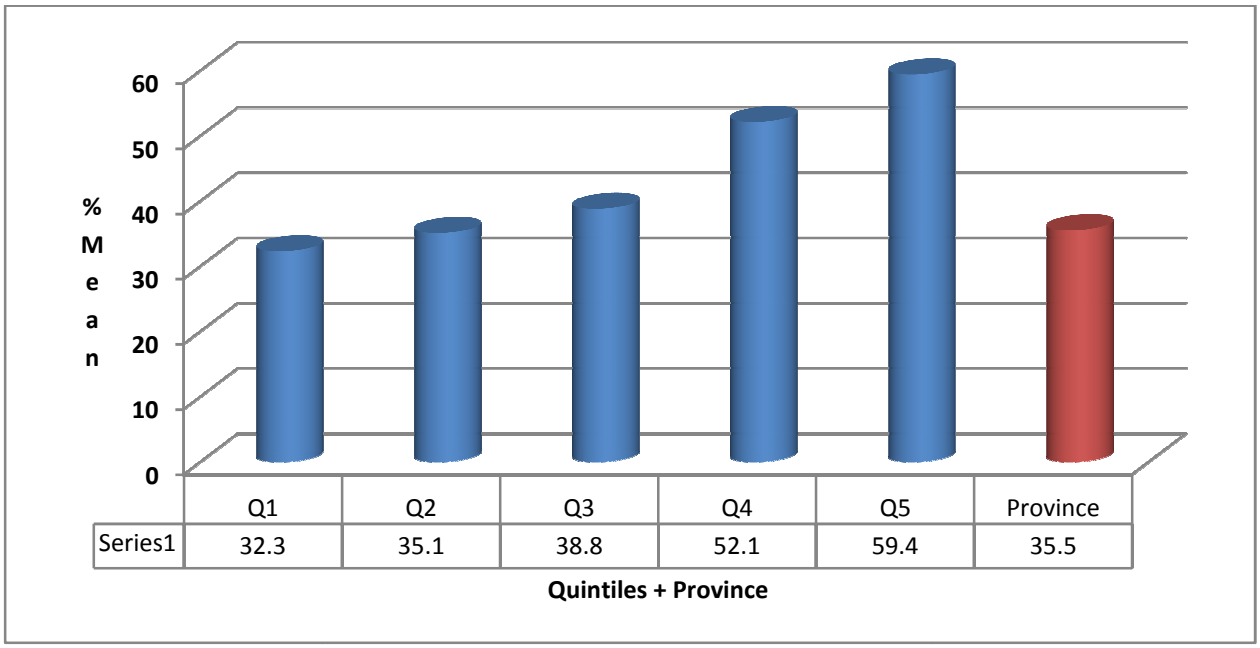


	Q1	Q2	Q3	Q4	Q5	TOT%
0 - 34%	59.7	50.5	42.6	25.0	21.7	51.7
35 - 49%	18.8	23.9	29.1	25.0	10.0	22.4
50 - 69%	14.9	21.5	21.7	27.5	21.7	19.1
70 - 100%	6.6	4.2	6.7	22.5	46.7	6.9

3.4.5 Difference in learner performance per quintile

Schools across South Africa are classified according to quintiles, where quintile five (Q5) represents urban schools and quintile one (Q1) represents schools in the deep rural areas. . Graph 3.8 shows the difference in performance between quintiles in the province:

Graph 3.8 % Mean performance in Life Skills by quintile in 2011



	Q1	Q2	Q3	Q4	Q5	Province
Series1	32.3	35.1	38.8	52.1	59.4	35.5

There are currently 2 539 primary schools in Limpopo. The province is largely a rural province, where only 2% of schools are in urban areas. Schools are classified in quintiles according to the level of development and access to resources in the areas in which they are situated. Quintile classification ranges between quintile 1 (Q1) in deep rural areas to quintile 5 (Q5) in urban areas.

Learners in Q1- Q3 schools come from poorer homes where the lack of resources can play a significant role in their performance. These schools often do not have access to basic resources (e.g. books, newspapers, TV) to support quality education.

The Quality, Improvement, Development, Support and Upliftment Programme (QIDS-UP) was introduced in 2006 as an intervention programme to make resources available to our poorest schools. As resources are being made available to the poor (mainly Q1 and Q2) schools, learner performance is expected to improve, but despite bigger budget allocations given to these schools, there is still a significant difference between learner performance in the lower quintiles and that of quintiles 4 and 5.

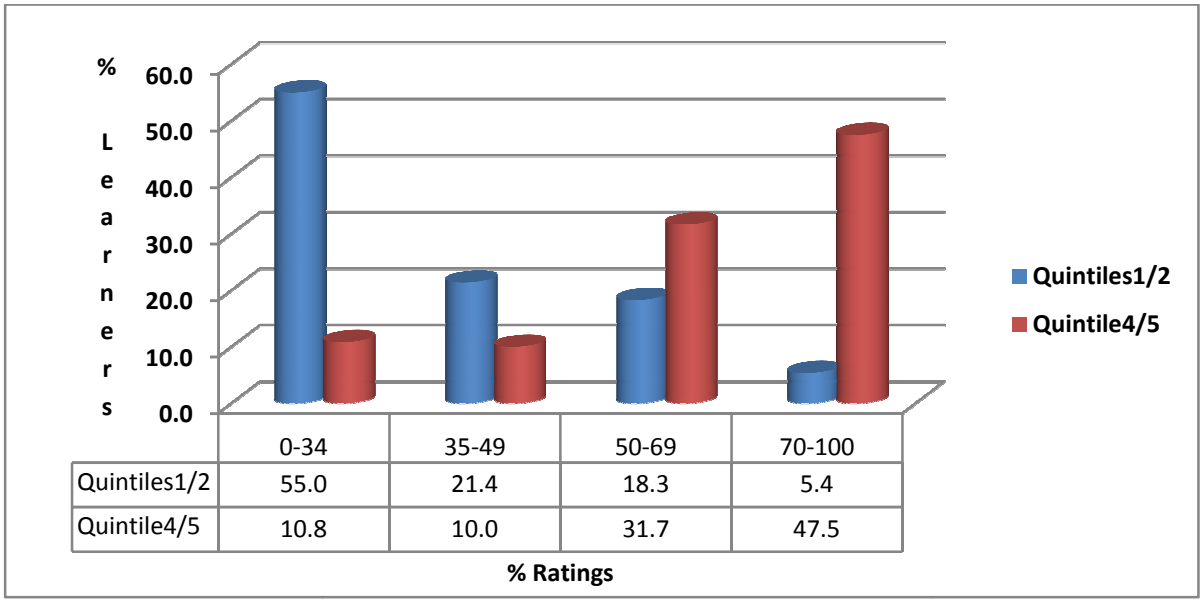
The difference in performance between Q1 and Q5 schools was monitored and assessed by the Directorate to track the impact being made by the availability of resources and interventions, i.e. QIDS-UP.

Only one quintile four school and two quintile five schools, were sampled in the random sampling procedure for 2010. The percentages reflected under Q4 and Q5 (Graph 3.8), therefore reflect the performance of one school (Q4) and two schools (Q5) only. Seven additional Q5 schools were sampled to determine the gap in performance between Q1 and Q5.

When comparing the mean scores of learner performance in quintile 1 – 2 with that of quintile 4-5 schools, it becomes clear that provision of additional budget, has not had an upward effect on learner performance. There is a gap of 44.2% between learners in the *Not Achieving* bracket. In the *Outstanding* bracket the difference in performance is 42.1%. Of specific concern are the 65.8% learners falling in the *Not Achieved* bracket that may be promoted to Grade 4 if the policy on learner progression is implemented in full. This situation creates a big challenge to a Grade 4 teacher, who would have no idea about where to start, what to teach and how to group his/her learners.

The mean difference in performance between 1-2 and 4-5 quintiles is 30.2% with a standard deviation of 20.1. The difference in performance between quintiles is presented in Graph 3.9 below:

Graph 3.9 Difference in learner performance: Q1&2 and Q4&5



	0-34	35-49	50-69	70-100
Quintiles1/2	55.0	21.4	18.3	5.4
Quintile4/5	10.8	10.0	31.7	47.5

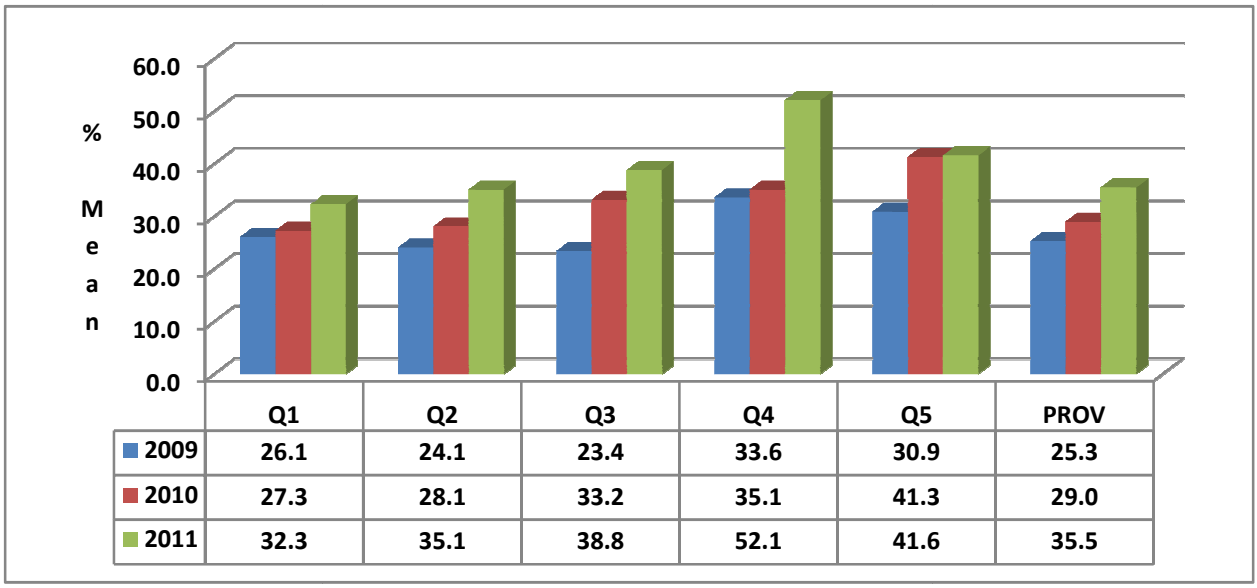
3.4.6 Learner performance by Gender

There were 1423 boys in the sample and 1183 girls. Girls performed better than boys in all the items, except two, than boys. The largest difference in performance (11%) was found in item 7, which dealt with Personal Development. However, the overall difference in performance was not significant.

3.5 PROGRESS MADE IN LEARNER PERFORMANCE SINCE 2009

Learner performance was measured in 2009 and 2010, using the same instrument as in 2011. By comparing the results over the three years, an improvement/ decline in learner performance is determined. For the period 2009 up to 2011, there has been an upward movement in performance in all the quintiles and the province. The most significant improvement was in quintiles 3 and 4 where learner performance improved by 15% and 19% respectively. A graphical presentation is presented in Graph 3.10 below:

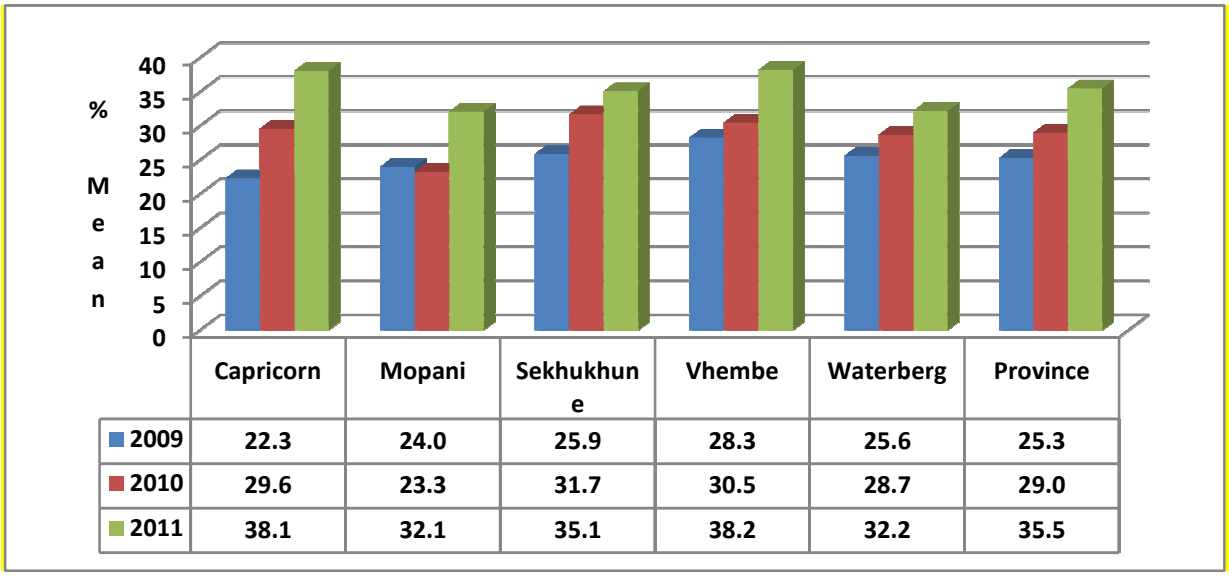
Graph 3.10 % Mean comparison per quintile



	Q1	Q2	Q3	Q4	Q5	PROV
2009	26.1	24.1	23.4	33.6	30.9	25.3
2010	27.3	28.1	33.2	35.1	41.3	29.0
2011	32.3	35.1	38.8	52.1	41.6	35.5

The province improved from 25.3% mean in 2009 to 29.0% in 2010 and from 29.0% to 35.5% in 2011. The province has thus moved out of the 'not achieving' bracket (0-34%) to the partially achieving (35-49%) bracket. This upward movement of the province is mainly due to performance in the districts of Capricorn, Vhembe and Sekhukhune, who performed at and above the provincial % mean. Waterberg and Mopani Districts are still performing in the *Not Achieved* bracket.

Graph 3.11 % Mean comparison per district



	Capricorn	Mopani	Sekhukhune	Vhembe	Waterberg	Province
2009	22.3	24.0	25.9	28.3	25.6	25.3
2010	29.6	23.3	31.7	30.5	28.7	29.0
2011	38.1	32.1	35.1	38.2	32.2	35.5

3.6 MAIN FINDINGS

Based on the analysis above, the main findings are

3.6.1 Grade 3 learners do not perform at age appropriate levels

3.6.2 Learners experience difficulty in answering higher order questions such as questions that require reasoning, interpretation and the constructing of sentences

3.6.3 Learner progression by age does not assist the academic development of learners experiencing challenges

3.6.4 Intervention strategies (e.g. provision of resources and additional support) have not succeeded in closing the gap in performance between lower and higher quintiles

3.6.5 Inadequate and inappropriate planning on the part of educators

3.6.6 Inadequate internal teacher development and support

3.7 RECOMMENDATIONS

3.7.1 Attention should be given to higher order thinking, reasoning and the construction of sentences

3.7.2 Learners experiencing challenges should be assisted to perform at age appropriate levels before progression to the next grade

3.7.3 Intervention strategies should be closely monitored by the relevant sections (e.g. circuit managers and curriculum advisors) to ensure effective implementation

3.7.4 Discuss lesson plans in subject meetings to ensure gradual complexity across grades

3.7.5 Develop educators continuously through IQMS

CHAPTER 4 – Learner performance in Grade 6: Natural Sciences

4.1 INTRODUCTION

In this chapter, the achievement of Grade 6 learners in Natural Sciences is presented.

Mean scores are presented as percentages and in certain instances disaggregated by districts. Achievement levels are also presented as stipulated in the Curriculum 2005 Assessment Guidelines. The report also provides the graphical representation of the gap in performance between Q1/Q2 and Q4/Q5 to establish the extent of education provisioning between the poorest and richest schools.

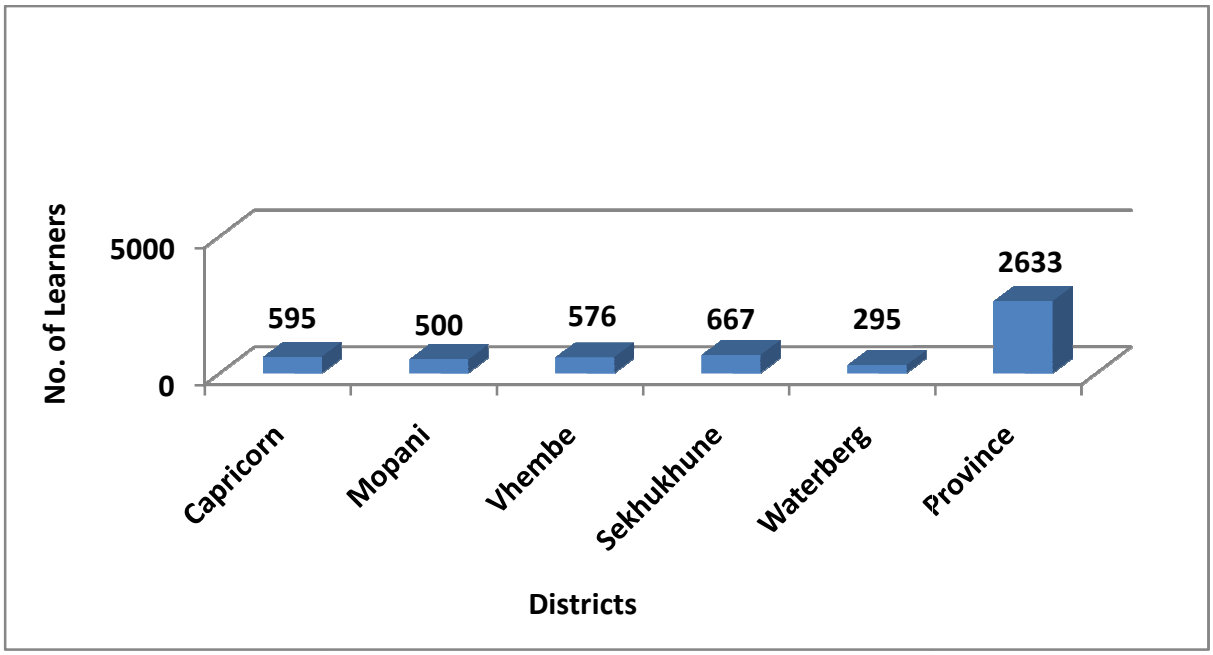
Learners were assessed in the LOLT of the school. In the Intermediate Phase, the largest proportion of the sample population was assessed in English. In three (3) schools learners were also assessed in Afrikaans.

4.2 LEARNER REPRESENTATION BY NUMBERS

A total number of 2 633 learners from the 5% sampled schools participated in the 2011 study. Learner-sampling from the 5% sampled schools resulted in the ratio of female and male of 47.9% is to 52.1%.

From each sampled school 20 learners were randomly sampled from a Grade 6 composite list. The total sample per district and the province is presented in Graph 4.1 below:

Graph 4.1 Learner representations by numbers

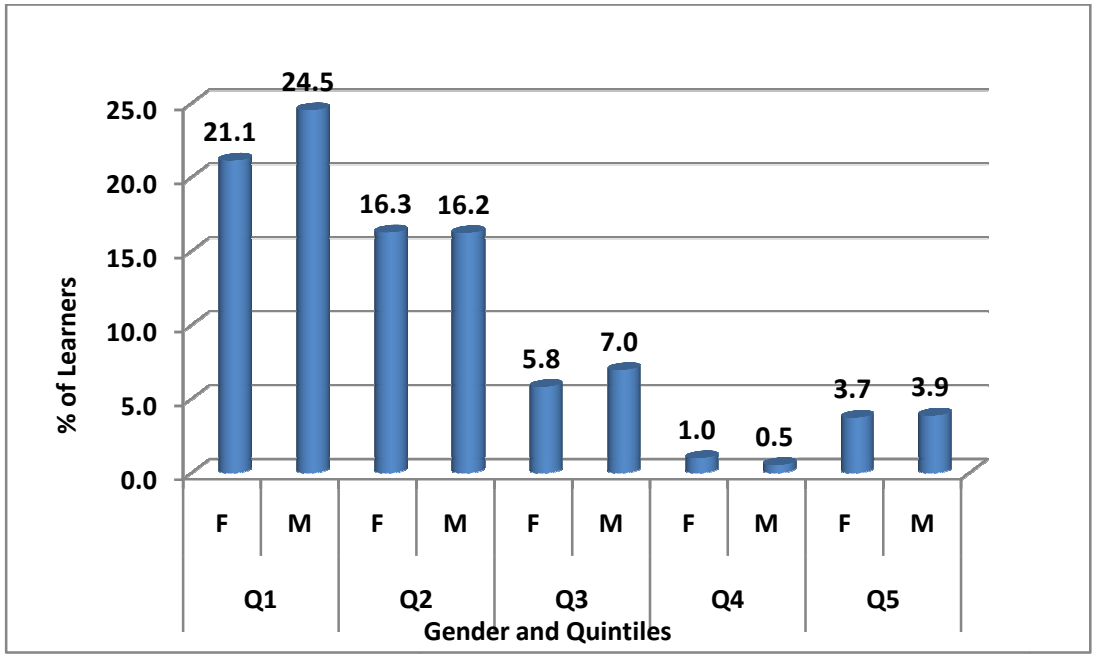


4.3 GENDER DISTRIBUTION PER QUINTILE

The highest percentage of learners who participated in the study came from schools in quintiles one (46%) and two (32.2%). Of these numbers 37.4% of the learners were females from quintiles one and two and 40.7% were males from the same quintiles. Only 21.9% of participating learners came from quintiles three to five. Females constituted 10.5% and males 11.4% from these quintiles. The percentage representation reflects the population percentage by quintile.

The gender representation according to quintiles is presented in Graph 4.2 below:

Graph 4.2 Gender representation by quintiles



The greater percentage of learners that participated in the study came from quintiles 1 and 2.

4.4 EVALUATION INSTRUMENT

The Natural Sciences evaluation instrument was based on all the three Learning Outcomes and had 46 items altogether. The evaluation instrument framework is presented in Tables 4.1 and 4.2 below:

Table 4.1 General Framework

LO NO	Learning Outcomes (LOs)	No. Of Items
1	Scientific investigations	8
2	Science knowledge	25
3	Science and Society	13
	TOTAL	46

Table 4.2 Items Framework

Item No	LO & AS	Theme	Content	Purpose of Item	Item type	Difficulty (High; Medium; Easy)
1	2(1)	LL	Purification process	Evaluate the different purification processes of water	MCQ	M
2	2(1)	MM	Water cycle	Analyze and interpret the process of evaporation	MCQ	M
3	3(2)	EC	Electricity	Knowledge of safety procedures	MCQ	M

4	2(2)	LL	Eco-system	Analyze food chain	MCQ	M
5	2(2)	LL	Characteristics of living organisms	Discriminate features of living and non-living	MCQ	M
6	2(2)	EB	Natural resources	Discriminate between natural resources and their properties	MCQ	M
7	2(1)	EC	Sources of energy	Recall knowledge of energy options	MCQ	M
8	2(2)	EB	Planets	Recall position of planets in the solar system	MCQ	M
9	2(1)	EC	Electricity conduction	Identify sources of electricity	MCQ	M
10	2(1)	EC	Sources of energy	Interpret visual data and analyze the energy transfer process	Matching	M
11	2(1)	EC	Sources of energy		Matching	M
12	2(1)	EC	Sources of energy	Interpret visual data and analyze the energy transfer process	Matching	M
13	2(1)	E	Sources of energy		Matching	M
14	3(1)	LL	Uses of plants	Evaluate cultural practices in society	Matching	H
15	3(1)	LL	Diseases	Evaluate beliefs in society by recalling knowledge	Matching	M
16	3(2)	LL	Nutrition	Evaluate factual statements	Matching	M
17	2(1)	EB	Forces	Evaluate understanding of scientific phenomenon	Matching	M
18	2(1)	EB	Solar system	Identify characteristics of planets	Matching	M
19	2(1)	MM	Measurement	Recall instrument for measuring temperature	True/False	M
20	1(3)	MM	Solubility	Recall and apply properties of liquids	True/False	M
21	1(3)	MM	Solubility	Recall and apply properties of liquids	True/False	M
22	2(1)	EB	Phenomenon in nature	Recall a scientific phenomenon in nature	True/False	M
23	2(2)	EC	Electricity	Identify the process of energy transfer	True/False	M
24	2(1)	MM	Water	Identify properties of liquids	True/False	M
25	2(1)	MM	Living organisms	Classify matter according to it its properties	OEQ	H

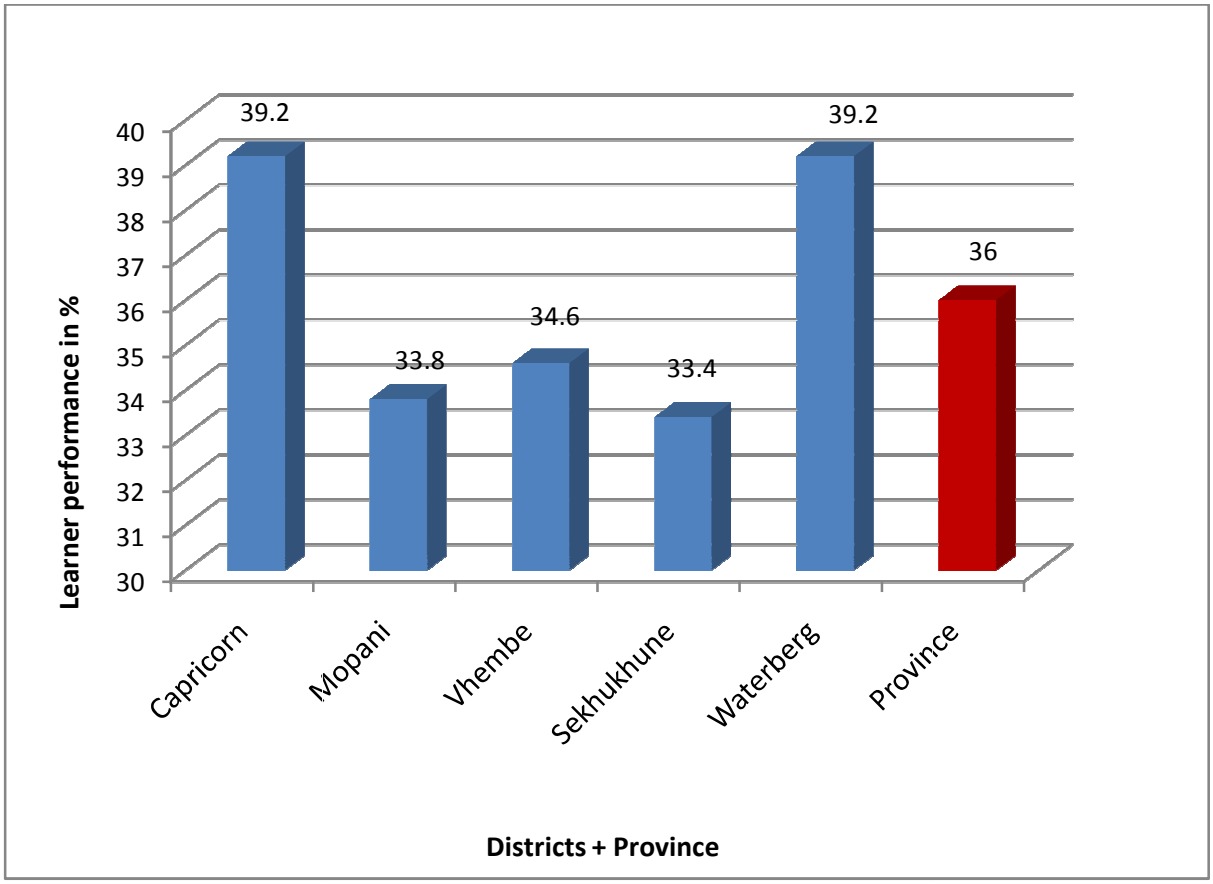
26	2(1)	MM	Separation of materials	Understand a process of separation	OEQ	H
27	2(1)	EC	Motion	Recognize the effect of force	OEQ	H
28	2(3)	MM	Insulation	Interpret visual data to solve a problem	OEQ	M
29	2(3)	EB	Properties of soil	Analyse visual data and apply the properties of soil	OEQ	H
30	2(3)	EB	Properties of soil	Apply knowledge of properties of soil	OEQ	H
31	2(1)	EB	Minerals	Recall knowledge on the environment	OEQ	H
32	3(2)	MM	Personal safety	Use scientific knowledge to make informed decisions	OEQ	H
33	3(2)	MM	Properties of materials	Decision making on the use of materials by knowledge of its properties	MCQ	L
34	3(2)	MM			OEQ	H
35	3(2)	MM			OEQ	H
36	1(3)	EB	Source of energy and water as a resource	Understanding of energy generation uses of natural resources and using graphical data to draw inferences	OEQ	H
37	3(3)	EB	Water as a resource	Interpret visual data and read measurements on capacity	OEQ	H
38	3(2)	EB	Water as a resource		OEQ	M
39	3(2)	EB	Water as a resource		OEQ	M
40	1(3)	EB	Climate		OEQ	M
41	1(3)	EB	Climate	Interpret graphical data	OEQ	M
42	1(3)	EB	Climate	Read and analyze graphical data	OEQ	M

4.5 LEARNER PERFORMANCE IN NATURAL SCIENCES

4.5.1 Learner performance aggregated by districts

The provincial mean score for learner performance in Natural Sciences for 2011 is 36.0%. An improvement of 1.6% has been recorded when compared with the 2010 learner-performance. Learner performance, aggregated by districts, is presented in Graph 4.3 below:

Graph 4.3 Learner performance aggregated by districts

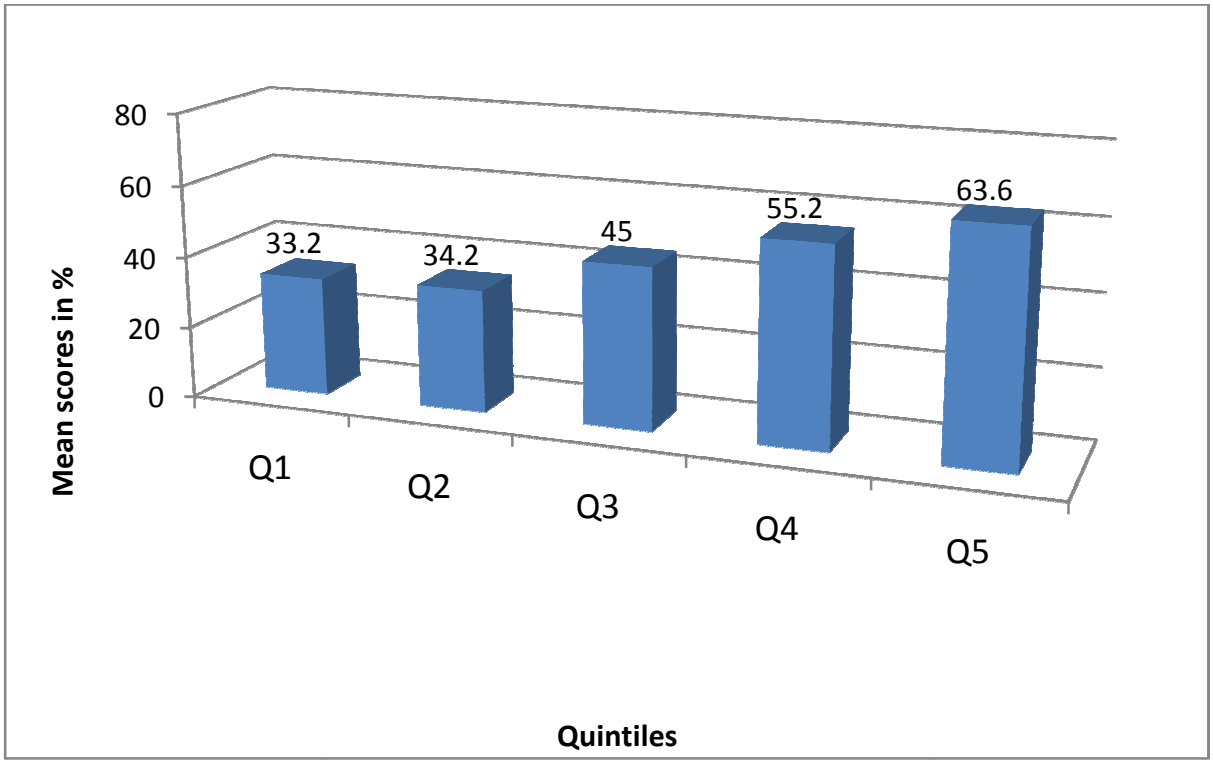


Mean scores for Capricorn and Waterberg districts is on par at 39.2%. Greater Sekhukhune and Mopani districts registered 33.4% and 33.8% respectively. Vhembe, Greater Sekhukhune and Mopani districts all performed below the provincial mean score of 36%.

4.5.2 Learner performance per quintile

Five (5) percent of schools were sampled across each quintile (refer to Table 2.2). The school population as supplied by the Education Management Information System (EMIS), indicated that there are twelve Q4 and fourty-two Q5 schools in the Province. Of these, only one quintile- 4 (Q4) school, and three quintile-5 (Q5) schools fell into the sample. The difference in performance between quintiles 3 and 4, therefore, needs further research. Learner performance per quintile is presented in Graph 4.4 below:

Graph 4.4 Mean learner performance per quintile in each district



There is no significant difference in performance between Q1 and Q2 (1.0%), whilst the difference in performance recorded between Q2 and Q3 was 10.8%, between Q3 and Q4, 10.2% and between Q4 and Q5 was 8.4%.

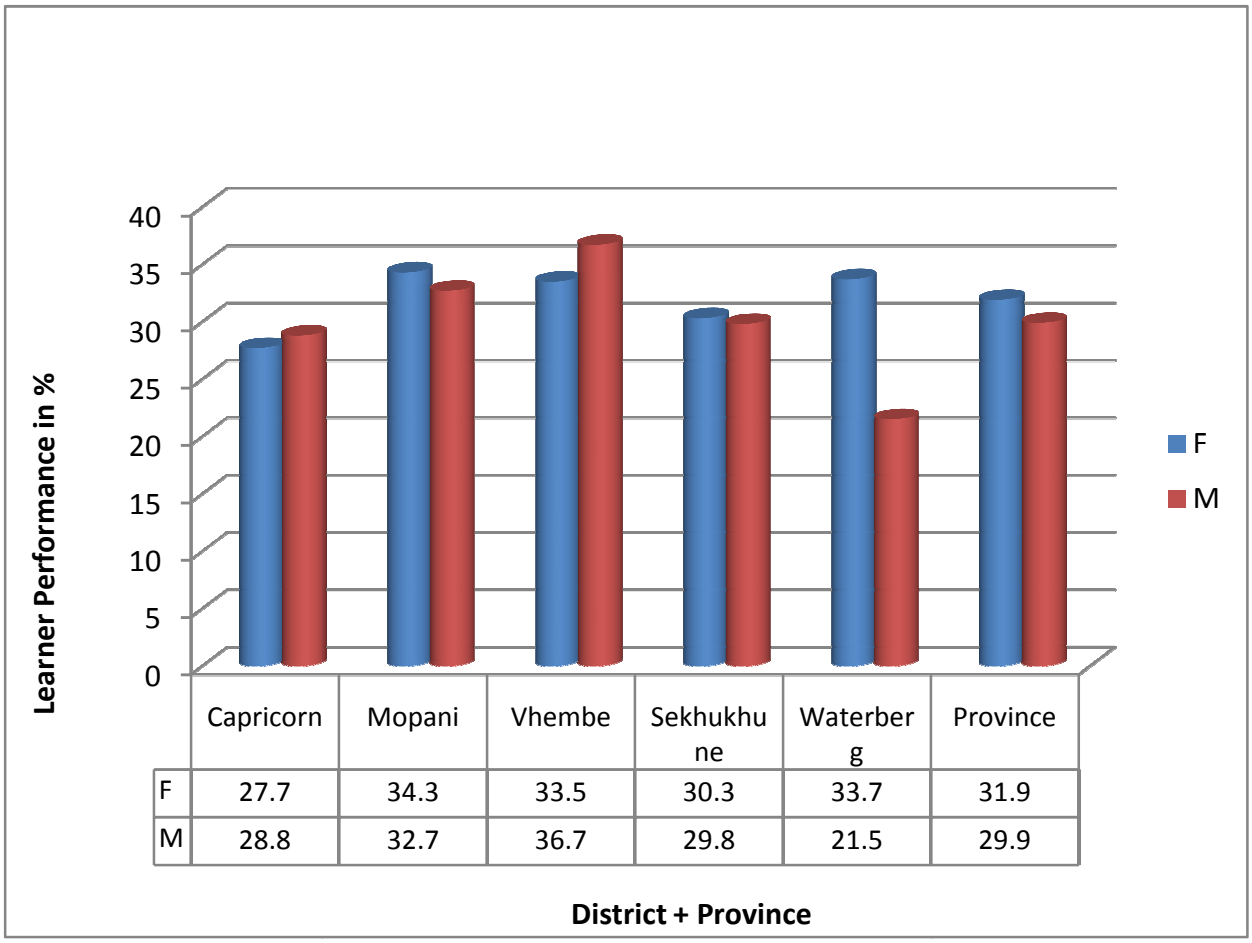
The gap in performance between Q1 and Q5 (30.4%) is a matter of concern. This huge difference calls for increased support to Q1 schools in the teaching, learning and assessment of the NCS.

4.5.3 Learner performance by gender

The learners sampled by gender in this study are 47.9% females and 52.1% males. Comparison of gender performance shows that there is no significant difference in performance between female (31.9%) and male (29.9%) learners. Provincially, female learners edged male learners by 2%.

Waterberg District recorded the biggest difference (12.2%) in gender performance. In two districts, i.e. Capricorn and Vhembe, male learners scored higher than female learners. Learner performance by gender is presented in Graph 4.5 below:

Graph 4.5 Learner performance by gender

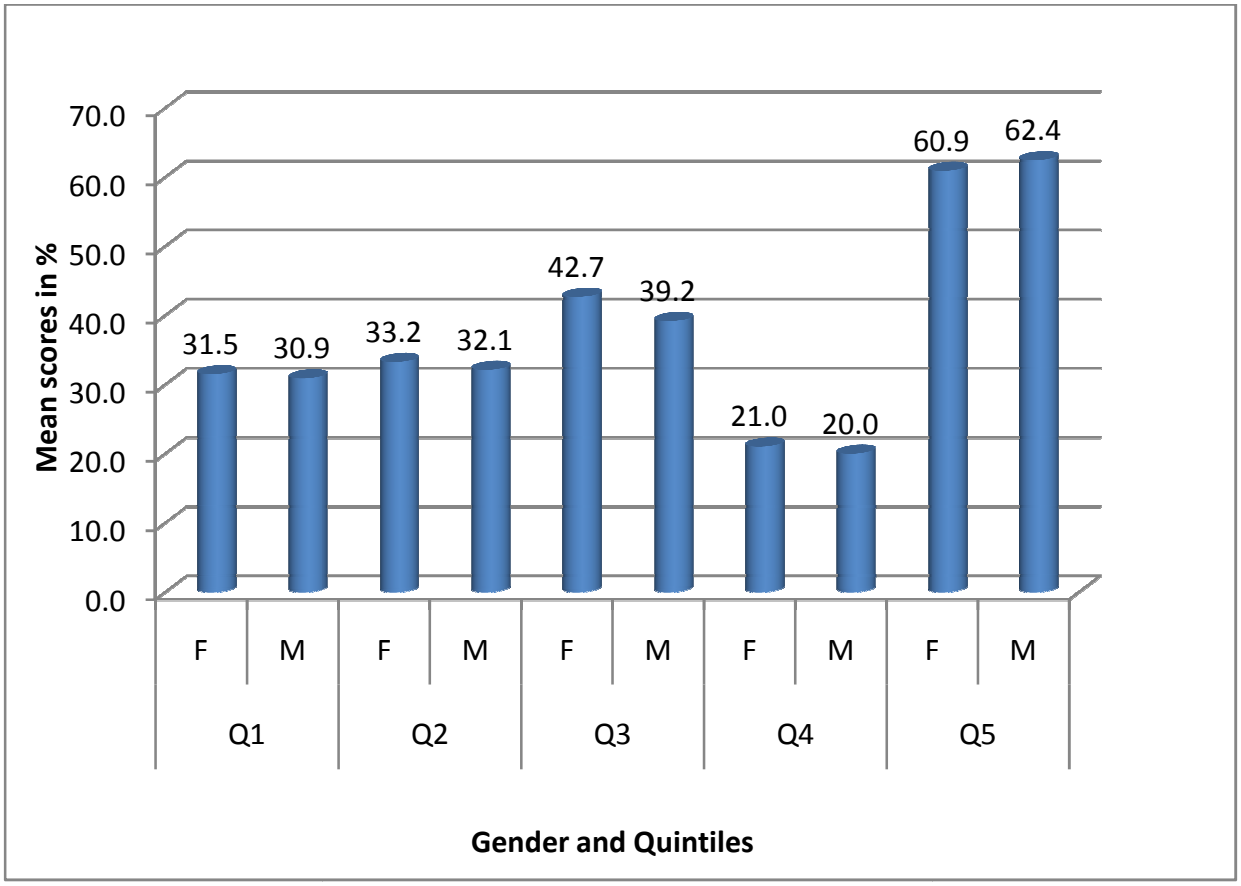


	Capricorn	Mopani	Vhembe	Sekhukhune	Waterberg	Province
F	27.7	34.3	33.5	30.3	33.7	31.9
M	28.8	32.7	36.7	29.8	21.5	29.9

4.5.3.1 Gender performance by quintiles

When looking at gender performances per quintile, it is noted that female learners have a higher performance than males in all quintiles, except in quintile 5, where male learners scored 62.5% when compared with 60.9% of females. Gender performance per quintile is presented in Graph 4.6 below:

Graph 4.6 Gender performance by quintile



4.5.4 Learner performance by performance levels

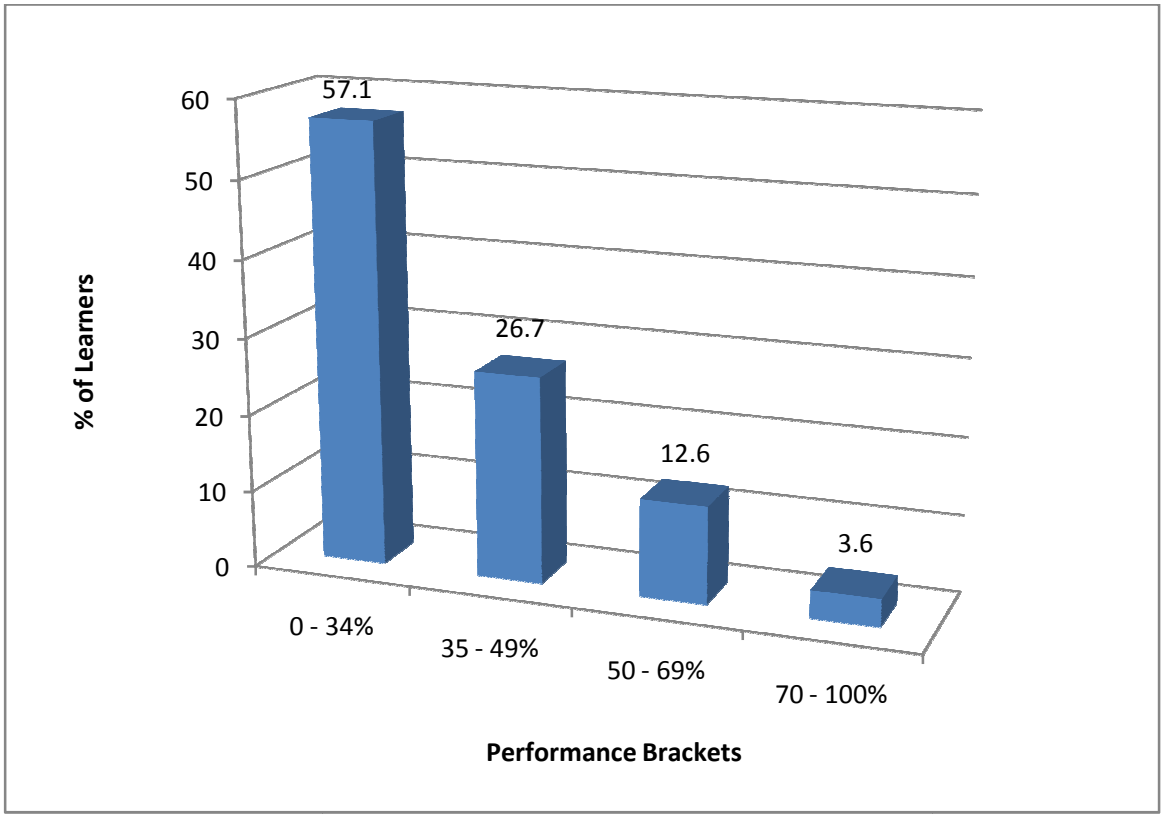
The Assessment Policy for GET prescribes four levels to indicate the quality of learner performance. The four levels are:

- Outstanding 70-100%
- Achieved 50-69%
- Partially Achieved 35-49%
- Not Achieved 0-34%

The percentage of learners not reaching acceptable outcomes in Natural Sciences is 83.8%. Most learners (57.1%) are performing at the *Not* Achieved level with only 3.6% of the learners performing at the Outstanding level.

Learner performance by performance levels is presented in Graph 4.7 below.

Graph 4.7 Learner performance by performance levels

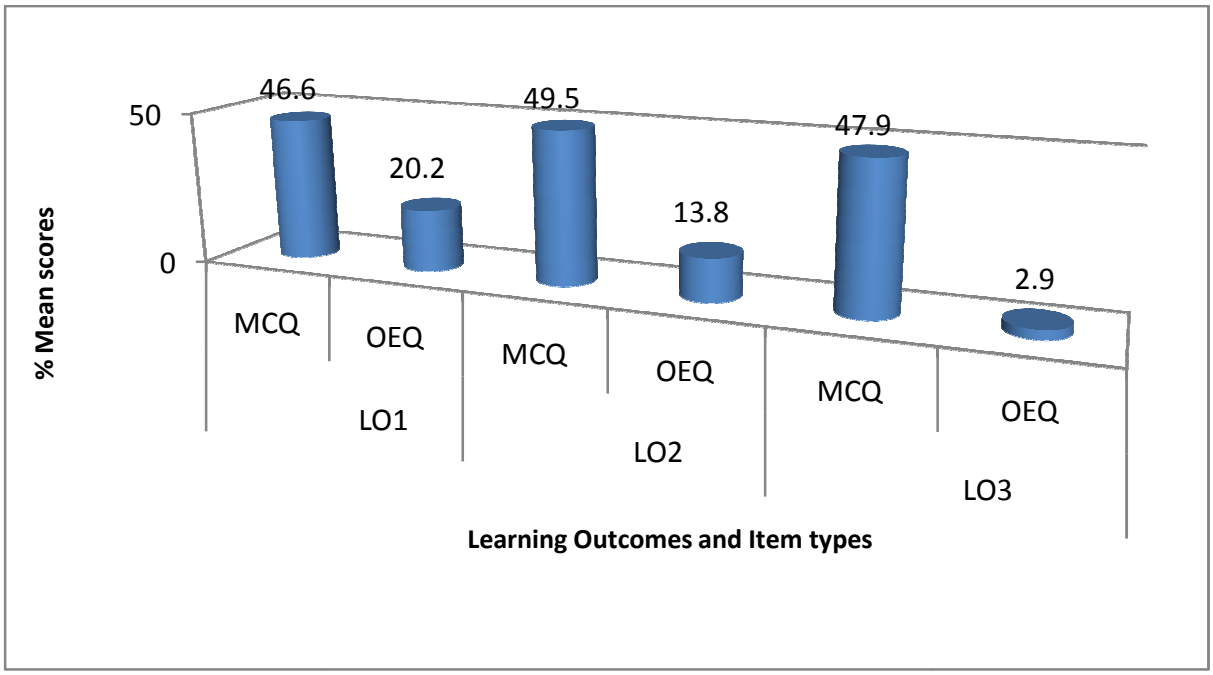


4.5.5 Learner performance by question type

The study shows that there was a significant difference in learner performance between multiple choice questions (MCQs) and open-ended questions (OEQs), 48.0% and 12.3% respectively. Learner performance was relatively better in multiple choice questions on LO2 (Scientific Knowledge) followed by LO3 (Science and Society) and then LO1 (Scientific Investigations). The range in mean scores between OEQs and MCQs is 2.9% and 49.5% respectively. For Scientific Investigations (LO1) the mean score is 33.4%, ranging from 20.2% on OEQs to 46.6% on MCQs. In LO2 scores ranged between 13.8% on OEQs to 49.5% on MCQs with the mean score of 31.7%. The mean score for Science and Society (LO3) is 25.4% with mean scores for MCQ and OEQ being 47.9% and 2.9% respectively.

Learner performance per Learning Outcome and question types is presented in Graph 4.8 below:

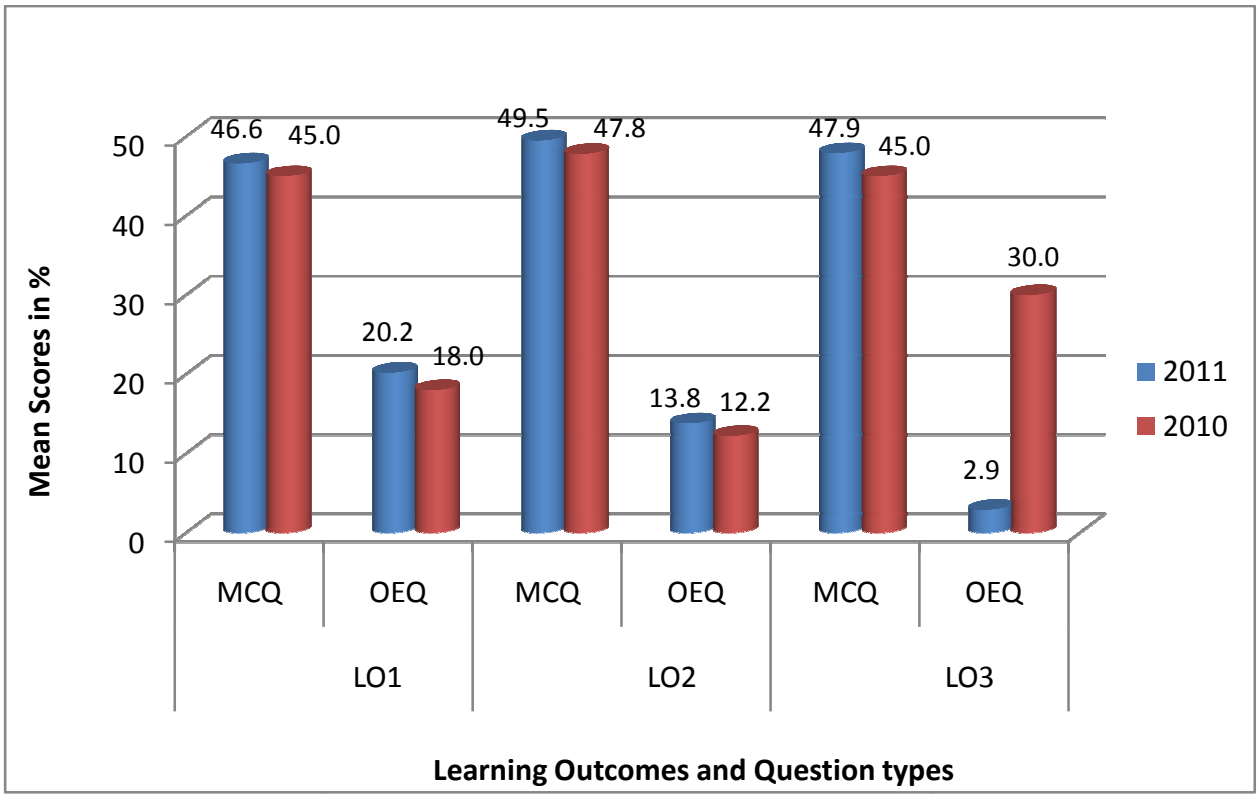
Graph 4.8 Learner performance per Learning Outcome



The mean scores for MCQs and OEQs for the 2011 study were 48.0% and 12.3% respectively compared to those of 2010 as 45.9% and 20.1% respectively. Whilst there was a slight improvement in MCQs in 2011, there was also a huge decrease in learner performance scores for LO3 on OEQs. Open-ended questions require learners to have mastered a certain degree of language competency in the LOLT, and various high order skills, such as reasoning, analysis, evaluation and synthesis. The low scores in these question-types confirm that learners have not yet mastered the above at their appropriate levels.

A comparison of learner performance per Learning Outcome and question types for 2011 and 2010 is presented in Graph 4.9 below:

Graph 4.9 Comparison of Learner performance per Learning Outcome: 2011 and 2010



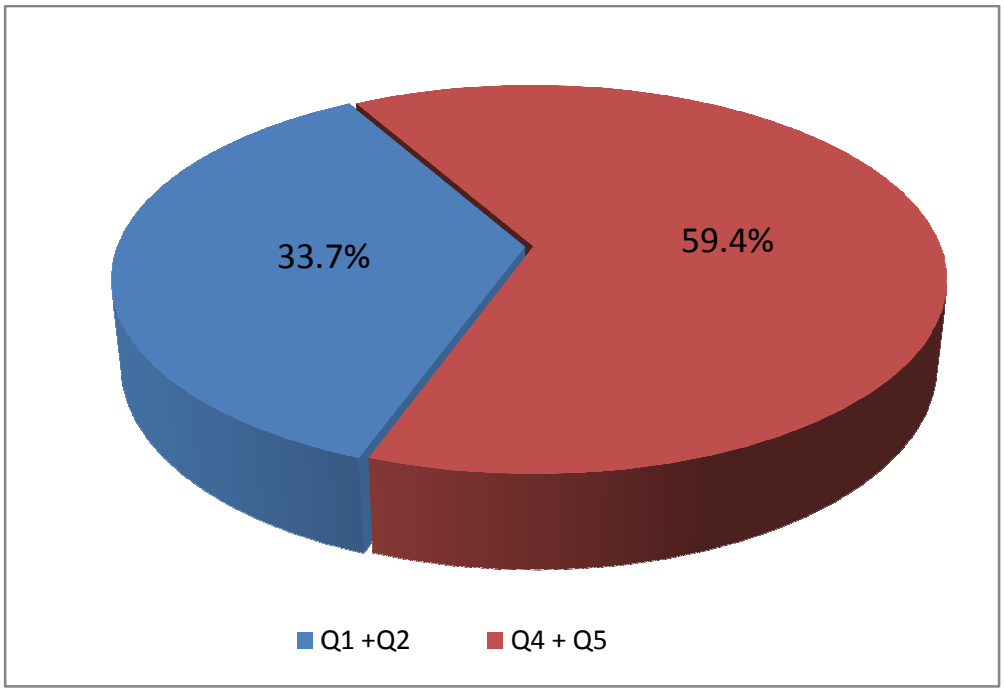
4.5.6 GAP IN PERFORMANCE BETWEEN Q1 & Q2 and Q4 & Q5

Lack of science resources is a challenge that was indicated by almost all our schools as limiting quality learning and teaching. Quintile 1 schools do not always have access to the basic resources, e.g. libraries and science kits to do scientific investigations, for effective learning and teaching. It is therefore a big challenge to prepare learners to think scientifically and to lay a foundation for experiments which form a large part of the science curriculum in the Further Education and Training (FET) phase.

The 2010 and 2011 random sample included only four schools in Q4 and Q5. For the purpose of determining the difference in performance between quintiles, (7) additional Q5 schools were included. The difference in performance between the quintiles is 25.7% in 2011 and that of 2010 is 25.3%. There is no indication that the difference between the top performing and the lower performing quintiles is narrowing.

The gap in performance between quintiles is presented in Graph 4.10 below:

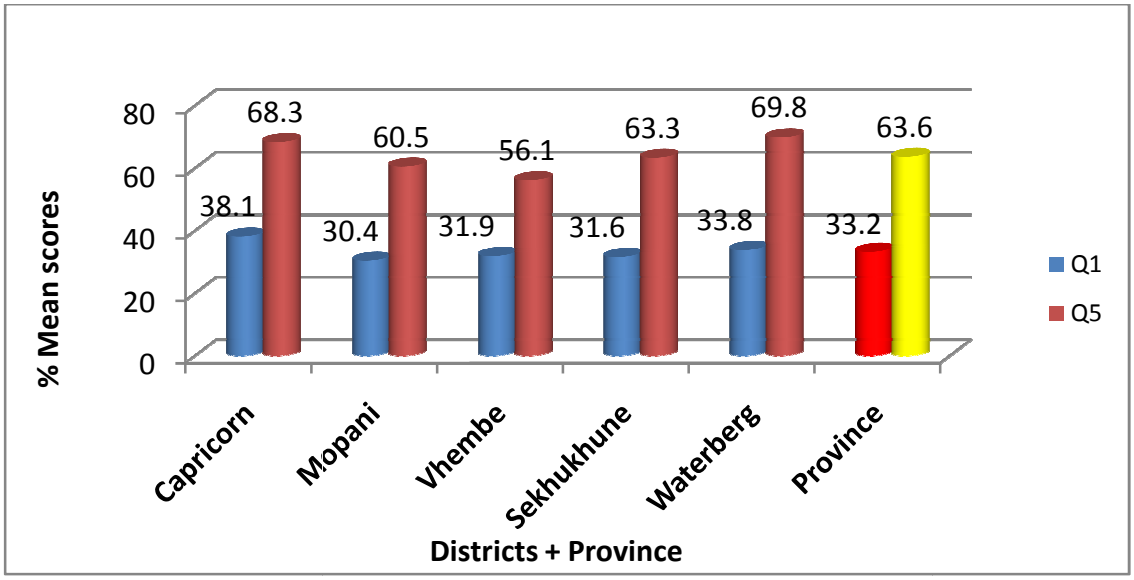
Graph 4.10 Gap in performance between Q1&Q2 and Q4&Q5 in Natural Sciences (Gr. 6)



The most significant difference in performance was recorded in Waterberg District with a difference of 36%.

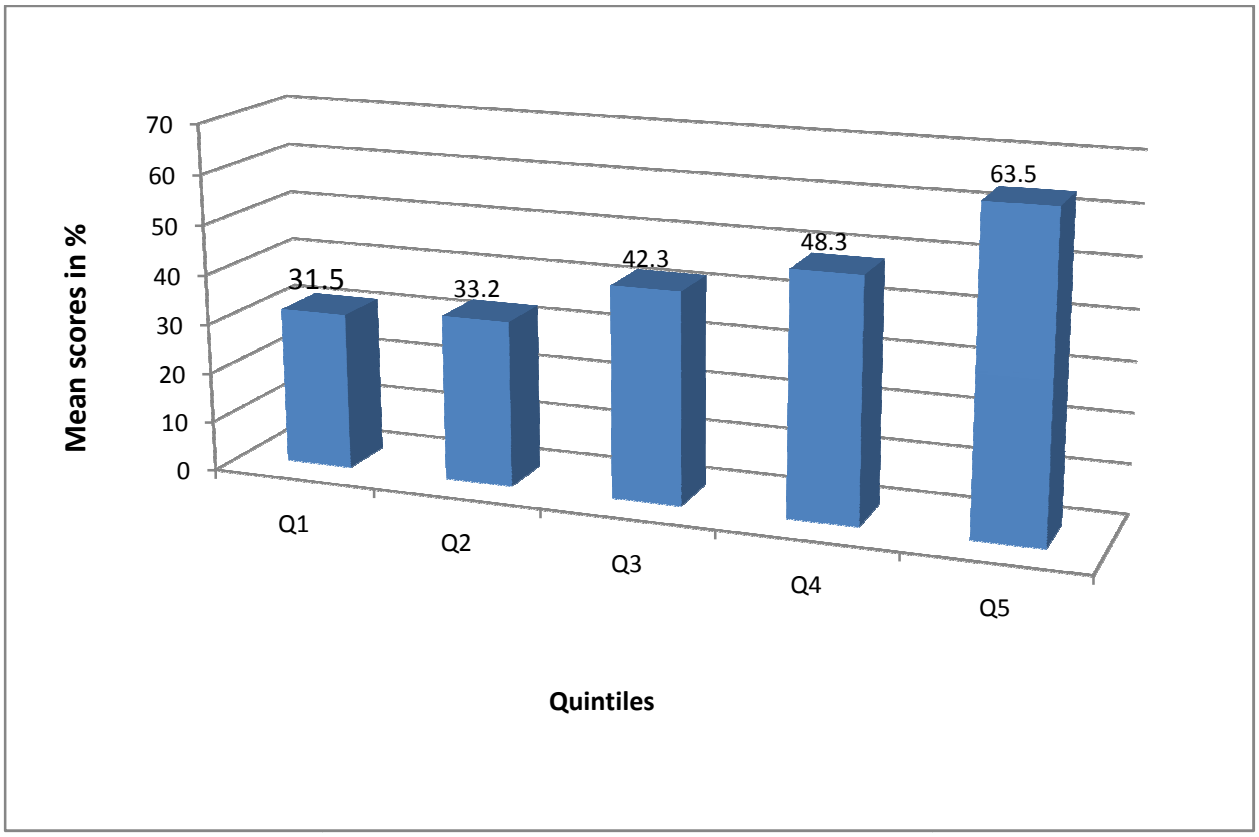
The following graph gives an indication of comparison of quintiles 1 and 5.

Graph 4.11 Comparison of learner performance in quintiles 1 and 5



Mean performance of learners in each quintile is presented in Graph 4.12 below:

Graph 4.12 Mean learner performance per quintile



There is no significant difference in performance between Q1 and Q2 (1.0%), whilst the difference in performance recorded between Q2 and Q3 was 10.8%, between Q3 and Q4, 10.2% and between Q4 and Q5 was 8.4%.

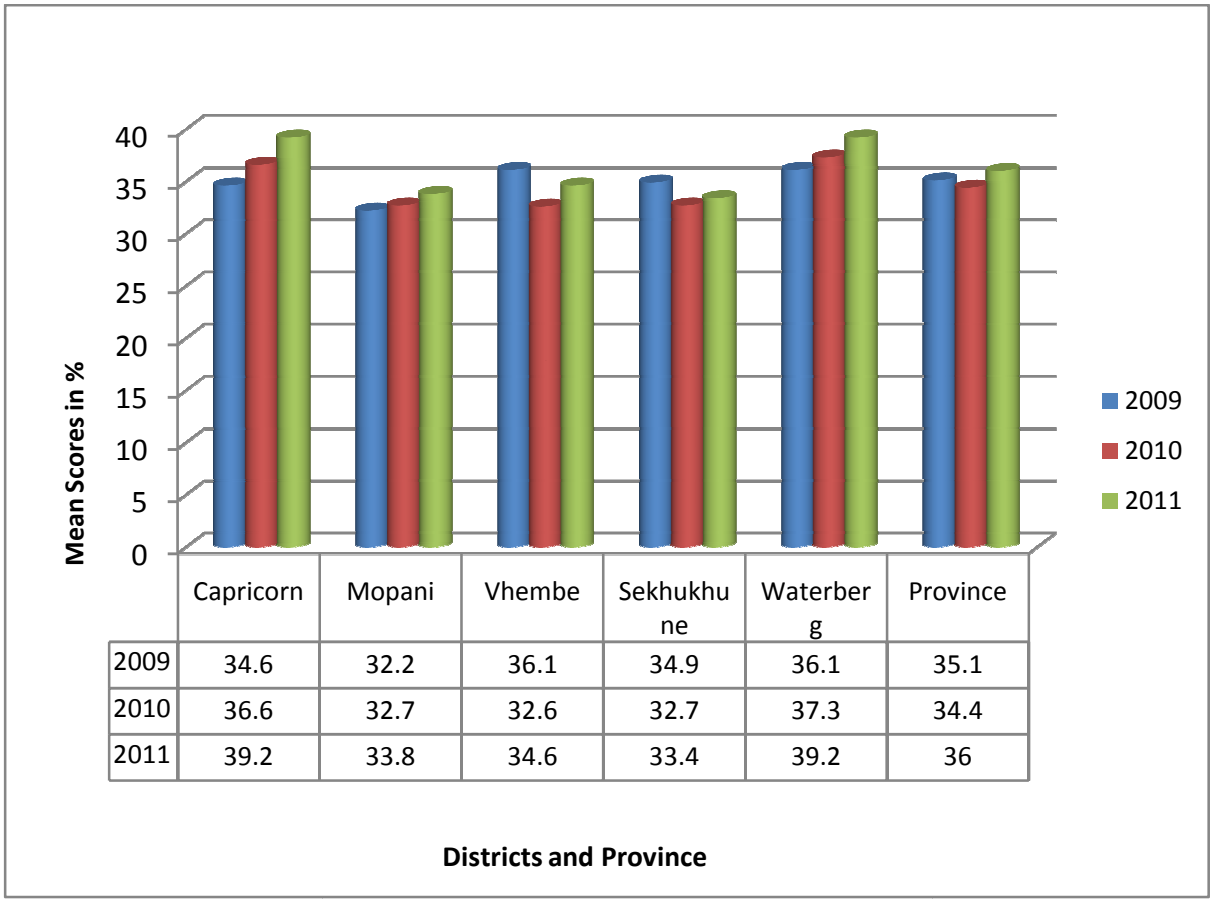
4.6 LEARNER PERFORMANCE IN 2009, 2010 AND 2011

The same Natural Sciences instrument was used over the period of three years (2009 – 2011) to evaluate learner performance in the study. However, in 2010 schools were re-sampled as a result of the reviewing of quintiles that was made in the province. Consequently, schools that participated in the study in 2009 are not necessarily the same as those which were evaluated in 2010 and 2011.

The 2010 and 2011 school-sample was exactly the same. However, a 5% sample was maintained over the three-year period of the study. Additional quintile 5 schools were included for gap comparisons between quintiles 1 and 2 and quintiles 4 and 5. These additional quintile 5 schools were not included when provincial and districts mean scores were calculated.

Comparison of learner performance between 2009, 2010 and 2011 is presented in Graph 4.13 below:

Graph 4.13 Performance comparison: 2009, 2010 and 2011



	Capricorn	Mopani	Vhembe	Sekhukhune	Waterberg	Province
2009	34.6	32.2	36.1	34.9	36.1	35.1
2010	36.6	32.7	32.6	32.7	37.3	34.4
2011	39.2	33.8	34.6	33.4	39.2	36

An analysis of the above graph indicates that the mean scores of three districts, Mopani, Waterberg and Capricorn have consistently and gradually improved over the three-year period. Whilst the mean score for Mopani minimally improved by 0.5% and 1.1% between 2009 and 2011 Waterberg registered an improvement of 1.2% and 1.9% and Capricorn 2% and 2.6% over the same period.

These results tend to suggest that whatever intervention strategies are being implemented in the two districts (Capricorn and Waterberg), they appear to be improving learner performance.

The mean scores for Vhembe and Greater Sekhukhune districts show a similar performance pattern – a decrease in performance between 2009 and 2010 and an increase between 2010 and 2011. Both the two districts could not, however, perform in 2011 at their 2009 levels. Implementation of intervention strategies, such as the Foundation for Learning Campaign, should be researched in these districts as improvement in learner performance is not visible.

A more focussed study will have to be conducted to get a better understanding of factors that contributed to the two scenarios where three districts showed improved mean scores whilst the other two had varying mean scores .

The province recorded a 0.7% drop between 2009 and 2010 and an improvement of 1.6% between 2010 and 2011 in learner performance.

4.7 CONCLUSION

It should be pointed out that the same Natural Sciences instrument was used for both 2009 and 2010 (with minor improvements in the case of the latter). However, only two districts (Capricorn and Waterberg) have significantly improved on their 2009 learner performance. Mopani has also experienced a slight improvement based on the 2009 performance. There is, therefore, a need for further research to establish what could have contributed to a decrease in performance in the other two districts and, consequently, the provincial performance.

8 CONTEXTUAL FACTORS THAT HINDER LEARNER PERFORMANCE IN GR 3 AND GR 6

This research found that there are, amongst others, certain contextual factors that can influence the performance of learners.

4.8.1 CONTEXTUAL FACTORS INFLUENCING LEARNER PERFORMANCE IN PRIMARY SCHOOLS

- Lack of parental support
- Shortage of Learner-Teacher-Support Materials (LTSM) - textbooks, equipments, laboratories, and chemicals
- Subject/phase meetings, where educators plan together and receive guidance and training, are neglected in some schools
- There is a need for the In-Service training of teachers, with less than a third year of training in Natural Sciences and in the Foundation Phase
- Learners with special educational needs (LSEN) do not receive assistance in 32% of our schools
- Pacesetters for the completion of the syllabus are not adhered to
- Teacher expectation of learner performance result in standards set being at a low level

4.8.2. RECOMMENDATIONS

- The availability of LTSM (textbooks, science kits) should be addressed in Life Skills and Natural Sciences

- A campaign to bring awareness on the role that the parents can play in the education of their children should be launched.
- Monitor adherence to pacesetters to ensure that syllabi are completed
- Strengthen the need for subject/phase meetings to support educators
- Capacitate schools on supporting learners with special educational needs
- Internal and external teacher development should be reinforced and maintained as directed by the IQMS

SECTION 3

CHAPTER 5 – LEARNER PERFORMANCE IN GRADE 9:

Natural Sciences and EMS

5.1 – Design and Implementation

5.1.1 INTRODUCTION

The main aim of the school is to provide educative-teaching. That is the accompaniment of the child through his/her various stages of development to a responsible adulthood. This educative teaching must be planned for, as it does not happen haphazardly. There must always be a continuous effort to achieve it.

To achieve the vision of *Schooling 2025* (DBE: 2010), all stakeholders are to be taken on board when educational planning is done.

The transformation of education in South Africa has not been without challenges. The school register of needs (SRN) 2000 survey (DoE,2001)reported that in many parts of the country, the school system is still having a lot of disparities, large classes, inadequate or no resources, and infrastructure. The survey also reported a decline in the number of schools that had buildings in excellent and good conditions and an increase in a number of schools that had weak or very weak buildings.

5.1.1.1. Purpose of the study

The purpose of this study is to determine the level of performance in Grade 9 in the two learning areas, Natural Sciences, and Economic and Management Sciences. The study will also try to determine the contextual factors that influence learner performance in the Senior Phase in general and in Grade 9 in particular. At the end of this study appropriate intervention strategies will be listed, in order to improve learner performance.

The results and findings in this study can be valuable to the Department of Education, Educators, School Managers, Curriculum Advisors and Researchers.

5.1.1.2. Sampling

The study was conducted in the Five (5) districts of the Limpopo Province, namely: Capricorn, Greater Sekhukhune, Mopani, Vhembe and Waterberg.

To determine the number of schools to participate in this study a stratified random sampling method was used, which means that 7.5% of schools in each district per quintile was taken.

At the level of the school a random sampling method was also used to select learners who were to participate in the study.

5.1.1.3. Advocacy

Advocacy was conducted in July 2011 to the 106 schools in each of the 5 districts. In these meetings the purpose of the study was outlined and the role that school managers should play during data collection was also explained.

5.1.1.3. Development of the Evaluation Instrument

The evaluation instruments were developed by the Systemic Evaluation officials in the Province, Quality Assurance officials from Districts, together with Curriculum Advisors for the two Learning Areas. The evaluation teams first developed the evaluation frameworks based on the National Curriculum Statements for both Economic and Management Sciences and Natural Sciences.

- **Structure of the Economic and Management Sciences instrument**

  The EMS evaluation instrument consisted of 64 questions covering all four learning outcomes as shown in Table 5.1:

LEARNING OUTCOME	IDENTIFICATION OF LEARNING OUTCOMES	NUMBER OF QUESTIONS	MARKS	PERCENTAGE IN THE PAPER
1	The economic cycle	25	25	39.1
2	Sustainable growth and development	8	8	12.5
3	Managerial, consumer and financial knowledge	16	16	25
4	Entrepreneurial knowledge	15	15	23.4
TOTAL		64	64	100

- **Structure of the Natural Sciences instrument**

The Natural Sciences evaluation instrument consisted of 43 items amounting to 50 marks, covering all the three Learning Outcomes (LOs) as shown in Table 5.2:

LEARNING OUTCOME	IDENTIFICATION OF LEARNING OUTCOMES	NUMBER OF QUESTIONS	MARKS	PERCENTAGE IN THE PAPER
1	Scientific investigations	5	6	12
2	Constructing Science Knowledge	34	38	76
3	Science, Society and the Environment	4	6	12
TOTALS		43	50	100

- **The content area covered by the Natural Sciences instrument**

  Table 5.3 reflect the content area covered by the Natural Sciences instrument:

CONTENT AREA	NUMBER OF QUESTIONS	MARKS	PERCENTAGE IN THE PAPER
Life and Living	9	12	24
Energy and Change	7	8	16
Planet Earth and Beyond	12	13	26
Matter and Materials	15	17	34

- **Structure of the contextual questions**

The contextual questionnaire instrument consisted of 94 questions divided into 5 categories, as shown in Table 5.4 below:

#	CATEGORY	NUMBER OF QUESTIONS	RESPONDENT	METHOD
A	Leadership and co-ordination	15	Principal	Interview
B	Governance and relationships	12	Principal	Interview
C	Teacher development	16	Educators	Witten responses
D	Teaching and learning	25	Educators	Witten responses
E	Assessment	9	Educators	Witten responses
F	Teachers ' attitudes	17	Educators	Witten responses
	Total	94		

- **Piloting and refinement of the evaluation instruments**

After the instruments were developed they were piloted in 5 schools in the province, which means that each item got 100 responses. The findings of the pilot study were used to refine the instruments. The instrument refinement process was carried out by the Systemic Evaluation officials, Quality Assurance officials as well as Curriculum Advisors.

- **Translation**

In the sample, 7 schools had Afrikaans as their language of learning and teaching (LOLT), as such the papers had to be translated into Afrikaans to accommodate them.

- **Data collection**

Data was collected by Systemic Evaluation officials together with the Quality Assurance officials from Districts. Data collectors had to undergo one day training to prepare them for data collection.

- **Data Coding, scoring and capturing**

The Instruments were coded and scored and captured by SE officials, QA officials from Districts, as well as some selected educators.

- **Data cleaning, data analysis and report writing**

Data cleaning, data analysis and report writing was done by the Systemic Evaluation officials at head office.

5.1.2. SAMPLING

- **The sample size**

The study consists of 106 schools from the five districts in Limpopo province, representing 7.5% of all the schools with Grade 9 in the province. As the stratified random sampling method was used, 7.5% schools of each quintile in every district were selected. The study ultimately consisted of 106 schools and 2102 learners. There were 102 more boys than girls in the sample. The sample also included 106 principals and 212 Educators who responded to the questionnaires**.** The sample is presented in Table 5.5 below:

Table: 5.5. Number of learners who participated in the study per district by gender.

DISTRICT	NUMBER OF SCHOOLS	NUMBER OF LEARNERS		BOYS	GIRLS
CAPRICORN	21	419		219	200
GREATER SEKHUKHUNE	23	460		250	210
MOPANI	20	400		202	198
VHEMBE	22	434		233	210
WATERBERG	20	389		198	191
PROVINCE	106	2102		1102	1000

- **Number of learners who participated in the study by age**

The policy on age requirements states that, a learner must be admitted to Grade 1 if he/she turns seven in the course of that calendar year. It further states that a learner who is younger than this age may not be admitted. The statistical age norm per grade is the grade number plus six, e.g. Grade 9 + 6 = age 15. It is, therefore, expected that the Grade 9 learner should be 15 years old.

In the study 165 (7.9% of the sample) learners are 14 years and younger, which means that they were admitted too early at their respective schools.

The study also revealed that 530 learners (25.2% of the sample) are 16 years old, which means that these learners will be 19 years old when they will be doing Grade 12. Another 566 learners (26.9%of the sample) are 17 years or above, which means that these learners will be 20 years old or above when they will be doing Grade 12. Only 841 learners (40% of the sample) are correctly aged at 15 years old. There might be either a problem in the admission of learners in schools or with the progression of learners.

The study consists of learners of all age groups in Grade 9. Table 5.6 below shows the distribution of learners in Grade 9 by age in the whole sample:

Table 5.6 Learner distribution by age

DISTRICT	14 YEARS AND LESS	15 YEARS	16 YEARS	17 YEARS AND MORE
CAPRICORN	6.7	47.5	25.3	20.5
GREATER SEKHUKHUNE	6.9	35.2	23.5	34.3
MOPANI	7.3	39	26.5	27.3
VHEMBE	12.2	38.2	23	26.5
WATERBERG	5.9	40.6	28.3	25.2
PROVINCE	7.8	40	25.2	26.9

5.1.3 VALIDITY AND RELIABILITY

It is important that the test scores measure what they are supposed to measure. In this kind of study, content validity is measured against all the aspects of the curriculum. This study meets all the requirements in terms of content validity, *viz:*

- All learning outcomes were covered in the two learning areas, i.e. Natural Sciences, and Economic and Management Sciences
- There is variation of questions in terms of Low, Medium and High order
- The types of questions. That is Multiple Choice (MCQ), Matching Type (MTQ), Open Ended (OEQ) as well as Short Answer (SAQ) questions were considered when the instruments were developed
- The questions were also structured into cognitive levels of learners, i.e. according to Bloom's Taxonomy-. There were questions that were testing knowledge, comprehension, application and analysis (Van Deventer and Kruger 2003:33)
- Both question papers were piloted and moderated before the study

Reliability indicates the degree to which the total score obtained in a test is free of measurement errors (Silverman 1993:152). The results of this study can be regarded as reliable as all precautions were taken when it was conducted, e.g. data collectors were properly trained before data was collected, data cleaning was conducted before and after coding and scoring, and during data capturing proper verification of scores was also done.

The study is therefore regarded as valid and reliable.

5.1.4 LIMITATIONS OF THE STUDY

The study was well designed and well implemented; however, a few limitations should be noted as one is reading this report:

- Not all assessment standards could be assessed as the study was restricted to those questions that can be responded to through pen and paper
- The role of item type question should be noted when scores are interpreted in a criterion referenced context, for instance, in an item with four answer options, the fact that 50% of the respondents got the answer correct, may not denote the same degree of achievement as would be implied if 50% correctly answered an open-ended or a short answer question
- The sample was only stratified by districts and quintiles and the issue of circuits was not considered. At district and school level, a random sampling method was used resulting in minority populations that could be under-represented or even left out.
- In contextual questions the analysis is based on self reported data obtained from educators and school principals – part of this information was not verified by any observation, and as such should be read very carefully. This is especially applicable when attempting to find casual links
- Some of the questionnaires, as well as questions from these instruments, were not completed correctly and thus could not be used in the analysis
- Incorrect and missing data on the cover pages of the instruments caused delays in data capturing and analysis

5.2. LEARNER PERFORMANCE IN ECONOMIC AND MANAGEMENT SCIENCES AND NATURAL SCIENCES IN GRADE 9

5.2.1 Economic and Management Sciences

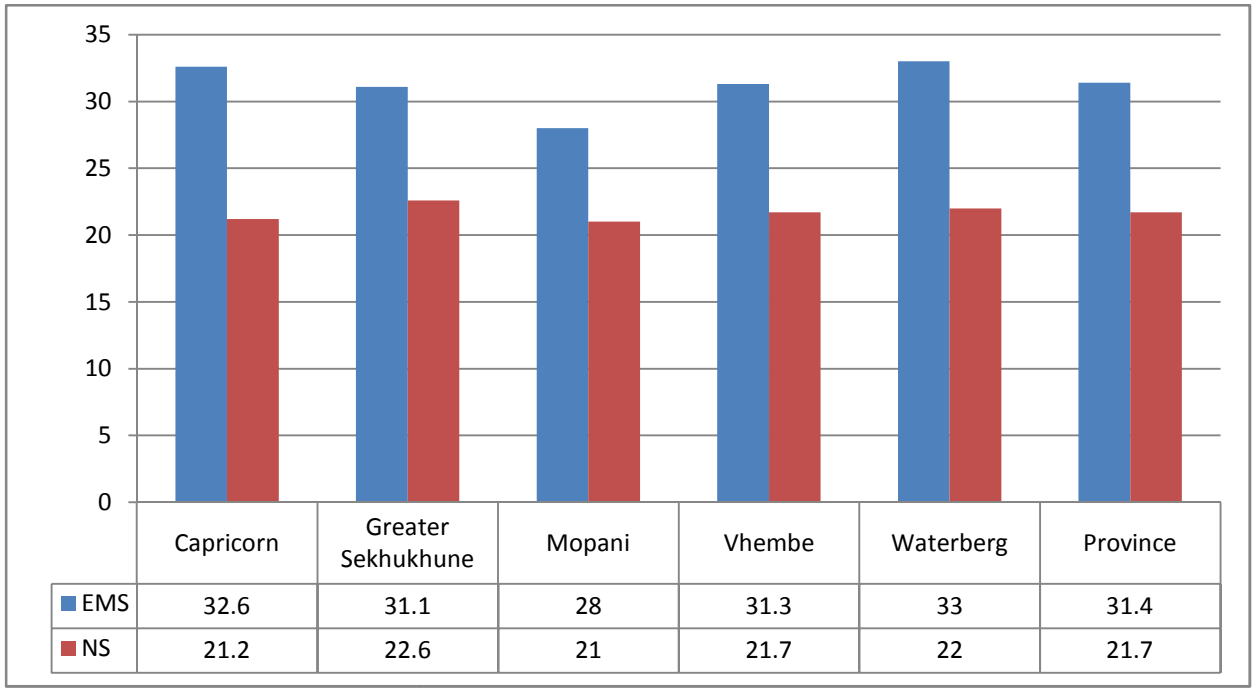
The Provincial mean score in Economic and Management Sciences is 31.4%. Waterberg (33%) registered the highest score followed by Capricorn with 32.6% .Both the two districts scored above the provincial mean.

The four districts, Capricorn, Greater Sekhukhune, Vhembe and Waterberg are performing at performance level 2, which is *Elementary Performance* (30% - 39%). Mopani is the only district performing at Performance level 1, which is the *Not Achieved* Level (29% and less).

5.2.2. Natural Sciences

The provincial mean score for Natural Sciences is 21.7%. Greater Sekhukhune obtained the highest score (22.6%) and performed with Waterberg (22%) above the provincial mean scores. Mopani scored 21.7% which is equal to the provincial score. There is no significant difference in performance between the five districts. All five districts are performing at achievement level 1, which is the *Not Achieved* Level.

Graph 5.1: Learner performance aggregated by districts.



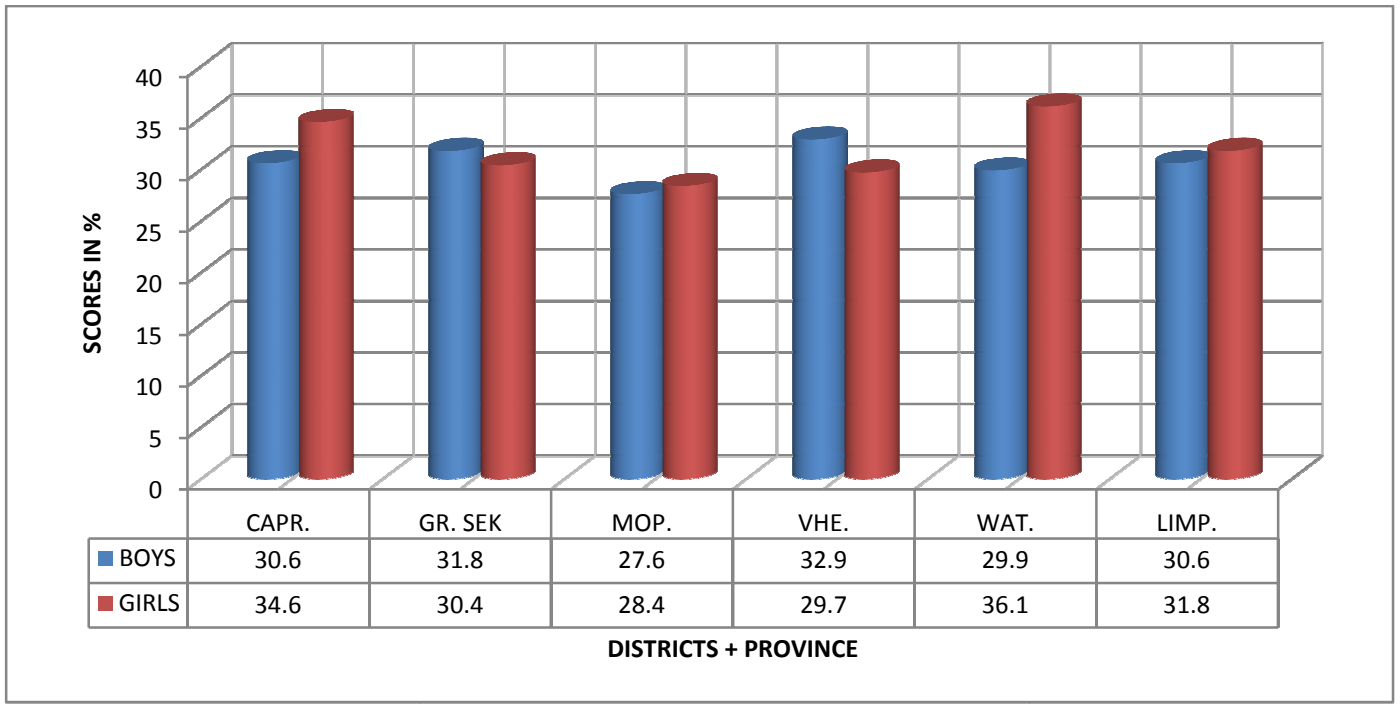
	Capricorn	Greater Sekhukhune	Mopani	Vhembe	Waterberg	Province
EMS	32.6	31.1	28	31.3	33	31.4
NS	21.2	22.6	21	21.7	22	21.7

5.2.3. Learner performance by gender

- **Economic and Management Sciences by gender**

The sample consisted of 1000 female and 1102 male learners. The provincial mean score for male learners is 30.6 % and the female learners obtained 31.8%. Although male learners in Greater Sekhukhune and Vhembe performed better than their female counter parts with female learners performing better than their male counterparts in Capricorn and Waterberg, there is no significant difference in performance between male and female learners in Economic and Management Sciences.

Graph 5.2: Learner performance by gender in the five districts.

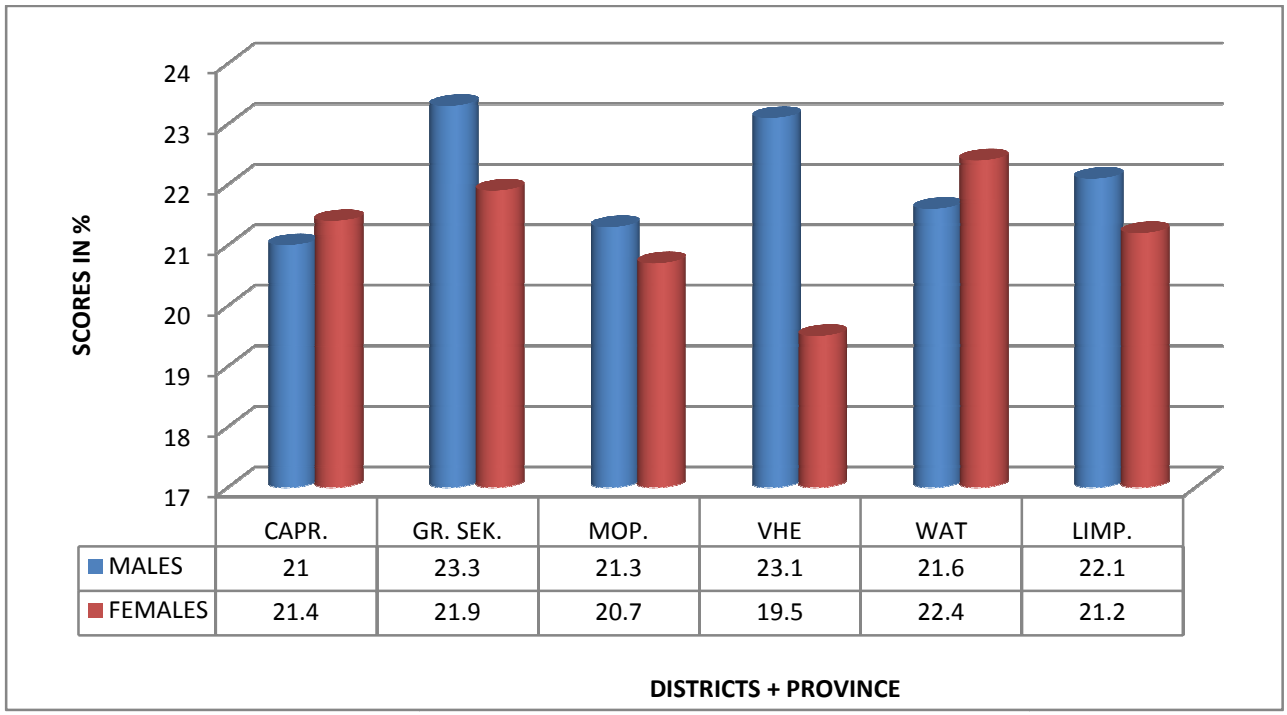


- **Grade 9 Natural Sciences by gender**

There are no major differences in learner performance between male and female learners. Males performed slightly higher than females in the Province, which is 22.1% as to 21.2%, giving us a difference of 0.9%. In Greater Sekhukhune male learners obtained 1.4% higher than their female counterparts. In Mopani males scored 0.6% higher than their female counterparts and in Vhembe by 3.6%.

In Capricorn and Waterberg, female learners performed slightly higher than their male counterparts. In Capricorn and Waterberg female learners obtained 0.4% and 0.8% higher than their male counterparts respectively.

Graph 5.3: Learner performance by gender in Natural Sciences.



5.2.4. Learner performance according to performance levels in EMS and Natural Sciences.

For interpretation of results in the Grade 9 study, the performance levels indicated below were applied:

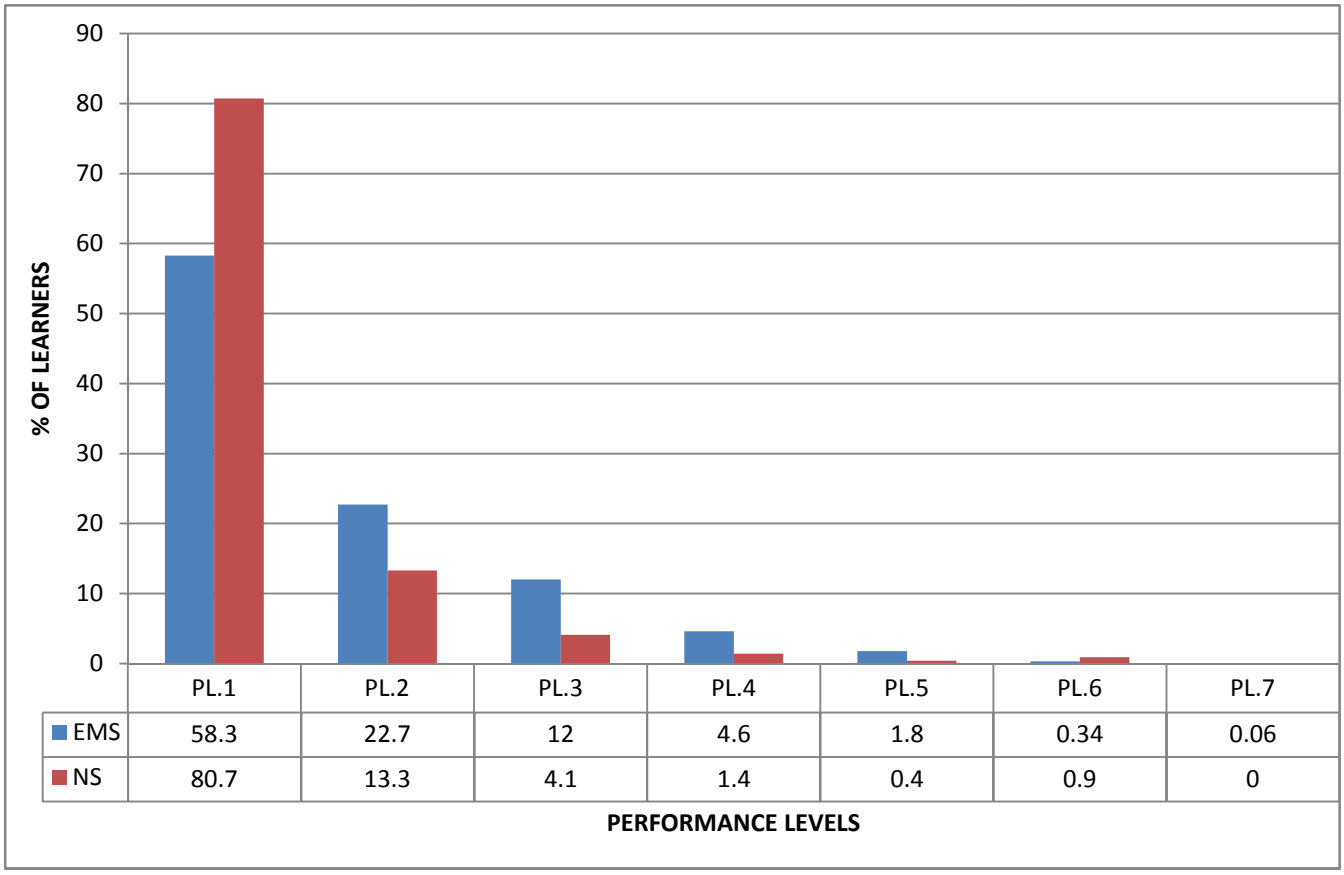
Performance levels, their percentages and their meaning.

PERFORMANCE LEVELS	PERCENTAGES	EXPLANATIONS
1	0 -29	Not achieved
2	30 – 39	Elementary
3	40 - 49	Moderate
4	50 - 59	Adequate
5	60 -69	Substantial
6	70 - 79	Meritorious
7	80 - 100	Outstanding

In Economic and Management Sciences, the majority of the learners (58.3%) are performing at performance level 1, which is the *Not Achieved* level. These learners (58.3%) obtained a score that is from 0 to 29% in the test. Only 0.06% of the learners is at performance level 7 (*Outstanding Performance* Level), which means that 0.06% of learners obtained 80% and above in Economic and Management Sciences. A total of 6.8% learners obtained 50% and above.

With regard to Natural Sciences; 80.7% of the learners are at Performance Level 1(*Not Achieved*). No learner scored above 80%, with only 2.7% scoring 50% or above.

Graph 5.4: Percentage of learners at different performance levels in Economic and Management Sciences, and Natural Sciences.



	PL.1	PL.2	PL.3	PL.4	PL.5	PL.6	PL.7
EMS	58.3	22.7	12	4.6	1.8	0.34	0.06
NS	80.7	13.3	4.1	1.4	0.4	0.9	0

- **District performance**

  Economic and Management Sciences: In all five districts the majority of the learners are performing at PL.1 – which is the *Not Achieved* level. Mopani has the highest number (65.5%) of learners performing at the *Not Achieved* Level, therefore scoring below 30% in the EMS test.

  Waterberg is the only district with 0.3% of their learners performing at performance level 7, that is, the *outstanding level*.

  Natural Sciences: Capricorn has the highest percentage (83.1%) of learners performing at Performance Level 1, the *Not Achieved* Level. Capricorn and Greater Sekhukhune each have 0.2% of learners performing at Performance Level 6, the meritorious level. No learners performed at the *outstanding* level.

Highest quality performance per district: Vhembe District obtained the best quality results in both learning areas, those are 10.6% and 3.3%learners scoring above 50% in EMS and Natural Sciences respectively.

Table 5.6: Percentage of learners at different performance levels in both learning areas per districts. .

PERFORMANCE LEVELS	CAPRICORN		GREATER SEKHUKHUNE		MOPANI		VHEMBE		WATERBERG		PROVINCE	
	EMS	NS	EMS	NS	EMS	NS	EMS	NS	EMS	NS	EMS	NS
1	61.3	83.1	54.4	80.6	65.5	79.8	55	79.1	55.7	77	58.3	80.7
2	17.6	11.3	24.7	13.7	21.3	15.5	24	13.3	26	12.2	22.7	13.3
3	11.8	3.4	13.3	3.8	11	4	10.4	4.6	13.6	4.3	12	4.1
4	4.9	1.4	5	1.1	1.8	0.8	7.6	2.8	3.6	1	4.6	1.4
5	3.4	0.5	1.5	0.7	0.5	0	2.8	0.5	0.8	0.5	1.8	0.4
6	0.98	0.2	0.4	0.2	0	0	0.23	0	0	0	0.3	0.09
7	0	0	0	0	0	0	0	0	0.3	0	0.06	0

5.2.5. Learner performance per learning outcomes

- **Economic and Management Sciences**

Economic and Management Sciences has four Learning Outcomes:

LEARNING OUTCOME 1:	LEARNING OUTCOME 2:	LEARNING OUTCOME 3:	LEARNING OUTCOME 4:
The economic cycle	Sustainable growth and development	Managerial, consumer and financial knowledge and skills	Entrepreneurial knowledge and skills
In this Learning Outcome learners are expected to demonstrate knowledge and understanding of the economic cycle within the context of the economic problem.	In this Learning Outcome, learners are expected to demonstrate an understanding of sustainable growth, reconstruction and development and to reflect critically on related processes.	In this Learning Outcome, learners are expected to demonstrate knowledge and ability to apply responsibly a range of managerial, consumer and financial skills.	The learner is expected to be able to demonstrate entrepreneurial knowledge, skills, and attitudes.

Learners performed better in LO2 (Sustainable growth and development), with Capricorn scoring the highest mean (35.8%), followed by Sekhukhune with 33.9%. Lower performance was recorded in LO3 (Managerial, consumer and financial knowledge and skills). Educators also identified LO3 as the more problematic LO for learners, especially the section dealing with Accounting. The highest performances in LO3 were recorded for Waterberg (26.3%) and Capricorn (25.6%)Districts.

Table 5.7 Learner performance per district in EMS in Learning Outcomes.

DISTRICT	LO 1	LO 2	LO 3	LO 4
CAPRICORN	35.8	37.2	25.6	36.7
GREATER SEKKHUKHUNE	33.9	41	24.5	33.2
MOPANI	26.7	36.3	22.9	32.1
VHEMBE	31.6	24	24.7	34.5
WATERBERG	33.2	40.9	26.3	36.2
PROVINCE	32.2	35.9	24.8	34.6

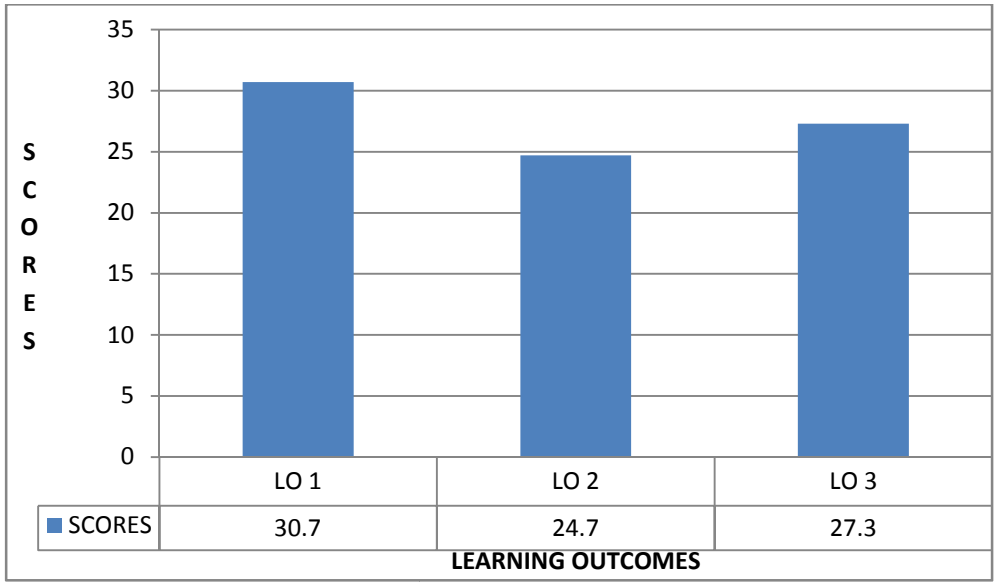
- **Learner performance according to learning outcomes in Natural Sciences**

Learning outcomes in Natural Sciences are reflected below:

LEARNING OUTCOME 1:	LEARNING OUTCOME 2:	LEARNING OUTCOME 3:
Scientific Investigations	Constructing Science Knowledge	Science, Society and Environment
In this LO, learners are expected to act confidently and curiously about natural phenomena, and to investigate relationships and solve problems, technological and environmental context	In this LO the learner is expected to know, to interpret and to apply scientific, technological and environmental knowledge	In this LO, learners are expected to demonstrate an understanding of the interrelationships between science and technology, society and environment

Learners performed the best in LO1, dealing with scientific investigations. No practical work could be done, resulting in paper and pen questions, which were mainly of a multiple choice nature. This could have had an influence on the results. Learners had difficulty with LO2 (Science knowledge). Learner performance according to learning outcomes in Natural Sciences is presented in Graph 5.5 below:

Graph 5.5 Learner performance according to Learning Outcomes (Natural Sciences)



- **District performance according to learning outcomes in Natural Sciences**

Waterberg District recorded the highest performance in LO1 (34.8%), with Vhembe and Greater Sekhukhune having the highest scores in LO2 (25.4%) and (36%) respectively.

DISTRICT	LEARNING OUTCOME 1	LEARNING OUTCOME 2	LEARNING OUTCOME 3
CAPRICORN	28.5	24.7	26
GREATER SEKHUKHUNE	31.2	24.3	36
MOPANI	30.2	24	25
VHEMBE	28.8	25.4	25.7
WATERBERG	34.8	25	24
PROVINCE	30.7	24.7	27.3

5.2.6. Learner performance according to learning area content – Natural Sciences

Learners performed better in M*atter and Materials* (28.3%), with the highest score recorded for Waterberg (29.9%),but struggled with questions on *Life and Living* (22.9%), which could predict that they might have difficulties with Life Sciences in the FET band. The highest score recorded in this content area is 24.4%, obtained by Sekhukhune.

Table 5.8 Learner performance per learning area content –Natural Sciences

DISTRICT	MATTER AND MATERIALS	LIFE AND LIVING	ENERGY AND CHANGE	PLANET EARTH AND BEYOND
CAPRICORN	29.6	22.4	23.6	24.4
GREATER SEKHUKHUNE	24.3	24.4	26.3	25
MOPANI	29.4	21.7	23.8	25.1
VHEMBE	28.5	22.4	25.6	24.9
WATERBERG	29.9	23.7	24.4	26.9
PROVINCE	28.3	22.9	24.7	25.3

5.2.7 Learner performance by question type

- **Economic and Management Sciences**

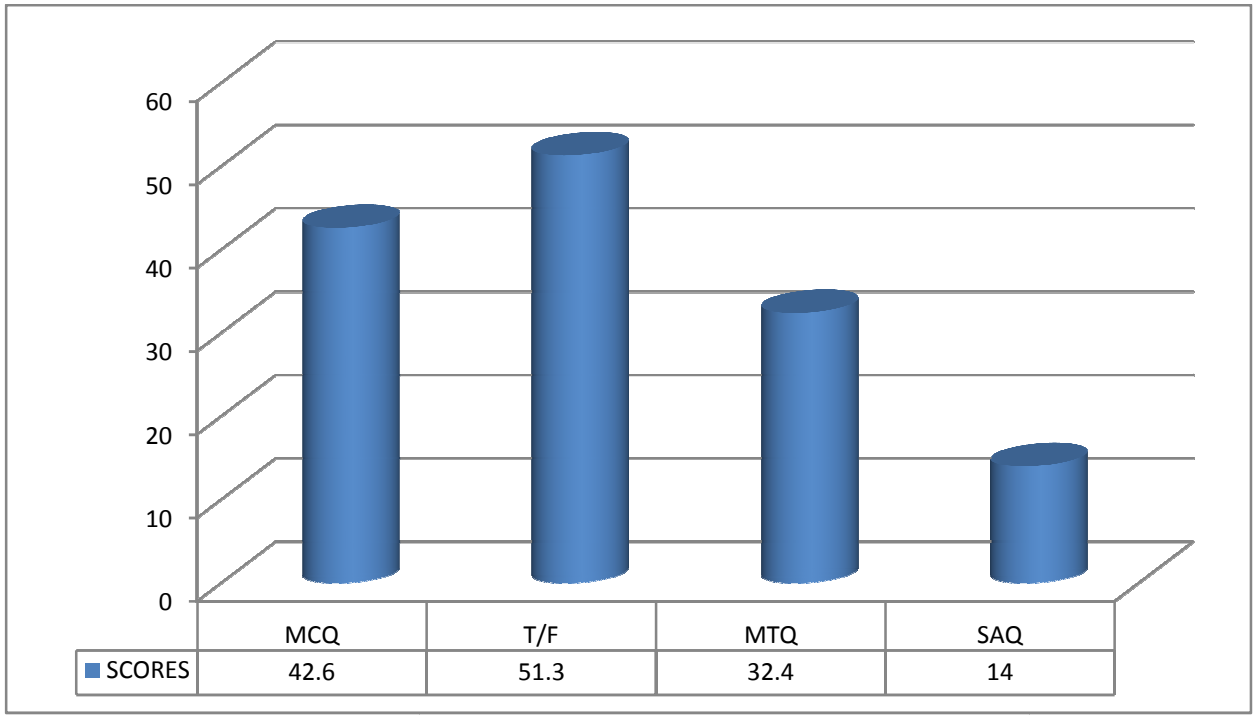
The Economic and Management Sciences instrument consisted of 64 items divided into the following question types:

MULTIPLE CHOICE QUESTIONS	T RUE AND FALSE QUESTIONS	MATCHING TYPE QUESTIONS	SHORT ANSWER QUESTIONS
20	10	10	24
31.3%	15.6%	15.6%	37.5%

The highest scores were recorded in the True/False questions. The % difference in scores between the true/false and short answer questions is 28.6% indicating that learners still experience challenges with

comprehension of, and the construction of sentences in the LOLT. Learner performance by question type is presented in Graph 5.6 below:

Graph 5.6: Learner performance by question type in EMS



Learner performance per question type in districts – EMS

The highest score per question type was recorded in the True/False questions (51.3%) and the lowest score for Short Answer questions (14%). The district obtaining the highest score for writing short answers was recorded in Greater Sekhukhune (20.1%), whilst the lowest score was in Mopani District (9.3%).

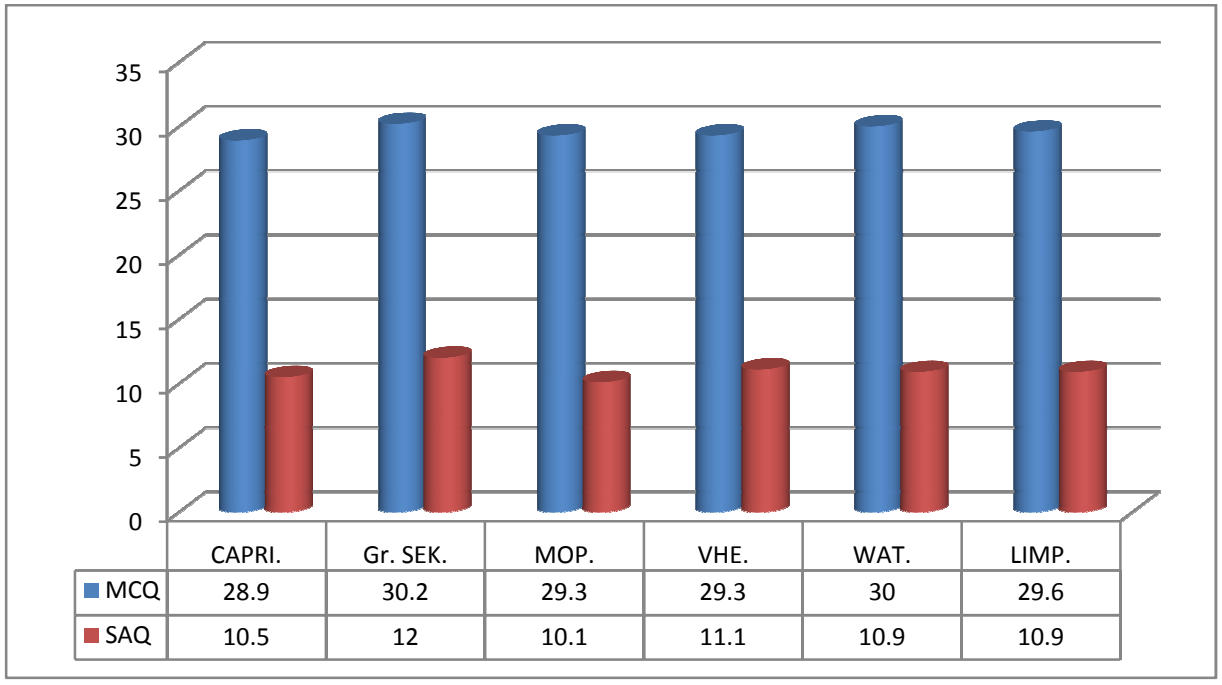
DISTRICT	MULTIPLE CHOICE QUESTIONS	TRUE AND FALSE QUESTIONS	MATCHING TYPE QUESTION	SHORT ANSWER QUESTIONS
CAPRICORN	44	53.2	31.4	15.1
GREATER SEKHUKHUNE	42.8	50.4	30.7	20.1
MOPANI	39.3	51.5	26.7	9.3
VHEMBE	43	45.7	40.3	13.1
WATERBERG	43.7	55.7	32.7	12.4
PROVINCE	42.6	51.3	32.4	14

Learner performance according to question types in Districts in Natural Sciences

Learner scores in Natural Sciences indicate a similar trend as in EMS where Multiple Choice Questions scores are significantly higher (29.6%) than those of the Short Answer Questions (10.9%). Additional

support should be given to language structure and use. Learner performance in question types (Natural Sciences) is presented in Graph 5.7 below:

Graph 5.7 Learner performance in question types (Natural Sciences)



5.2.8. Gap in performance between quintile 1 and quintile 5 schools

The schools according to quintiles were distributed as follows in the sample:

QUINTILE 1	QUINTILE 2	QUINTILE 3	QUINTILE 4	QUINTILE 5
42	29	16	9	10

The average performance of all quintile 5 schools in the study in Economic and Management Sciences is 47.7% and 27.5% in quintile 1 schools. The gap in performance between quintile 5 and quintile 1 schools in EMS is 19.9%.

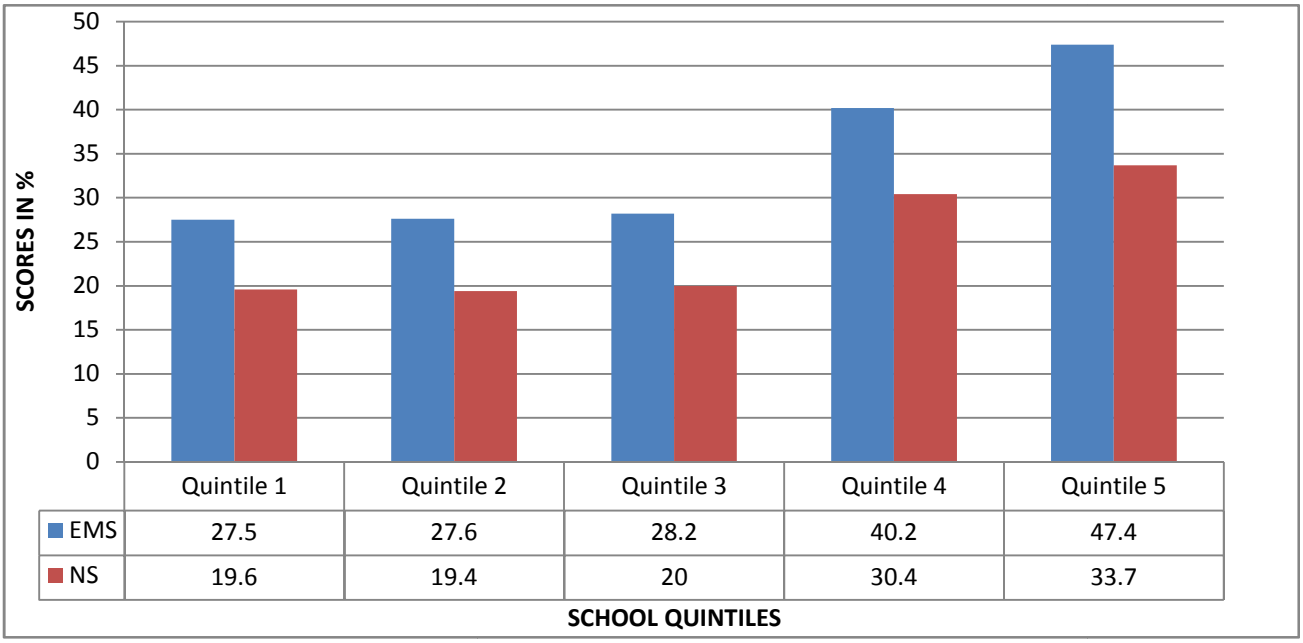
The average performance of quintile 5 schools in Natural Sciences is 33.7% and that of quintile 1 schools is 19.6%. The gap in performance between quintile 5 and quintile 1 schools is 14.1%.

There is little difference in performance between quintiles 1, 2 and 3 in both learning areas. The most significant difference is recorded between quintiles 3 and 4, confirming the difference in education delivery between rural and urban schools.

The narrowest difference in performance between quintiles 5 and 1 is found in Vhembe District where the difference is 12.7% in EMS and 9.5% in Natural Sciences. The most significant difference is recorded in Capricorn in EMS with 37.7% and Sekhukhune in Natural Sciences with 16.1%.

School quintile levels are presented in Graph 5.8 (province) and Table 5.8 (districts) below:

Graph 5.8: Learner performance per quintile level of the schools



	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
EMS	27.5	27.6	28.2	40.2	47.4
NS	19.6	19.4	20	30.4	33.7

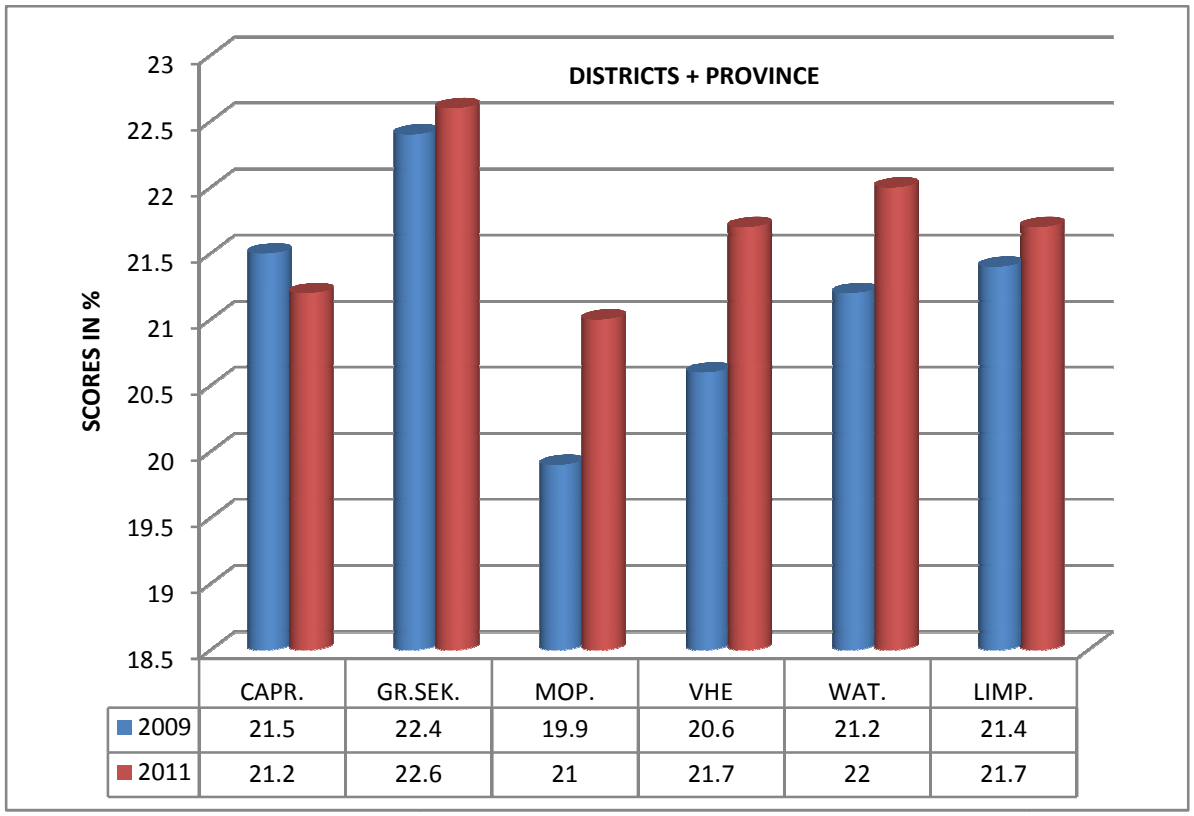
Table 5.8: District performance per quintile

DISTRICT	Q 1		Q 2		Q 3		Q 4		Q 5	
	EMS	NS	EMS	NS	EMS	NS	EMS	NS	EMS	NS
CAPRICORN	30	20.1	27.6	18.6	30.9	18.7	55.1	29.3	67.7	35.2
GREATER SEKHUKHUNE	22.8	18.4	29.5	22.7	33.8	26.8	39.1	24.7	49.6	34.5
MOPANI	26	19.8	27.5	20.4	28.7	19.9	35.2	27.2	41	33.4
VHEMBE	32.6	20.3	25.7	18.6	25.7	19.9	46.1	35.5	45.3	29.8
WATERBERG	25.9	18.7	26.5	19.7	28.9	19.2	0	0	42.1	34.7
PROVINCE	27.5	19.6	27.6	19.4	28.2	20	40.2	30.4	47.4	33.7

5.29. A comparison between the 2009 and the 2011 se studies (Natural Sciences)

In 2009, the Department of Basic Education together with the Human Science Research Council conducted a national study in the three Learning Areas, Language, Mathematics and Natural Sciences. In the 2011 provincial study Natural Sciences was also evaluated. Graph 5.9 below, illustrates a comparison in Natural Sciences between the 2009 and the 2011 studies. There is a slight improvement of 0.3% in the 2011 study. Four districts, i.e. Greater Sekhukhune, Mopani, Vhembe and Waterberg registered minimal improvement. It is only in Capricorn district where a slight decline in learner performance was noted. The differences in performance between the 2009 and the 2011 studies are not significant.

Graph 5.9 Comparison between the 2009 and 2011 results in Natural Sciences



5.2.10 Main findings

- 52% of learners in Grade 9 are 16 years and above
- The majority of learners are performing at Performance Level 1 – *Not Achieving*
- Learners are struggling with open-ended questions
- Learners are only able to answer questions that test knowledge, but are unable to answer questions that test comprehension, application, analysis, synthesis and evaluation

5.2.11 Recommendations

- Learners should be given written work frequently, using a variety of assessment forms
- Educators should be empowered on content knowledge, especially in Accounting
- Special attention should be given to Life and Living (Natural Sciences) as this prepare learners for Life Sciences in the FET Band
- Support currently invested in the FET Band should be inclusive of the Senior Phase

5.3 CONTEXTUAL FACTORS HAVING AN IMPACT ON TEACHING AND LEARNING IN GRADE 9

The constructs that were used in the contextual instruments were based on the findings of previous studies that were done provincially (*Best practices from top performing outliers (*LDoE: 2010), nationally (*Schools that work:* Christie, P *et* al: 2007) and internationally (*In search of quality: what the data tells us*: UNESCO News letter No 3 Vol. XXV111:2010).

It is generally perceived that contextual influences can have an impact on learner performance. This impact can be either positive or negative, depending on the location, physical and human resources, poverty level, etc. of the school and the community. The report of the Ministerial Committee on *Schools that Work* (2007) that was done in secondary schools across the country, however, indicates that 'context does not over-determine how effective schools are, strong though its influence may be. Human agency is able to shape social circumstances and change history '(2007:103). They continue to say that the reaction of public institutions on dealing with failure includes, 'denial, task avoidance, demotivation, lowering expectations of self and others, projection of blame, a sense of powerlessness and a lack of agency' (2007:28).

This chapter is based on the background stated above. Taking into account the policies that were put in place to ensure effective teaching and learning and how well these are implemented, and the intervention strategies employed by the school, interviews were conducted with the school principal and the educators. The contextual factors that were looked at, include Leadership, Management and Coordination; Educator Development; Teaching and Learning; Governance; and Educator Attitudes. Findings are reported under each section.

5.3.1 LEADERSHIP, MANAGEMENT AND COORDINATION

In *Schools that Work,* Coleman *et al (*2007: 104), prioritizes schools that work as 'focusing on their central task of teaching, learning and management', having 'organizational cultures …….that supported hard work' and having 'strong internal accountability systems in place'. These characteristics imply a strong, effective and efficient management team. The schools that were found to be 'working schools' in the Coleman *et al* study, were schools that achieved acceptable learning outcomes. It implies therefore that schools achieving better results, are having effective school management teams.

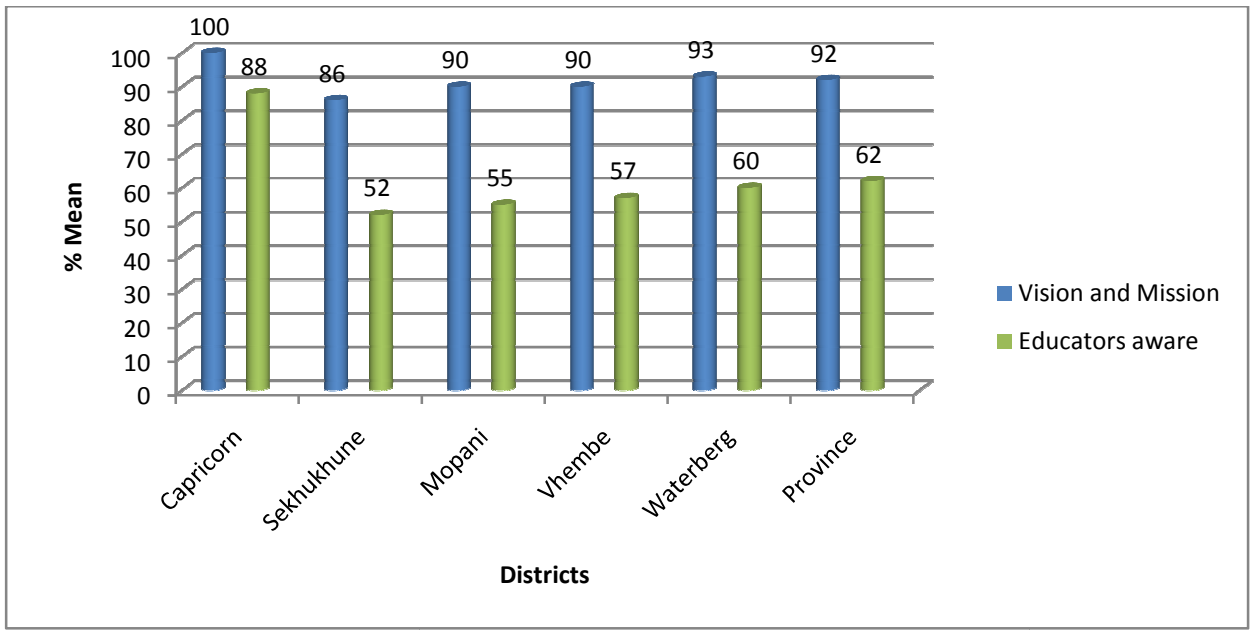
School Management Teams need basic policies to manage the smooth running of schools. Educators and learners should be governed by a code of conduct to ensure that effective learning and teaching takes place according to national policy. Of special interest is a leave register for educators and how occasional leave is taken during school hours. The way this is regulated at school, has a direct impact on the daily seven hours reserved for contact time. A fully fledged School Improvement Plan (SIP) and a religious policy on handling the rights of learners in our diverse society are also required. For the interest of this study, the availability of basic policies for the effective management of schools was looked at.

- **Vision and Mission statements**

Schools were found to have both vision and mission statements, in fact a high percentage (92%) schools have these documents. When looking at whether educators know these documents, it was found that only 62% educators could recall the contents thereof. In some districts it was as low as 52% or 55%. It would seem that these statements are either very old and of no meaning to the school any longer or only kept as a matter for compliance. The vision and mission of a school should direct all activities to perform to its best ability. Vision and mission statements found at school seldom serve the purpose of education in the twenty-first century.

The availability of these statements and educators' knowledge thereof, are presented in Graph 5.10 below:

Graph 5.10: The availability and knowledge of vision and mission statements in percentage



- **The availability of policies and procedures**

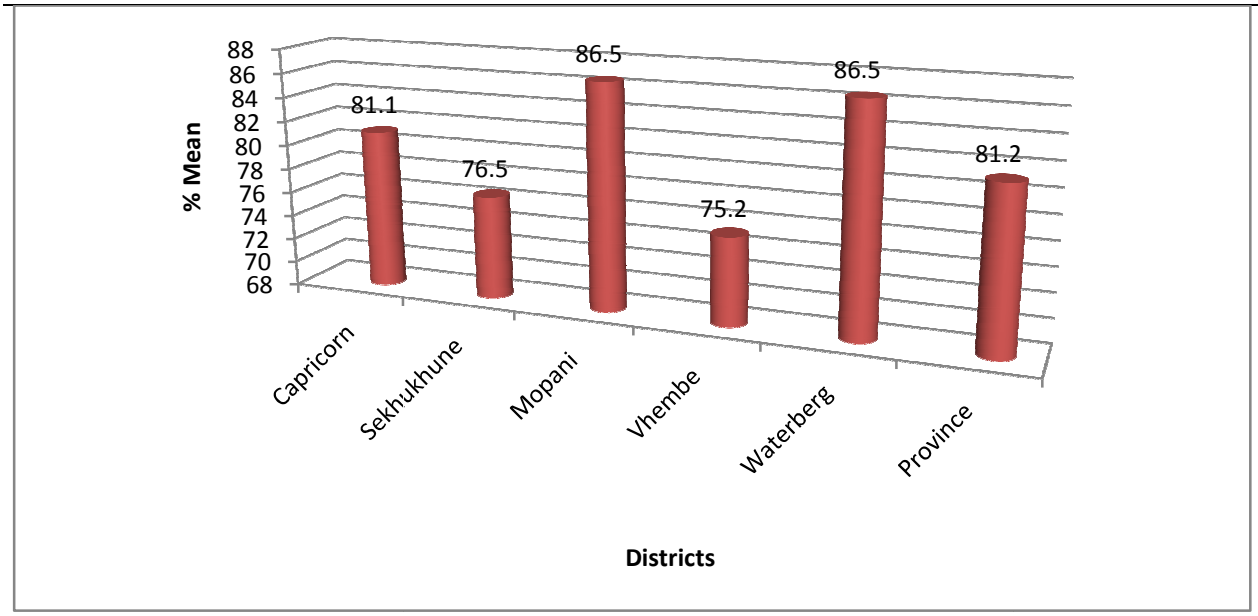
Basic policies were available in a significant percentage (81.2%) schools across the province. Schools in Mopani and Waterberg Districts indicated the highest availability (86.5%) with Sekhukhune and Vhembe Districts having the lowest availability (76.5% and 75.2% respectively). Policies and procedures that were the least available provincially were Educators Code of Conduct (73%), Religious Policy (58%) and a relevant SIP (52%). Where a educators' code of conduct was found, it was mostly a copy of the SACE document and not amended to suit the needs of the school.

The SIP of the school is an important document where intervention strategies and teacher development is planned. If the SIP is not properly planned and implemented a valuable tool is lost for improving learner performance.

Policies on learner attendance (95%), educators' leave (93%) and admission of learners (93%) were mostly available. Schools reported that they monitor the performance of educators (82%) and the implementation of the curriculum (85%). It was, however, observed that schools regard the monitoring process of the Integrated Quality Management Systems (IQMS) as sufficient and do not monitor performance of educators regularly to identify possible challenges for teacher development.

Availability of policies or procedures at schools is presented in Graph 5.11 below:

Graph 5.11: Availability of policies and procedures



Policies and procedure are available at schools to ensure proper teaching and learning takes place. Support is needed in schools to assist them to implement these ultimately.

Conclusion: The vision and mission statements of schools are outdated and do not serve the needs of the community or the school any longer. These documents, together with the School Improvement Plans (SIPs) are available but not implemented to improve learner performance. Schools have a Code of Conduct for educators, mainly the one provided by the South African Council for Educators, but a document serving their own needs, should be available.

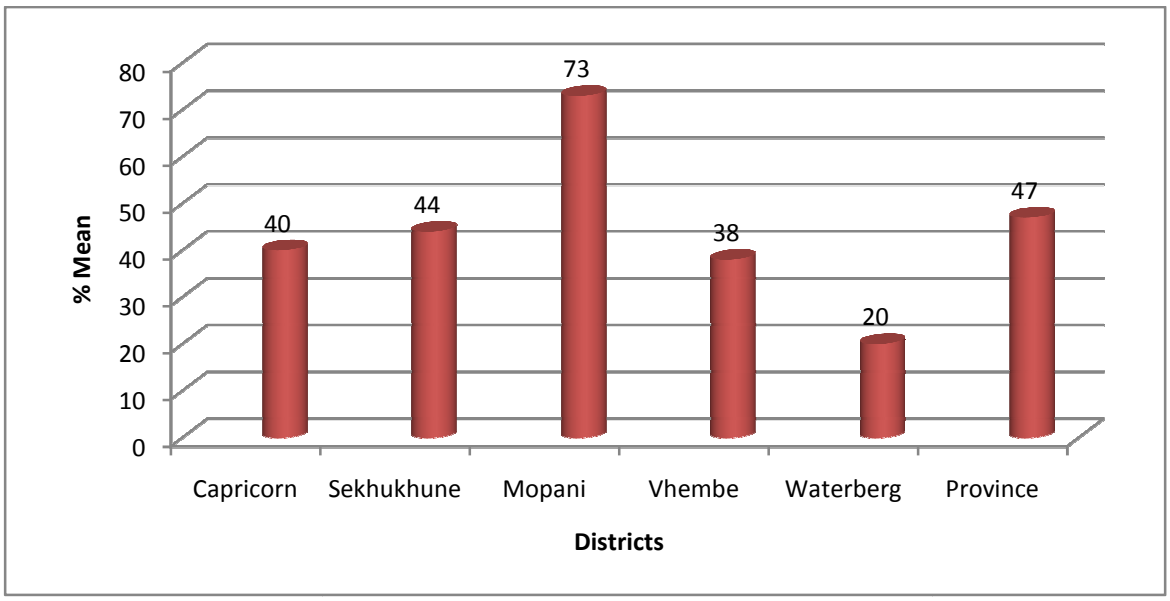
5.3.2. EDUCATOR DEVELOPMENT

Educators are the most valuable resource in our schools. The Minister of Basic Education commented in her Budget Vote Speech of 2011/12 that 'educators are a critical resource for improving quality in schools'(Motshekga: 10). Educators, therefore, need to be properly equipped with appropriate knowledge and skills to educate learners efficiently. One of the most valuable ways to enrich educators' knowledge and skills, is through continuous educator development. The Department of Education introduced the *Collective Agreement No 8 of 2003 on Integrated Quality Management Systems* to address, *inter alia,* the development of educators. Based on educators' Personal Growth Plans (PGPs) and continuous observation in class, the Staff Development Team (SDT) should develop educators in areas that they find challenging. Educator development is now discussed under the following headings:

- **Educators' qualifications**

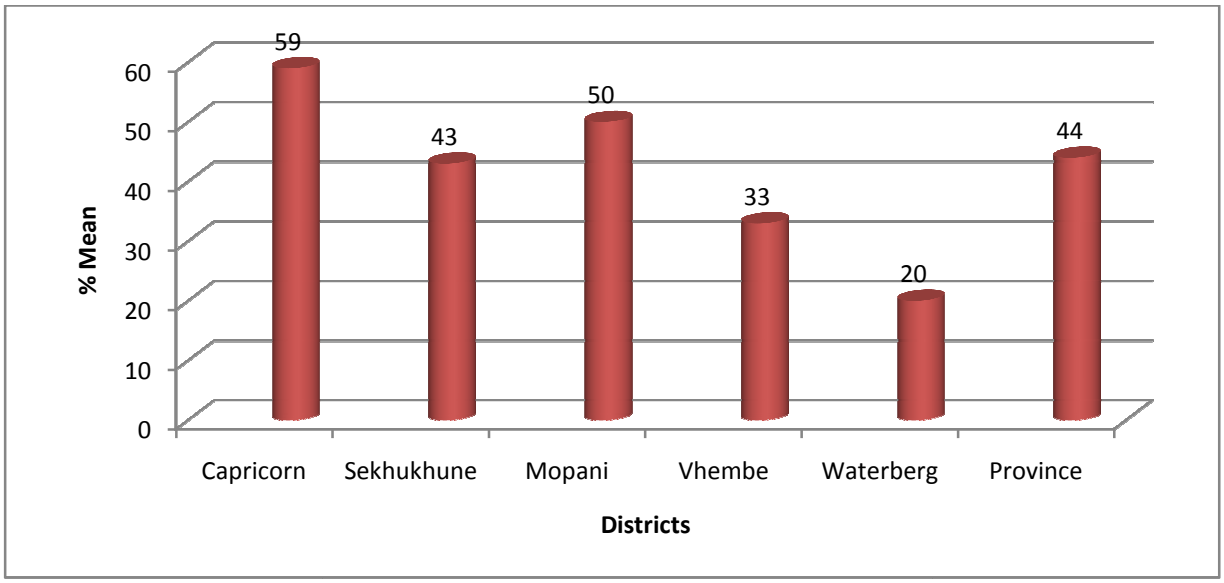
Educators are under-qualified to teach Natural Sciences and Economic and Management Sciences in Grade 9 successfully. A large percentage of educators have academic qualifications of Grade 12 and lower in these learning areas. Educators' basic knowledge of scientific facts in Natural Sciences might not be sufficient to provide learners with the firm foundation they need to progress in Physical Science in the Further Education and Training Band. Resources for doing experiments are also not freely available in our schools, therefore, one of the critical learning outcomes in Natural Sciences is neglected. Educators might not have the knowledge and skills to improvise, and need to be developed. Educators having an academic qualification in Natural Sciences of Grade 12 or lower, are presented in Graph 5.12 below:

Graph 5.12: Natural Sciences educators having an academic qualification of Gr 12 or lower in percentage



During data collection in 2011, educators indicated their challenges in the two learning areas that were evaluated in secondary schools. EMS consists of three economic learning areas (Economics, Accounting and Business Economics), requiring educators to have a fair amount of knowledge of all three. During original educator training, few educators were qualified in all three learning areas. A educator who has not been trained in Accounting, find it difficult to cope with learning outcome 3, dealing mainly with accounting principles. These educators should be assisted and developed through the IQMS process. Of special interest is the high percentage of educators in this category in Capricorn (59%). When looking at the performance of the learners in Capricorn in EMS, it would seem that educators found means to counter this. EMS educators having and academic qualification of Grade 12, or lower, is presented in Graph 5.13 below:

Graph 5.13: EMS educators having an academic qualification of Gr 12, or lower, in percentage



- **Development through internal and external workshops**

Educators should be developed internally by the school, and externally by the Circuit, District and the Province. Natural Sciences educators indicated that 47% educators attended external workshops in their learning area. The most workshops in Natural Sciences were held in Vhembe and Waterberg Districts (64%). Fewer workshops were held in EMS, with an average of 36% recorded. Educators in Vhembe District attended the most workshops scoring 50%. Educators recorded that they were not invited to workshops in these two learning areas in Mopani.

- **Development through further studies**

Educators that are not developed in their schools or in their appropriate districts have to rely on furthering their studies to enrich their knowledge and skills. It was recorded that only 29% educators are furthering their studies in Natural Sciences and 28% in EMS. Funding seems to be one of the main reasons for not studying in their relevant areas. Other reasons that were given indicated that educators further their studies in other areas, e.g. educational management. Some also indicated that they have recently been given this particular learning area and were still busy with other studies.

- **Educators' experience**

Educators in the Province are highly experienced with 71% Natural Sciences educators having taught for at least ten years. The most experienced educators were recorded in Mopani District, where 94% Natural Sciences educators have ten or more years experience. Educators' experience in the Senior Phase is the highest in Capricorn (14 years mean), compared to the provincial mean of 10 years.

Educators teaching economic learning areas for at least ten years, average 67%, with the most experienced educators in Mopani District (95%) and Vhembe District (94%).Mopani educators also recorded the highest number of years (13)having taught in the Senior Phase. It would be expected that the experience found in Mopani District would have a positive correlation with learner performance. Mopani, however, recorded the lowest score (21%) amongst the districts.

- **Educators' performance measurement**

Data was collected on the existence and functionality of the SDT, the Development Support Group (DSG) and the School Improvement Plan (SIP). Educators indicated that the SDT (89%) and the DSGs (87%) are available in schools. They also complete their personal growth plans (85%) and these are included in the school improvement plan (85%). Educators regarded only 75% SDTs and 80% DSGs to be functional. It would seem that structures have been put in place, but that the evaluation and development of educators are not a priority in our schools.

Educator development is not done effectively in the schools, since challenges are often not identified through class visits and the correct completion of personal growth plans.

- **Conclusion**

Internal and external workshops seem to be problematic. Educators still lacking content knowledge, should be developed as a matter of urgency.

5.3.3 TEACHING AND LEARNING

The core function of the Department is to deliver quality teaching and learning to the youth of the country. Limpopo Department of Education has continuously improved learner performance in Grade 12 over the past few years. It is evident from this evaluation that learner performance in Economic Management Sciences (31.4%) and Natural Sciences (21.7%) do not reflect the same quality results.

The Minister of Basic Education commented in her Budget Vote Speech of 2011/12 that South African schools 'do not manage and cover the curriculum adequately'. This statement could imply a number of shortcomings in curriculum delivery: e.g. the syllabus might have been completed, without learners having grasped everything; certain sections, such as the Accounting section of EMS or the practical part of Natural Sciences might have been neglected due to insufficient knowledge of Accounting by the EMS educator or lack of resources to do experiments; inadequate planning and the pacing of work.

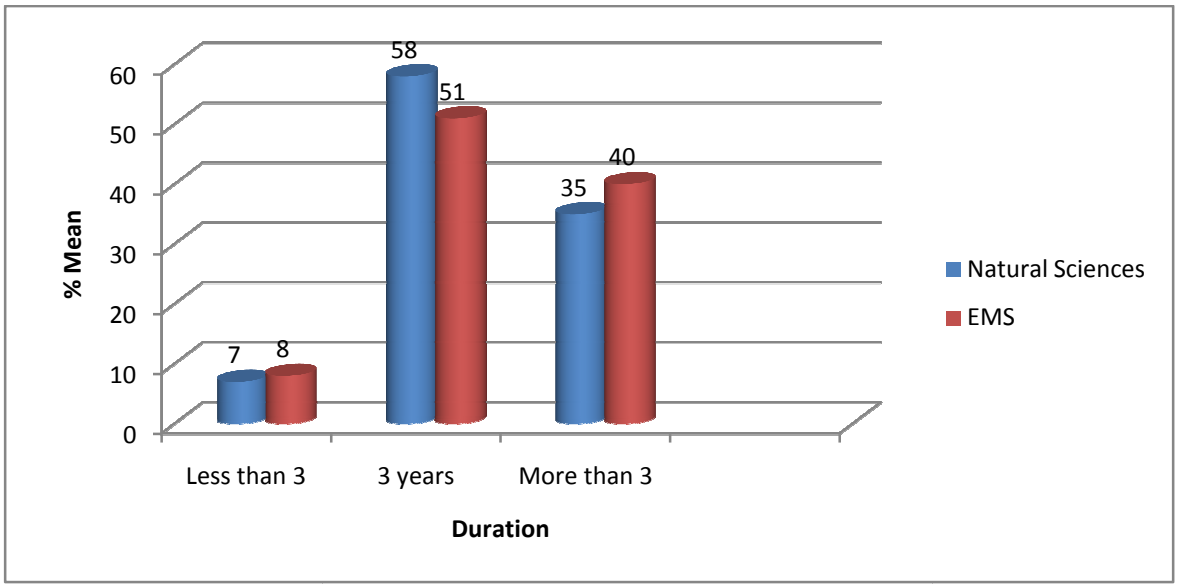
Learner performance in South Africa, and also in Limpopo, indicated low performance in the Trends in Mathematics and Science Study (TIMMS) evaluations that were done internationally in 2007. South Africa scored the lowest of 45 countries in science in Grade 8. (IIEP: 2010).

Having this background in mind, the quality of teaching and learning was evaluated in Grade 9 schools.

- **Years of professional educator training**

Beside educators' academic qualifications in Natural Sciences and EMS, they also need professional knowledge and skills to present quality teaching in schools. Lesson planning, assessment, teaching strategies, the use of resources and setting of targets are amongst some of these. The duration of professional training was looked at in both learning areas. In Natural Sciences only 7% educators had less than 3 years professional educator training, with 8% in EMS. The highest percentage of educators having more than three years training is 56% for Natural Sciences in Vhembe and 56% for EMS in Sekhukhune Districts. Educators therefore seem to have received adequate professional training to understand the teaching profession. Educators' years of professional training is presented in Graph 5.14 below:

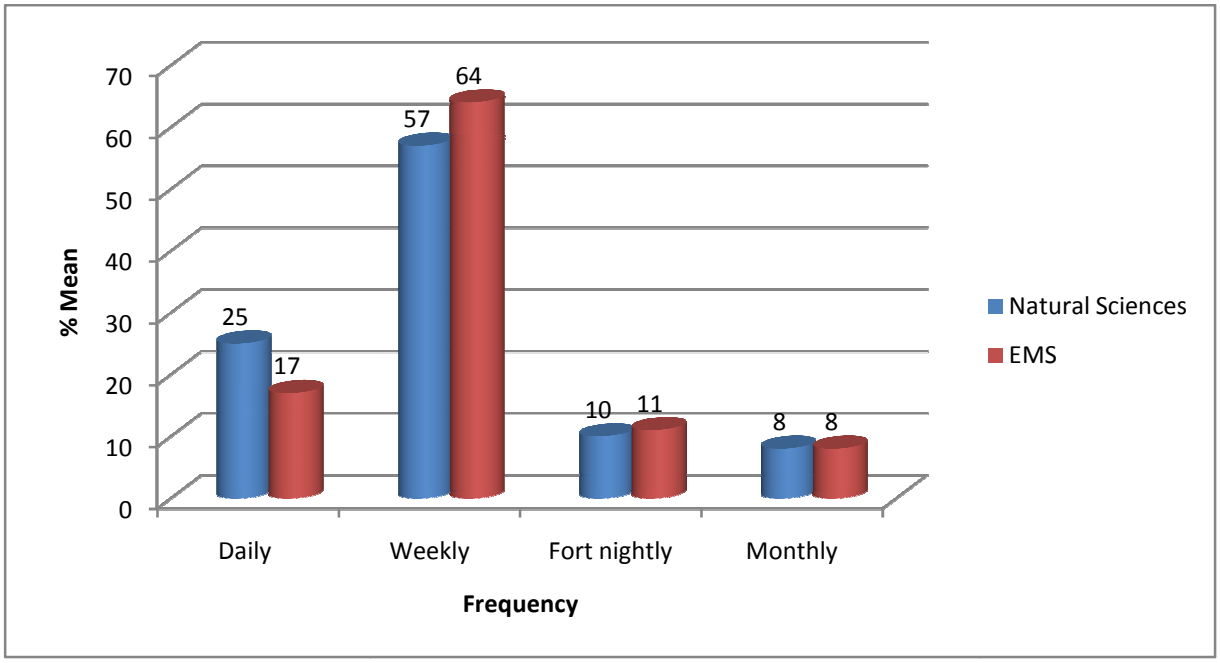
Graph 5.14: Educators' years of professional training



- **Lesson planning**

Lesson planning is mostly done on a weekly basis (57% and 64% respectively), with25% Natural Sciences and 17% EMS educators planning daily. Learner performance in Natural Sciences and EMS is relatively low, which might imply that although lessons are planned, the quality, or the presentation thereof, may be low. The frequency of lesson planning is presented in Graph 5.15 below:

Graph 5.15: The frequency of lesson planning



- **Teaching strategies/methods most frequently used**

Educators were given a list of teaching strategies to indicate which of these they use frequently while teaching. Natural Sciences and EMS educators indicated that they use group discussions the most frequently. This is followed by demonstration and experiments in Natural Sciences and telling and problem solving in EMS. Educators in both learning areas indicated that the strategy they seldom used is code-switching to the mother tongue.

- **Learning Outcomes found more challenging**

EMS is a learning area consisting of three Learning Outcomes that are taught as independent learning areas in the Further Education and Training Band. These learning areas are Accounting, Economics and Business Economics. Educators qualifying in these learning areas, seldom qualified in all three. The most commonly learning area of these three not taken at tertiary level is Accounting. Accounting seems also to be viewed as more difficult. The Learning Outcome found most challenging in EMS is the outcome dealing with Accounting at large.

The Learning Outcome dealing with Natural Sciences that educators find most challenging is Learning Outcome 3, which deals with experiments. This might be since resources to do experiments are not freely available in schools.

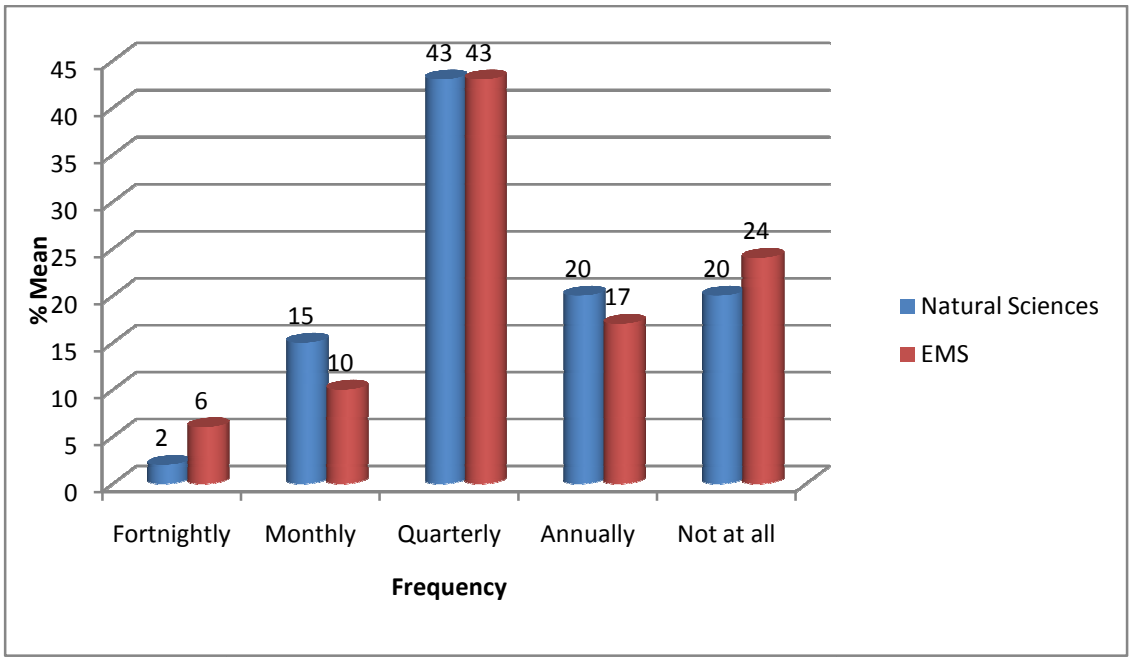
- **Frequency of class visits by School Management Team (SMT) members**

Class visits should be seen as an opportunity to assist, support and develop educators. Challenges, that could impact negatively on learner performance should be identified and addressed immediately. Educators doing an outstanding contribution to learning and teaching should also be appreciated and supported in all their needs.

Class visits are mainly done quarterly as most (43%) respondents indicated. Class visits are often done only for IQMS purposes and are then done towards the end of the academic year when summative evaluation becomes necessary. Class visits done annually are 20% (Natural Sciences) and 24% (EMS) respectively.

The frequency of class visits by the SMT was evaluated and is now presented in Graph 5.16 below:

Graph 5.16: Frequency of class visits by SMT



- **Learning area meetings**

Educators should attend learning area meetings where challenges with teaching practice, learner performance, planning, etc. should be discussed. This is also an ideal opportunity to do informal educator development.

Educators reported that learning area meetings are held mostly once a quarter (46% in Natural Sciences and 43% in EMS). In some instances these meetings are held once a year (20% in Natural Sciences and 16% in EMS). This might be during the first staff meeting held at the beginning of the year where educator development, based on class visits can not be addressed. Of particular interest are the 20% schools in Natural Sciences and 23% in EMS that reported that no learning area meetings are held at their schools.

In conclusion it can be said that learning area meetings are held at most schools but that the quality of discussions might not contribute to improved learner performance.

- **Resources most frequently used in teaching and assessment**

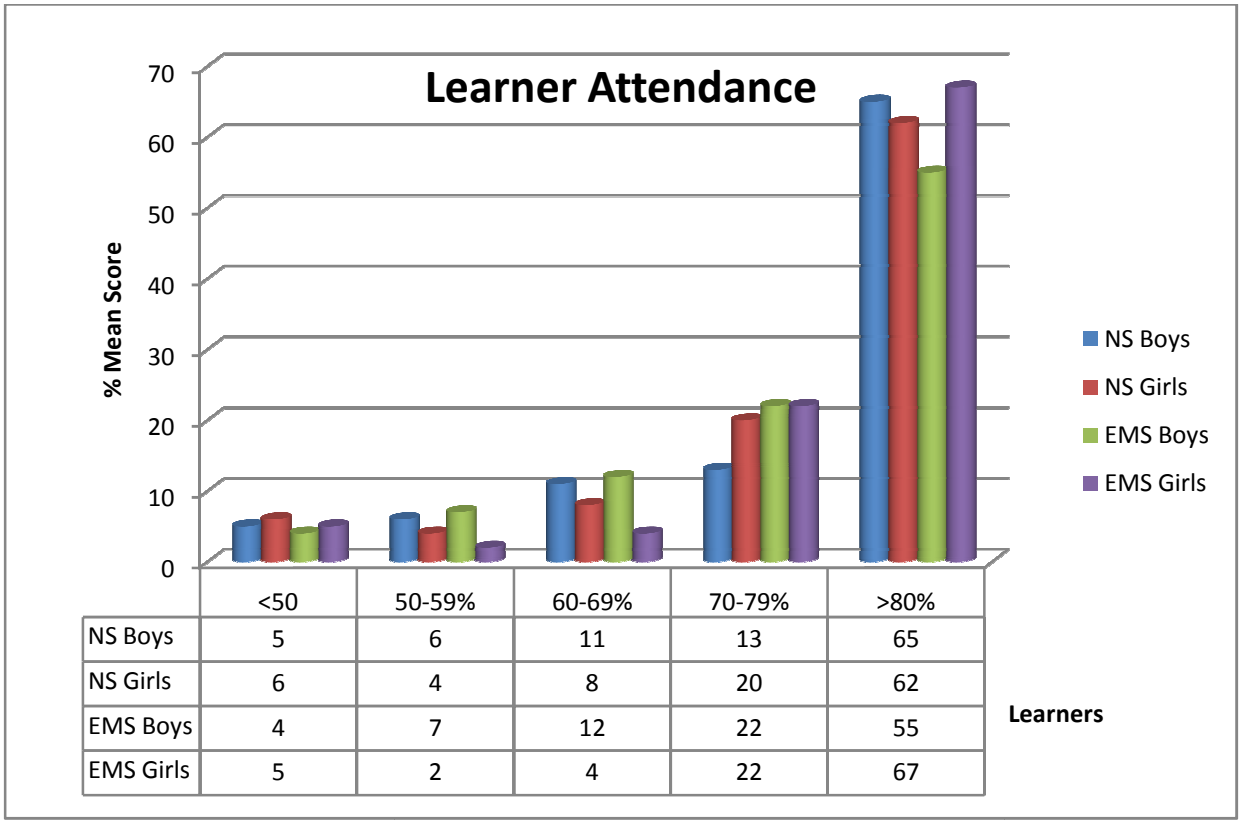
Educators were given a list of possible resources. They had to indicate which of these they use more frequently. They indicated that the resources most frequently used are Work Schedules, Textbooks and Milestones.

Resources least often used are Teaching Aids/Science kits, Policies and the National Protocol on Recording and Reporting (NPRR). Where the language of teaching and learning (LOLT) is not the same as the learners' mother tongue, it is imperative that teaching aids be available and used to achieve effective teaching and learning.

- **.Learner Attendance during July/August 2011**

Learners need to be in class to ensure effective learning. Educators reported that 38% learners were not attending 80% of lessons in July/August 2011. Of special concern are the 5% learners attending less than half of the lessons. Reasons for their absenteeism should be investigated, preventing a negative impact on learner throughput. Learner attendance is presented in Graph 5.17 below:

Graph 5.17 Learner attendance



	<50	50-59%	60-69%	70-79%	>80%
NS Boys	5	6	11	13	65
NS Girls	6	4	8	20	62
EMS Boys	4	7	12	22	55
EMS Girls	5	2	4	22	67

- **Formal assessments**

Van der Berg et al in analyzing the PIRLS results, indicate that, 'more frequent diagnostic testing and class exercises were also linked to better performance' (2011:08). Frequent formal testing is, therefore, recommended to improve learner performance.

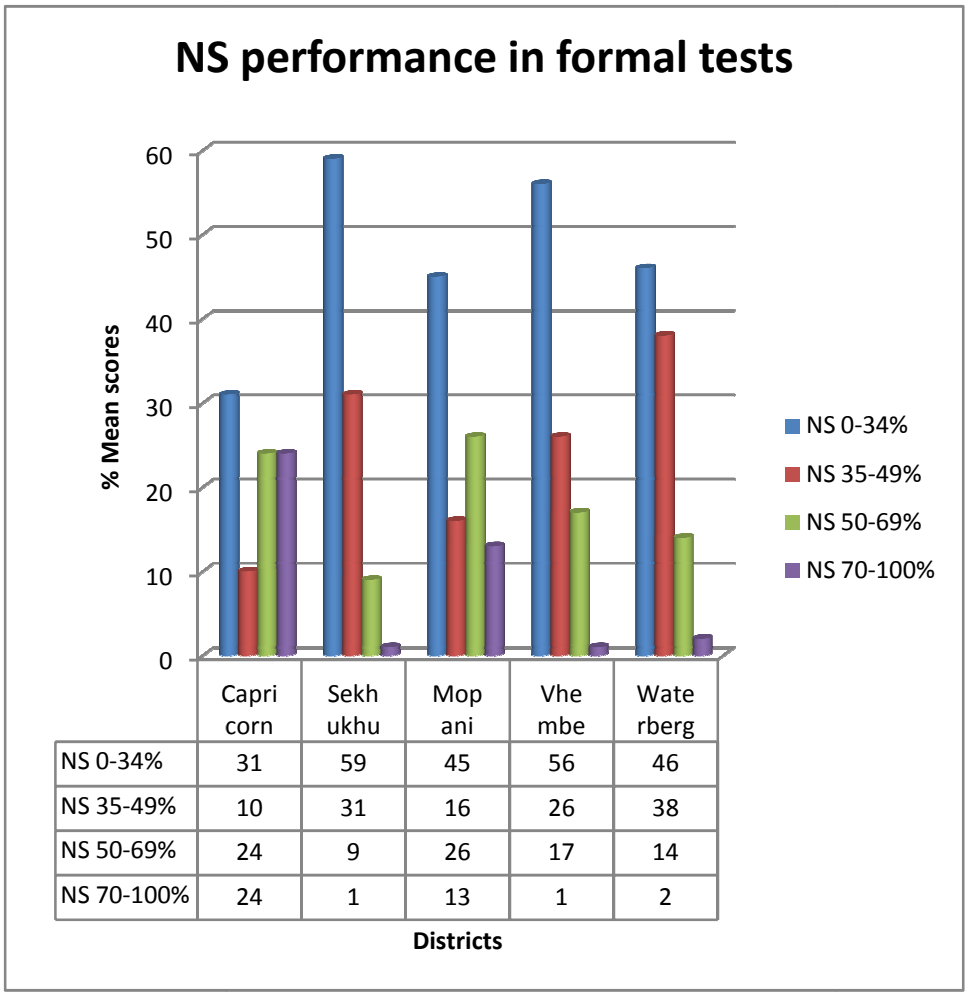
- ✓ **The frequency of formal testing in Grade 9:** Learners write formal tests mostly once a month, with some schools writing formal tests quarterly and a few once a month. The frequency of formal tests is presented in table 5.9 below:

Table 5.9: Frequency of formal assessment in percentages

District	Once per week		Once a month		Once per quarter	
	NS	EMS	NS	EMS	NS	EMS
Capricorn	0	0	93	93	7	7
Sekhukhune	0	0	65	55	35	45
Mopani	10	10	68	75	22	15
Vhembe	0	0	56	72	44	18
Waterberg	0	10	75	60	25	30
Province	2	20	71	71	27	9

- ✓ **Learner performance in formal tests**: Learners do not perform well in formal testing. A significant number of learners perform at the *Not Achieved (*38%) or *Partially Achieved* (35%) levels in EMS with 47% and 24% in Natural Sciences respectively. The highest percentage (48%) learners scoring above 50% is found in Capricorn District. Greater Sekhukhune District has the highest percentage (59%) learners scoring at the *Not Achieved* level. District performances are presented in Graphs 5.18 and 5.19 below:

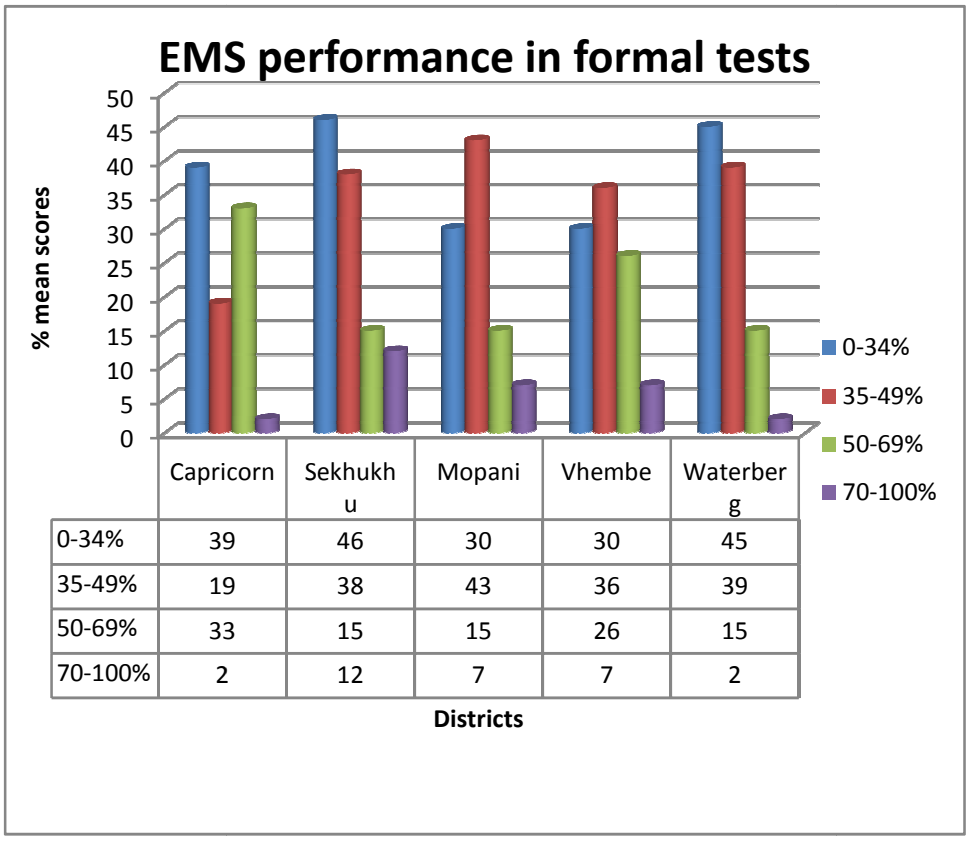
Graph 5.18: Natural Sciences performance in formal tests



	Capricorn	Sekhukhu	Mopani	Vhembe	Waterberg
NS 0-34%	31	59	45	56	46
NS 35-49%	10	31	16	26	38
NS 50-69%	24	9	26	17	14
NS 70-100%	24	1	13	1	2

Learner performance in EMS indicates that Capricorn District has the highest percentage (35%) learners amongst districts performing above 50%. Greater Sekhukhune and Waterberg Districts have the highest percentage (46%) learners performing at the *Not Achieved* level.

Graph 5.19: EMS performance in formal tests



	Capricorn	Sekhukhu	Mopani	Vhembe	Waterberg
0-34%	39	46	30	30	45
35-49%	19	38	43	36	39
50-69%	33	15	15	26	15
70-100%	2	12	7	7	2

- ✓ **Moderation of formal tests:** All schools reported that formal tests are moderated by the Senior Management Team (SMT) before they are administered.

- ✓ **District and provincial common tests**: Educators reported that 95% schools write quarterly provincial or district tests. In Waterberg District 2% schools, and in Greater Sekhukhune District 3% said they don't write common tests.

- ✓ **Analysis of formal assessment**

  Educators reported that they analyse all learner performance in 50% schools in both learning areas, whilst some (40% in Natural Sciences and 41% in EMS) only analyse common tests. This analysis is reportedly used for identification of learner challenges and remedial work.

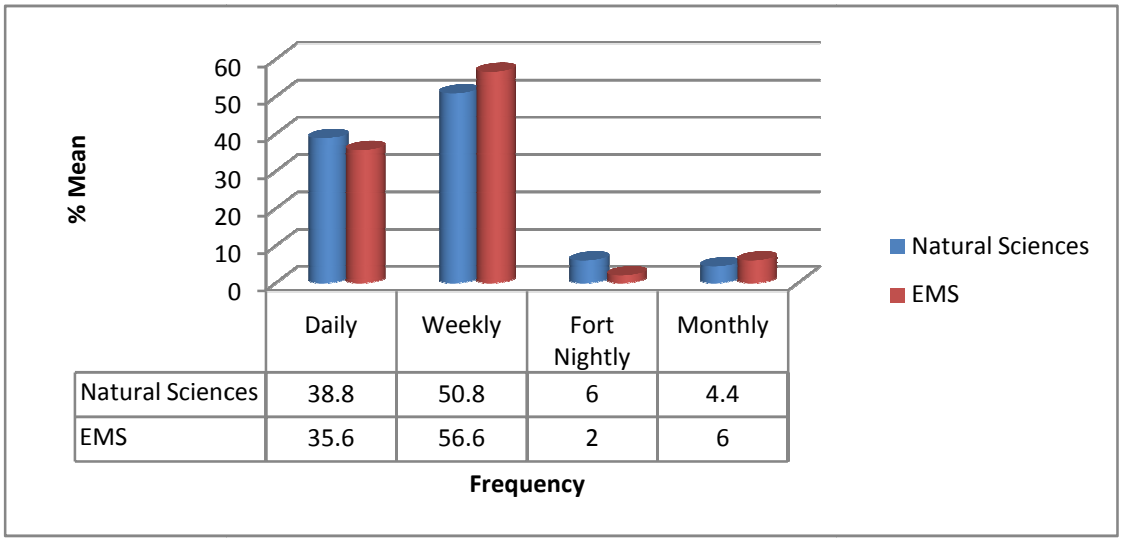
Of special concern is the 10% (Natural Sciences) and 9% (EMS) educators who never analyse learner performance.

- **Written work**

✓ **Frequency of class and home work**

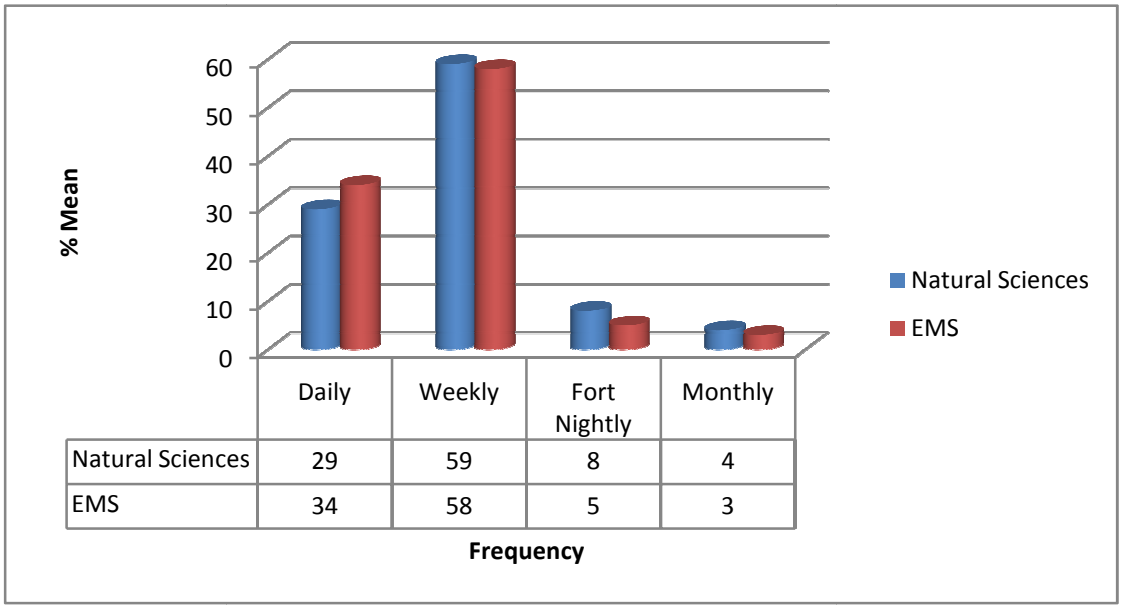
Written work should be done regularly to improve construction of sentences, transferring thoughts into words and for spelling, reasoning and handwriting. Learners did not do well in the short-answer questions and in questions that required analysis, reasoning, application, evaluation or comprehension. The results of this study show that class work and homework are given mostly on a weekly basis (>50%). Class work done on a daily basis (38.8% in Natural Sciences and 35.6% in EMS) should have a positive effect on learner performance. Learners doing written work once per fortnight or once per month, might not receive the necessary exposure to written work.

Graph 5.20: Frequency of class work in EMS and NS



	Daily	Weekly	Fort Nightly	Monthly
Natural Sciences	38.8	50.8	6	4.4
EMS	35.6	56.6	2	6

Graph 5.21: Frequency of homework in EMS and Natural Sciences



✓ **Controlling of written work**

Educators mostly control learners' work on a weekly (55%) or daily (27%) basis. Approximately 7% educators only control learners' work once a month. An opportunity for revision and feedback of challenging context is hereby lost.

- **Educators' views on challenges to teaching and learning**

Educators were given a list of possible challenges to teaching and learning in their schools. Although the percentages differ slightly between the two learning areas, educators agree that homework not being done, is the most challenging. In informal discussions educators agreed that a possible cause might be that the unavailability of text books might contribute to this. The results are presented in Table 5.10 below:

Table 5.10: Challenges to teaching and learning experienced by educators

Challenges	Natural Sciences	EMS
1. Learners not doing home work	30%	30%
2. Overcrowding	25%	24%
3. Ill-discipline in class rooms	22%	23%
4. Late-coming	12%	13%
5. Bunking classes	11%	11%

- **Target setting**

  Performance targets should be set to specific Grades, learning areas and learners. Learning area targets are not stable, but should be adjusted according to learner performance throughout the year. It was found that targets are set in 72% schools (Natural Sciences) and 74% (EMS). Capricorn District presented the highest percentages of 92% and 87% respectively, whilst Greater Sekhukhune and Mopani Districts had the same lowest percentages of 55% and 60% respectively. When analyzing the targets set by districts and schools, it is clear that targets are not realistic and achievable. The average mean target set provincially for Natural Sciences is 71.4% and that for EMS is 72%. When looking at the means for the above learning areas achieved in the systemic evaluation test (Natural Sciences is 21.7%; EMS is 31.4%) targets set by schools are unrealistic and unachievable.

5.3.4. GOVERNANCE

The DBE prescribes in the South African Schools' Act (Act 84 of 1996, Chapter 3, Par. 16.1) that all schools should be governed by a School Governing Body (SGB). The SGB is a legal structure, holding office for a three-year period. Certain functions, i.e. regulation of the finances of the school and developing of a School Development Plan (SDP), are prescribed functions of the SGB.

The SGB is expected to manage and control the finances of the school effectively, to submit financial statements to be audited annually and to report to parents during a formal parents' meeting on the financial status of the school. Since learner performance is the key objective of a school, at least 60 percent of funds should be directed at teaching and learning.

The SGB should have a clear constitution with members who are properly constituted and trained to do its functions effectively.

A School Development Plan (SDP) must also be developed for the school for the time of office of a specific SGB. The SDP is a broad three-year planning structure, reflecting professional and physical development, against the vision and mission of the school.

The SGB, with its functions and the implementation thereof, was looked at. It was found that 89% schools have a clear SGB Constitution, with Greater Sekhukhune district reporting that all schools have clear constitutions. SGBs are properly constituted in 93% of schools, they meet as required by their constitutions (88%) and have been trained in 83% of schools.

SGBs compile an annual budget in 90% schools which is presented in 87% schools to the parent community for approval. The SGB ensure that financial statements of schools are prepared annually (93%) and monitor the expenditure of the budget by the school in 93% schools. Schools seem to comply with the prescriptive to allocate 60% of the budget to teaching and learning. The only district that recorded a lower percentage (51%), was Waterberg. During data collection it was observed that SMTs are not clear on what is meant by 'teaching and learning' on the budget. Different activities, e.g. computers for office use, erecting a fence, building classrooms, etc. are included. This should be clarified to schools to ensure that the 60% of the budget is allocated to items as indicated.

The overall best performances of SGBs were recorded in Vhembe District (93.4%) and in Greater Sekhukhune District (93.2%). The lowest performance of SGBs was recorded in Capricorn District with 78%.

Schools also indicated the frequency of communicating with different structures. The majority of schools (50%) communicate with their SGBs on a monthly basis, with 35% schools communicating quarterly. Some schools communicate daily (3%) and some weekly (6%). Six percent schools indicated that no communication with SGBs is taking place at their schools.

Schools also communicate with the Department of Health and Social Welfare. Most (59%) schools see this Department at least once per quarter, whilst 12% schools have no contact with this Department. The district recording the lowest percentage for communicating with this Department is Vhembe District.

During data collection it was mentioned that schools need continuous counseling services to address the social, economic and academic needs of learners. Learners' need of special education, e.g. hard hearing learners or learners with challenges in progressing, are often neglected as educators don't have the necessary skills to assist them. Learners in child-headed families are also common in the province and these learners often drop out of school to care for their families. Learner pregnancies add another burden to educators' diverse challenges. Counseling services, offered by the Department, can assist in normalizing these challenges.

Seventy percent (70%) schools communicate on a monthly or quarterly basis with the Department of Safety and Security, whilst 10% schools have no contact with them.

Conclusion

Schools need to be clarified on the 60% of the budget that should be allocated to teaching and learning. There are some misconceptions on the items that are included under this objective.

5.3.5 EDUCATORS' ATTITUDES

Much has been said about the influence of the socio-economic background of learners on their academic achievement in school. Whilst it is acknowledged that teaching and learning is not independent of a learner's background and social context, history in Limpopo proved that there are other important factors that can have an influence on how well schools work and learners achieve. When looking at learner performance in Grade 12 in Limpopo, some schools in rural areas compete with the best in urban areas, e.g. Dendron High. In the systemic evaluation study that was done in 2010, a quintile 1 school was found to be amongst the top ten performers in Grades 3 and 6.

It leaves no doubt that an educator plays the largest role in the performance of learners, as Christie says 'learner performance is directly attributed to the competence of a educator' (2007:107). The influence of the educator is so important that Christie *et al* believe that 'human agency is able to shape social circumstances and change history' (2007:103). Elmore is also cited in *Schools that Work* that internal accountability 'precedes external accountability and is a pre-condition for any process of improvement' (2007:110).

Educators' attitudes towards teaching and learning; even the circumstances under which they are rendering their service, can influence the effectiveness of how they are teaching and how learners are learning. Educators' attitudes towards their tasks were, therefore, looked at. They were presented with certain questions and requested to respond as honestly as possible but it should be kept in mind that some of their answers might not reflect their true feelings. We will now report on some of the questions we asked educators and their responses.

- **Educators attitudes towards Natural Sciences and EMS teaching**

Educators are mostly content (81%) teaching Natural Sciences and EMS, despite the fact that 20% respondents provincially, and 38% respondents in Waterberg District indicated that they do not have the content knowledge to do so. They also indicated that 23% provincially and 43% in Greater Sekhukhune District would not teach these learning areas if they had a choice. If educators feel more empowered in these learning areas, they might also enjoy teaching them.

They display, however, a positive attitude towards their work (97%) and feel that these learning areas are important (97%). Educators reported that learners in Capricorn (94%) are very motivated to learn in these learning areas as opposed to the 86% provincial mean.

- **Educators' attitudes towards teaching in the current system**

Only 54% educators feel satisfied teaching in the current system, with Capricorn District recording the high rate of 81%. Educators provincially feel that they were more enthusiastic when they began teaching (46%) as opposed to the 75% educators in Waterberg feeling less enthusiastic now. Educators also feel that they would, in 28% provincially and 48% in Greater Sekhukhune District leave teaching for another job.

- **Educators' feelings on appreciation and support**

Although educators do not feel fully content in the current education system, they do feel that they are making a difference in learner performance (96%), are proud of their contribution to learner performance in these learning areas (88%) and that learners appreciate them (96%).

Educators rated the support they get from School Management Teams on 72%. The response in Vhembe (86%) indicates that good working relations exist in this District. The three districts (Mopani-55%, Greater Sekhukhune -67%, Capricorn-69%) rating themselves below the provincial mean should be supported in building these relationships.

It would, however, seem that educators support one another (92%) and that they feel performance in their learning areas can be improved (96%).

A significant percentage of educators (47%) feel that they can not cope with the work load. Of special concern is the 77% educators in Waterberg who responded positively to this question. Reasons for this answer may be that educators present a large number of learning areas, especially in small schools; insufficient training and support; or the lack of resources like photocopiers or textbooks, necessitating educators to write notes on the chalkboard – which is time-consuming.

Conclusion

Educators seem positive towards their learning areas, learners and other educators. Performance might be hampered by insufficient support by SMTs, inadequate content knowledge of educators and a distrust of the current education system. The workload in Waterberg District should be looked into and proper support be given where necessary.

5.3.6 MAIN FINDINGS –CONTEXTUAL FACTORS IMPACTING ON LEARNER PERFORMANCE

The following main findings are presented:

a. The school improvement plan (SIP) does not reflect the current challenges experienced in learning and t

b. Internal and external educator development are neglected in the GET

c. Schools do not interpret the 60% allocation on the budget towards curriculum issues correctly

d. Educators have positive attitudes towards their work

e. Educators are not supported effectively by their SMTs or District offices

f. Educators often do not teach the learning areas of qualification

g. Lesson planning is attended to, but do not produce the desired results

h. Class visits and learning area meetings are not effective

i. Learner attendance is not at an acceptable level

j. Performance targets are unrealistic and unachievable

k. Written work is not done regularly enough to address challenges

5.3.7 RECOMMENDATIONS

a. Monitor the implementation of the SIP

b. Develop educators in Accounting

c. Improve all cognitive levels of learners, e.g. comprehension, application and analysis

d. Clarify the 60% of the budget that must be allocated to learning and teaching

e. Moderate and monitor lesson plans

f. Clarify and implement the roles of SMTs

g. Strengthen school discipline, e.g. homework, class attendance, etc

h. Provide the necessary LTSM to GET

i. Improve the amount and quality of written work

CHAPTER 7 – FINAL COMMENTS

Learner performance in the General Education Band in Limpopo Province is not according to expectations. This fact has been reported over a number of years in different national, international and provincial studies such as the Grades 3, 6 and 9 systemic evaluation studies that were done nationally in 2007, 2004 and 2009 respectively. The results of the Annual National Assessment (ANA) tests in 2010 and 2011 confirm the systemic evaluation results.

International studies, such as the SACMEQ 11 (2006) revealed that the reading achievement of Grade 6 learners (nationally) is predominantly at the *Basic Reading* level (level 3) and the Mathematics competency is at the *Emergent Numeracy* level (level 2). In SACMEQ 111 (2007) the *status quo* remained the same. The PIRLS (2006 – Gr. 4) portrayed the same dooming picture where South African learners achieved the lowest of 45 countries.

Provincial studies in 2009, 2010 and 2011 reflected similar results, of which the 2011 results have been discussed in this report. Local newspapers, e.g. *Beeld,* 04 April 2012 (p. 7), reported on the Education Summit that was held in Durban, where Prof. Bram Fleisch, of the University of the Witwatersrand, was allegedly commenting that if learners perform below standard in primary schools, a ripple effect start that would affect performance at secondary school and tertiary levels. He also confirmed that 70% of learners are not reading at their appropriate levels and that written work is of poor quality where sentences are limited.

At the same summit, Prof. Loyiso Jita (*Beeld*, 04 April 2012, p.7)said that South Africa could change its curriculum often and also provide additional funds to education, but if the teachers' attitudes do not change, all these extras would not result in a positive change to the system. Educators should participate freely in analysis of learners' results, such as the national ANA, so that they can gain the skills of interpretation. He continued to say that educators do not have the relevant content knowledge and that excellent educators are not acknowledged.

The studies that were done in 2012 in Limpopo confirm that learners in the General Education and Training band (GET) are not performing at expected levels. Learner performance in Life Skills (Gr. 3) has a mean of 35.5%, whilst performance in Natural Sciences (Gr. 6) is at 36%. The means in Natural Sciences (Gr. 9) are at 21.7% and that of Economic and Management Sciences (Gr. 9) at 31.4%.

We should acknowledge that all role players in provincial education are failing the education system at present.

It is against this background that we, as educationists, should consider seriously whether *Outcomes Based-Education* is really providing in the needs of the country. Whether a formal national examination, such as the Matriculation examination should not be introduced at the end of the different phases, or at least at the end of the senior phase since high school educators are left with false impressions, based on Gr. 12 results, that schools are performing well and learners are thoroughly prepared for further studies.

With this report in mind, let us once again take charge of our responsibilities and be part of the future success of our beloved country.

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