Gr6 Intermediate Phase
Systemic Evaluation Report
December
2005

education

Department:
Education
REPUBLIC OF SOUTH AFRICA

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FOREWORD BY THE MINISTER

The purpose of a systemic evaluation is to determine whether the intentions and expectations of policy are being realised in practice. This systemic evaluation was undertaken to provide an insight into the levels of learner performance, particularly in reading, writing and numeracy.

While we are fully aware of the deep seated inequities that still exist in our society, this survey paints a stark picture of the different life chances that our children experience. Those children who are born into poor families or into rural families, who attend schools that are unable to draw on the parent community for financial support, have performed most poorly in this survey. The direct correlation between poverty and educational quality demonstrated in this survey must confirm the importance of a clear pro poor policy in education.

The message is loud and clear: resources do matter. Making wide scale changes that will help teachers to teach better and learners to learn more effectively is a challenging undertaking that requires determination, resilience, cooperation between all those who are involved, well researched and reliable information, and well targeted resources to ensure the development of a school environment which is conducive to learning and teaching.

It is precisely for these reasons that Government has provided for schools that do not have to rely on financial support from impoverished communities; that schools in rural areas will be included in the strategy to establish schools of excellence; that the infrastructure and utilities of rural schools is receiving urgent attention, that efforts are being made to provide incentives to locate qualified teachers in rural schools.

These interventions, however, would be of little more than symbolic value, if they were not to be accompanied by consistent and detailed monitoring and evaluation of the interventions. The systemic survey tells us clearly that too many of our children cannot read, write or count at the age appropriate level. The limitations of this survey lie in the lack of insight into the learning processes in classrooms across the country.

We will continue systemic evaluation but this will now seek to inform our understanding of what does work in the contexts that have been referred to above. This information will be applied in practice and will then be monitored and evaluated to continue to promote and achieve the reading, writing and numeracy skills that are the foundation of a quality "Education for All".

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FOREWORD BY THE DG

Ten years into democratic governance, the grade 6 learner assessment survey confirms that the legacy of apartheid – from infant under-nourishment as a result of poverty, to the deliberate neglect of intermediate and high level skills – has impacted deeply on the educational achievements of our children. In primary schools, the continued scarcity of teaching and learning resources, including good teachers, pervades many parts of the system, and affects especially Black and poor children. It also shows that we all have to work harder to turn around low levels of learner achievement, especially in learning areas such as mathematics and natural sciences, and in language ability – both home language and the language of learning.

The systemic evaluation studies, including the current survey, point to various current programmes that need to be accelerated, and to new initiatives, so that all children in South Africa are able to enjoy their right to high quality education. For example, the grade 6 learner survey shows that

- Language is a major factor in children's learning,
- Learners in rural communities performed worse than urban learners, and
- Where the learning environment in schools is favourable learners perform better in assessment tasks.

We must therefore strengthen our programmes in each of these areas in order to improve the achievements of our children.

While the findings are clearly unpalatable to any educationist, and should cause all of us concern, they also provide the empirical evidence for increased targeting of resources and support. Such evidence encourages us to be continuously critical and periodically review our strategies to improve the quality of education, and focus on schools and districts where social and educational deficits are most crippling.

The findings provide clear evidence of what must still be done by all role-players to bring education provision to an acceptable quality to even the poorest of our fellow-citizens, and to raise the quality of learning in every classroom in the country. We will continue to engage all role-players and encourage them to join forces with us as we re-visit our quality improvement strategies, based on the new evidence. We do know that targeted interventions are effective, having dramatically reduced the number of 'under-performing' schools at matric level. It is now the turn of primary education, and in improving its quality, we will be laying the foundations for accelerated and shared growth in the country.

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ACRONYMS

AID	Automatic Interaction Detection
AIDS	Acquired Immune Deficiency Syndrome
AQEE	Access, Quality, Equity & Efficiency
C2005	Curriculum 2005
CEA	Centre for Evaluation and Assessment
DA	Developmental Appraisal
DoE	Department of Education
EC	Eastern Cape Province
EFA	Education For All
EMIS	Education Management Information System
ELRC	Education Labour Relations Council
FET	Further Education and Training
FS	Free State Province
GP	Gauteng Province
HIV	Human Immunodeficiency Virus
HSRC	Human Sciences Research Council
IQMS	Integrated Quality Management System
KZN	KwaZulu-Natal Province
LLC	Language, Literacy and Communication
LP	Limpopo Province
LO	Learning Outcome
LOLT	Language of Learning and Teaching
M	Mean
MCQ	Multiple-Choice Question
MLMMS	Mathematical Literacy, Mathematics and Mathematical Sciences
MOI	Medium of Instruction
MP	Mpumalanga Province
NC	Northern Cape Province
NW	North West Province
OECD	Organisation for Economic Co-operation and Development
OEQ	Open-Ended Question
PM	Performance Measurement
RNCS	Revised National Curriculum Statement
SACE	South African Council for Educators
SEM	Structural Equation Models
SES	Socio-Economic Status
SGB	School Governing Body
STATSSA	Statistics South Africa
UP	University of Pretoria
UNGEI	The United States Girls Education Initiative
UNESCO	United Nations Educational, Scientific and Cultural Organisation
WC	Western Cape Province
WSE	Whole School Evaluation
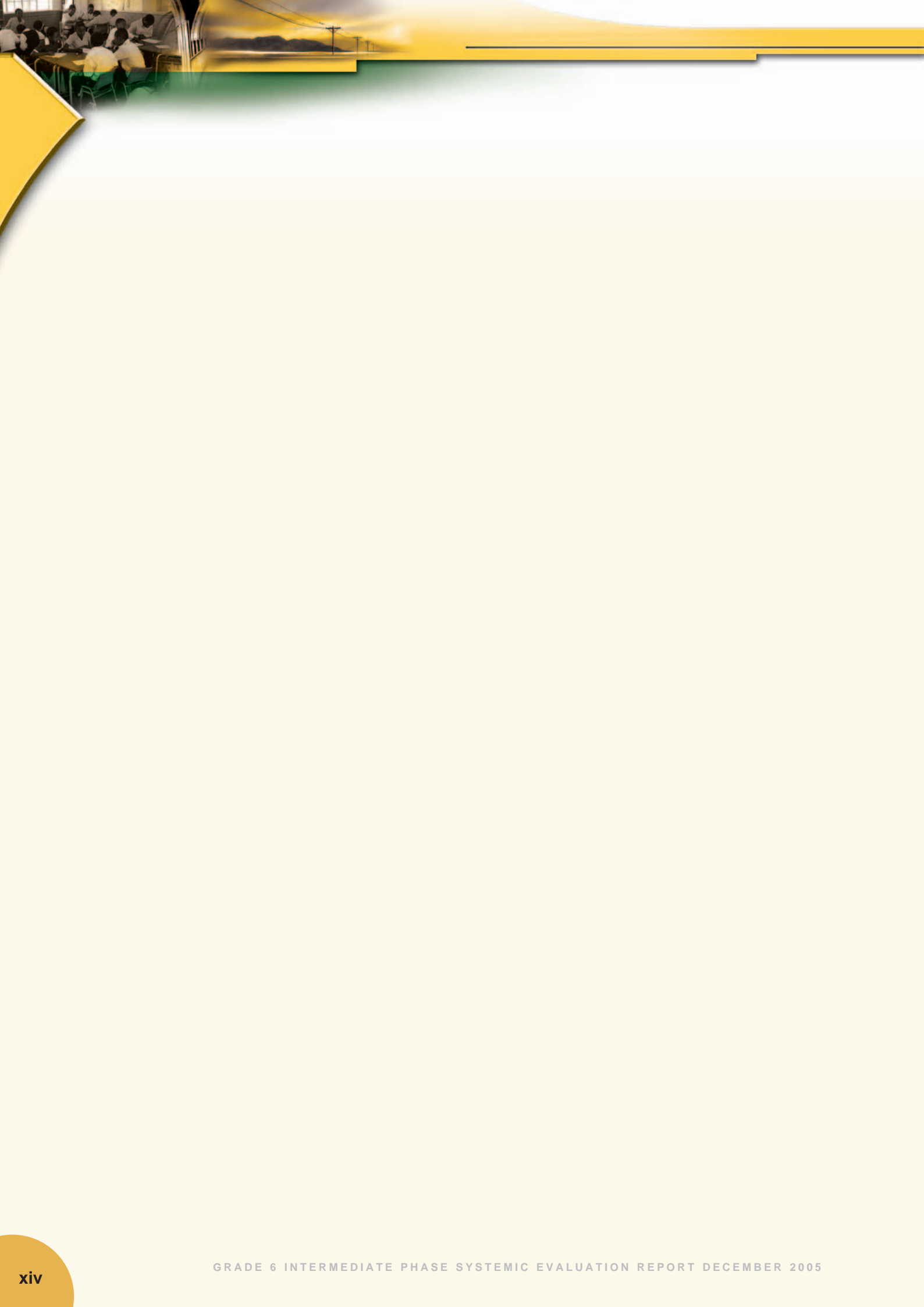
EXECUTIVE SUMMARY

INTRODUCTION

Systemic evaluation studies offer a powerful lens through which to view the performance and health of the education system. In particular, the Grade 6 Systemic Evaluation study is intended to serve three purposes: first, to determine the level of achievement of learners within the system; second, to highlight specific areas/issues within the system that require further attention/investigation; and, third, to serve as a base line for comparison against future systemic evaluation studies.

This report on Systemic Evaluation at the Intermediate Phase builds on the Foundation Phase report of 2003 and provides details about the health of the education system. It comprises three main components: (1) design and implementation, (2) contextual factors at home and school and their relationship to learner achievement scores, and (3) learner assessment tasks in three learning areas – Language (LOLT), Mathematics, and Natural Sciences. In addition, this study has investigated the extent to which school and home conditions affect the academic performance of learners. The report concludes by making several recommendations, some suggesting short-term education quality interventions and others with longer-term policy implications.

DESIGN AND IMPLEMENTATION

The Grade 6 Systemic Evaluation study was undertaken by the Department of Education with the assistance of a number of service providers. The study comprised several phases: (1) development of questionnaires and assessment instruments, (2) field tests, (3) analysis of pilot data and the development of final instruments, (4) sampling, (5) administration and data collection, (6) data coding, entry and cleaning, and (7) analysis and reporting, each of which was undertaken either by the Department of Education, or by service providers managed by the Department.

A stratified sample of public schools was selected across all provinces. In each sampled school, all Grade 6 learners were considered in selecting a sample of a maximum of 40 learners. The total sample of learners realised in this study was 34 015.

The analysis of learner achievement scores involved converting the scores to percentages and appropriately weighting them, and reporting the means, standard deviations, and standard errors. Analysis was based on correlations and Automatic Interaction Detection (AID), which were used to identify the factors related to learner achievement and to understand what the main drivers of learner achievement were.

CONTEXT OF LEARNING AND TEACHING (INDICATORS)

Indicators pertaining to the learning and teaching context within which Grade 6 learners function are described in terms of the "**AQEE** to improve learning" model. This model comprises several frameworks for each of the four policy goals of **A**ccess, **Q**uality, **E**fficiency, and **E**quity, which in turn are defined and implemented according to specific indicators.

The findings on many of the indicators under the policy goal of *access* could be regarded as "problematic" in terms of the scale used in this study. Factors such as school fees, access for learners with special needs, access to information at school, school libraries, and access to textbooks and learning materials need to be addressed. The *quality* policy goal factors such as learning and teaching resources were found to be inadequate in many instances, and appropriate steps should be taken to address this situation. Other factors
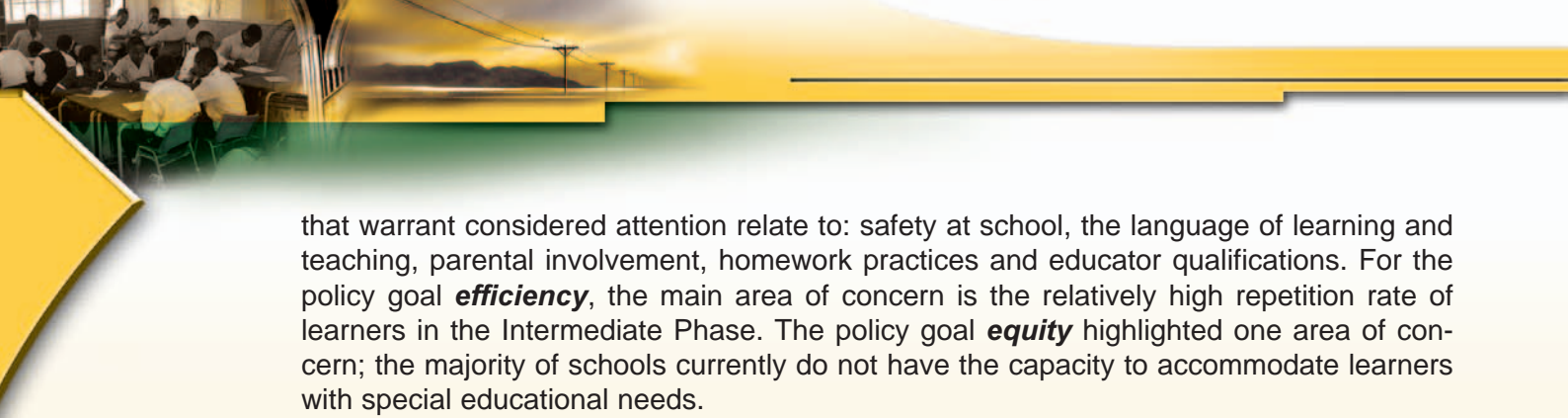
that warrant considered attention relate to: safety at school, the language of learning and teaching, parental involvement, homework practices and educator qualifications. For the policy goal *efficiency*, the main area of concern is the relatively high repetition rate of learners in the Intermediate Phase. The policy goal *equity* highlighted one area of concern; the majority of schools currently do not have the capacity to accommodate learners with special educational needs.

LEARNER ACHIEVEMENT

Learner achievement scores for each learning area were relatively low, with learners obtaining a national mean score of 38% in Language (LOLT), 27% in Mathematics and 41% in Natural Sciences. Across most provinces, similar performance trends were observed, with the highest scores recorded in Natural Sciences, followed by Language (LOLT) and Mathematics. In all three learning areas, the highest mean percentage scores were recorded in the Western Cape, Gauteng and the Northern Cape.

For each learning area, scores were also reported according to the four achievement levels so that the levels at which learners are functioning could be determined. A significantly higher percentage of learners across all three learning areas are functioning at the "Not Achieved" level (63% in Language, 81% in Mathematics and 54% in Natural Sciences), with a relatively small percentage of learners – 28% in Language (LOLT), 12% in Mathematics and 31% in Natural Sciences – functioning at or above the required Grade 6 level (that is "Achieved" and "Outstanding" combined).

Certain important trends were observed in all three learning areas. Learners whose home language was the same as the language of learning and teaching obtained significantly higher scores in all learning areas. The geographic location of the schools that learners attended also had a significant impact on learner achievement, with learners in the urban areas obtaining higher scores than learners attending schools reported to be in rural areas. In addition, learner scores were extremely low for questions that required learners to construct and provide their own responses (i.e. open-ended questions) compared to multiple-choice questions. Comparisons of learner achievement between boys and girls showed no significant differences in Mathematics. However, for Language (LOLT) and Natural Sciences, girls generally obtained higher scores; this trend was observed in all provinces.

Overall, the study indicates that the majority of Grade 6 learners have not achieved the expected assessment standards, a result that has serious implications for the ability of Grade 7 teachers to cope with a diverse learner population in terms of knowledge and skills' levels; this also has corresponding policy implications for teacher recruitment and teacher education and development.

FACTORS RELATED TO LEARNER ACHIEVEMENT

A number of factors were found to be consistently associated with learner achievement across the three learning areas assessed. In all instances, socio-economic status (SES) was found to be an important predictor of learner achievement, with learners who reported to be in the lower SES categories obtaining significantly lower scores than those in the higher SES categories did. In addition, greater access to information and resources at school was found to have a high correlation with performance.

Other important predictors of learner achievement observed in the study were: parents' ability to pay school fees, parental involvement and support of learners' work, learners' access to information at home, quality of learners' participation in the classroom, and attendance and discipline at school. These are also the strongest and most consistently strong correlations when viewed individually and across the provinces.

RECOMMENDATIONS

This study has proposed several recommendations geared at improving learner achievement and the conditions of teaching and learning. The recommendations were informed by a particular framework comprising the three categories: home and community context (those factors outside the Department of Education's sphere of influence); resource inputs for improving learning; and teaching and learning practices (both categories directly within the Department's ambit of influence). Many of these recommendations call for greater resources to be directed at schools, and for existing policies to be implemented and monitored more stringently. Importantly, this study recommends a fresh examination of the existing policy on the language of teaching and learning, and for consideration to be given to the special circumstances prevailing in schools in rural areas. Moreover, specific recommendations call attention to the central role of the educator and principal in raising education quality, as do proposals on the importance of education collaboration and partnerships, especially those involving the Department at all levels of the system: parents, school governing bodies, local authorities and other line-function departments. An underlying message of the study is the need for a renewed commitment and dedication of all education stakeholders in ensuring the delivery of quality education in South Africa.

CHAPTER 1
Background

1.1 INTRODUCTION

The education landscape in South Africa has undergone significant changes in the last decade following the country's first democratic elections in 1994. A plethora of policies have been put in place, ranging from new curricula to meet the needs of a post-apartheid society in the 21st century; a framework for improving access to basic quality education for all; the introduction of democratic participation in school governance; a restructured Further Education and Training (FET) sector to fast-track the development of medium- and high-level skills; and a reconfigured higher education system (DoE, 2004). Much has been achieved, but still more needs to be done. A key challenge is the consolidation of quality learning and teaching throughout the education system.

The concern with quality education is aptly captured in the Vision Statement of the Department of Education (DoE), which states:

> "Our vision is of a South Africa in which all our people have access to lifelong education and training opportunities, which will in turn contribute towards improving the quality of life and building a peaceful, prosperous, and democratic South Africa" (DoE, 2004).

A related priority is the need to investigate whether policy and programme interventions are contributing to education transformation and quality. This entails a shift from a focus on inputs to a focus on processes and educational outcomes. The new curriculum framework, in addition to highlighting the expected outcomes of education generally, stipulates the minimum standards required from the teaching and learning process at the end of each grade. Simultaneously, in line with international developments, there has been an increasing focus on systemic evaluation, in which Learning Outcomes are linked in a systemic approach that takes into account the interconnectedness of factors in the education system, from institutional (school-based) to district, provincial and national levels that affect learning and teaching.

1.2 NATIONAL CONTEXT

The earlier period of democracy in South Africa was characterised by an emphasis on improving access to education. As the *White Paper on Education and Training* (DoE, 1995: Chapter 4), states:

> "the system needs to increasingly open access to education and training of good quality, to all children, youth and adults and to provide means for learners to move easily from one learning context to another".

The DoE makes a similar point in its 2003 report on systemic evaluation of the Foundation Phase:

> "one of the immediate transformation goals of the immediate post-apartheid government was to ensure that all children, irrespective of their race, class, gender, religion and/or other characteristics, had access to basic education" (DoE, 2003:3).

The primary emphasis on access to education shifted over the years to a greater concentration on the quality of education. One of the tools through which this occurred was the *National Policy on Whole School Evaluation* (DoE, 2001:8), which foregrounds the notion of quality education in the form of achievement levels. The *National Policy on Whole School Evaluation* states that:

> "The core mission of schools is to improve the educational achievements of all learners. Whole-school evaluation, therefore, is designed to enable those in schools, supervisors and support services to identify to what extent the school is adding value to learners' prior knowledge, understanding and skills."

The policy text lists a number of key areas for evaluation, which include learner achievement scores:

> "Whole-school evaluation is concerned with the range of inputs, processes and outcomes. These are associated with, for example, staffing and physical resources, … the quality of leadership and management, learning and teaching, and the standards achieved by the learners" (DoE, 2001:5).

An important aspect of meeting the goal of quality education for all learners is the continuous evaluation of the school system as a whole. The DoE has instituted a number of quality assurance systems such as **Integrated Quality Management System** (IQMS), **Developmental Appraisal** (DA), **Performance Measurement** (PM), **Whole School Evaluation** (WSE) and **Systemic Evaluation.**

1.3 SYSTEMIC EVALUATION

Systemic evaluation studies measure the extent to which the education system achieves set social, economic and transformational goals. They do this by measuring learner achievement at selected grades, taking into account the context of learning and teaching. The DoE states that "the main purpose of systemic evaluation is to benchmark performance and track the progress made towards the achievement of the transformational goals of access, redress, equity and quality" (DoE, 2003:5). This formidable task requires understanding the logic of the system, its various components, how they are linked, and what their collective force and magnifying effects are. Thus the entire education system needs to be kept in view at all times.

The framework of systemic evaluation stipulates that systemic evaluation seeks to answer the following key questions:

1. What is the context in which learning and teaching are taking place?
2. What is the level of achievement of the learners at key points of the education system (Grades 3, 6 and 9)?
3. What factors affect learner achievement?
4. How can the level of achievement be improved?

As will be seen, answers to the first question are provided in Chapter 3 of this report, while learners' levels of achievement are reported in Chapter 4. Factors that correlate with learner achievement are discussed in Chapter 5 and ways of improving learner achievement are outlined in Chapter 6. One of the key principles of systemic evaluation is that it should be based on "sound research methodology that enables informed decision making" (DoE, 2003:11). It is for this reason that Chapter 2 presents the design and research methodology in some detail.

Additionally, a conceptual model of indicators, which is divided into four parts, has been developed. These parts are as follows:

1. The **context** in which teaching and learning take place
2. The human and material **inputs [resources]** available
3. The quality of teaching (and learning) **processes** and practices; and
4. The quality of **outputs** (outcomes) of the education system (DoE, 2003:8)

The recommendations provided in Chapter 6 speak to this model of indicators.

The overall goal of systemic evaluation, therefore, is to assess the effectiveness of the entire education system and the extent to which the vision and the goals of the education transformation process are being achieved and quality learning and teaching produced. In particular, systemic evaluation studies are intended to provide regular information to policy makers that will enable them to arrive at conclusions about appropriate educational interventions. Systemic evaluation also serves as a baseline to measure the impact of intervention programmes at a later stage.

The systemic evaluation of the Intermediate Phase is a follow-up study to the systemic evaluation of the Foundation Phase that was carried in 2003. Within the Foundation Phase systemic evaluation report, it is clearly stipulated that the report "serves as a baseline for future Systemic Evaluation studies" (DoE, 2003). For this reason, the framework that was used for the Foundation Phase systemic evaluation report was adapted with some modifications for the Intermediate Phase systemic evaluation study. The overall transformation policy thrust, as reflected by the goals: Access, Equity, Redress, and Quality (DoE, 2003), has been maintained.

It is also important to note the legislative context in which systemic evaluation is being conducted. In terms of education legislation, the Minister of Education is mandated to evaluate and monitor the standards of education provision, delivery and performance (DoE, 2003). "Section 8(1) of the National Education Policy Act of 1996 makes provision for the Minister of Education to direct standards of education provision, delivery and performance throughout the Republic" (DoE, 2003:2).

In addition, Section 48 of the *Assessment Policy for General Education and Training* makes provision for systemic evaluation to be conducted on a nationally representative sample of learners at a nationally representative sample of learning sites with the intention of evaluating all aspects of the school system and learning programmes (DoE, 2003). The policy requires that systemic evaluation be undertaken in three grades of the education system: Grades 3, 6 and 9.

1.4 FOCUS AND STRUCTURE OF THE REPORT

This report focuses on a systemic evaluation study of the Intermediate Phase and consists of an analysis of a nationally representative sample of Grade 6 learner achievement scores, discussions of the methodology used in conducting the study, factors that affected learner achievement, and a presentation of recommendations for interventions and policy. The Intermediate Phase systemic evaluation was conducted in 2004 and its main aim was to provide systems-based information about the health of learner performance of the Intermediate Phase. This was undertaken through the development of instruments to assess the competencies of learners at the end of Grade 6 in three Learning Areas (LAs), English, Mathematics and the Natural Sciences.

The structure of the report is outlined below.

Chapter 2: Design and implementation

This chapter outlines the research design and methodology used in conducting the systemic evaluation of the Intermediate Phase. It describes the key research instruments used; how sampling was done; how the issues of validity and reliability were taken into account; and how data were analysed.

Chapter 3: Context of learning and teaching

Chapter 3 describes the context within which learners in the Intermediate Phase function, both at home and school. Based on the AQEE to improve learning model, this chapter reports on relevant indicators that provide both national and provincial portraits of the system.

Chapter 4: Learner achievement

This chapter reports on learner achievement scores through the use of the four levels of performance ("Not Achieved", "Partly Achieved", "Achieved" and "Outstanding") as noted in the Revised National Curriculum Statement (RNCS) assessment guidelines. The acquisition of the relevant knowledge and skills is assessed in three important learning areas: Language (LOLT), Mathematics, and Natural Sciences.

Chapter 5: Factors related to learner achievement

This chapter discusses factors that affect learner achievement, on the basis of correlations as well as automatic interaction detection (AID) analysis. These factors (indicators) are separated into five categories and reported against learner scores for the three learning areas assessed.

Chapter 6: Conclusion

This chapter provides concluding comments and recommendations based on the results, in particular the relationships between varying contextual factors and learner achievement scores.

CHAPTER 2
Design and Implementation

2.1 INTRODUCTION

This chapter describes the design and implementation of the Grade 6 Systemic Evaluation (SE) study. First, an overview of the implementation process is presented; second, the instrument development, sampling, data collection, analysis and interpretation are described; and last, the limitations of the study are noted.

2.2 THE DESIGN OF THE STUDY

The initial design of systemic evaluations in South Africa was developed by the DoE with the technical and research knowledge support provided by a consortium that was managed by the Centre for Education Policy Development (CEPD) and included the Human Sciences Research Council (HSRC) and the Research Institute for Education Planning (RIEP) in a process that lead to the Grade 3 survey in 2001. Key elements of the design included the development of assessment tasks based on the curriculum and to be administered on a representative sample of learners; the development of questionnaires on contextual factors that might impact on teaching and learning and the administration of these to all the role-players, including learners, parents, teachers, principals and district officials; and the analysis of data on learner achievement and the correlation of this data with contextual factors. Part of the design included a set of educational indicators of inputs, processes and outputs of the education system.

Ideally, the design and the instruments should remain the same in order to compare like with like as progress is tracked over time. However, a number of adjustments were found to be necessary – partly because the process is developmental and lessons learnt from one stage should inform the next, and also because the nature and complexity of the learning content is different in different grades. On the one hand, it became clear after the Grade 3 study that the contextual questionnaires needed to be re-structured to make them more meaningful to the respondents and also to facilitate a clearer analysis of responses. On the other hand, the nature of the curriculum within which the Grade 6 assessments were embedded necessitated a different assessment design from what had been done at the Grade 3 level. In fact, both studies provide important baseline information about the respective grade levels studied. However, as far as was practically possible, great care was taken to retain the original design.

The DoE conducted the Grade 6 Systemic Evaluation study with technical assistance from external service providers. A team comprising national and provincial officials of the DoE managed the study. The whole process of (re-)design, instrument development, piloting and main implementation, coding and scoring, and report writing went through several phases (see Table 2.1), each of which was conducted by the DoE team or contracted to service providers and managed by the DoE.

Table 2.1 Sequence of activities for the Grade 6 SE study implementation

Stage	Activity	Time Frame	Responsibility
1	Development of instruments • Assessment tasks • Contextual questionnaires	January–July 2002	DoE
2	Pilot study • Phase I • Phase II	• September 2002 • May 2003	DoE
	Analysis of pilot data • Phase I • Phase II	• October 2002–March 2003 • June–September 2003	DoE and Centre for Evaluation and Assessment (CEA), University of Pretoria
3	Refinement and finalisation of instruments	April 2004	DoE and CEA, University of Pretoria
4	Sampling	July 2004	DoE and STATSSA
5	Data-collection training	August 2004	DoE
	Administration and data collection	September–October 2004	DoE
6	Data coding, entry and cleaning	November 2004–April 2005	DoE and HSRC
	Data analysis and reporting	May–August 2005	

Two sets of instruments used in the Grade 6 Systemic Evaluation study were designed and piloted by the DoE, as follows:

i) Assessment instruments for Language (LOLT), Mathematics and Natural Sciences to assess learner achievement; and

ii) Questionnaires for learners, parents, teachers, principals, and districts to obtain information on the context within which learning takes place.

Additional details on the process followed can be obtained from the field test report (DoE, 2004).

2.3 THE DEVELOPMENT OF LEARNER ASSESSMENT TASKS

In collaboration with provincial education departments, the Department of Education commenced preparations for the study in 2002. The design and development of assessment items for Grade 6 culminated in the implementation of the pilot study in September 2002 in 65 schools across all the provinces, to test the suitability and appropriateness of the assessment items. Two sets of instruments (A and B) containing three tests – Language (LOLT), Mathematics, and Natural Sciences – were administered concurrently in the pilot study. The purpose of this design was to pilot as many items as possible but also to spread these among the sampled learners to avoid possible effects of fatigue if, for example, a learner took an excessively long test.

The Centre for Evaluation and Assessment (CEA) at the University of Pretoria was contracted to facilitate the coding and scoring of data, analyse the data, and write a technical report, as well as recommend suitable items from both set A and set B for the main survey. The technical report recommended a framework for item design. The CEA was also involved in the design and development of an assessment framework, which was followed by a field test conducted in May 2003 in 27 schools, i.e. three schools by province. The aim of the field test was to identify appropriate items for the September 2004 main study.

The instruments for Language (LOLT), Mathematics and Natural Sciences were finalised in 2004 on the basis of the analysis of the field study conducted in 2003. The format of the final instruments is given in Table 2.2. A distinction is made between multiple-choice questions (MCQs) and open-ended questions (OEQs).

Table 2.2 Item types for the final Grade 6 assessment instruments

Learning Area	MCQ	OEQ	Total
Language (LOLT)	28	21	49
Mathematics	21	14	35
Natural Sciences	31	12	43

The proportion of MCQs was larger than the proportion of OEQs for each of the learning areas. Natural Sciences had the highest proportion of MCQs, at 72%.

2.4 THE DEVELOPMENT OF CONTEXTUAL INSTRUMENTS

The contextual questionnaires developed for the Grade 3 study in 2001 were adapted for the Grade 6 study. With the assistance of the CEA, the framework for the contextual questionnaires was also refined. The framework was developed by the DoE and focused on the 26 education quality indicators that were based on the transformation goals of access, redress and equity.

The contextual questionnaires were administered in both the pilot and field-test studies in preparation for the main survey. The respondents in the survey were Grade 6 learners, their parents or guardians, teachers of the learning areas assessed, principals, district officials and hostel supervisors. After the pilot study, the necessary modifications were made so that meanings were clearly conveyed and the required information obtained.

The total number of questionnaires developed, as well as the number of items in each questionnaire, is listed in Table 2.3.

Table 2.3 Description of the contextual questionnaires

Questionnaire	Number of questions	Administration per school	Number of returns
Teacher	38	One teacher per learning area	2 869
Learner	43	Every sampled learner	34 015
Parent	25	One parent/guardian of each sampled learner	33 296
Principal	51	One principal	989
District – manager	25	One per district	60
District – learning area specialist (LAS)	25	One per district	58
Hostel	29	One sampled learner living in a hostel	153

It is clear from the table which type of respondent was expected to complete each questionnaire. For each of the learning areas, one educator questionnaire was completed by one of the Grade 6 educators responsible for that learning area.

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 achievement assessment is content validity and the following are among the questions that need to be asked: Does the instrument assess all aspects of the curriculum appropriately? To what extent are the Learning Outcomes and Assessment Standards for the Intermediate Phase covered?

The process of developing assessment instruments started in 2002. As far as the curriculum was concerned this was a transition period where Curriculum 2005 (C2005) was in sway at the Intermediate Phase but there was already the Revised National Curriculum Statement (RNCS) being implemented at the Foundation Phase. There were already plans that by 2004, when the survey would be conducted, Grade 6 learners would be following the RNCS. Frameworks for developing assessment tasks were therefore based on C2005 but with the provision that these would be adapted to the RNCS so that the final reporting should be done in terms of the RNCS. This meant that, for each learning area, the analysis and reporting were based on items that were realigned from Specific Outcomes (C2005) to appropriate Learning Outcomes (RNCS).

The tasks in this survey were designed with the intention of assessing only those competencies that can be assessed through pen-and-paper exercises. Due to logistical and economic constraints no attempt was made to assess competencies that would require direct observation of performance on site, such as reading, performing scientific experiments or any form of practical hands-on activity.

The proportions in which items were allocated to Learning Outcomes in each area reflects the bias in favour of Learning Outcomes that lend themselves to pen-and-paper assessment. The allocation does not in any way suggest that some outcomes are more important than others. For instance, speaking (LO2) is a very important outcome, but since, by its nature, it would have required direct observation of learners speaking, this outcome could not be assessed in this survey. Similarly, although the outcome of Scientific Investigations (LO1) in Natural Sciences reflects the essence of the scientific approach, it could only be assessed to a limited extent in purely written form, as some of it requires that the observer be on site to assess fairly and within a context. Despite these apparent constraints, the collective of items by learning area does provide a relatively comprehensive overview of what learners could and could not do in the curriculum. The distribution of items across Learning Outcomes for each learning area has been reflected in the following subsections.

2.5.1.1 Language (LOLT)

The Language (LOLT) assessment instrument comprised two sections: the Listening Comprehension section and the Reading and Writing section. In the Listening Comprehension section, the test administrator read stories to the class and learners then answered questions on the stories set in a paper and pencil format. The Reading and Writing section was assessed exclusively in paper and pencil format. Table 2.4 lists the number of items relating to the Learning Outcomes (RNCS).

Table 2.4 Classification of the questions in the Language (LOLT) instrument

Learning Outcome (LO)	No of items
LO 1: Listening	13
LO 3: Reading & Viewing	14
LO 4: Writing	9
LO 5: Thinking & Reasoning	7
LO 6: Language Structure & Use	6
Total	**49**

Listening (LO1) and Reading and Viewing (LO3) were allocated 27% and 29% respectively, of the total items in the Language task. The next highest priority was given to writing as a basic skill (9 out of 49 items) and the rest of the items were allocated to LO5 and LO6 in almost equal proportions.

2.5.1.2 Mathematics

The distribution of Mathematics items after their realignment according to the Learning Outcomes (RNCS) is set out in Table 2.5.

Table 2.5 Classification of the questions in the Mathematics instrument

Learning Outcome (LO)	No of items
LO 1: Numbers, Operations and Relationships	13
LO 2: Patterns, Functions and Algebra	5
LO 3: Space and Shape	5
LO 4: Measurement	6
LO 5: Data Handling	6
Total	**35**

In the Mathematics test, LO1 comprises 37% of the items, while both LO2 and LO3 comprise 14.5%, and each of LO4 and LO5 comprises 17% of the total number of items. The number of items reflecting each Learning Outcome is adequate for obtaining relevant information on how learners perform, although additional items for Learning Outcomes 2, 3, 4 and 5 would have made for a more thorough assessment.

2.5.1.3 Natural Sciences

All three Learning Outcomes associated with Natural Sciences were assessed. The distribution of the items across the Learning Outcomes has been shown in Table 2.6.

Table 2.6 Classification of the questions in the Natural Sciences instrument

Learning Outcome (LO)	No of items
LO 1: Scientific Investigations	8
LO 2: Science Knowledge	26
LO 3: Science and Society	9
Total	**43**

While the three broad Learning Outcomes of the RNCS are all covered, the majority of items assess Science Knowledge, LO2 (60%), followed by Science and Society, LO3 (21%) and Scientific Investigations, LO1 (19%).

2.5.1.4 Concluding statement on the validity of assessment instruments

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

2.5.2 Validity of the contextual instruments

The questionnaires elicited relevant information from a number of important role-players in education. In each case the role-player was asked either some factual information or about her or his perceptions, attitudes, experiences or actions considered to be of relevance in the education context. The framework guiding the development of questions was developed by the DoE and comprised the 26 education quality indicators that were based on the transformation goals of access, redress and equity. As such all the questions contribute to a rich description of the education context. The contextual information gathered was all of a self-report nature.

The questions in the questionnaires were classified, according to the indicators and indices implied by the AQEE model, by researchers who were well grounded in this model. Three researchers completed the classification in consultation with each other. They worked towards consensus in terms of the classification of each item. In terms of proficiency, one of the researchers had an educational background, the second had a psychology background and the third was a test developer. After the questions had been classified, a senior researcher inspected every classification and, where necessary, held discussions with the researchers so that a consensus could be achieved.

The indicators and indices used in this analysis may be said to be valid in so far as they derive from a consensus of expert views.

2.5.3 Reliability of Instruments
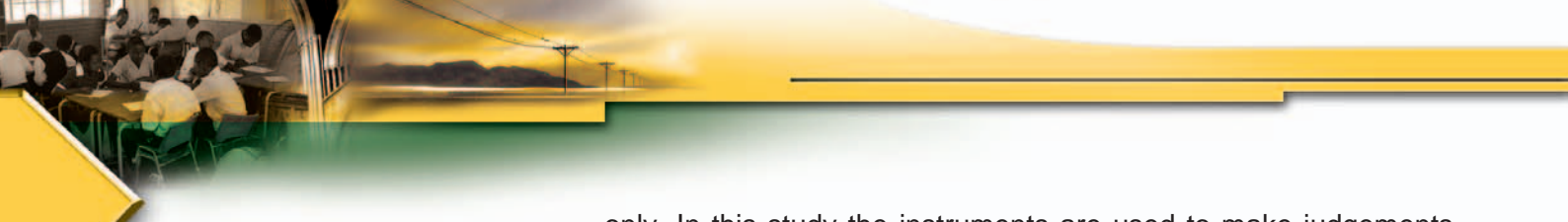
2.5.3.1 Reliability of the learner achievement instruments

Reliability refers to the consistency with which an assessment instrument measures a specific construct and therefore indicates the degree to which the total score obtained in a test is free of measurement error. The degree of internal homogeneity of the questions in a test can be used as an indication of the reliability of the test and is measured by the Alpha Co-efficient. The stronger the interrelationship between items, the closer the Alpha Co-efficient will be to the maximum score of 1. The Alpha Co-efficient for each of the three learning areas is reported in Table 2.7.

Table 2.7 Reliability co-efficient for each of the three learning areas

Learning Area	Alpha Co-efficient
Language (LOLT)	0.95
Mathematics	0.87
Natural Sciences	0.89

The Alpha Co-efficient for the learning areas was relatively high, indicating that all instruments can be considered to be providing reliable scores. The reliability co-efficient for each Learning Outcome individually will be much lower, as there are fewer items; in some cases, the Learning Outcomes comprised five or six items

only. In this study the instruments are used to make judgements about the achievement level of groups of learners in a particular province, of a particular gender etc. When judgements about individuals are made reliability co-efficients may be expected to be 0.80 or higher, but when groups are compared the reliability co-efficient may be as low as 0.50, with the instrument still providing valuable information.

2.5.3.2 Reliability of the contextual instruments

The AQEE framework was used to classify the contextual information into meaningful indicators and indices that would assist in describing the context of education. Reliability coefficients were not calculated for all the indicators. Taking the example of the indicator "Access to learning material and textbooks", this indicator drew on 14 questions in the questionnaires and had a reliability co-efficient of 0.66.

2.6 SAMPLING

The aim in this survey was to draw a representative sample from mainstream public ordinary schools that offered Grade 6. The first stage in sampling was to determine the "desired target population". The "desired target population" was defined as all South African schools with Grade 6 and, as at the tenth-day review of the Education Management Information System (EMIS) data in January 2004, these were a total of 18 269 primary and combined schools, which constituted public ordinary schools, independent schools and special schools. Among them, these schools had a total of 1 107 635 Grade 6 learners.

The next stage was to define the population to be excluded in line with the purpose of the systemic assessment. The "excluded population" comprised independent schools, schools that cater for learners with special educational needs, and mainstream public ordinary schools with fewer than 15 registered Grade 6 learners at the time of sampling. The total "excluded population" consisted of 4 079 schools with 25 169 Grade 6 learners among them. These schools were excluded before the sample was drawn.

The revised *"defined target population"* from which the sample was drawn was then obtained by subtracting the *"excluded population"* from the original *"desired target population".* This resulted in a *"defined target population"* of 14 190 schools with 1 082 466 Grade 6 learners among them.

A stratified random sample of 1 000 schools (approximately 7% of the *"defined target population"*) was planned. These schools were allocated disproportionately to the nine provinces, using only province as the explicit stratification variable. The disproportional allocation was based on the *power allocation rule,* using the power of 0.5 of the number of schools in the *"defined target population"* for each province. In simple terms, the sample size used for each province was equal to the square root of the number of schools in the *"defined target population"* of the province. The advantage of this technique is that it ensures a balanced provincial representation by drawing more schools from smaller provinces and fewer from larger provinces than could be achieved through simply taking a particular percentage of schools. The resulting allocation of the 1 000 schools to the nine provinces is shown in Table 2.8a.

To keep the number of sampled schools constant, a possible substitute school was also drawn for each sampled school. The purpose was to ensure that if it was found during fieldwork that a sampled school could not be used for a valid reason, a possible replacement school of the same type and in the same area would be available for use instead.

The final stage in the sampling process occurred at school level. Data collectors sampled Grade 6 learners in each of the sampled schools. Where the number of Grade 6 learners present on the first day of data collection was greater than 42 learners, systematic sampling was used to draw a sample of 40 learners. If there were 42 or fewer learners, all of these learners were included in the survey. Sampled learners who did not attend school on the second day of data collection were not replaced.

Table 2.8a Number of Grade 6 learners in South Africa and distributions across provinces

Province	Grade 6 learners in SA in 2004		Grade 6 learners' data collected		Schools	
	Number	Percent	Number	Weighted percentage	Sampled	Realised
EC	219 256	19.79	5 373	16.62	181	180
FS	68 498	6.18	2 451	5.25	72	72
GP	140 122	12.65	4 340	14.30	112	112
KZN	253 987	22.93	5 643	21.70	169	169
LP	174 649	15.76	4 952	15.65	138	137
MP	74 610	6.73	3 009	7.53	90	90
NW	61 574	5.55	3 413	8.43	101	101
NC	20 751	1.87	1 678	2.14	46	46
WC	94 188	8.50	3 156	8.39	91	91
Total	**1 107 635**	**100.00**	**34 015**	**100.00**	**1 000**	**998**

Data from 998 schools, with 34 015 learners among them, could eventually be used. The realised sample sizes by province are reflected in Table 2.8a. School weights and learner weights were calculated so as to ensure that results obtained accurately reflected the population of all South African public schools.

The gender distribution of the sampled learners is presented in Table 2.8b.

Table 2.8b Gender distribution

Gender	Number	Percentage
Boys	17 088	50.2
Girls	16 721	49.2
Missing	206	.6
Total	**34 015**	**100.0**

While the sample comprised slightly more boys than girls, this difference is in line with the number of learners enrolled in Grade 6 according to Education Statistics 2003, considering that approximately 0.6% of the learners did not indicate their gender.

Table 2.8c shows the age distribution of sampled learners.

Table 2.8c Age distribution

Age	Number	Percentage
10	301	.9
11	6 620	19.5
12	12 654	37.2
13	7 010	20.6
14	4 003	11.8
15	1 802	5.3
16	945	2.8
16+	457	1.3
Invalid Response	158	.5
Missing	65	.2
Total	**34 015**	**100.0**

About 89% of the sampled learners were in the age categories between 11 and 14 years. More than nine percent of the learners were 15 years and older and were over-age for Grade 6. About one percent or 301 learners were 10 years of age. This means that at the time of admission to school these learners were younger than five and turning six after 30 June of the Grade 1 year.

Government policy is that learners should be admitted to school when they are six turning seven on in their Grade 1 year. Accordingly, learners in Grade 6 would be expected to be 12 years of age and, if allowance were made for the possibility that they may have repeated both the foundation and Intermediate Phases (once each), an average Grade 6 learner would be expected to be no older than 14 years of age.

The home language distribution appears in Table 2.8d.

Table 2.8d Home language distribution

Home Language	Number	Percentage
Afrikaans	4 933	14.5
English	1 578	4.6
isiNdebele	540	1.6
isiXhosa	6 358	18.7
isiZulu	6 967	20.5
Sepedi	3 723	10.9

Table 2.8d (continued)

Home Language	Number	Percentage
Sesotho	2 565	7.5
Setswana	3 580	10.5
siSwati	1 088	3.2
Tshivenda	1 023	3.0
Xitsonga	1 297	3.8
Other	117	.3
Invalid Response	4	.0
Missing	242	.7
Total	**34 015**	**100.0**

The most common home languages reported were isiZulu and isiXhosa, followed by Afrikaans, Sepedi, and Setswana. These figures correspond to what Statistics South Africa (STATSSA) found to be the pattern for the official languages used as "home languages" in South Africa (2004).

2.7 DATA COLLECTION

DoE officials trained data collectors from each province at centrally organised venues. The purpose of this training was to ensure consistency and reduce the "data collector effect" to the minimal. For Listening Comprehension exercises, training involved role-plays and demonstrations to ensure maximum uniformity, although this could be done to a limited extent, especially where the data collectors' daily language was different from that of the learners. In a few such instances the sampled school provided a local teacher to assist with interpretation where it was absolutely necessary. In such cases the teacher was first given a "crash orientation" by the trained data collector. These cases were extremely few and could by no significant means affect the intended consistency of data collection. Each of the trained data collectors was given a manual with detailed instructions to guide them during the data collection process.

The survey was conducted across all nine provinces in South Africa. Data was collected over a period of two days in each sampled school during September and October of 2004. National and provincial DoE officials monitored the data-collection process. Monitors underwent the same training as data collectors so that they not only ensured compliance but were also able to provide advice where it was needed. They also provided a reserve team in case a data collector was not able to collect data on a particular day. All monitors had in their possession mobile telephone numbers of all the data collectors in the area they monitored and also the numbers of other monitors. This network of communication enabled data collectors to receive immediate help when the need arose. This included receiving additional data-collection instruments where a shortage was identified, and for this purpose a surplus was kept in close proximity to the schools where data was being collected.

The provincial departments of education notified schools about the intended data collection approximately six months in advance. In addition, closer to the scheduled data-collection time, a data-collection team leader visited the schools to ensure that data collection in the appointed two days would not coincide with competing school
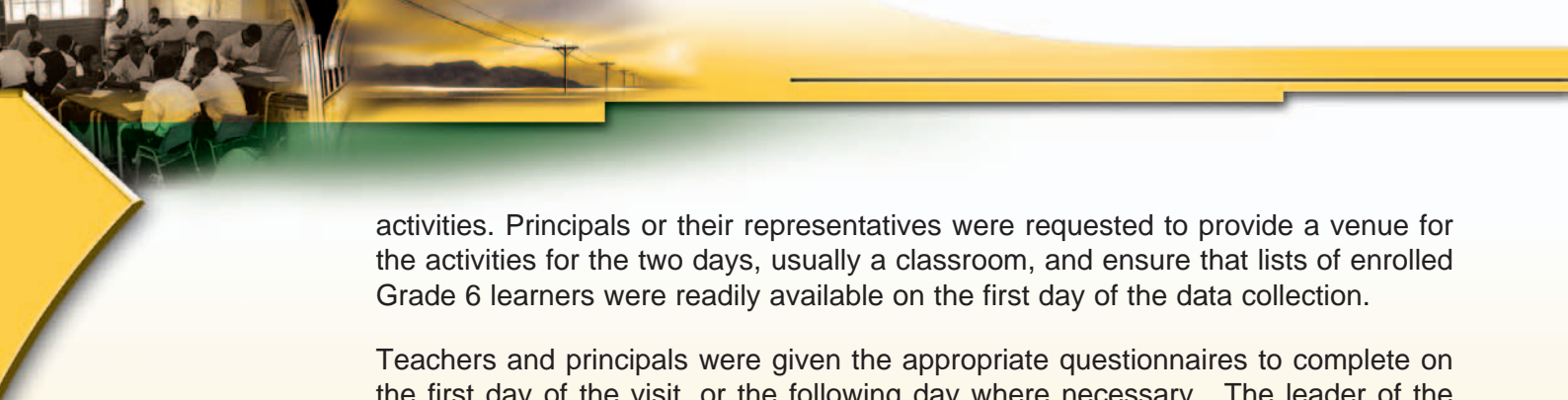
activities. Principals or their representatives were requested to provide a venue for the activities for the two days, usually a classroom, and ensure that lists of enrolled Grade 6 learners were readily available on the first day of the data collection.

Teachers and principals were given the appropriate questionnaires to complete on the first day of the visit, or the following day where necessary. The leader of the data-collection team had the responsibility of taking the District Questionnaires to the relevant officials and of collecting them once they were completed.

Except for the Listening Comprehension task where a data collector read questions to the sampled learners, learners had to read the instructions in the assessment tasks for themselves and respond in writing to the given questions. The situation was different for the completion of questionnaires. Learners could ask the data collector to provide additional explanation, but not answers, and to provide this information in any language that the respondent expressed a need for. There were at least two data collectors to oversee the process in each sampled school.

All completed instruments were collected by provincial co-ordinators and returned to the DoE for scoring, coding, entry, cleaning, and analysis.

2.8   DATA SCORING, ENTRY, AND CLEANING

Coding of constructed responses was managed by the DoE and conducted with the assistance of temporary staff members at a central venue in November and December 2004. An external service provider was responsible for training all coders and monitors in each of the three learning areas, and for quality assuring the entire coding process.

Only open-ended items in the assessment instruments were coded. A full day was spent on the induction of monitors and another day on the induction of coders. Coders worked in groups of 9 to 14 under the supervision of a group leader who was a learning area specialist (LAS) in that learning area. Ten percent of scripts were moderated by the table leader. In addition 10% of all coded books were quality assured by the external service provider.

It was considered preferable to compare the achievements of the same learners in the three learning areas. For this reason the books of learners who did not have the opportunity to answer the questions on any one of the learning areas were not sent for data capturing.

Data were captured by hand over a period of two months, after which two programmers worked at cleaning the data for an additional two months. Scoring of all multiple-choice responses as well as open-ended responses was done programmatically once the data had been cleaned.

2.9   DATA ANALYSIS AND REPORTING

The data analysis and reporting comprised three phases: contextual information from the questionnaires; learner achievement results from the assessment instruments; and the identification of factors associated with learner achievement. Reports were prepared at both the national and provincial levels.

2.9.1 Learner Achievement Scores

All learner achievement scores were presented as percentages and were reported using means, standard errors and standard deviations. Scores were reported at the national level and aggregated by province. In addition, the performance of learners in each learning area was reported against the achievement levels suggested in the *Curriculum 2005 Assessment Guidelines* (DoE, n.d.). The description of the four levels ("Not Achieved", "Partly Achieved", "Achieved", and "Outstanding"), their interpretation, and the cut-off percentages are shown in Table 2.9.

Table 2.9 Percentage of learners at each achievement level

Achievement level	Description	Percentages
1	Not Achieved	1%–39%
2	Partly Achieved	40%–49%
3	Achieved	50%–69%
4	Outstanding	70%–100%

Results are presented in tables and graphs, with additional information provided in the Appendices at the end of the report.

2.9.2 Contextual data

The Grade 6 contextual questionnaires were adapted from the Grade 3 Systemic Evaluation study.

The framework was based on transformation goals of access, equity, and quality, and was represented by 26 education indicators developed by the DoE (DoE, 2003). However, as part of this framework, a number of indicators were categorised into more than one transformation goal, information on "efficiency" was not included, and the transformation goals were not represented as an integrated system. For this reason, the data from the contextual questionnaires were analysed through the "AQEE to improve learning" model that was designed for evaluating the functioning of education systems in developing nations (Kanjee, 2004).

The AQEE model is a comprehensive evidence-informed decision-making model based on the four policy goals of **A**ccess, **Q**uality, **E**fficiency & **E**quity. It embodies a systems approach that recognises the inextricable links between the technical, cultural and political factors in the formulation, implementation, monitoring and evaluation of education policy and practice. Central to the AQEE model is its focus on the learner and the learning and teaching process. Thus "Quality" comprises the essential focus of the model, while inter-dependence between the four policy goals is also recognised. (See Figure 2.1.) In addition, the model accounts for the inter-relatedness of data and information at the system level (national, provincial, district), institution/community level (school, adult centre) and learner level, so as to maximise the information provided to decision makers.

Figure 2.1 "AQEE to improve learning" model
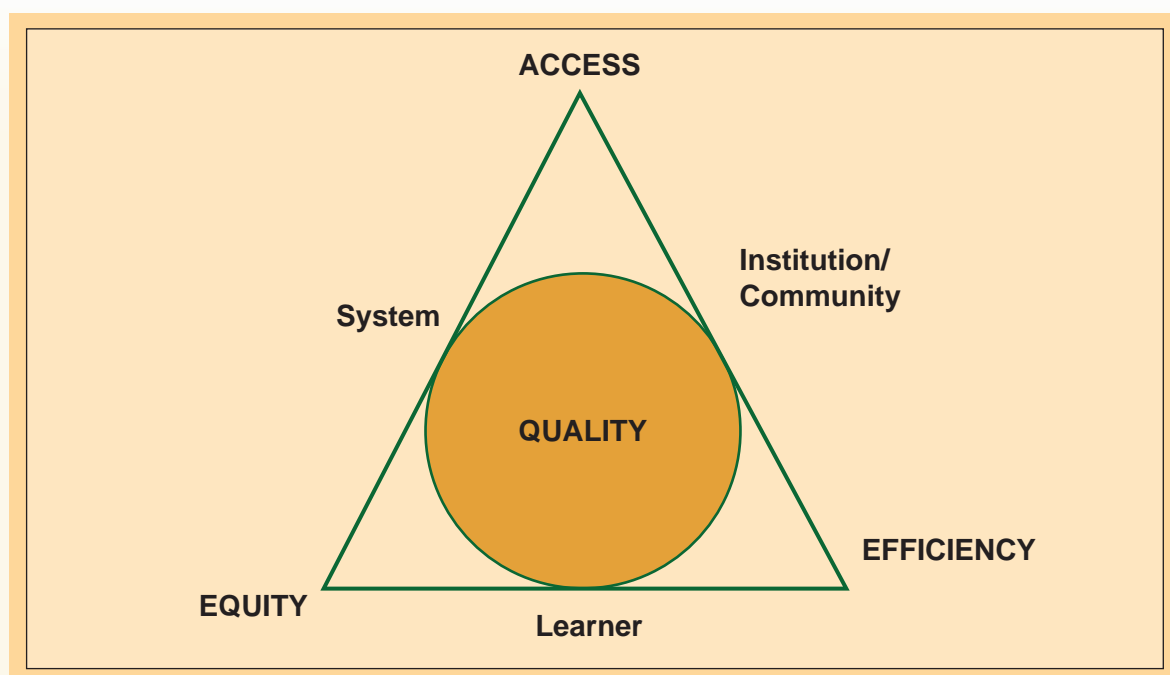
Each policy goal shown in Figure 2.1 comprises a framework that is defined and operationalised by indicators and indices. This makes it possible to adapt the model to the specific context that defines different national or local education systems and to focus on particular measures for monitoring and evaluating the attainment of relevant policy goals. Given that each indicator represents a complex construct that usually covers large amounts of data, indicators are further broken down into indices. An index is an individual or composite statistic that represents a basic construct in education for use in a policy context. In this way indices are used to explain a great deal about an entire system by reporting on the condition of a few of its particularly significant features. For example, an indicator can be created to reflect the construct "school resources".

However, in practice, "school resources" is a complex concept that represents a range of different types of resources. For this reason, the indicator is further broken down into a number of indices, such as "learning resources" or "sports resources" or "classroom furniture" or "school amenities (i.e. water, electricity, etc.)". These indices are calculated from the questions posed to teachers, learners, principals and parents pertaining to the condition of buildings, classrooms, furniture, windows, etc. Thus, a number of questions are then combined to calculate an index, and a number of these indices are combined to calculate an indicator. In turn, a number of indicators are combined to report on a policy goal.

2.9.3 Factors associated with learner achievement

A number of procedures were considered when the factors associated with learner achievement were examined. The purpose was to identify the strong predictors of learner achievement, both to understand the main drivers of achievement and to identify which variables were likely targets for intervention.

Both the Pearson correlation co-efficient and multiple regression may be used to determine the strength of relationships between the variables. A correlation co-efficient is commonly used to indicate the strength of the relationship between two variables. A high correlation implies that high values in one variable go along with high values in another variable and vice versa. Values of the correlation co-efficient may vary between -1 and +1, with 0 indicating no relationship and +1 indicating a perfect relationship or a perfect correspondence. When the correlation is +1, a higher value on one variable will always be accompanied by a higher value on the other variable. When the correlation is -1, a higher value on one variable will always be accompanied by a lower value on the other variable. Correlation indices in the range of 0.5 to 1 are usually regarded as very high, and correlation co-efficients in the range of 0.2 to 0.5 could be seen as substantial.

Simple correlations represent the strength of relationships, but they take cognisance of only two variables at a time. While multiple correlation techniques account for more than two variables simultaneously, they suffer significantly from the phenomenon of multi-colinearity. Multi-colinearity occurs when many of the predictor variables are related (as they typically are in the education context) and, consequently, it becomes impossible to separate out their individual effects. When these variables are combined in single linear models, the estimates from these models become unstable and may even be nonsensical.

In order to address these weaknesses, a third option was considered; namely, automatic interaction detection (AID) analysis. As its name suggests, the great strength of AID is that it can be used to examine interactive effects, which in this context would allow for the identification of the combination of predictor variables that produce optimal success. In addition, AID also allows for the possibility that different predictors may be optimal in different contexts. For example, "textbooks" may be important for the low socio-economic status (SES) group, whereas "sports facilities" may be important for the high SES group. Because many variables operate simultaneously, similar variables may exclude each other from the model. For example, well-resourced schools will tend to have a wide variety of good teaching resources. It becomes difficult therefore to establish which set of resources is most relevant to learner achievement. Consequently, the model may choose one set or the other, but not both.

An AID analysis begins by choosing from among the predictor variables the variable that most strongly predicts learner achievement. This is a two-step process in the scenario where the independent variable is measured on an interval scale, as is the case in this study. The first step is to split the independent variable at some point in its range in such a way that the two groups determined by that split have the highest possible difference in their mean learner achievement scores. In that sense, the split is optimal as it best describes the difference between the learner achievement mean scores. In this study, the strongest predictor was SES for each of the learning areas and so the data were split into two groups – high and low SES groups. AID then proceeds by treating each of the two groups as a separate sample and repeats this process, that is by identifying the best predictor variable in each group, say "sports facilities" for the high SES group and "textbooks" for the low SES group. This process is repeated until no further significant mean differences for subgroups are detected.

2.10 LIMITATIONS OF THE STUDY

The study was designed to provide a snapshot of education in South African public schools at the end of the Intermediate Phase (i.e. Grade 6). The study was well designed and implemented and the findings may, thus, be taken as an accurate reflection of the condition of schooling. However, a few limitations, as outlined below, should be noted.

The study was *not designed for making causal statements* pertaining to how specific factors impact on learner achievement. That is best done with designs that include experimental and control groups.

The analysis of contextual data is based on self-reported data obtained from district officials, principals, parents, educators, and learners.

The assessment instruments used could each contain only a limited sample of all the tasks from the curriculum. For some Learning Outcomes, the number of items was as low as five or six. In the case of Language (LOLT), not all Learning Outcomes could be assessed, as the assessment relied heavily on reading and writing ability in a classroom context.

The role of item type should be noted when scores are interpreted in a criterion-referenced context. In an item with two answer options, the fact that 50% of respondents got the item right does not denote the same degree of achievement as would be implied if 50% correctly answered an open-ended item.

The sample was only stratified by province while at the district/region or school level random sampling was used. One weakness of random sampling is the probability that minority populations may either be excluded or under-represented. For instance, in this study there could be no guarantee that schools in various geographical areas (i.e. urban, township, rural, remote rural, and farm) were proportionately represented. Principals were requested to indicate where schools were located and this could have introduced an element of subjectivity. These two factors namely, random sampling and self-reporting could explain why in Limpopo Province no urban schools were accounted for in the sample.

2.11 REPORTING AND INTERPRETATION OF RESULTS

The data for the evaluation were analysed and presented by: (i) creating indicators and indices as outlined in the AQEE model; (ii) reporting on each learning area regarding the performance of learners; and (iii) identifying factors associated with learner achievement for each of the three learning areas.

2.11.1 Interpretation of indicators

All indicators used to present the context of learning were reported under the heading of the four policy goals: "access, quality, efficiency, and equity". To facilitate the interpretation of indicators, a ten-point scale was applied, with indicator scores closer to ten signalling a positive outcome. In addition, scores were divided into five categories, to provide a meaningful and practical interpretation of each indicator. Additional details are presented in Chapter 3.

2.11.2 Interpretation of learner-assessment results

For the learner-assessment component, mean score percentages as well as standard errors and standard deviations were used to report results for each of the three learning areas. Scores were reported using either tables or graphs and were aggregated by province, with additional details provided in the Appendices. In reporting results, percentages were usually rounded to whole numbers; in some instances, therefore, totals may not necessarily add up to 100%.

2.11.3 Interpretation of results for factors associated with learner achievement

The identification of factors associated with learner achievement was determined by the use of correlations as well as AID analysis. The indicators found to have a significant correlation or association with learner achievement were also reported through the five interpretation levels reported in Chapter 3.

2.12 CONCLUSION

This chapter described the research design and methodology used in conducting the systemic evaluation of the Intermediate Phase. Two types of instruments were used in collecting data: learner-assessment instruments and questionnaires about the context in which learners function. The assessment instruments were developed to assess learner achievement in three learning areas: Language (LOLT), Mathematics, and Natural Sciences.

The contextual questionnaires solicited information from learners, educators, principals, parents and district officials about the learning and teaching conditions at home and at school. These questionnaires were refined versions of the contextual instruments of the Grade 3 systemic study conducted in 2001.

The instruments were administered to a nationally representative sample of Grade 6 learners across all provinces in September 2004. About 3% of the Grade 6 learners in the country were assessed. The proportion of boys and girls assessed was about equal. It was found that about 9% of learners were already 15 years or older. They are so much older than the learners who progressed through school at the regular rate that they must be considered over-age. The presence of overage learners may make additional demands on educators, and the value of repetition needs careful consideration. One percent of learners was younger than is possible had they started school at the age determined by the DoE.

The chapter also noted the way in which data was analysed and reported. The "AQEE to improve learning" model was used to report on contextual information, while learner scores were reported separately for each learning area at the national and provincial levels. In addition, correlations and AID analysis were used to identify factors associated with learner achievement.

In the next chapter, the results derived from the contextual data used to describe the context of learning and teaching at the Intermediate Phase in South Africa are presented.

CHAPTER 3
Context of Learning and Teaching

In this chapter, the teaching and learning conditions in the school and the home environment of the learners surveyed are presented and discussed with a view to ascertaining their influence on learning achievement (see Chapter 5). Data were obtained from the following survey instruments: the Learner Questionnaire, the Parent Questionnaire, the Educator Questionnaire and the Principal Questionnaire. All four questionnaires elicit information on background characteristics of the targeted groups and on the environmental conditions pertaining to the teaching and learning processes.

3.1 REPORTING AND INTERPRETATION OF INDICATORS AND INDICES

A number of questionnaires were administered so that data about the context and conditions within which learning and teaching take place in the South African education system could be obtained. Learners, parents, educators, principals, and district officials completed the questionnaires, which comprised between 25 and 42 questions each. The data collected had to be summarised so that all relevant information could be presented in an "easy to understand" manner. To this end, a number of indicators and indices were developed that summarised the responses obtained from all the different questionnaires without compromising the information communicated in the respective responses.

The indicators developed were based on the essential policy goals of *access*, *quality, equity and efficiency* and focused specifically on the issue of improving learning (see Chapter 2). To most clearly explain the indicators, each indicator is assigned a score of between 0 and 10, where scores closer to 10 signal a positive outcome and scores closer to zero signal a negative outcome. In addition, indicator scores were placed into one of five categories, as shown in Table 3.1, to provide an interpretation of each score, regarding improving learning in practice.

Table 3.1 Interpretation of indicator and index scores

Index score range	Possible interpretations
0 to 3	Unacceptable/very low
3.1 to 5	Largely problematic/poor
5.1 to 7	Problematic/inadequate/limited
7.1 to 9	Satisfactory but could improve
9.1 to 10	Very good/high

The indicators describing the learning and teaching context within which Grade 6 learners function are presented under the heading "policy goals: access, quality, efficiency, and equity". Each indicator is presented as text, or in tables or graphs. In addition, information on various indices is reported and, where necessary, responses are indicated as percentages.

3.2 POLICY GOAL: ACCESS

The concept of access to education generally refers to entry into the (formal) school system, and access to learning materials and educational information, and comprises the following four features:

i)   Getting to school – as defined by how long it takes learners to travel to school;
ii) Entry into school – as defined by: (a) obstacles to attending schools (e.g. children with special needs) and (b) admission policy and criteria (e.g. school fees);
iii) Access to information – as defined by the accessibility of educational information at home and at school (e.g. newspapers, books, computers, library); and
iv) Access to learning materials and textbooks – as defined by materials such as chalk, commercially made wall charts, exercise books, textbooks, etc. that are used in the teaching and learning process.

Various international and national declarations (such as the Universal Declaration of Human Rights (1948) and the United Nations Millennium Declaration) have asserted the critical importance of ensuring access to education for all children. For example, a recent study by the United Nations Girls Education Initiative (UNGEI) found that "around 45 million children in sub-Saharan Africa are out of school. Nowhere else in the world are children so deprived of education" (2005:1). The report notes that:

> "The opportunity to attend school is not only a question of learning for children in southern Africa. It is also one of survival, because access to education and information is vital for adolescents to protect themselves from AIDS and other diseases" (Emphasis added) (UNGEI, 2005:1).

In South Africa, the right to education (read access) for all children is enshrined in the Constitution. In addition, the South African Government has declared education compulsory for all 7 to 15 year olds and has made provision to exempt poor parents from paying school fees so that it can ensure access to education.

Among the main barriers to access to education in most developing countries are the distances that learners travel to school and the amount of school fees required to enrol at school. Language has also been found to be an obstacle to education. Distance to school is particularly taxing in the sense that some learners simply cannot withstand the kilometres they are required to walk and in that those who manage to walk the long distances lag behind other learners because they are too exhausted to concentrate on their school work. Fees, in addition, perpetuate class inequalities, as children from poor families are unable to pay school fees and therefore do not complete their schooling. For this reason, the issue of access to education is central to the development of nations and the eradication of illiteracy and economic inequalities.

3.2.1   Access to the school

The distance that learners have to travel to school must be considered when one develops a picture of the extent to which they can take advantage of the schooling opportunities available. It is reasonable to assume that learners who need to travel long distances will spend less time at school. Impaired concentration may be another adverse effect. The **getting to school** indicator was constructed to reflect the time taken to travel to school. The national average for this indicator was 7.8, which can be interpreted as "satisfactory but could improve". Similarly, indicator scores for all the provinces ranged from 7.3 (KZN) to 8.7 (WC) (Table 3.2 in Appendix A).

Table 3.4 Mode of transport related to time spent getting to school (%)

	Less than 15 minutes	From 15 to 30 minutes	From 30 to 45 minutes	From 45 to 60 minutes	More than 60 minutes
By walking	39	22	7	4	3
By bicycle	1	1	0	0	0
By bus	1	2	1	1	0
By taxi	1	2	1	0	0
By train	0	0	0	0	0
By car	7	3	1	0	0
By truck or tractor	0	0	0	0	0
By horse or donkey	0	0	0	0	0
Other	1	0	0	0	0
Total	**50**	**29**	**10**	**6**	**5**

As reported in Table 3.3 in Appendix A and in Table 3.4 above, over 80% of the learners take less than 30 minutes to get to school, with only 5% of learners taking more than one hour. In addition, 61% of learners who reported that they walked to school take less than 30 minutes to do so, which indicates that most schools are within the vicinity of learners' places of residence. However, a study conducted by the HSRC (2005) found that many learners in South Africa's rural schools walk long distances to get to their schools.

Table 3.5 Time spent getting to school by location of school (%)

	Urban	Township	Rural	Remote rural	Farm
Less than 15 minutes	60	52	47	46	38
From 15 to 30 minutes	26	31	31	28	28
From 30 to 45 minutes	7	9	11	11	12
From 45 to 60 minutes	4	4	6	7	10
More than 60 minutes'	3	4	5	8	12
Total	**100**	**100**	**100**	**100**	**100**

Similar findings are noted in this study (Table 3.5), where about a third of the learners in rural, remote rural, and farm areas reportedly take more than 30 minutes to get to school.

3.2.2 Entry into schools

Although every child has the right to basic education, there are still obstacles such as school fees that prevent or restrict learners from accessing schools. The **entry into schools indicator** is made up of the following indices: school fees and access for learners with special needs. In this study most learners across the country reported that their entry into schools was "limited" (with a national average of 5.9) (Table 3.6 in Appendix A).
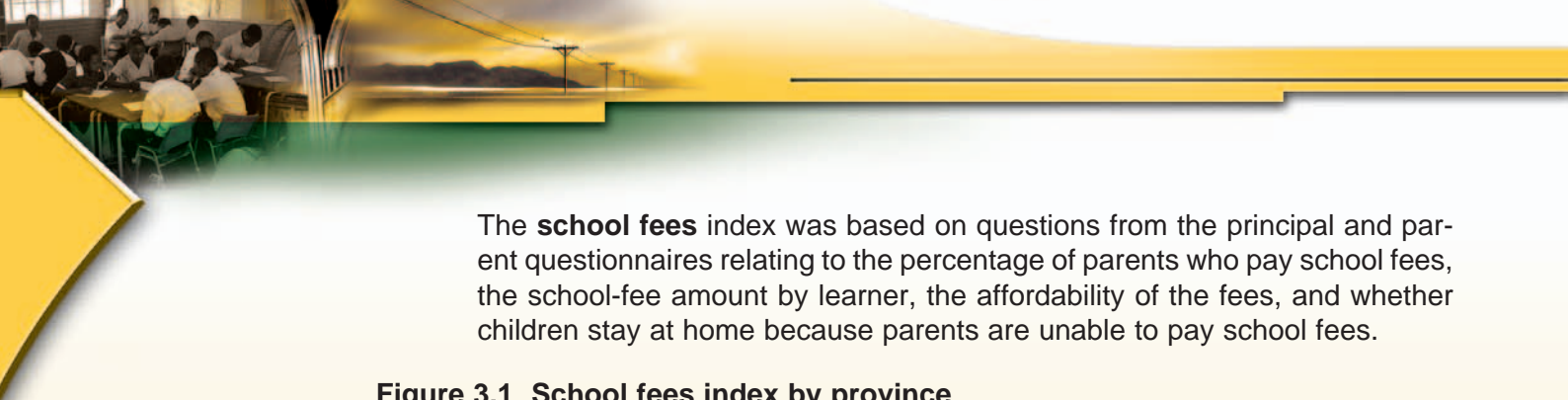
The **school fees** index was based on questions from the principal and parent questionnaires relating to the percentage of parents who pay school fees, the school-fee amount by learner, the affordability of the fees, and whether children stay at home because parents are unable to pay school fees.

Figure 3.1 School fees index by province
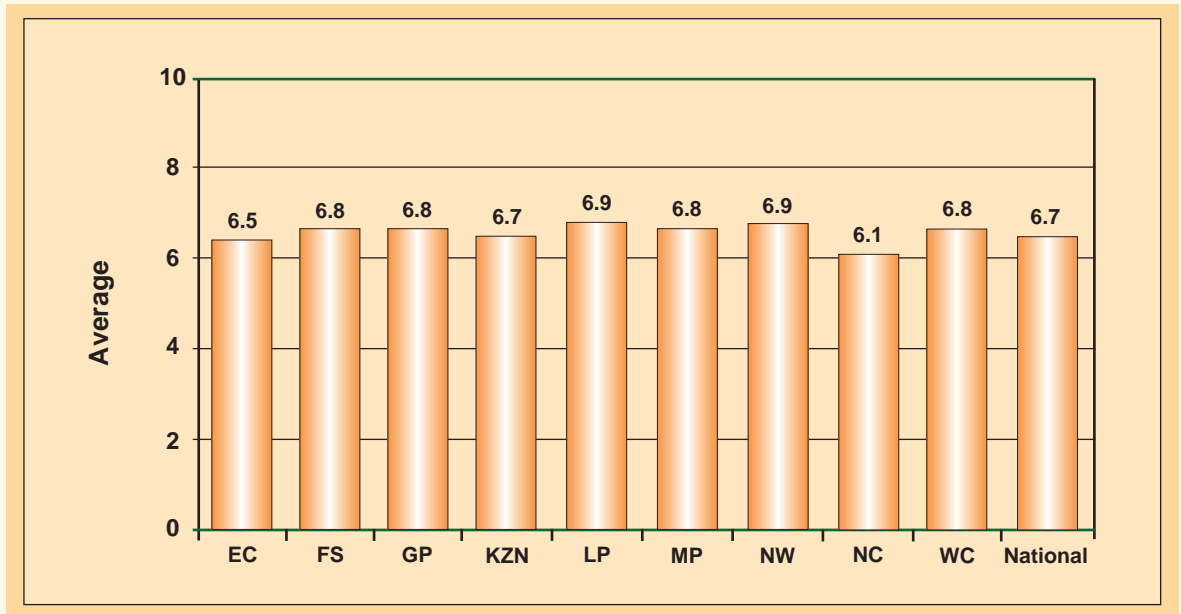
As presented in Figure 3.1, the **school fees index** is "problematic" for all provinces (national average of 6.7), indicating that access to schools because of school fees is still a barrier for some learners. Further analyses reveal that the incidence of the payment of fees by parents is higher in those provinces where fees are lower (Tables 3.7a, 3.7b, 3.8a and 3.8b in Appendix A). This finding suggests that fee recovery is more successful when fees are low. Although the majority of parents paid school fees, approximately 13% of parents, especially in rural areas, reported that they had, on occasion, kept their children at home because they were unable to pay school fees.

The **access for learners with special educational needs (LSEN) index** was based on a question from the educator questionnaire and refers to whether classrooms are accessible to learners with special educational needs.

Table 3.9 Percentage of LSEN classroom accessibility by province

	Mathematics		Natural Sciences		Language (LOLT)	
	Yes	No	Yes	No	Yes	No
EC	18	82	19	81	15	85
FS	23	77	32	68	28	72
GP	22	78	24	76	25	75
KZN	26	74	20	80	23	77
LP	16	84	14	86	18	82
MP	29	71	25	75	25	75

Table 3.9 (continued)

	Mathematics		Natural Sciences		Language (LOLT)	
	Yes	No	Yes	No	Yes	No
NW	18	82	28	72	21	79
NC	31	69	20	80	31	69
WC	26	74	23	77	22	78
National	22	78	22	78	22	78

As noted in Table 3.9, the majority of educators, approximately 78% for all three learning areas and all provinces, reported that their classrooms were not easily accessible to learners with special educational needs.

3.2.3 Access to information

Access to additional information outside formal learning-teaching interactions is essential for supporting the holistic and continuous development of learners. Having access to different types of information in various printed or telecommunication media exposes learners to new information and provides them with greater opportunity to read and to increase their knowledge. In addition, the number of books to which a learner has access also influences that learner's reading habits and abilities.

In this survey, the **access to information indicator** (Table 3.10 in Appendix A) is made up of the following indices: information at school (e.g. access to the school library and reading books in the class) and information at home (e.g. electronic media, print media, books at home and access to a community library). It should be noted that this indicator only refers to access and does not account for whether learners use the information to which they have access.

Figure 3.2a Access to information by province
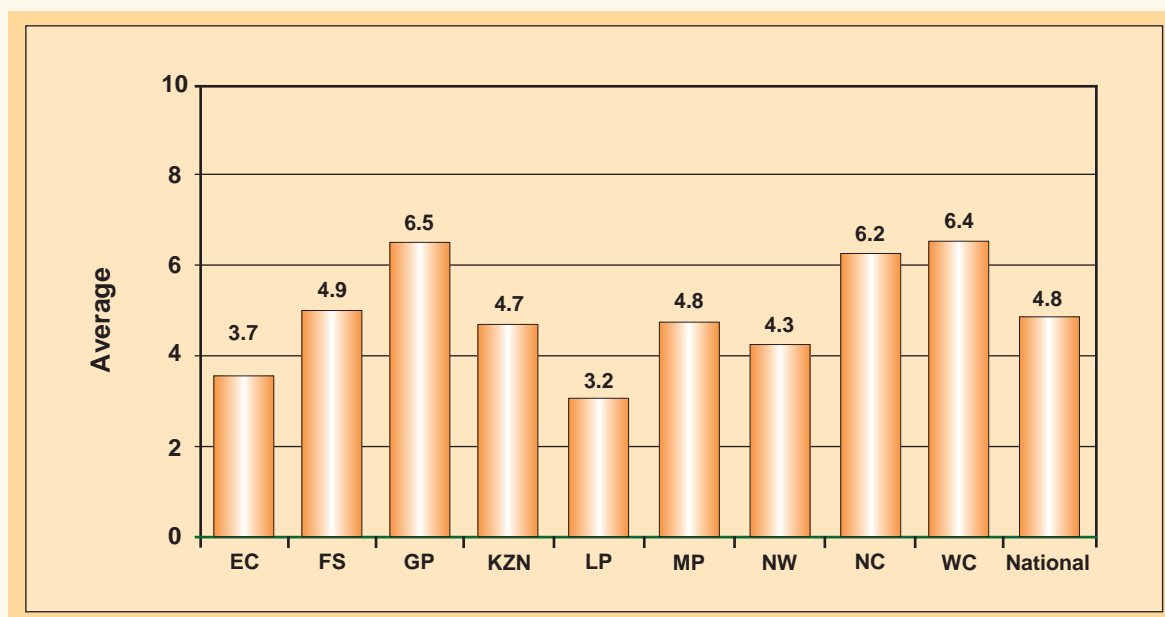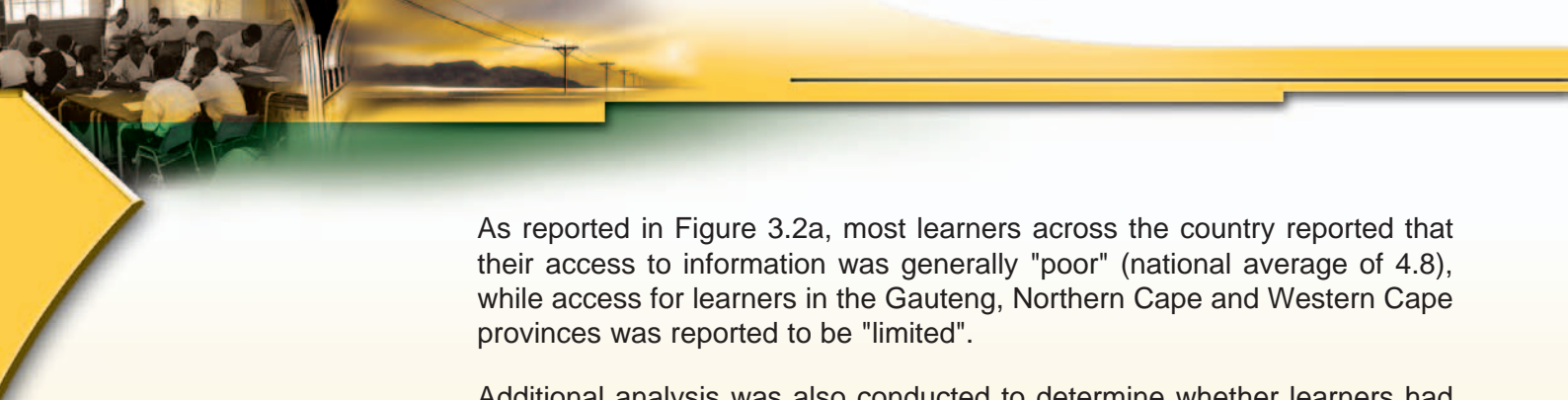
As reported in Figure 3.2a, most learners across the country reported that their access to information was generally "poor" (national average of 4.8), while access for learners in the Gauteng, Northern Cape and Western Cape provinces was reported to be "limited".

Additional analysis was also conducted to determine whether learners had greater access to **information at school** (Tables 3.11 and 3.12 in Appendix A) or to **information at home** (Table 3.13 in Appendix A).

Figure 3.2b Access to information at home and school
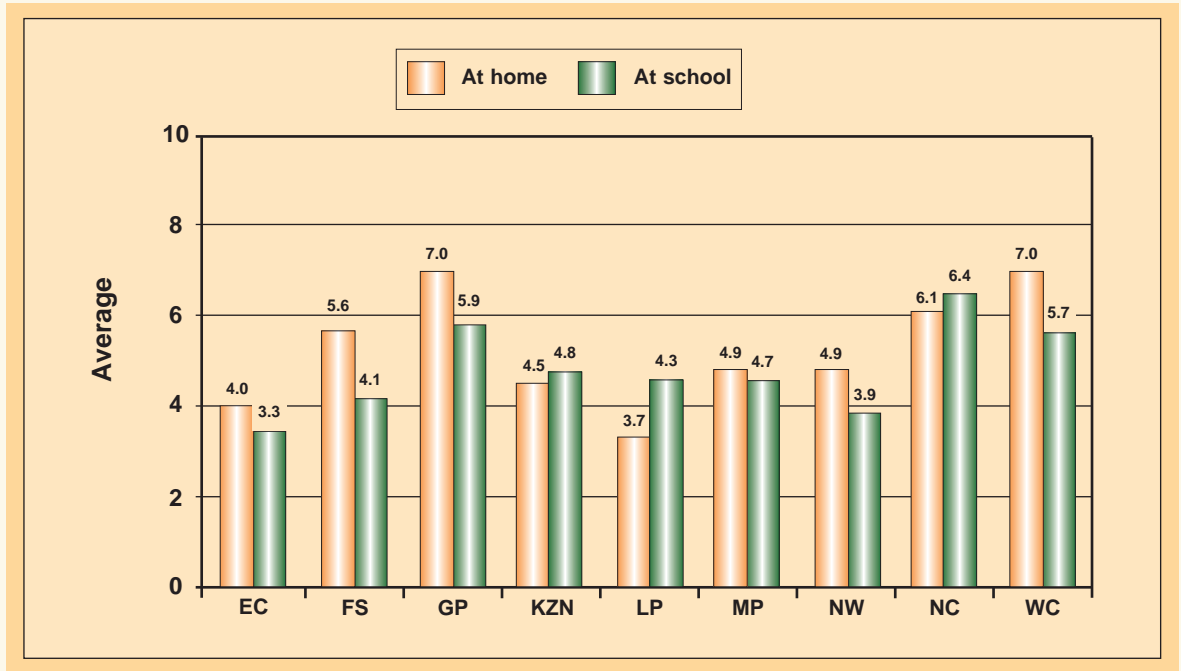
As presented in Figure 3.2b, access to information at home was generally higher in most provinces than was access to information at school. However, access to information at home was still reported as "poor" for five provinces (EC, LP, KZN, MP and NW), and as "limited" in four provinces (FS, NC, GP and WC). Access to information in schools was reported as "unacceptable" in one province (LP), "poor" in five provinces (EC, KZN, FS, MP, NW), and "limited" in three provinces (GP, NC, WC). At present, access to a school library is a problem in a large number of schools, with 46% of learners indicating that they did not have a library at school.

Figure 3.3 Access to school and community libraries
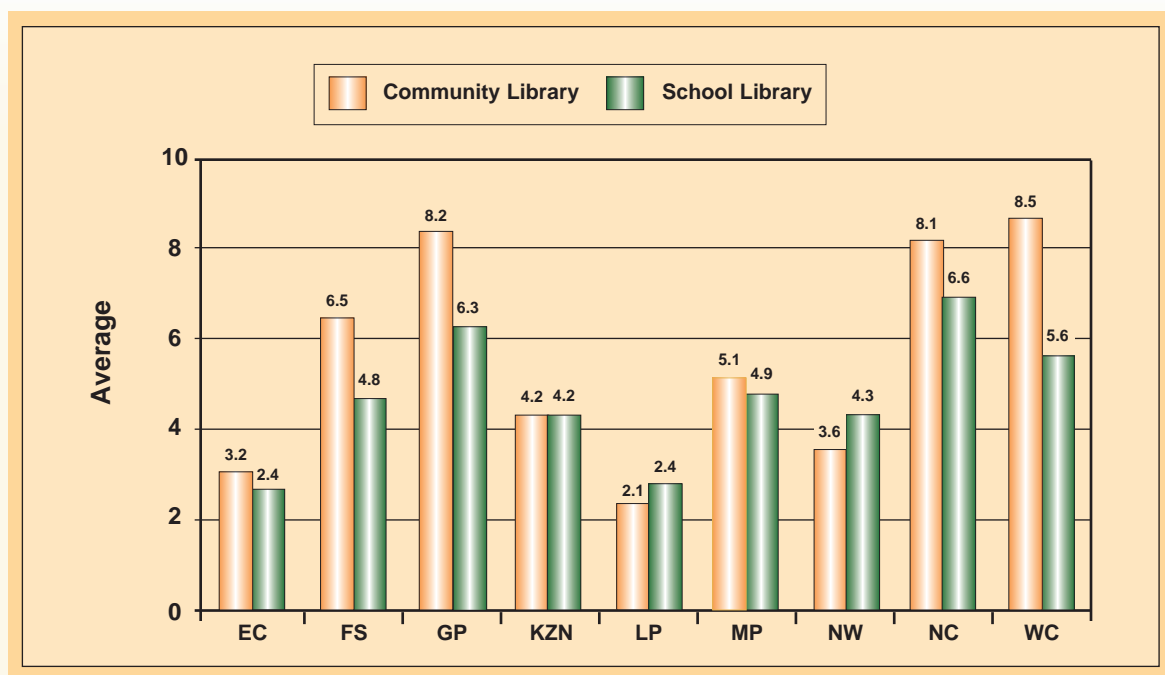
As depicted in Figure 3.3, apart from Limpopo Province, access to the community library was generally greater than access to the school library across all provinces, although access to the community library was only "satisfactory" in Gauteng, the Northern Cape, and the Western Cape. With regard to the school library, access was reported as "unacceptable" in two provinces (EC, LP), "largely problematic" in four provinces (FS, KZN, MP, NW), and "limited" in three provinces (GP, NC, WC).

Learners also reported that at home they generally had less access to print media (national average 4.5) such as newspapers and magazines and books (average 5.1) that are different from school textbooks, as compared to electronic media (average 5.6) such as radio and television (Table 3.13 in Appendix A.). Given that the new curriculum requires that learners obtain and use information from newspapers and magazines at home, this could have a negative effect on learning.

3.2.4 Access to learning material and textbooks

The availability of relevant materials and textbooks is essential for raising the quality of the teaching and learning process (UNESCO, 2004). The learning **materials and textbooks indicator** provides information on the level of access that learners have to learning materials and textbooks in the class-room. The indicator was analysed separately for each learning area and is made up of the learning materials index and the textbook index. Across all provinces and all three learning areas, access was reported as either "limited" or "satisfactory", with indicator scores ranging between 5.8 and 7.7. The national average was 6.3, which could be interpreted as "limited" (Table 3.14 in Appendix A).

The results of the **learning materials index** show that access to general learning materials such as pencils, exercise books, wall charts, dictionaries and maps was reported as "limited" in all provinces and across all learning areas (national average of 6.5). This implies that a number of learners do not

as yet have adequate access to these basic learning materials (Tables 3.15a to 3.15c in Appendix A).

Figure 3.4 Access to Mathematics learning materials by province
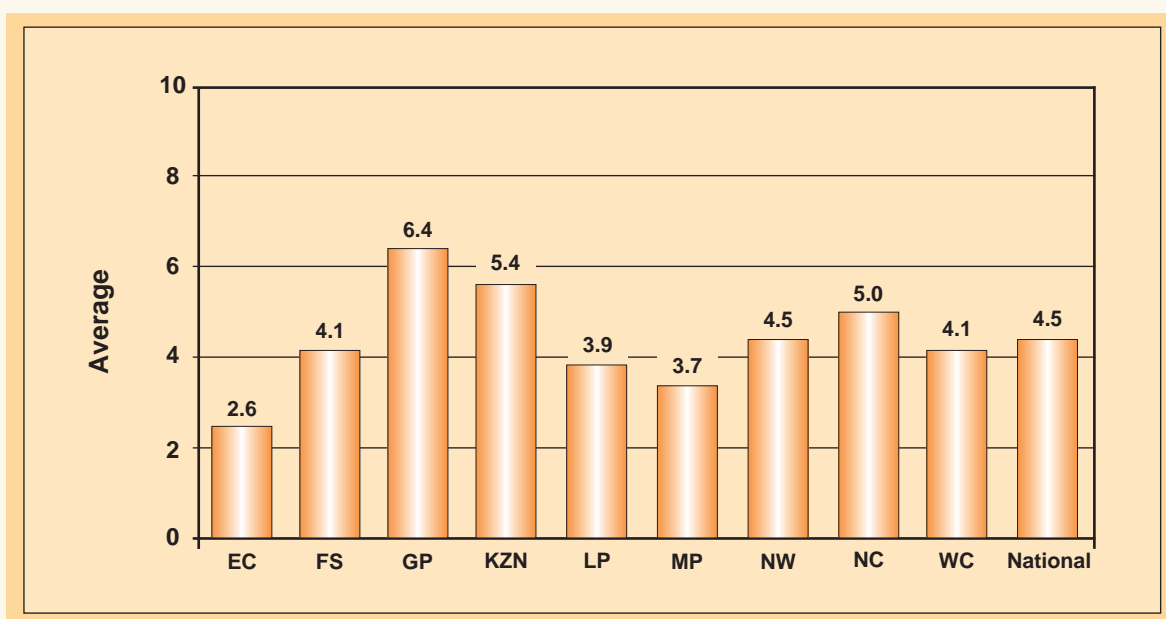
Information was also obtained from educators about the availability of Mathematics learning materials such as calculators and measuring instruments. As shown in Figure 3.4 (Table 3.15a), access to these materials was found to be "unacceptable" in the Eastern Cape, "largely problematic" in five provinces (FS, LP, MP, NW and WC), and "limited" in the rest (GP, KZN, NC). It must be noted, however, that access to chalk and chalkboards was reported as being "very good" in all provinces and for all learning areas.

In most learning contexts, textbooks serve as the most valuable resource for learners, which means that **access to textbooks** is vital. In the Eastern Cape, KwaZulu-Natal, and Limpopo provinces, the textbook is generally the most available resource or learning support material (HSRC, 2005).

Table 3.16 Learners indicating they have textbooks by province and learning area (%)

	Mathematics	Natural Sciences	Language (LOLT)
EC	56	57	57
FS	63	63	70
GP	56	54	58
KZN	43	39	48
LP	63	68	62
MP	63	64	66
NW	68	65	69
NC	76	74	76
WC	72	59	64
National	60	58	61

Approximately 60% of Grade 6 learners, in all learning areas, reported that they had a textbook. However, access was particularly low in KwaZulu-Natal (between 39% and 48%) and particularly high in the Northern Cape (approximately 75%). In the Western Cape, a significantly higher percentage of learners reported having Mathematics textbooks (Table 3.16). In general, though, this study finds that access to textbooks by learners remains a significant problem in the country, particularly in the light of the reliance on textbooks for learning and teaching.

3.3   POLICY GOAL: QUALITY

Improving the quality of education has been one of the greatest challenges facing education systems the world over. Given the large variation in living conditions across communities as well as the different contexts within which education is provided, it is not surprising that the definition of "quality education" varies significantly. In the AQEE model, quality is defined as:

i)   What a learner should know, which refers to the content and goals of the education system as reflected in mission and value statements and as noted in the curriculum and standards. (The curriculum documents should state what the schools should cover in the school year calendar. Curriculum support documents refer to the specific learning area content that the educator ought to cover in the school term);

ii) Where learning occurs, that is, the context within which learning occurs (e.g. class size, the level of health and safety of the learning environment, availability of physical and human resources, and facilities to support learning, i.e. learning materials, books, classrooms, etc.);

iii) How learning takes place, which refers to the implemented curriculum and the characteristics of learner-educator interaction such as whether teaching is learner-centred, whether educators are qualified, the role that learners play in their learning (e.g. homework practices), the role that parental involvement plays in their learning, educator and learner attitudes towards learning, and other educator practices (e.g. homework, assessment and record keeping), for example; and

iv) What is actually learnt, which refers to the outcomes of learning or the attained curriculum; that is, the knowledge, skills, attitudes and values that learners acquire.

Policy goal: Quality – Content and goals of the education system

3.3.1   Curriculum documents

Nationally, approximately 95% of educators reported that they had curriculum policy documents in their classrooms. In Mpumalanga, however, only 88% of Mathematics educators stated that they were in possession of the relevant documents (Table 3.17 in Appendix A).

Policy goal: Quality – Context within which learning occurs

3.3.2   School resources

The availability of a range of resources within the school is critical for improving learning and teaching practices in the classroom. However, a number of authors have pointed out that having sufficient resources on their own does not necessarily translate into good and effective teaching practices
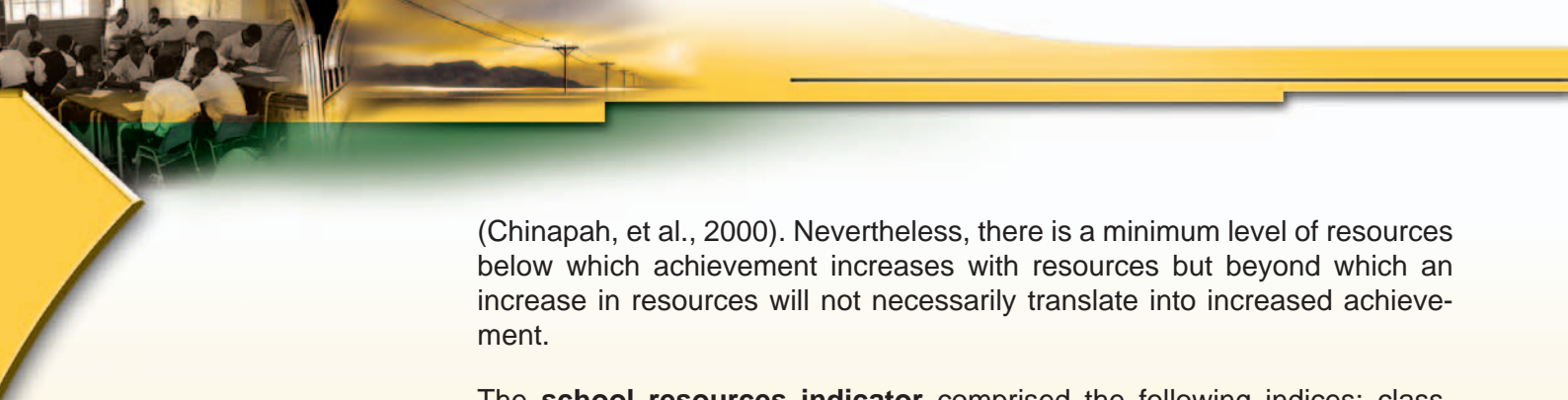
(Chinapah, et al., 2000). Nevertheless, there is a minimum level of resources below which achievement increases with resources but beyond which an increase in resources will not necessarily translate into increased achievement.

The **school resources indicator** comprised the following indices: classroom furniture, physical resources, school amenities, learning resources, sports resources, and vegetable gardens.

Figure 3.5 School resources by province and learning area[1]
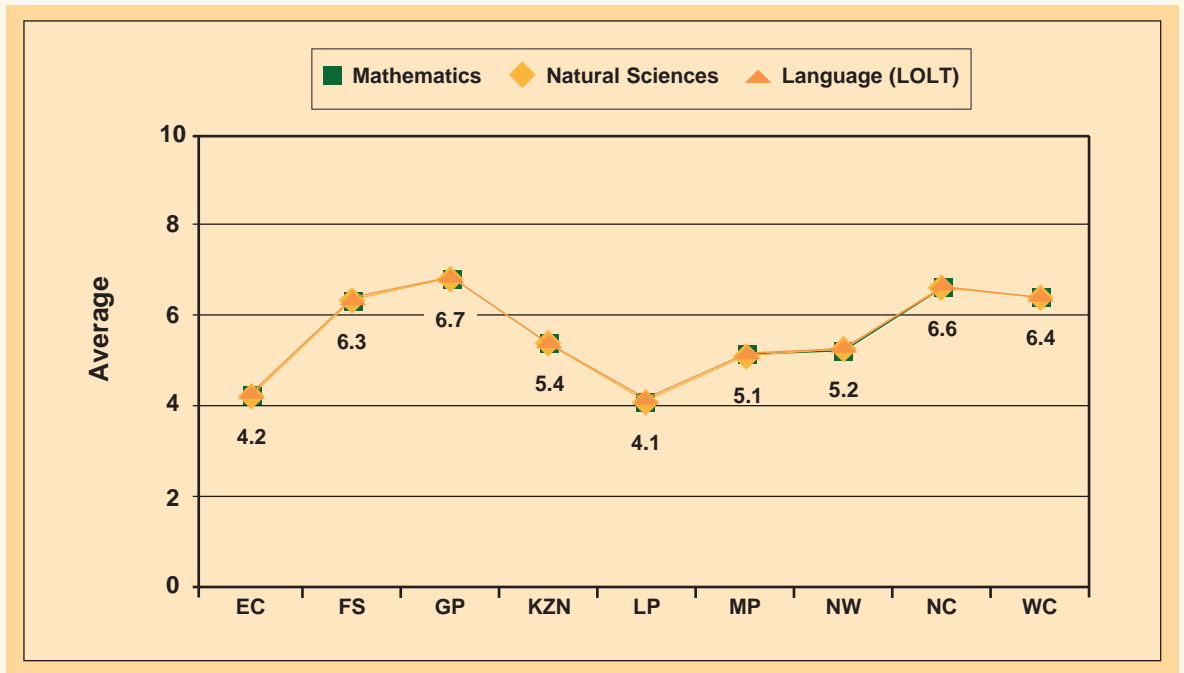
As seen in Figure 3.5, the availability of resources is similar for all three learning areas, with school resources being "largely problematic" in two provinces (EC, LP), and "inadequate" for the other seven provinces (Table 3.18 in Appendix A).

The availability of sufficient basic furniture, for use by learners and educators (e.g. tables, chairs, and storage space), produces an enabling physical environment, that can facilitate the learning-teaching process. In all learning areas and for all the provinces the **classroom furniture** index ranged between 7.0 and 9.3 and could be interpreted as "satisfactory", with the exception of the Northern Cape Province, which could be interpreted as "very good" (Table 3.19 in Appendix A).

The **physical resources index** refers to the condition of office and classroom equipment (e.g. fax machines and telephones), the facilities (e.g. cafeteria, staff room, school hall, and storeroom) and the number of classrooms available.

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[1] Figures for all three learning areas were very similar; for this reason the graph appears to display a single line.

Figure 3.6 Physical resources index by province
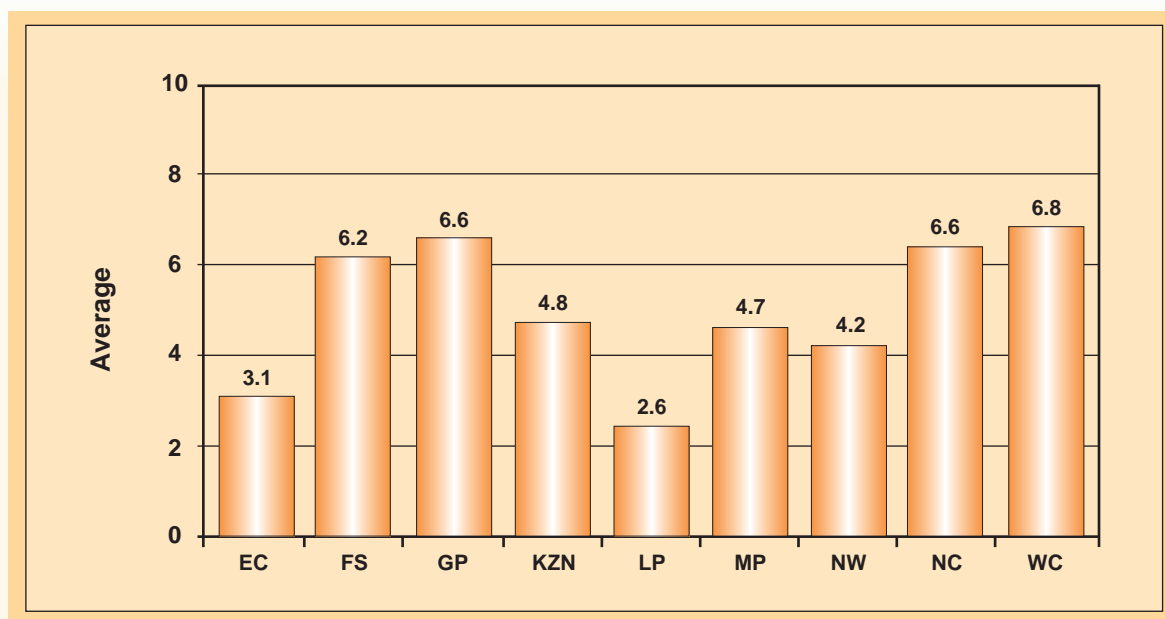
As shown in Figure 3.6, the index score of one province had an "unaccept-able" average (LP), four provinces had "largely problematic" averages (EC, KZN, MP, NC), and the remaining provinces had "inadequate" average scores (FS, GP, NC, WC) (Table 3.20 in Appendix A).

Schools need to have amenities such as playgrounds and toilets, and access to a basic supply of water and electricity. These amenities enable learners to broaden their out-of-classroom activities and aid in the effective running of the school. The **school amenities index** was "satisfactory" for five provinces (FS, GP, NW, NC, and WC) and "inadequate" for the other four provinces. These results indicate that schools generally have most of the required amenities (Table 3.21 in Appendix A).

Figure 3.7 Learning resources index by province
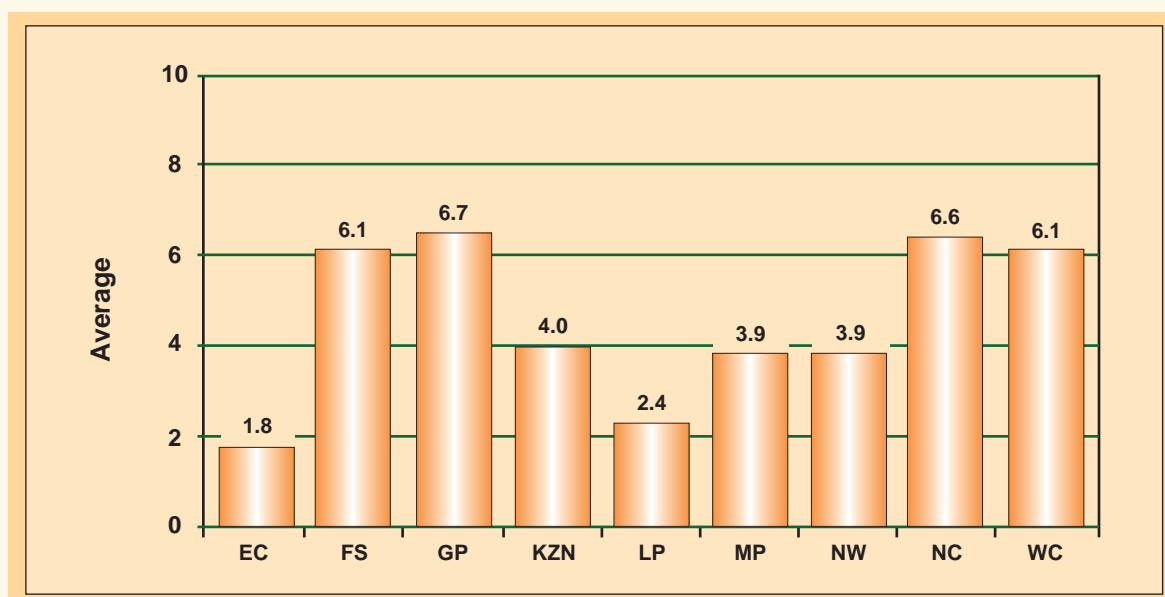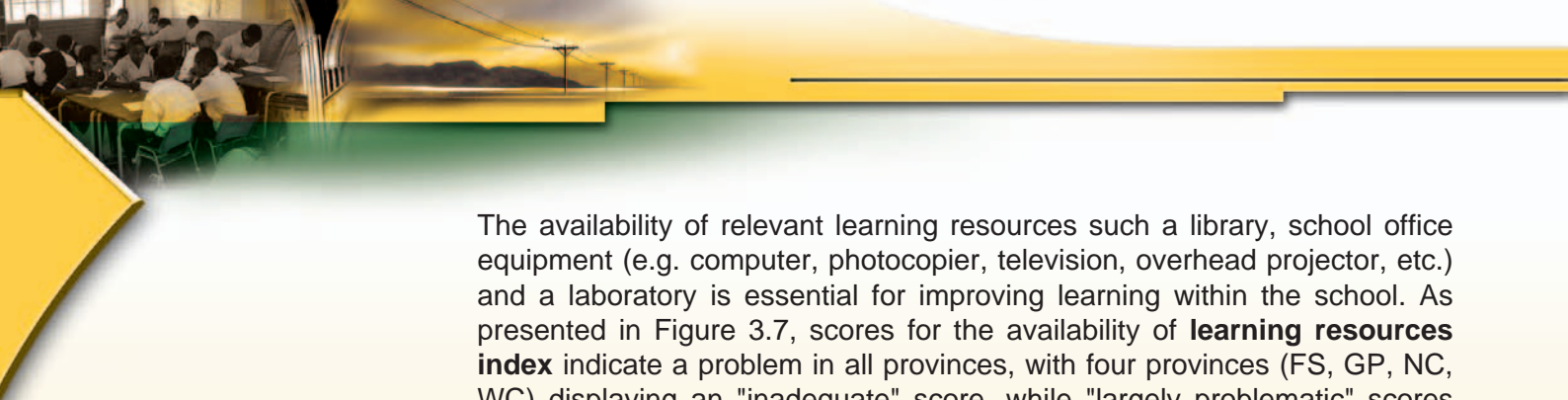
The availability of relevant learning resources such a library, school office equipment (e.g. computer, photocopier, television, overhead projector, etc.) and a laboratory is essential for improving learning within the school. As presented in Figure 3.7, scores for the availability of **learning resources index** indicate a problem in all provinces, with four provinces (FS, GP, NC, WC) displaying an "inadequate" score, while "largely problematic" scores being recorded in three provinces (KZN, MP, NW) and "unacceptable" scores in two provinces (EC, LP) (Table 3.22 in Appendix A).

The **sports resources index** provides information on the availability and condition of sport facilities and equipment. Scores for all provinces were reported as "inadequate", with an average of 6.1 (Table 3.23 in Appendix A).

The vegetable garden should be seen within the broader context of dealing with the issue of poverty and attempts to develop sustainable food security nets. The percentage of schools that have vegetable gardens varied between 35% and 50% across provinces. In Gauteng, KwaZulu-Natal, and Mpumalanga, this percentage was slightly higher than in the other provinces (Tables 3.24a to 3.24c in Appendix A). Schools reported that only half of these vegetable gardens were reported to be in a good condition, that is, well-tended. Learners who are well nourished are more likely to be attentive in class and able to participate in learning activities. Schools in impoverished localities should therefore be supported in their efforts to supplement the nutrition of learners through the establishment of vegetable gardens and other food-generating projects.

3.3.3 Discipline at school

The school environment in terms of safety as well as disciplined learners and educators is an essential prerequisite for effective learning to take place. Educators' abilities to manage and control their learners' learning and behaviour in the classroom can affect learner achievement (Brophy & Good, 1986). The **discipline at school indicator** refers to the frequency with which schools experience disciplinary problems with learners and educators, and the actions taken to maintain discipline. The discipline at school indicator is made up of four indices: **behavioural problems, substance-abuse problems,** addressing-discipline problems, and educator discipline. Discipline at school was rated as "satisfactory" (national average of 7.4) in all provinces (Table 3.25 in Appendix A). For learners, behavioural problems seemed more prevalent than substance-abuse problems (Tables 3.26 to 3.27 in Appendix A). In **addressing discipline problems,** most principals either sent learners for counselling and/or informed their parents of the problems (Tables 3.28 and 3.29 in Appendix A). Very few school principals tended to suspend learners from school, with the exception of the Western Cape Province where 47% of school principals indicated that they took this form of action. For the majority of the provinces, roughly 50% of school principals used detention to maintain discipline at their schools, while in the Western Cape Province just over 70% of school principals used detention.

The **educator discipline index** was rated as "satisfactory" for all provinces, with a national average of 8.1 indicating some discipline problems. Where problems did occur, these were mainly related to punctuality and absenteeism (Tables 3.30 and 3.31 in Appendix A). However, educators are considered role models for learners and therefore a higher index score of 9 or

10 would be more desirable. The information on educator discipline was based on questions from the Principal Questionnaire, which comprised questions relating to drug and alcohol abuse, absenteeism and sexual-harassment problems with educators in the school.

3.3.4 School safety

All schools should provide an environment that is safe and secure for all learners, educators, and staff members. Without a safe learning environment, educators may have difficulty teaching and learners may find their environment a difficult one in which to learn. The school safety indicator was constructed from school principal, parent and learner responses pertaining to perceptions of feeling safe; experiences of intimidation, bullying and sexual harassment; and the carrying of weapons in school and school activities for ensuring safety (e.g. security services, scholar patrols, fire extinguisher).

Figure 3.8 School safety indicators by province
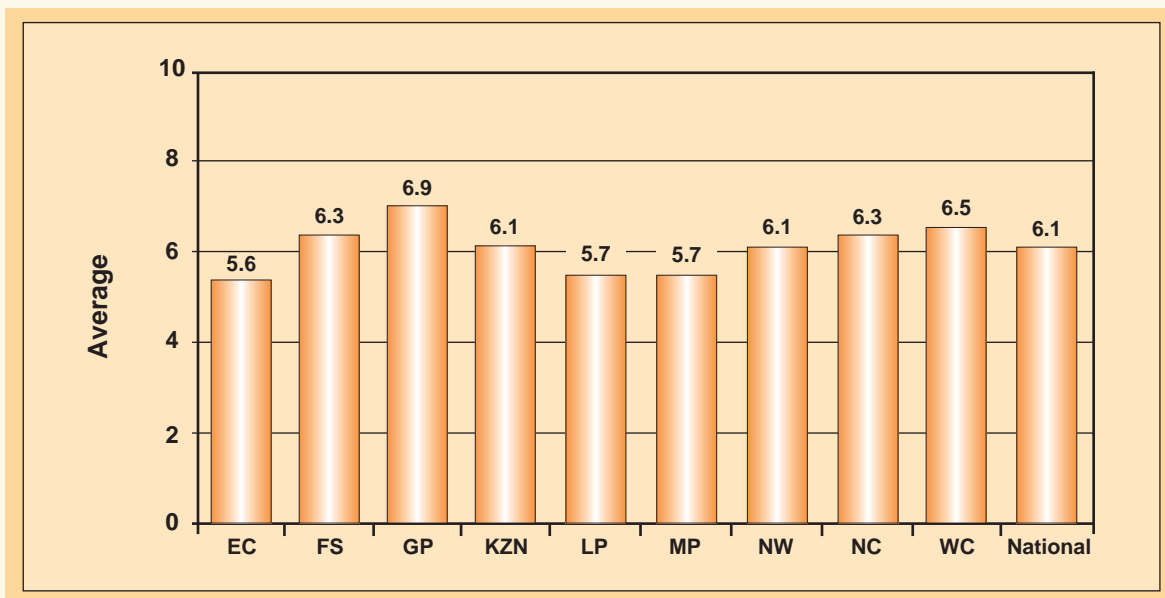
For this indicator (Figure 3.8), scores for all provinces were "problematic", which denoted that issues of safety were a challenge for a number of schools (Table 3.32 in Appendix A).

Further analysis reveals that approximately 15% of learners and 14% of parents reported that they did not feel that the school environment was safe for learners (Tables 3.33 and 3.34 in Appendix A). In addition, only 51% of school principals rated safety at their schools as good or excellent, while 34% of learners indicated that dangerous weapons were brought to school, and 69% indicated that bullying occurred at school (Tables 3.35a, 3.35b and 3.35c in Appendix A).

3.3.5 Meals for learners

Feeding schemes have been implemented in schools located in poor communities so that hunger is not an impediment to learning. A recent report in *Business Day* noted that "many [learners] depend on it [feeding scheme] as their main meal of the day" (26 July 2005:4).
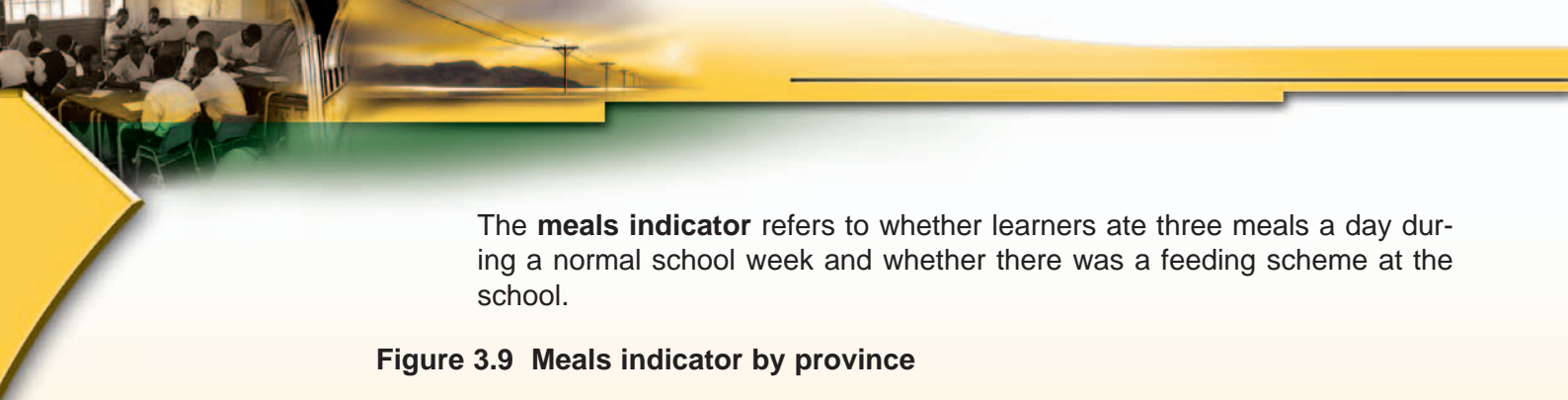
The **meals indicator** refers to whether learners ate three meals a day during a normal school week and whether there was a feeding scheme at the school.

Figure 3.9 Meals indicator by province
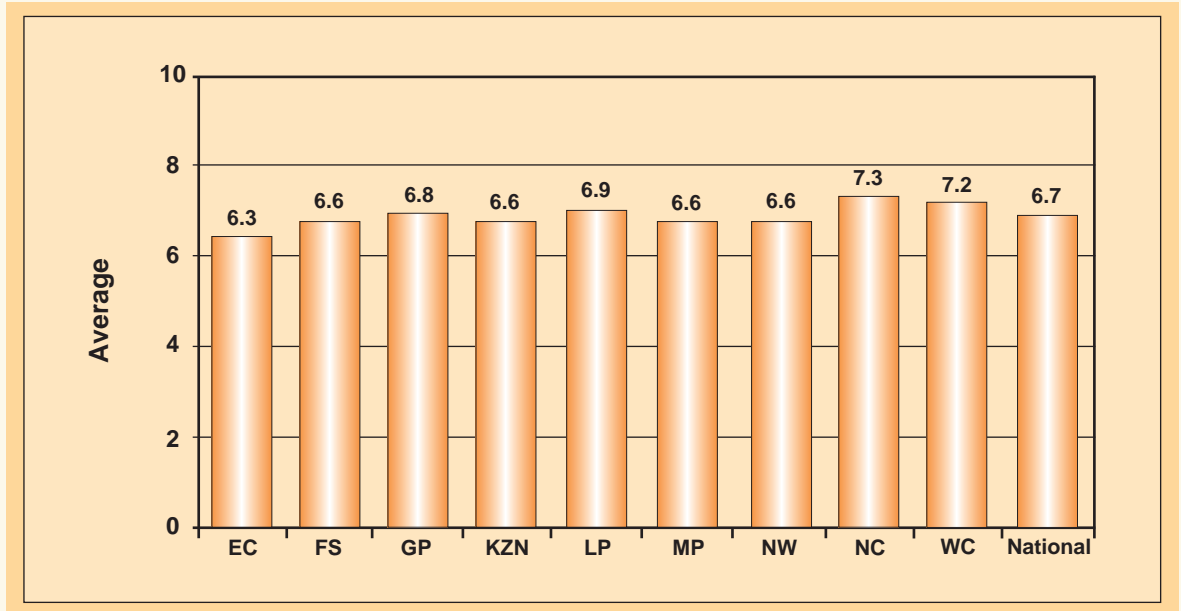
Only the Northern Cape (7.3) and Western Cape (7.2) provinces reported "satisfactory" index scores, with "problematic" scores recorded for the other provinces (average of 6.7) (Figure 3.9). This result indicates that a relatively high percentage of learners were not getting adequate meals during a normal school week. For those that did get meals, more learners were getting meals before and after school than during school. The national average for meals at school was 5.6, and ranged from 4.7 (EC) to 6.8 (WC), while the national average for the feeding scheme was 6.0 and ranged from 5.1 (EC) to 7.55 (NC) (Table 3.36 in Appendix A).

3.3.6   Class size

Class size is regarded as one of the most important factors affecting learner achievement, although there is no agreement as to its effect and cost-effectiveness in regard to learner achievement (Asadullah, 2005; Averett & McLennan, 2005; Odden, 1990). The **class size indicator** was calculated by dividing the total number of learners reported in a school by the number of classes in the school.

Figure 3.10 Average class size by province
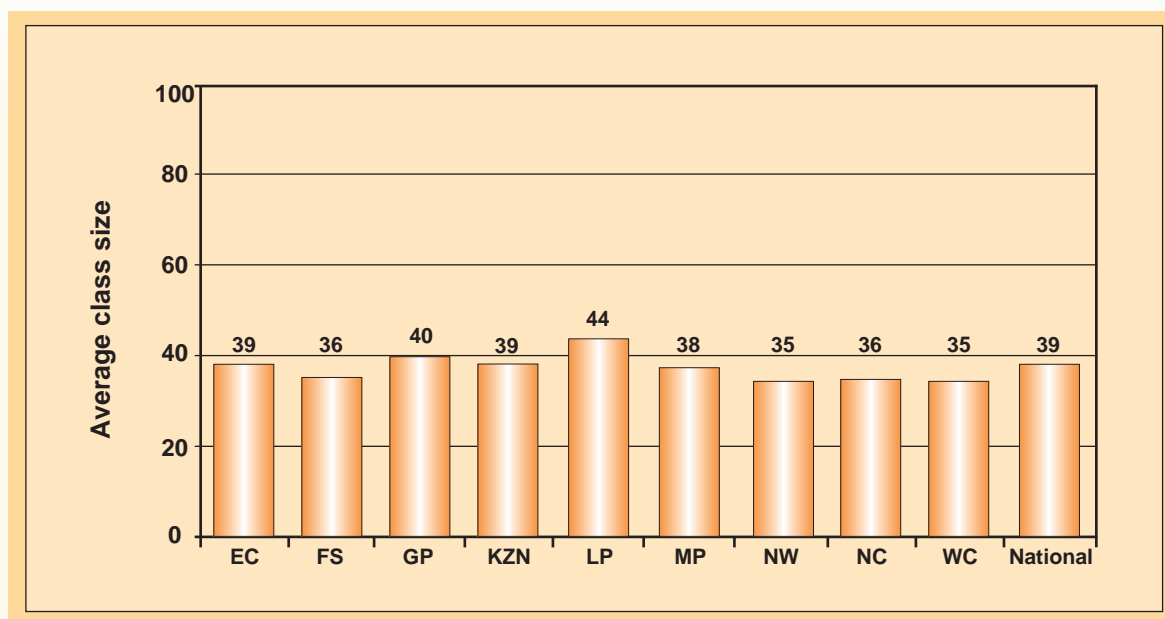
As indicated in Figure 3.10, the national **class size** average is 39 with the highest number of learners by class (44) reported for Limpopo Province (Table 3.37 in Appendix A).

3.3.7 Teaching resources at school

The availability of teaching resources and services is essential for educators to enrich their classroom practices. This teaching resources indicator provides information on the availability of relevant resources for educators; for example, the library, Internet, and a teaching resource centre.

Table 3.38 Teaching resources by learning area and province

	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	2.19	0.28	2.25	0.29	2.60	0.29
FS	3.61	0.43	3.87	0.43	4.29	0.45
GP	5.57	0.38	5.84	0.35	6.34	0.32
KZN	3.69	0.28	3.84	0.30	4.02	0.32
LP	1.58	0.21	1.64	0.23	1.91	0.22
MP	2.87	0.42	2.54	0.38	3.26	0.39
NW	2.58	0.45	2.70	0.45	3.01	0.47
NC	6.24	0.59	6.80	0.43	6.89	0.43
WC	7.32	0.35	7.49	0.37	6.96	0.37
National	3.28	0.12	3.61	0.12	3.96	0.12
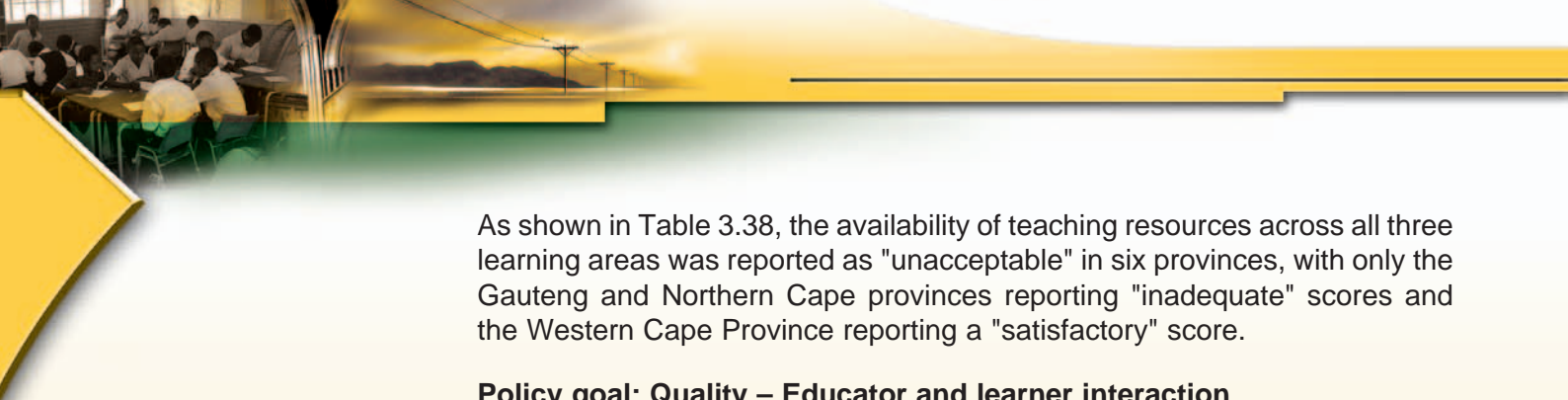
As shown in Table 3.38, the availability of teaching resources across all three learning areas was reported as "unacceptable" in six provinces, with only the Gauteng and Northern Cape provinces reporting "inadequate" scores and the Western Cape Province reporting a "satisfactory" score.

Policy goal: Quality – Educator and learner interaction

3.3.8 Educator classroom practices

Educators' classroom practices are an essential feature of the learning process and have been shown to have the greatest impact on learner achievement. Specific indices that make up the **educator classroom practices indicator** are: teaching activities, educator marking, and teaching records. Across all provinces and all three learning areas, scores were reported as "satisfactory" (averages of 7.3, 7.4 and 7.4 for Mathematics, Natural Sciences and Language (LOLT) respectively), which, in this instance, indicates that most educators have good classroom practices but could improve in certain areas (Table 3.39 in Appendix A).

The nature and relevance of teaching activities employed in the classroom are critical for the improvement of learning, given that different teaching activities are required to introduce and develop different skills; for example, reading aloud to/with the class as opposed to reading silently. Too much emphasis on any single activity could be detrimental to learners. The **teaching activities index** is based on responses from educators pertaining to the frequency with which various teaching activities such as storytelling, encouraging independent problem solving, and problem solving in groups are used in the classroom. Across all provinces and all three learning areas, scores were reported as "inadequate" (averages of 5.5, 5.7, and 6.0 for Mathematics, Natural Sciences, and Language (LOLT) respectively). In this instance, these scores indicate that most educators engaged in a variety of teaching activities on a regular basis without overly emphasising any specific activity (Tables 3.40 to 3.50 in Appendix A).

Figure 3.11 Teaching activities that educators did not engage in (%)
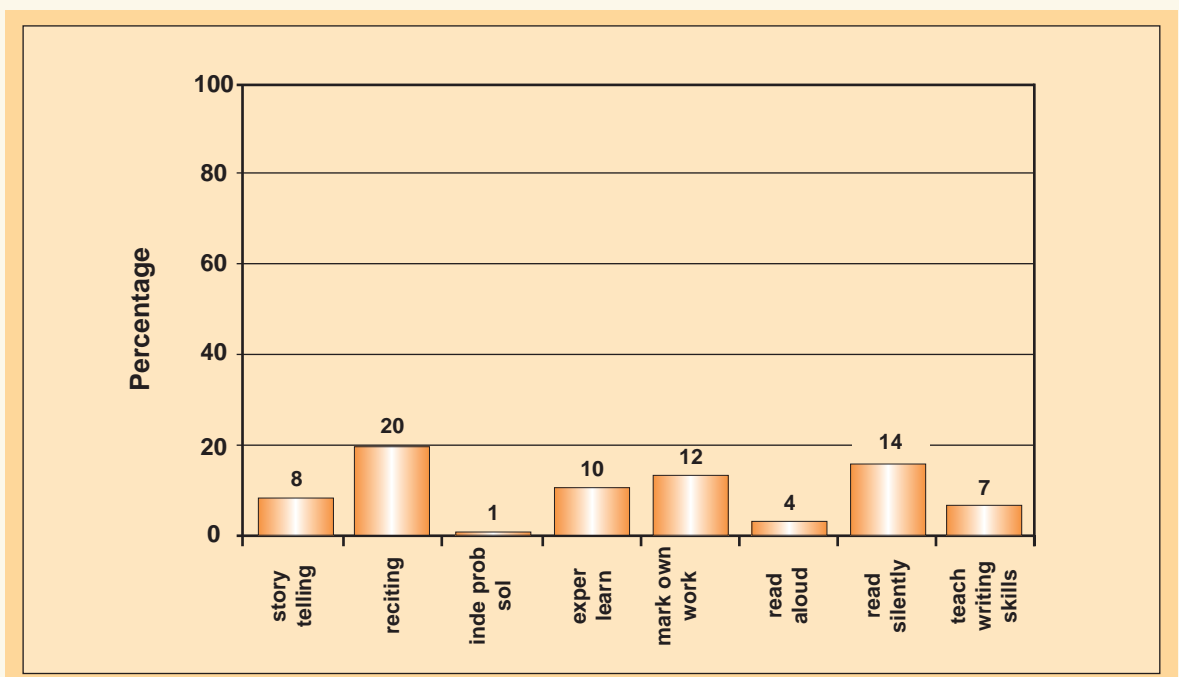
However, as presented in Figure 3.11, a number of educators did not engage in these teaching activities at all; for example, 7% of the educators indicated they did not teach writing skills, while 10% reported that they did not engage in experiential learning.

Effective feedback on how learners perform during class and on their written work is important for the improvement of learner achievement. In this survey, the **educator marking index** was developed from learner responses pertaining to the frequency with which educators marked the learners' work. For all provinces and learning areas, "satisfactory" scores were reported (an average of approximately 7), which indicated that most educators regularly marked learners' work (as shown in Tables 3.51 to 3.54 in Appendix A). However, approximately 21% of learners reported that Mathematics and Language (LOLT) educators only marked their work sometimes, with 2% stating that their work was never marked. For Natural Sciences, the corresponding percentages are slightly higher at 25% and 3% respectively.

Maintaining updated records about their learners and how they learn is essential if educators are to provide relevant and effective support to the large number of learners that they engage with daily. The **teaching records index** provides information about the range and availability of documents kept by educators, that is, attendance registers, lesson plans, learner profiles, learner portfolios, learner achievement and learner reports signed by parents. This index is based on responses from educators. Across all three learning areas and all provinces, scores ranged from "satisfactory" to "very good" (national average of 9.0), which means that most educators reported having all the relevant documents required for supporting the learning-and-teaching process (Table 3.55 in Appendix A).

3.3.9   Time spent on learning and teaching

The **time on task** indicator is made up of four indices: time spent on other tasks (e.g. time designated for teaching but actually used to attend to other school-related activities), teaching time (e.g. the hours allocated for learning and teaching), classroom presence (e.g. whether the educator is present in class and whether the lessons start on time) and multi-grade classes (e.g. if classes have learners from more than one grade in them).

Figure 3.12 Time on task by province and learning area[2]
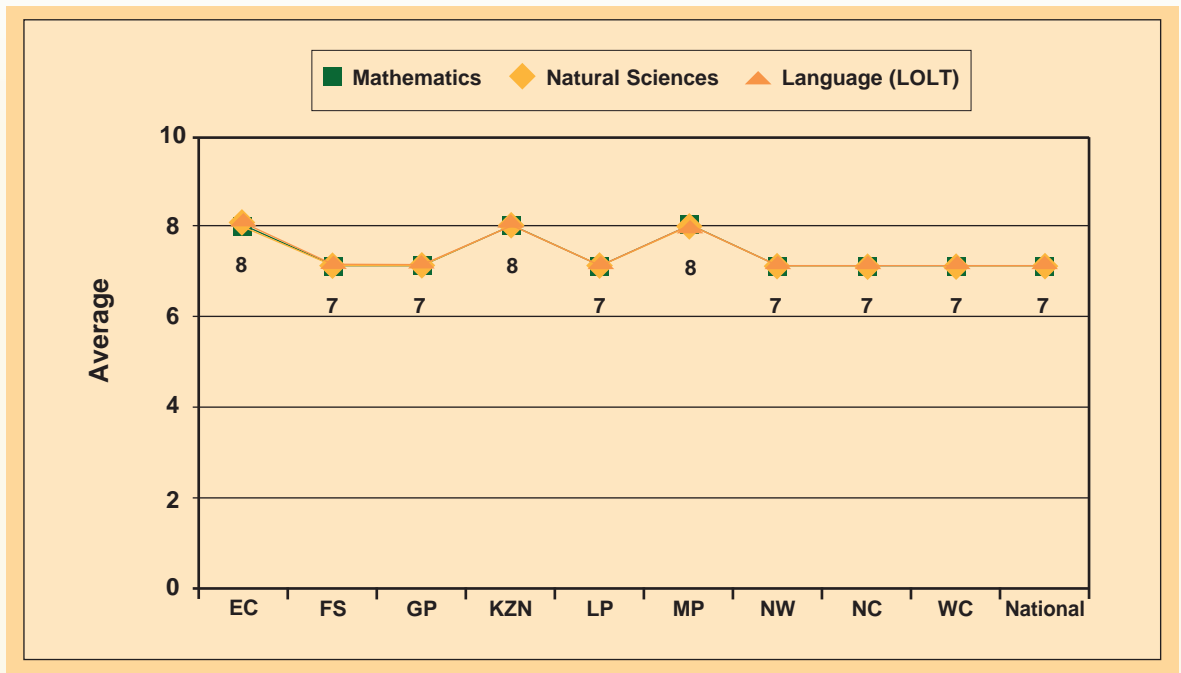
As shown in Figure 3.12, time on task is similar across all provinces with a national average of 7.4 for all three learning areas, which could be interpreted as "satisfactory" (Table 3.56 in Appendix A).

Additional analysis of the indices that make up the time on task indicator reveals that, across all provinces and learning areas, educators spent most of their time on teaching and less time on other activities as noted in the time spent on other tasks index. The national average score of 8.3 for **time spent on other tasks** could be interpreted as "satisfactory" (Table 3.57 in Appendix A). This index refers to the class time used by educators for various activities unrelated to actual teaching time; for example, collecting school fees, planning for teaching, marking learners' homework, assisting specific learners and studying for purposes of professional development.

In addition, school principals were asked to indicate the total time spent on teaching and learning in a normal week so that the **educator workload** index, as shown in Figure 3.13, could be calculated.

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[2] Figures for all three learning areas were very similar, which results in the graph appearing to display a single line.

Figure 3.13 Total time spent on teaching and learning by Grade 6 educators
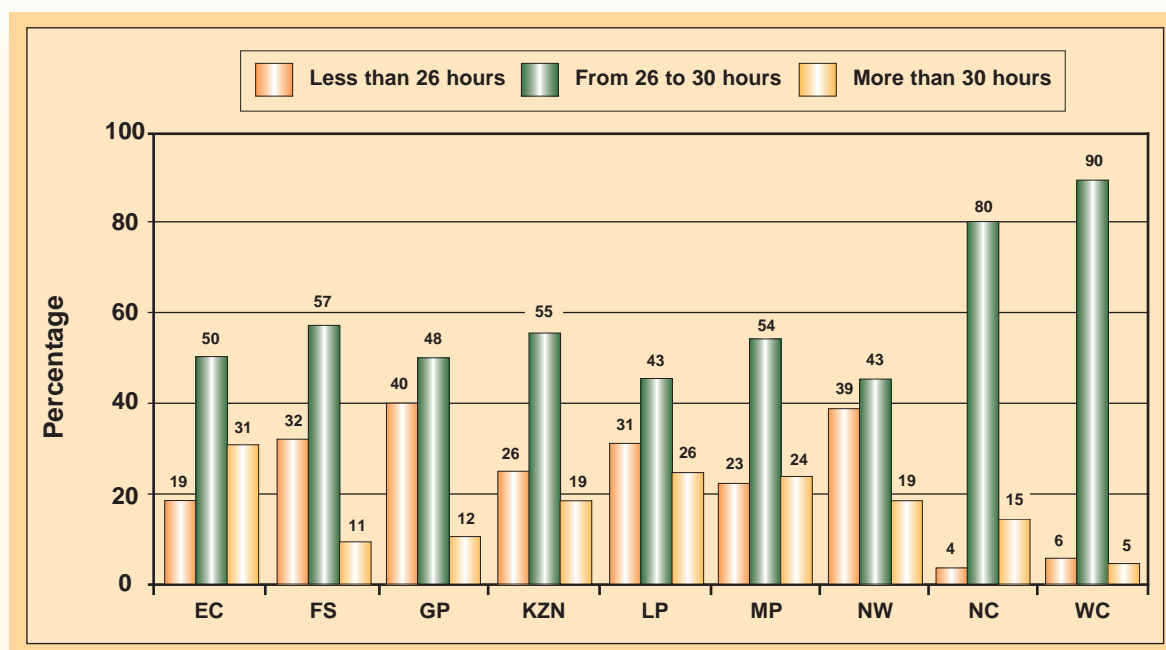
As presented in Figure 3.13, large variations in teaching time were reported across the provinces. The majority of school principals indicated that their Grade 6 educators spent between 26 and 30 hours a week on teaching, with over 80% of Northern and Western Cape schools falling within this category. In the Gauteng and North West provinces approximately 40% of school principals, and in the rest of the provinces at least 20% of school principals reported that their educators spent less than 26 hours a week on teaching and learning activities (Table 3.58 in Appendix A). This finding is of concern, given that the policy requirement for instructional time for the Intermediate Phase is stated as 26 hours, 30 minutes by week (NEPA, 1996).

The **learning area time index** is based on learner responses pertaining to whether lessons start on time and if the educator is in class teaching. Across all learning areas and provinces, index scores ranged between 7.5 (EC) and 7.8 (KZN), with a national average of 7.7, which could be interpreted as "satisfactory" (Table 3.59 in Appendix A). Additional analyses revealed that approximately 58% of learners reported that their Mathematics, Language (LOLT) and Natural Sciences educators were always in class and 1% reported that their educators were never in class (Tables 3.60a to 3.60c in Appendix A); approximately 50% of learners indicated that lessons started on time and 3% reported that lessons never started on time (Tables 3.61a to 3.61c in Appendix A).

The **multi-grade index r**efers to whether educators teach learners from different grades in one class, as depicted in Figure 3.14.
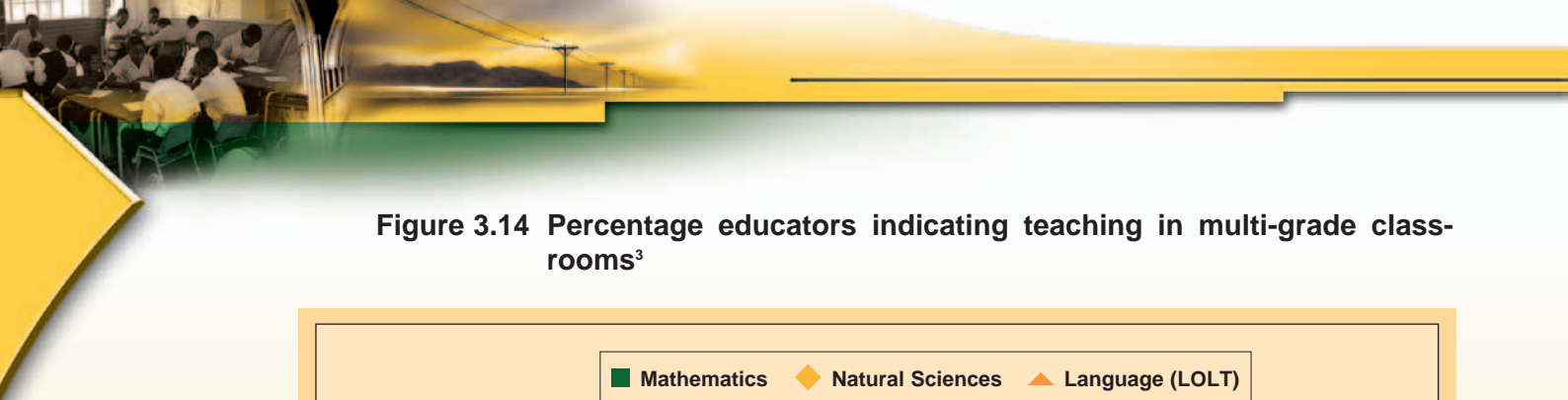
Figure 3.14 Percentage educators indicating teaching in multi-grade class-rooms[3]
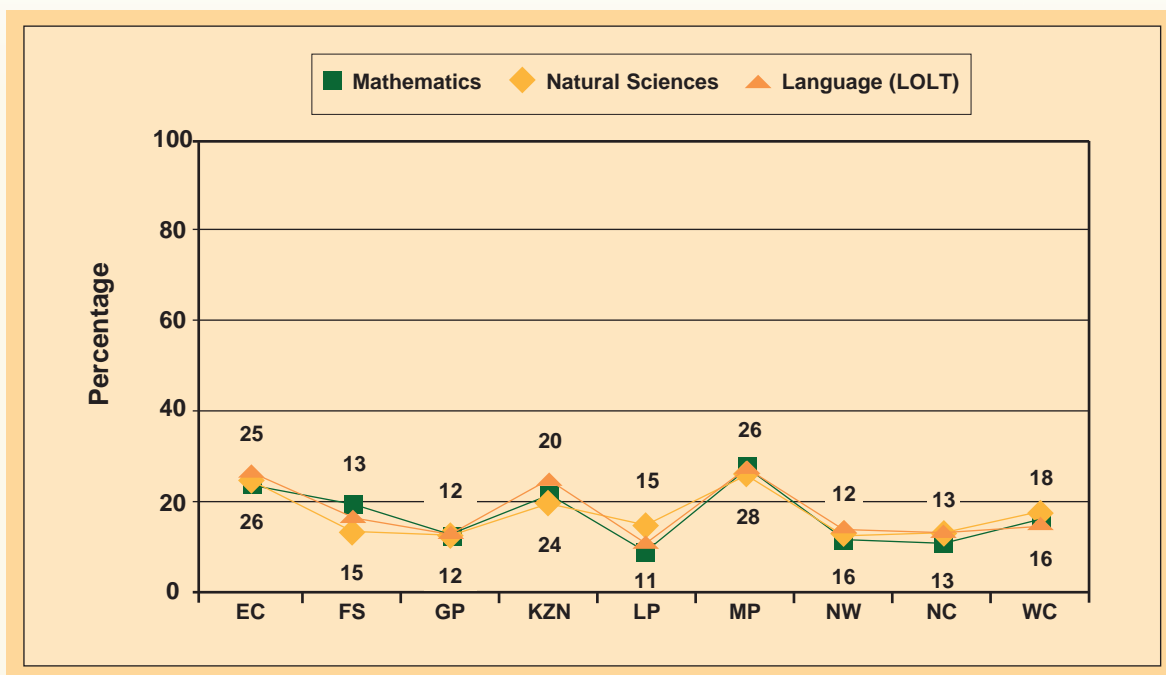
As shown in Figure 3.14, a relatively high percentage of educators indicated that they taught multi-grade classes, with the highest percentages noted in the Eastern Cape (25%), KwaZulu-Natal (22%), and Mpumalanga (27%), and with the rest of the provinces recording average percentages of between 10% and 18%. This pattern was consistent for all educators, with only small differences (between 2% and 4%) reported among the three learning areas (Table 3.62 in Appendix A).

3.3.10 Educator assessment practices

Assessment is essential for obtaining information to identify learners' strengths and weaknesses and for developing appropriate interventions for effective learning to take place. The **assessment practices indicator** refers to the frequency with which different types of assessment practices are conducted as well as how assessment information is utilised. This indicator is made up of four indices: exams, tests, other forms of assessment, and use of assessment. The national average score for the assessment practices indicator is 6.7, which could be interpreted as being "satisfactory" (Table 3.63 in Appendix A). Scores for all provinces and across the three learning areas for the three indices, **exams** (national average of 5.9), **tests** (national average of 6.6) and **other forms** (i.e. assignments, projects, homework and class work, with a national average of 6.9), could also be interpreted as "satisfactory" (Tables 3.64 to 3.66 in Appendix A).

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[3] Figures for all three learning areas were very similar; for this reason the graph appears to display a single line.

Figure 3.15 Learner activities assessed
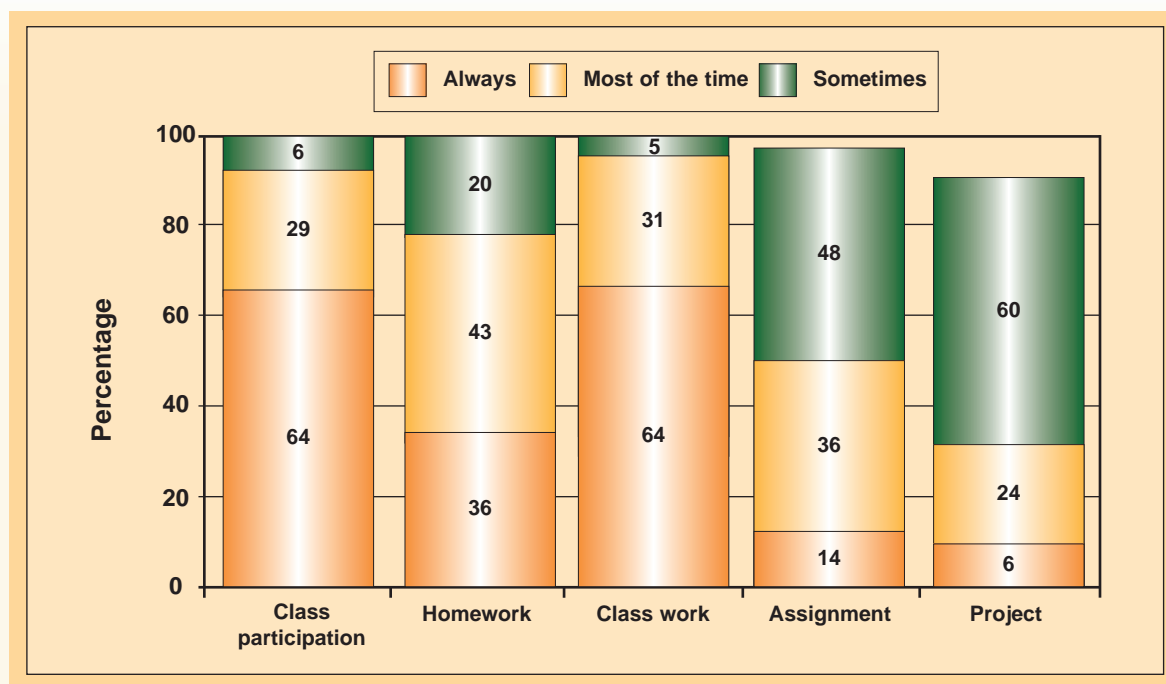

A further analysis of assessment activities beyond tests and exams (Figure 3.15) reveals that the majority of educators reported that they most often assessed class participation and class work, followed by homework, assignments, and projects (Tables 3.67 to 3.71 in Appendix A).

In addition, information gained from assessments that had been conducted was utilised for a variety of reasons, as shown by the "satisfactory" **assessment utilisation index score** (national average of 7.2 for all learning areas and provinces). This index is based on educator responses pertaining to whether they use assessment information to provide grades/marks to learners, to provide feedback to learners, diagnose learning problems, report to parents, assign learners to different programmes or tasks, or to plan future lessons (Table 3.72 in Appendix A). The majority of educators reported that they always used assessment information to: (1) provide feedback to learners and to plan lessons, (2) grade learners, (3) diagnose learning problems, (4) assign learners to different programmes, and (5) report to parents.

3.3.11 Homework practices

An essential activity of the learning and teaching process relates to how homework is used to improve learning. In their study, which covered 12 African countries, Chinapah, et al. (2000:65) found that:

> "an important factor which consistently influences learner achievement in 8 out of the 11 countries surveyed is the opportunities available at home for the child to do her/his homework".

The authors also note that the family and other educational stakeholders need to encourage learners to do their homework, while reducing the factors that prevent learners from doing their homework.

The **homework practices indicator** is based on learner and parent responses and comprises the following indices: the frequency of homework
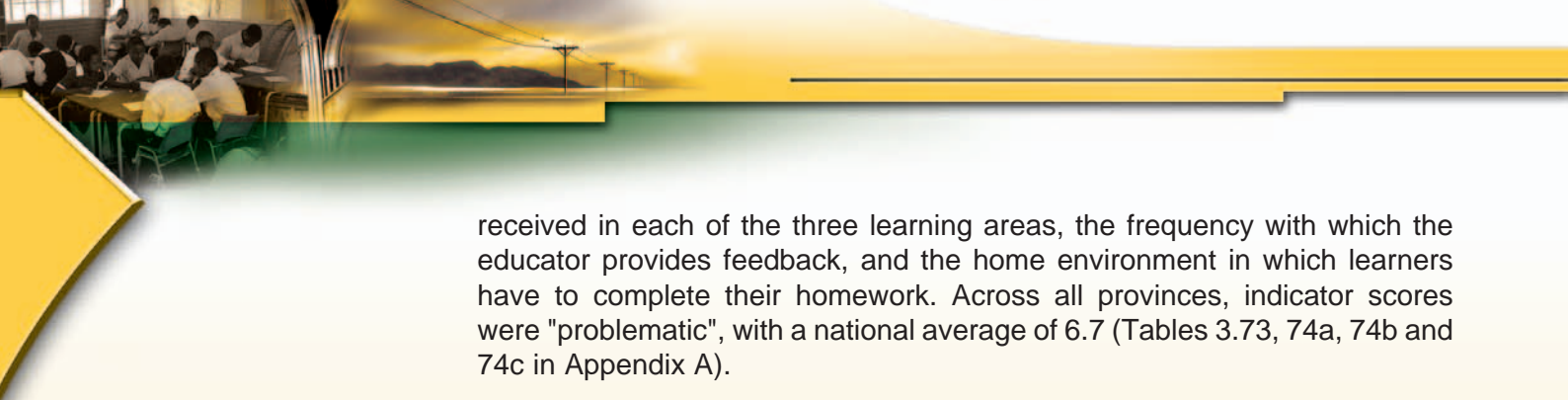
received in each of the three learning areas, the frequency with which the educator provides feedback, and the home environment in which learners have to complete their homework. Across all provinces, indicator scores were "problematic", with a national average of 6.7 (Tables 3.73, 74a, 74b and 74c in Appendix A).

Figure 3.16 Homework received, feedback, and homework environment by province
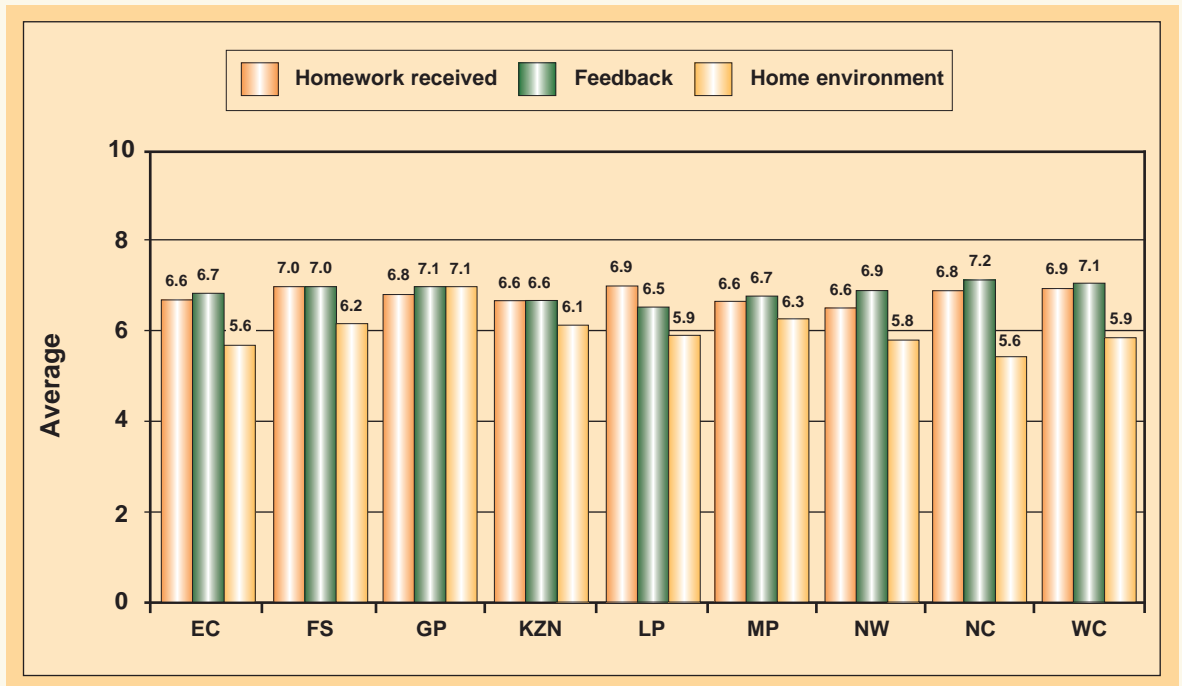
The **homework received index** refers to the frequency with which the educator gives homework and is based on responses from learners and parents. As shown in Figure 3.16, index scores for homework received were rated "satisfactory" for all provinces and all learning areas (national average of 7.5). In terms of learning-area-specific homework received, the national average was lower across learning areas (Mathematics 6.6, Natural Sciences 6.2, and Language (LOLT) 6.5), which could be interpreted as "problematic". Additional analysis revealed that only about 2% of Mathematics and Language (LOLT) learners and 4% of Natural Sciences learners reported that they were never given any homework. These figures are relatively low, suggesting that homework, at least in Mathematics, Natural Sciences and Language (LOLT), is a regular feature of the learning process of Grade 6 learners in South Africa.

The **homework feedback index** summarises learner responses pertaining to the frequency with which educators explain the assigned homework exercises, and whether feedback is provided after homework is completed in each of the three learning areas. While index scores were similar for the three learning areas, the reported scores were "problematic" for all provinces (national average of 6.8). Given that all educators should provide feedback for all homework, this result indicates that a large number of educators regularly do not explain assigned homework exercises, nor do they regularly provide feedback after the completion of homework. Approximately 23% of learners reported that educators sometimes provided feedback after homework exercises were completed, with 10% reporting that they never received any feedback at all.

The **homework environment index** refers to specific instances that prevent learners from completing their homework at home. The index includes factors such as: the learner does not understand the homework or nobody at home can assist. The score on the homework environment index for all provinces and learning areas was "inadequate" (national average of 6.1), which implies that many learners still have some difficulty in completing homework exercises at home.

Table 3.75 Reasons for learners not completing homework (%) by province

	No assistance	Do not understand	No monitoring
EC	46	45	47
FS	34	37	32
GP	26	36	27
KZN	41	40	40
LP	44	40	43
MP	37	39	40
NW	40	43	40
NC	43	46	43
WC	38	45	38
National	39	41	39

A high percentage of learners reported lack of assistance (39%), lack of monitoring by parents (39%) and not understanding the work (41%) as reasons for not completing their homework (Table 3.75).

3.3.12 Attendance

International studies on school effectiveness indicate that regular attendance by learners and educators is important for effective learning to take place (Scheerens, 1998). The **attendance indicator** is made up of two indices: attendance of educators from the Principal Questionnaire, and attendance of learners from the Educator Questionnaire. Attendance in five provinces (FS, GP, MP, NC, and WC) fell in the "satisfactory but could improve" category, while the rest of the provinces were rated "high" (national average of 8.9) (Table 3.76 in Appendix A).

Table 3.77 Educator and learner attendance by province

	Principal responses on educator attendance			Educator responses on learner attendance		
	Below 50%	80–89%	90–100%	Below 50%	80–89%	90–100%
EC	2	35	50	6	32	25
FS	-	11	82	1	24	67
GP	1	12	82	2	20	71
KZN	2	17	76	3	33	41
LP	1	15	77	3	25	59

Table 3.77 (continued)

	Principal responses on educator attendance			Educator responses on learner attendance		
	Below 50%	80–89%	90–100%	Below 50%	80–89%	90–100%
MP	1	17	77	0	36	48
NW	3	27	63	1	33	53
NC	-	7	91	-	33	53
WC	-	7	92	2	28	64
National	1	19	73	2	29	51

Table 3.77 provides information on attendance rates of educators (as reported by principals) and learners (as reported by educators). Principals did not regard **educator attendance** as a significant problem as revealed by the fact that, at the national level, 73% of principals reported that educators were at school between 90% and 100% of the time. However, the **attendance of learners** was reported by educators as a problem in all provinces. Only 51% of educators reported that their learners attended school regularly (i.e. between 90% and 100%), with attendance problems reported as being especially acute in the Eastern Cape and KwaZulu-Natal provinces.

3.3.13 HIV/AIDS policy

The Ministry of Education recognizes the seriousness of the HIV/AIDS epidemic and has developed a *National Policy on HIV/AIDS for Learners and Educators in Public Schools and Students and Educators in Further Education and Training Institutions* (DoE, 1999). The policy seeks to contribute towards promoting effective prevention and care within the context of the public education system. It is worth noting that a recent study on HIV/AIDS in public schools by Simbayi, Skinner, Letlape and Zuma (2005) found that most educators had attended professional training programmes about HIV/AIDS and are starting to support learners and educators affected by the prevalence of the pandemic.

The present study also sought information about HIV/AIDS, particularly training programmes for principals and educators to handle issues related to the epidemic. The **HIV/AIDS policy indicator** refers to whether schools provide support concerning the implementation of policies related to HIV/ AIDS and comprises of questions to the principals, educators and parents. Approximately 64% of the parents indicated that the schools provided support concerning the implementation of policies related to HIV/AIDS (Table 3.78 in Appendix A). The percentage of parents who answered in the affirmative for the provinces of KwaZulu-Natal, Mpumalanga, North West and Limpopo were 56%, 57%, 60% and 61 respectively, which is below the provincial average of 64%. About 53% of educators and 58% of principals indicated that they received training about management of HIV/AIDS-related issues. This suggests that the DoE should pay greater attention to providing support with regard to the implementation of HIV-AIDS-related policies.

3.3.14 Educator and school-principal job satisfaction

The commitment of both educators and school principals to provide quality education to learners is critical because it determines whether learning takes place, what learning occurs, and how this learning takes place in schools. For many years, the morale of members of the teaching profession has been an area of concern; this can be attributed to various factors such as perceived low status, low remuneration, and a lack of professional autonomy (Evans, 1997). The **job satisfaction indicator** is made up of three indices: educator appreciation, educator change career and principal change career, and is derived from the educator and principal questionnaires. This indicator covers whether educators feel that society, learners, and the principal appreciate their work and whether educators and school principals would like to change careers.

Figure 3.17a Job satisfaction indicator by province
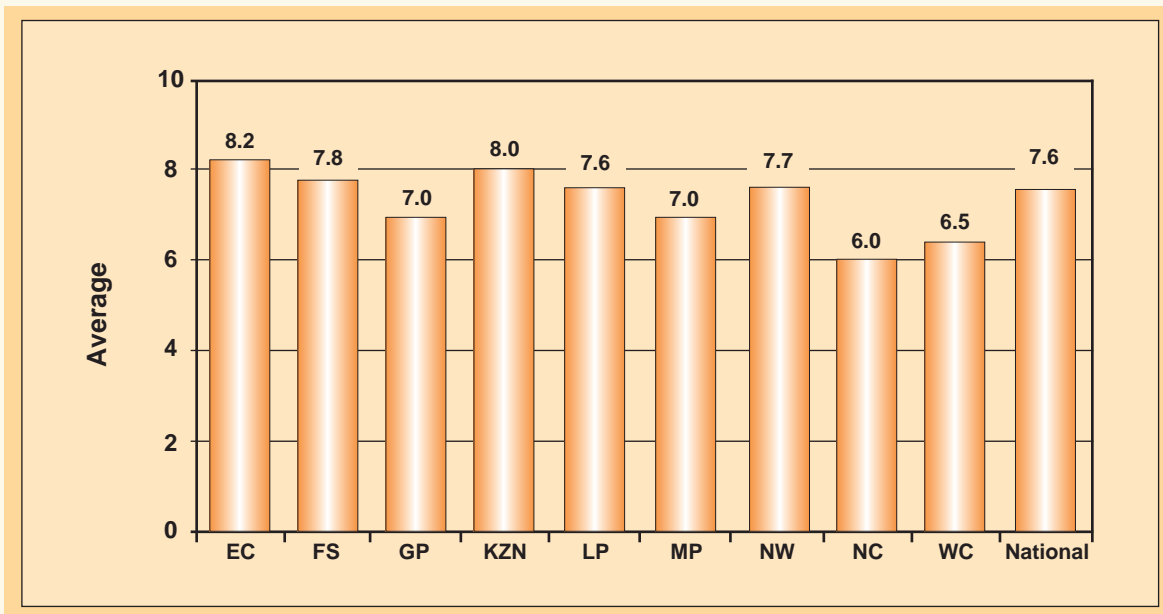
As shown in Figure 3.17a, for professional school staff (i.e. both principals and Language (LOLT), Mathematics and Natural Sciences educators), job satisfaction indicator scores were "problematic" in four provinces (GP, MP, NC and WC) and "satisfactory" in all other provinces (Table 3.79 in Appendix A).

Figure 3.17b Percentage of principals and educators preferring a change in career by province
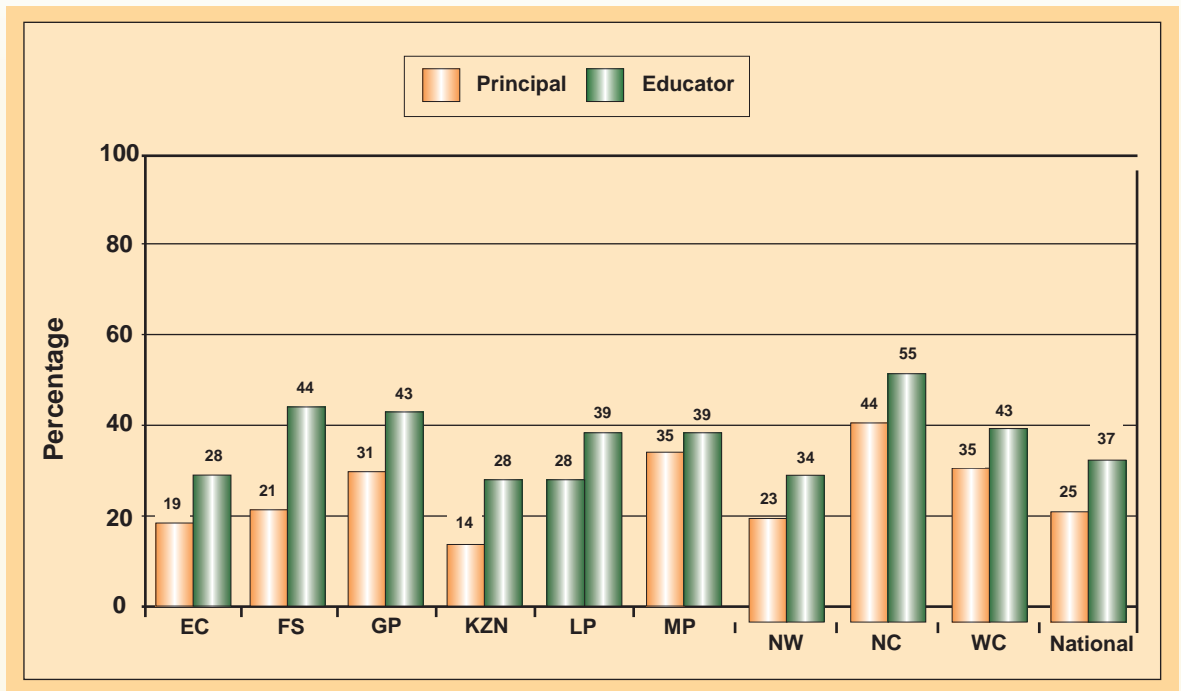
However, as noted in Figure 3.17b, 25% of **principals** and 37% of **educators** responded that they would like **to change their careers.** The highest percentages, of both principals and educators, were recorded in the Northern Cape, the Western Cape and Gauteng, with the lowest percentages noted in the Eastern Cape and KwaZulu-Natal (Tables 3.80 and 3.81 in Appendix A). A similar pattern was observed with respect to the **educator appreciation index**, with "satisfactory" results in three provinces (GP, NC, WC) and "very good" scores in the rest of the provinces (Table 3.82 in Appendix A). While the fact that educators feel appreciated is a positive indication that they will engage with learners for the improvement of learning, the high percentage of educators and principals who want to change careers is cause for concern.

3.3.15 Learner participation

The most important role-player in any education system is the learner, and the manner in which learners engage in their own learning is one of the most important factors in improving learning. To determine the quality of learners' school experiences, it is important to determine what learners are asked to do (i.e. type of interaction, e.g. passive role) by the educator in the learning environment (Clark, 2000). Research has demonstrated strong links between learner achievement and classroom variables such as educator praise, quantity and pacing of instruction, and educator expectations (Brophy & Good, 1986; Fraser, 1987; Stockard & Maybery, 1992).

The **learner participation indicator** refers to the frequency and nature of learner interaction and participation in the learning process and comprises the following indices: learner attitude, learner morale, learner participation in the Mathematics, Language (LOLT), and Natural Sciences class, library use, language of learning and teaching in the classroom, and extramural activities provided by the school. Responses were obtained from learners to questions such as: do learners play an active or passive role in their learning, do they work in groups, are they given projects and assignments, do they make use of the library, and what is their attitude towards school and their educators?

Learner participation was "problematic", with a national average of 6.3, which indicates limited participation by learners in the learning process (Table 3.83 in Appendix A). Additional analyses pertaining to the indices that comprise the learner participation indicator are reported in Figure 3.18a and discussed below.

That learners have positive attitudes to their school and educators has a significant influence on how learning takes place, as well as on levels of achievement. The **learner attitude index,** which was constructed to reflect whether learners enjoy learning and coming to school, and whether they like their educators, was reported to be "high" for all provinces, with a national average of 9.2 (Table 3.84 in Appendix A).

The **learner morale index** was constructed to provide information on learner perceptions pertaining to educator encouragement and interest, as well as to assistance from peers. Scores for this index were reported to be "satisfactory", with a national average of 7.9 denoting that learners were generally positive but that there was room for improvement (Table 3.85 in Appendix A).

The manner in which learners interact with their educators and peers and the learning activities undertaken in the classroom greatly impact on how and what learning takes place. Th**e learner interaction index** refers to how learners participate in the Mathematics, Natural Sciences, and Language (LOLT) classroom, and is based on questions such as: do the learners play an active or passive role in their learning, do they work in groups, and are they given projects and assignments? Scores for all three learning areas were similar and reported to be "inadequate" (national average of 5.9). Scores across provinces ranged from 5.6 (LP and NW) to 6.1 (WC). For effective learning to take place, there certainly is a need for learners to be more involved in the teaching and learning process (Table 3.86 in Appendix A).

Figure 3.18a Learner interaction, attitude, and morale by province
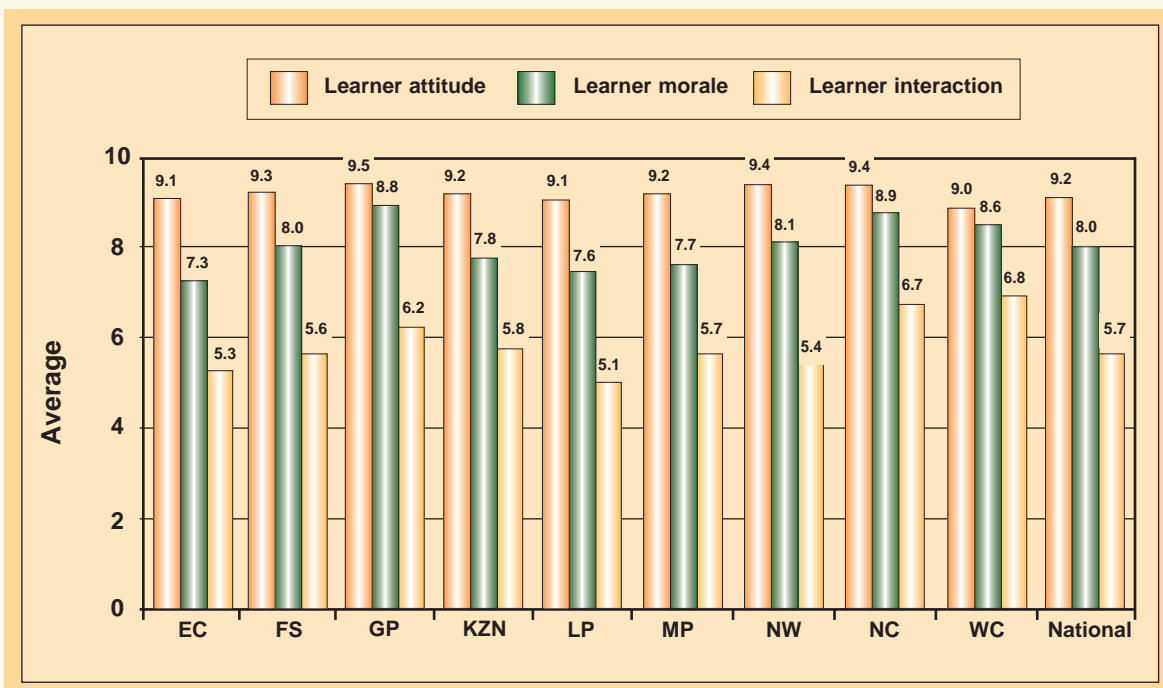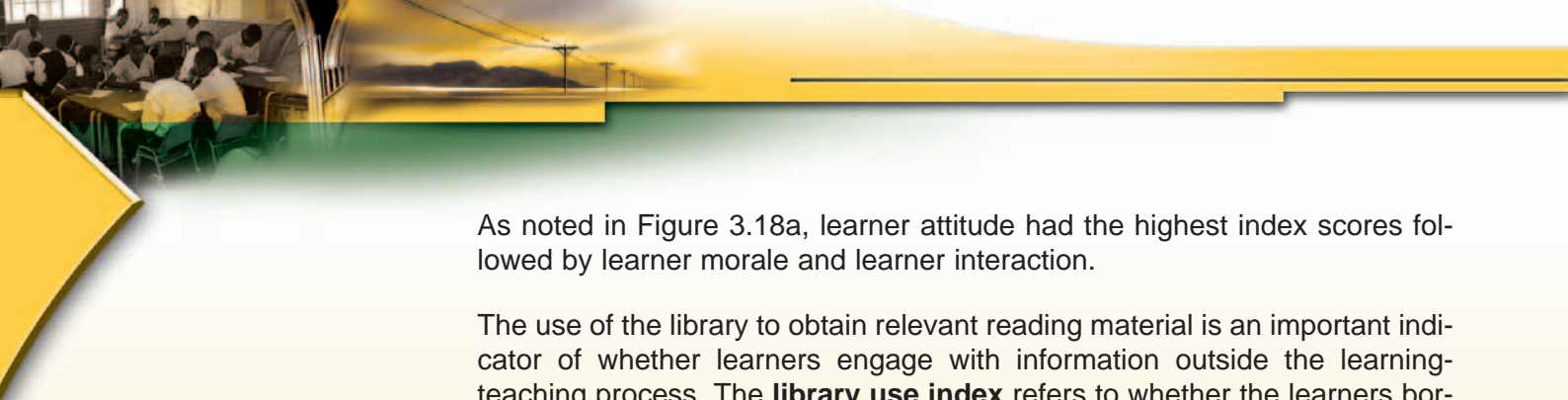
As noted in Figure 3.18a, learner attitude had the highest index scores followed by learner morale and learner interaction.

The use of the library to obtain relevant reading material is an important indicator of whether learners engage with information outside the learning-teaching process. The **library use index** refers to whether the learners borrow books from the library, and is based on learner responses.

Figure 3.18b Learner use of school library by province
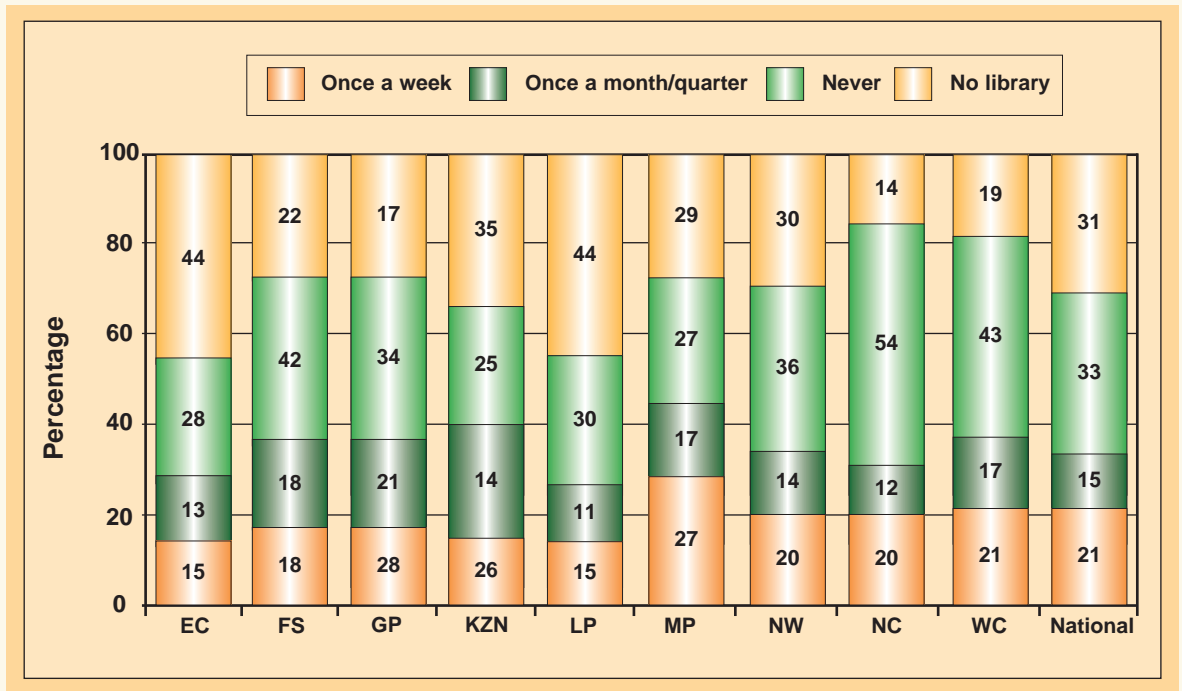
As indicated in Figure 3.18b, approximately 15% of learners across all provinces reported using the library at least once a week, while approximately 64% of learners either did not use or did not have a school library. In the Eastern Cape and Limpopo provinces, 44% of learners reported that the school did not have a library, while 54% of learners in the Northern Cape, 43% in the Western Cape and 42% in Gauteng reported that they did not use the library (Table 3.87 in Appendix A).

The role of language in increasing learning is regarded as perhaps the most essential aspect of improving performance. In particular, learners receiving instruction in their mother tongue, especially at the lower grade, has been shown to have a significant effect on how learning takes place in the classroom as well as on the performance of the learner (Heugh, 1999). The **Language (LOLT) index** was used to determine whether the home language of the learner was the same as the language of instruction.

Figure 3.19 Language (LOLT) by province
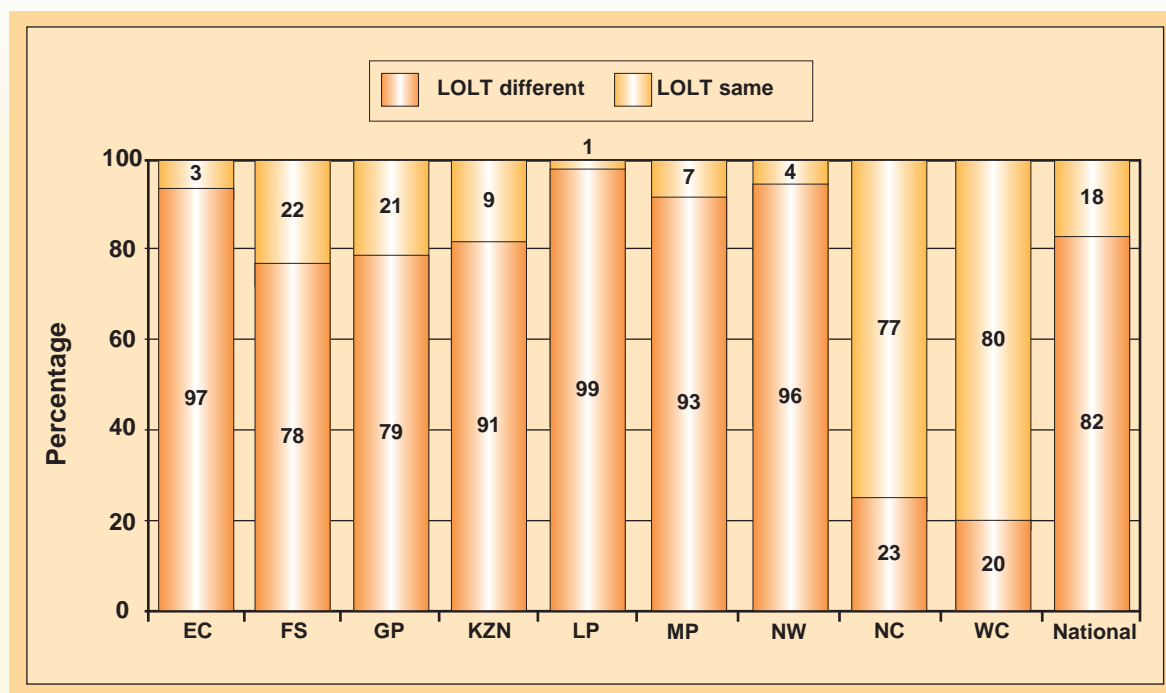
As noted in Figure 3.19, the majority of learners in all provinces besides the Northern and Western Cape provinces indicated that the language of learning and teaching was different from their home language (Table 3.88 in Appendix A).

The provision of opportunities such as sports and cultural activities broadens the scope of learners' activities. The **extramural activities index** was calculated from parent and principal responses to questions pertaining to whether the school provides sporting and cultural activities. The indicator score (national average of 7.8) was reported as "satisfactory" for all provinces (Table 3.89 in Appendix A).

3.3.16 Parental involvement and perception of the school

The home environment plays a critical role in the academic development of learners. An essential factor in the home is the involvement of and support provided by parents[4] in the education of their children to enhance learning. Parental involvement in the education of their children has been identified as one of the critical factors leading to a successful schooling experience. The more intensively parents are involved in their children's learning, the more beneficial the achievement effects are (Cotton & Wikelund, 2001). The involvement of parents in their children's education involves factors such as the amount and nature of support provided, how they interact with the school and educators, and the ability of parents to provide the support required by their children.

The **parental involvement and perception indicator** is calculated by parent and learner responses and is based on the following indices: parent support, parent feedback, parent education level and parent perceptions of the school and education. The national average of 7.1 could be interpreted as "satisfactory". While four provinces (FS, GP, NW and WC) fell in this

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[4] The term "parent" is used to denote all caregivers responsible for children, e.g. grandparents and guardians.
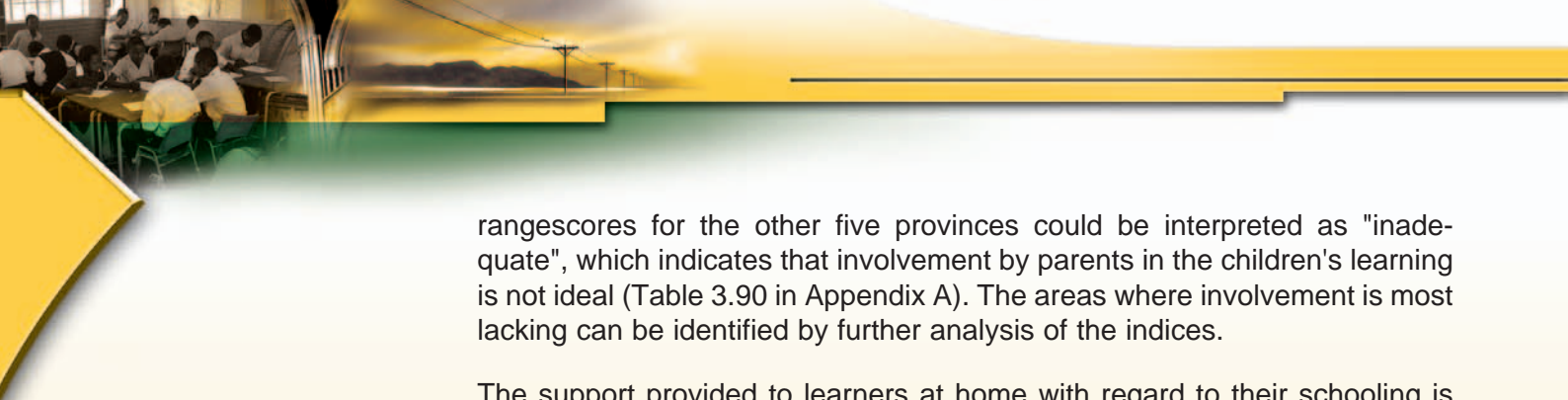
rangescores for the other five provinces could be interpreted as "inade-quate", which indicates that involvement by parents in the children's learning is not ideal (Table 3.90 in Appendix A). The areas where involvement is most lacking can be identified by further analysis of the indices.

The support provided to learners at home with regard to their schooling is calculated using the **parent support index.** This index is based on informa-tion from the Parent Questionnaire regarding the frequency with which par-ents: participate in or attend school activities, discuss the progress of their children with the class educator, and discuss schoolwork with their children. In addition, the **parent feedback index** refers to the nature and type of inter-action between parents and educators or the school to determine whether parents: received regular feedback on the progress of their children, received regular information about school activities, and felt comfortable with their interactions with the school. Learners were also asked if their educators informed their parents about their progress.

Figure 3.20 Index of parent support and feedback by province
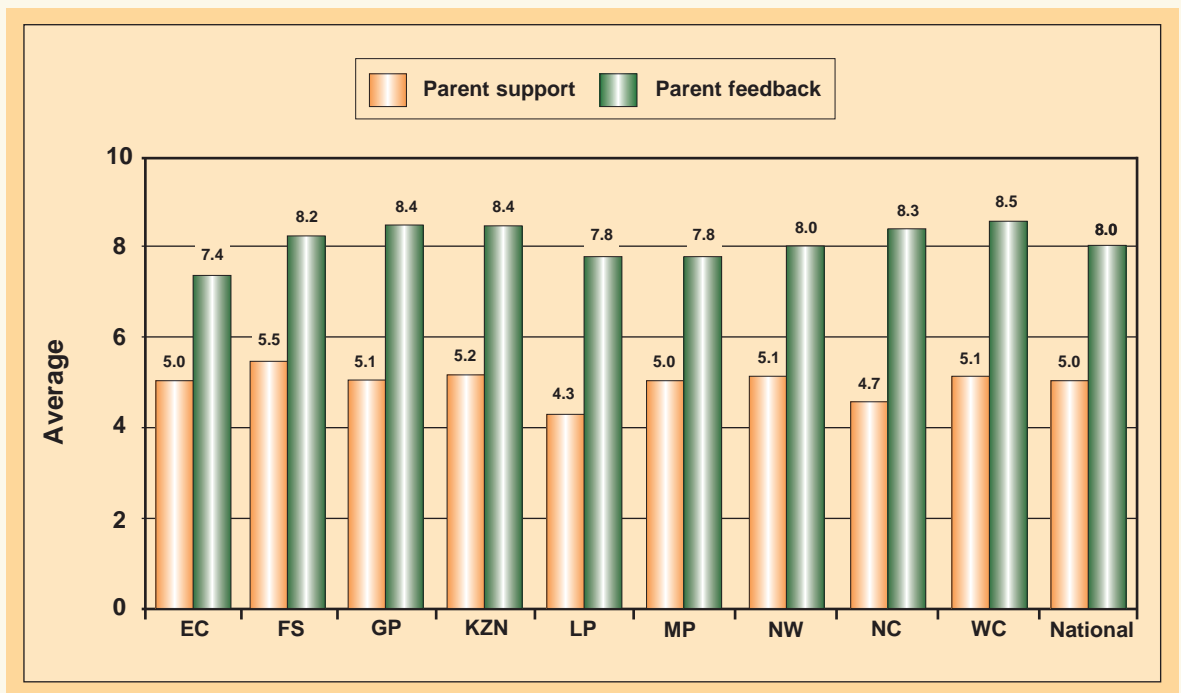
As reported in Figure 3.20, the support provided to learners by parents is "largely problematic" in all provinces, indicating that parents do not general-ly discuss or participate in learners' school work. Additional analysis supports this finding: on average, 20% of parents never discuss their child's progress with the educator or receive information about this from the educator. These figures correspond closely to those reflected in the homework index, where learners indicated that they received little support from home regarding their homework. However, the feedback provided to parents was reported as "sat-isfactory" in all provinces, with a national average of 8.0 (Tables 3.91 to 3.95 in Appendix A).

The **parent education level index** determines the extent to which parents are able to support the learning development of children in the home. Parental education levels therefore have an important effect on learning and learner achievement.

Table 3.96 Parent education level by province (%)

	Grade 3	Grade 4–6	Grade 7–9	Grade 10–12	Higher than Grade 12	No schooling	Total
EC	7	31	27	19	9	7	100
FS	7	21	21	26	20	5	100
GP	3	15	16	39	25	3	100
KZN	11	22	19	23	13	12	100
LP	5	21	17	24	21	12	100
MP	7	24	17	21	18	12	100
NW	6	24	23	25	16	7	100
NC	5	19	27	24	18	7	100
WC	3	14	30	29	22	2	100
National	6	22	22	25	17	8	100

As noted in Table 3.96, nationally, 17% of parents reported having an education qualification of higher than Grade 12, with 8% indicating that they had received no schooling at all.

The **parent perception index** is based on parent responses regarding the quality of the school and whether the principal is a good manager. This indicator was rated as "high" for one province (GP), and as "satisfactory" for the rest, with a national average of 8.8 (Table 3.97 in Appendix A). These findings on the **parent perception index** are important, as they suggest that parents generally believe that their children are receiving good quality education.

3.3.17 Attendance of pre-primary school

Attendance of pre-primary school has been identified as one of the most reliable predictors of good performance. Several studies have found that when learners who had attended pre-primary school entered school, they were more ready to learn than those who had not gone to pre-primary school (Mugnuson & Waldfogel, 2005).

Figure 3.21 Percentage of learners indicating that they had attended pre-primary school
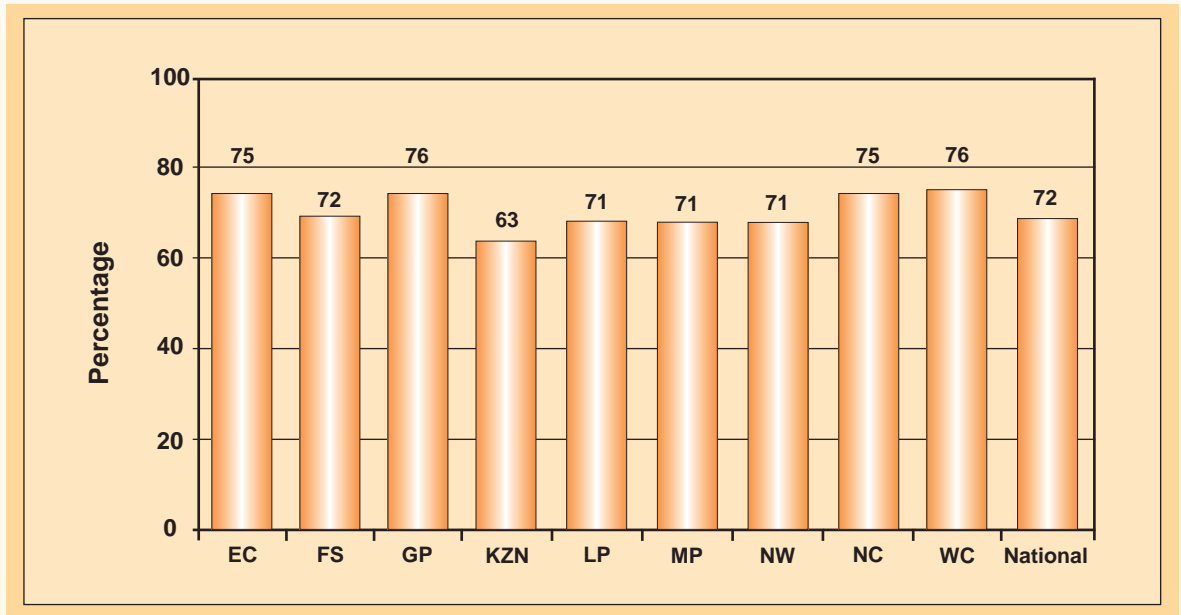
As depicted in Figure 3.21, approximately 72% of learners indicated that they had attended pre-primary schools, with percentages equally spread over the provinces (Table 3.98 in Appendix A).

3.3.18 Staff qualifications

The qualifications of school principals and educators have been identified as an important factor for ensuring that effective learning takes place at school. Previous research has shown that educators' credentials, experience, and years of education make a difference to learner achievement (Darling-Hammond, 2000; Darling-Hammond & Youngs, 2002). **The staff qualifications indicator** is made up of four indices: principal qualification, principal professional training, educator qualification, and educator professional training. This indicator had a national average of 6.5, which is interpreted as "problematic", and was similar across all three learning areas and provinces (Table 3.99 in Appendix A).

Figure 3.22 Qualification levels of principals by province
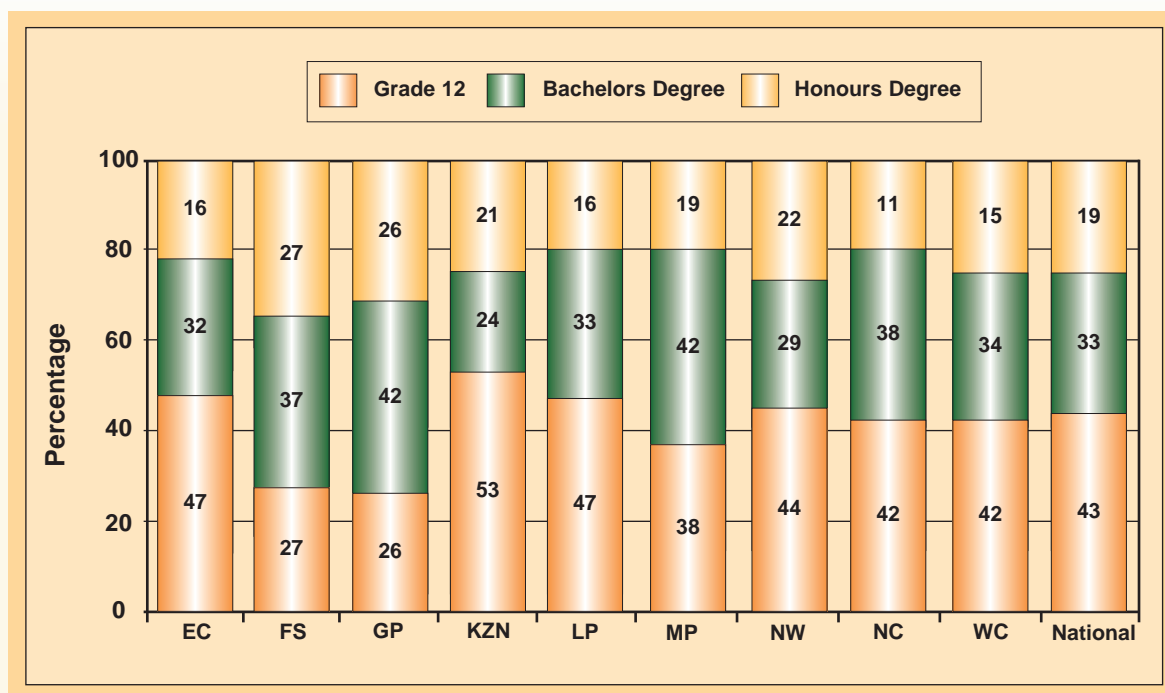
A high percentage of principals indicated that they had only a Grade 12 certificate (43%) with between 2% and 5% of **principals** in four provinces (EC, LP, NW, NC) having less than a Grade 12 qualification (Figure 3.22). However, approximately 55% reported that they had a university **qualification**; that is, 33% had Bachelors, 19% Honours, 3% Masters and 0.2% doctoral degrees (Table 3.100 in Appendix A).

Figure 3.23 Percentage of principals currently pursuing further education
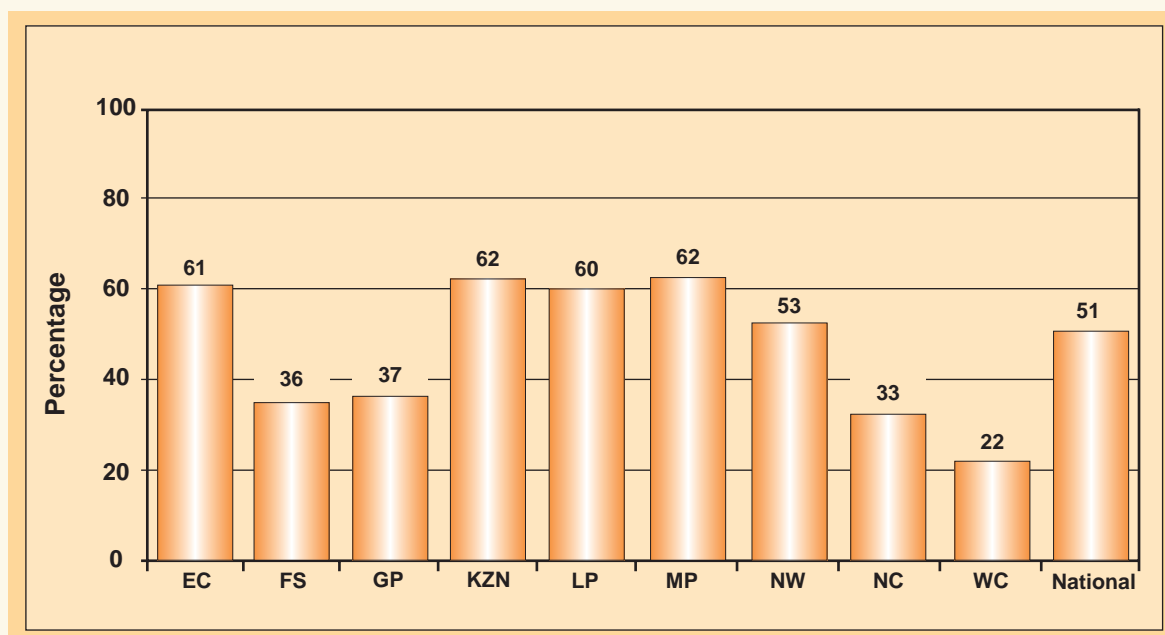
As depicted in Figure 3.26, nationally, about half of the **principals** reported that they were currently **engaged in further studies,** with the highest percentage of approximately 61% reported in four provinces (EC, KZN, LP, MP) (Table 3.114 in Appendix A).
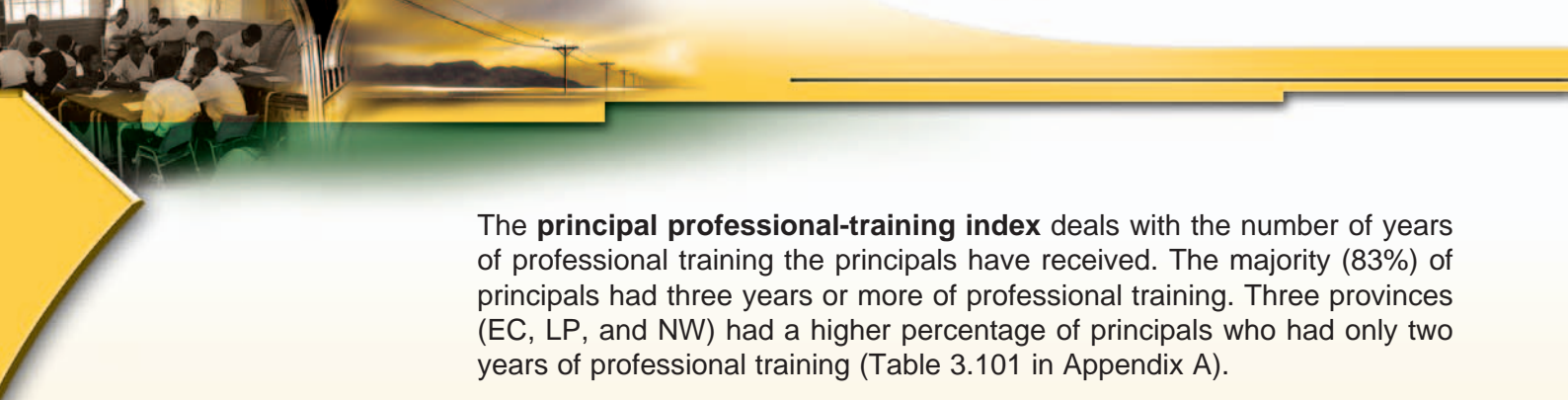
The **principal professional-training index** deals with the number of years of professional training the principals have received. The majority (83%) of principals had three years or more of professional training. Three provinces (EC, LP, and NW) had a higher percentage of principals who had only two years of professional training (Table 3.101 in Appendix A).

Figure 3.24 Qualification levels of educators by province
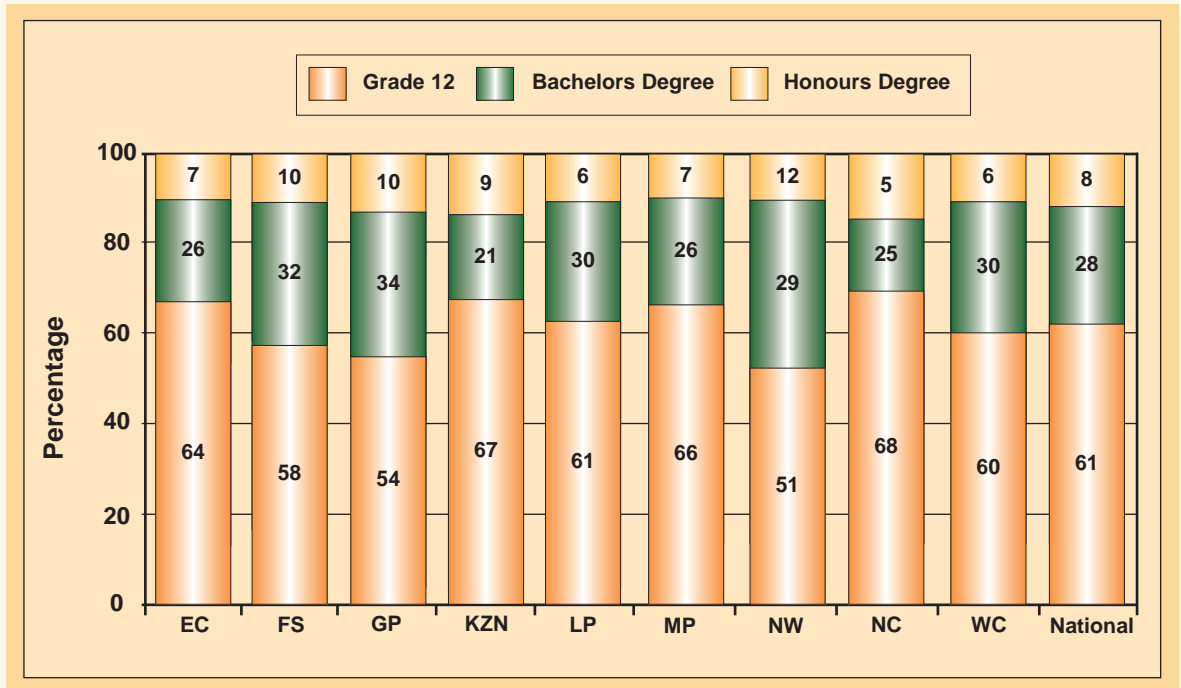
A high percentage of educators indicated that they had only a Grade 12 certificate (61%) with between 1% and 7% of **educators** across provinces having less than a Grade 12 **qualification** (Figure 3.23). However, approximately 36% of educators reported that they had a university qualification; that is, 28% had Bachelors and 8% had Honours degrees (Table 3.102 in Appendix A).

Studies of **educator qualifications** (i.e. formal training and certification) in different subjects have typically found that student learning benefits when educators have had more formal preparation for teaching. This has been found to be true of Natural Sciences and Mathematics educators, and of reading, elementary and vocational education, among others (Darling-Hammond, 2000; Conner, Son, Hindman & Morrison, 2005).

As shown in Tables 3.103 to 3.108 in Appendix A, 36% of Mathematics educators reported having their highest qualification as Grade 12, with percentages ranging from 25% in the Western Cape to 50% in Limpopo Province. On the other hand, 62% of Natural Sciences educators reported having a physical Natural Sciences qualification of Grade 12 or lower, with figures ranging from 32% in the Free State to 63% in Limpopo. In contrast, only 3% and 8% of Language (LOLT) educators reported having a qualification of Grade 12 or lower in English and Afrikaans respectively, although 27% of Language (LOLT) educators in the Eastern Cape reported having a qualification of lower than Grade 12 in Afrikaans.

A high percentage of Natural Sciences educators were in possession of a Grade 12 certificate for Biology, while one-third of Language (LOLT)

educators reported that they had a Grade 12 certificate in Afrikaans. Most educators had a tertiary qualification in English (77%), Afrikaans (59%), Mathematics (51%), and Biology (51%) with only 21% reporting a tertiary qualification in Physical Science. The results suggest that Natural Sciences educators are the least qualified educators in Grade 6 followed by Mathematics educators.

The **educator professional-training index** deals with the number of years of professional training of educators. The majority (86%) of educators had three years or more of professional training, while two provinces (LP and NW) had a higher percentage of educators who had only two years of professional training (Table 3.109 in Appendix A).

3.3.19 In-service training

Professional development of school staff is essential for both principals and educators to ensure they are exposed to updated information pertaining to improved learning and teaching. The **in-service training indicator** was devised to determine the type of in-service training that professional school staff had and the views of educators about in-service curriculum prog-rammes. This indicator comprises four indices: educator training, principal training, curriculum training and the further education of school principals. Across all provinces, indicator scores were reported as "inadequate", with a national average of 6.1 indicating below-average attendance of the relevant in-service training programmes (Table 3.110 in Appendix A).

The **principal training index** determines whether the principal received in-service training in the management of Curriculum 2005 as well as training in financial, conflict, school, and HIV/AIDS management, and is based on five items from the Principal Questionnaire. The **educator training index** deter-mines whether the educator received in-service training in the management of the classroom, inclusive education, gender equity, HIV/AIDS, race and values, drug abuse, and learning-area content.

Figure 3.25 In-service training for principals and educators by province
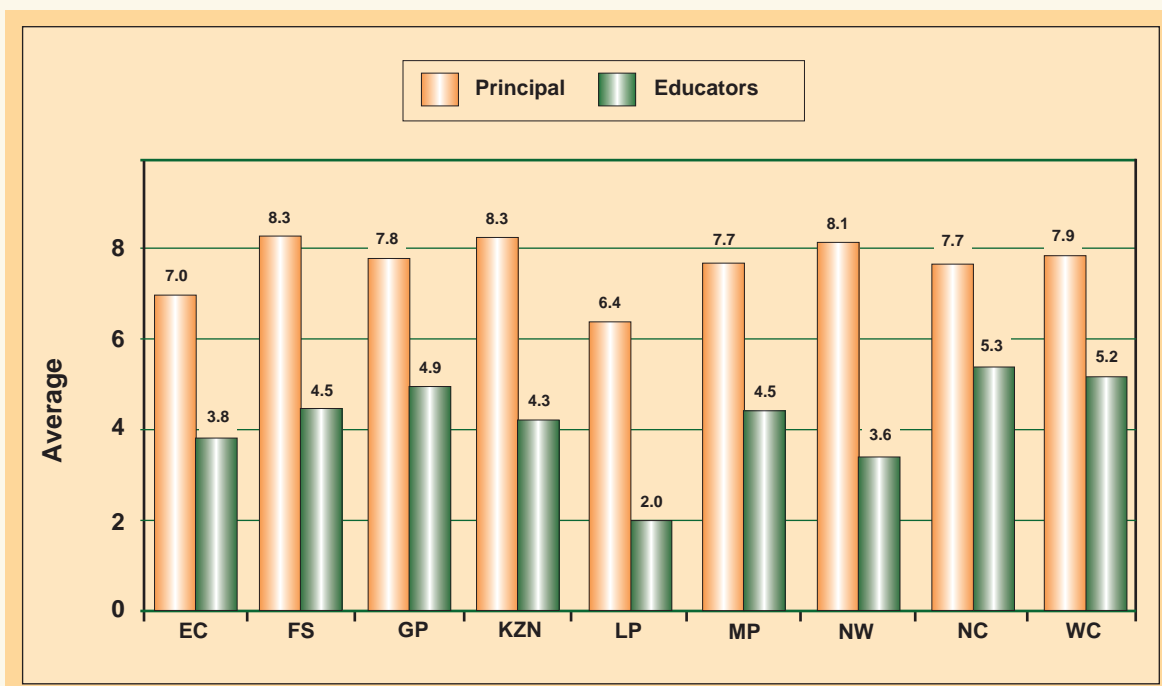
As illustrated in Figure 3.24, the principal training index scores fell within the ranges of "problematic" to "satisfactory" across the different provinces, with scores ranging from 6.4 (LP) to 8.3 (FS, KZN). In contrast, educator training index scores were "problematic" in two provinces (NC, WC), "largely problematic" in six provinces (EC, FS, GP, KZN, MP, NW) and "unacceptable" in Limpopo Province (Tables 3.111 and 3.112 in Appendix A).

The **curriculum training index** refers to educators' views on the attendance of curriculum-related in-service training programmes and the effect of these on the implementation of the curriculum. Items ranged from questions about how many hours of training educators had received in 2004 to specific skills they had acquired through their training, such as how to develop their own teaching and learning material. For all provinces and across all three learning areas, index scores were "satisfactory" (average of 7.3), indicating that a number of educators who attended the training felt that it was useful in assisting them to implement the curriculum more effectively (Table 3.113 in Appendix A).

Figure 3.26 Educator responses to effect of in-service curriculum training
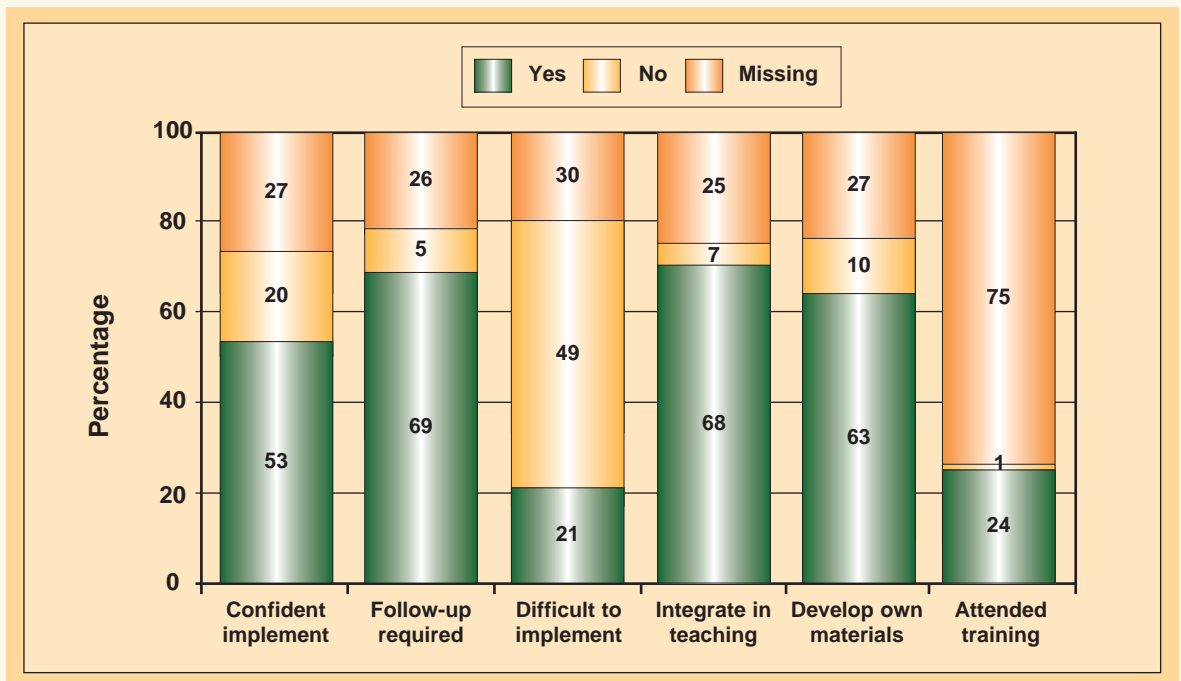
As depicted in Figure 3.25, a large percentage of educators did not respond (noted as "missing" in above graph) to questions focussing on curriculum-related in-service training programmes. The majority of educators were confident about implementing the curriculum, but some still found it difficult to implement. A high number of educators were able to integrate the training into their teaching (68%), and there were many who were able to develop their own materials (63%). This result indicates that the curriculum-related in-service training programme was extremely useful to those that did complete it. Of concern, however, is the large number of educators that omitted to respond to these questions, as it is not possible to determine accurately how many educators did not receive any training.

3.3.20 Staff perceptions

The perception and satisfaction of staff is known to affect learning and teaching, specifically learner attitude and behaviour. The **staff perceptions indicator** (Table 3.115 in Appendix A) provides information about the perception of principals and educators on the importance of various matters such as availability of learning materials, moral issues, the home background of learners, class size, nutrition and HIV/AIDS, teaching skills and the ability of the school to deal with these. The staff perceptions indicator is made up of two indices: principal perceptions, and educator perceptions. Across all provinces, indicator scores were "satisfactory" to "high", ranging from 8.7 (LP) to 9.1 (NC and WC). Not surprisingly, an overwhelming majority of educators and principals regarded these matters as extremely important.

The **principal perception index** focused on the perceptions of principals regarding the importance of various learning and teaching factors. These factors include: the manner in which educators manage large classes, morale, parental involvement, physical facilities, safety, the home background of learners, special educational needs and support materials for the effectiveness of learning and teaching in schools. The national average index score was 9.2. Except for Limpopo Province, which achieved a "satisfactory" score, index scores were "high" for all provinces, which indicates that principals perceived all the factors to be either important or very important (Table 3.116 in Appendix A).
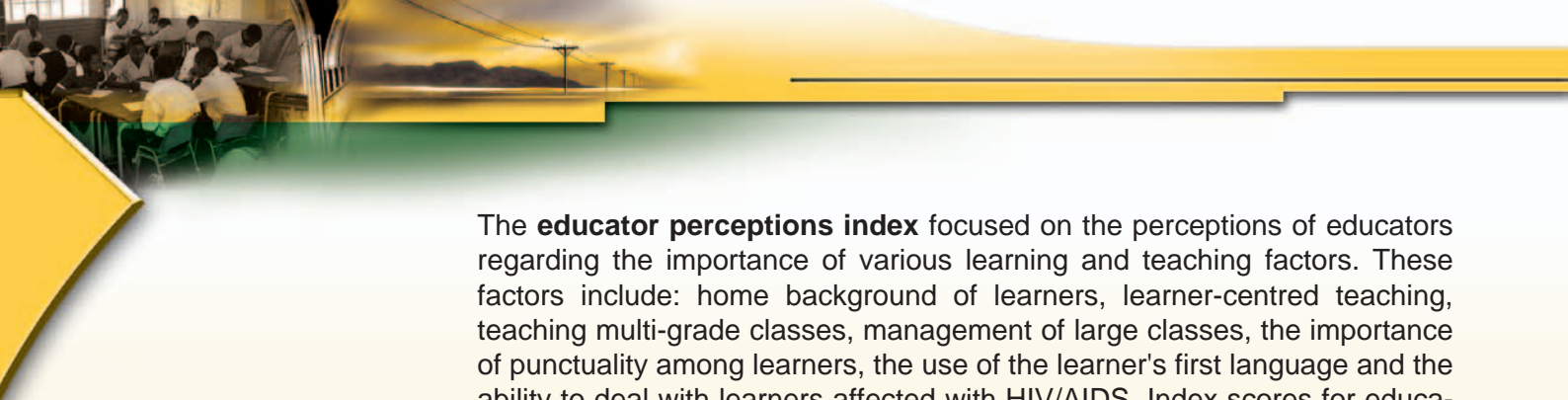
The **educator perceptions index** focused on the perceptions of educators regarding the importance of various learning and teaching factors. These factors include: home background of learners, learner-centred teaching, teaching multi-grade classes, management of large classes, the importance of punctuality among learners, the use of the learner's first language and the ability to deal with learners affected with HIV/AIDS. Index scores for educators' perceptions were "satisfactory" (national average of 8.6) across all provinces and for all three learning areas (Table 3.117 in Appendix A). This finding indicates that most educators felt that the factors noted above were either important or very important to the learning and teaching process.

3.3.21 Use of information at home

The **use of information at home indicator** refers to the frequency with which learners read at home, use the community library, and use a range of electronic media at home. The indices are calculated from learner responses to items pertaining to how often learners read newspapers, magazines or books, use the community library and use electronic media such as the radio, television and computers during the week.

Figure 3.27a Use of information at home indicator by province
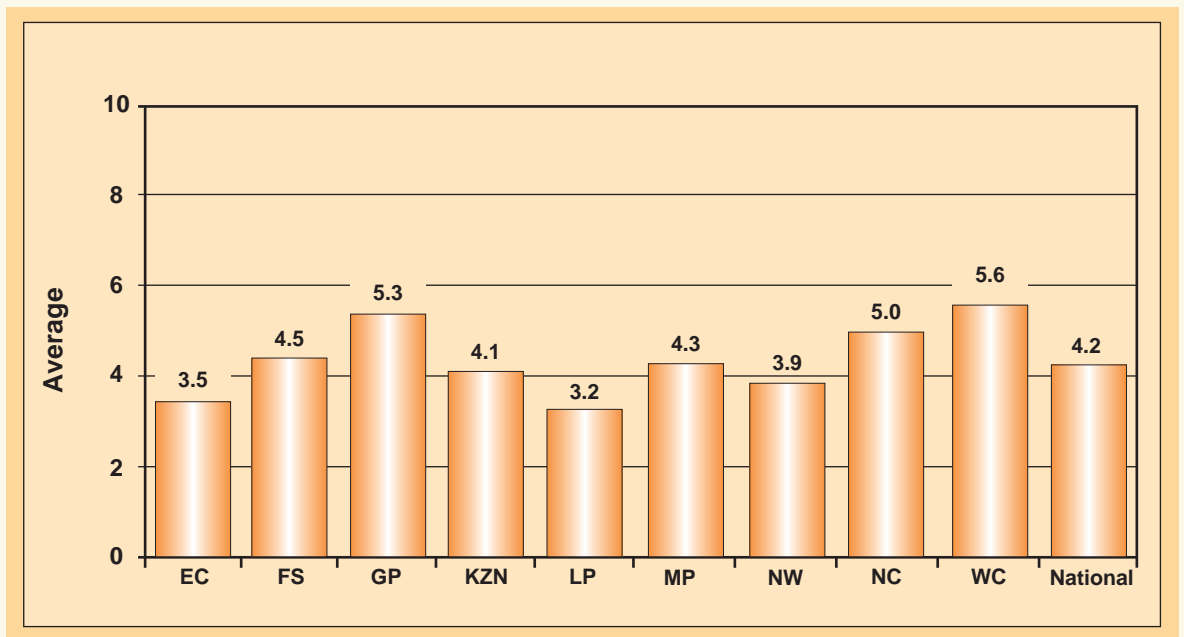
As shown in Figure 3.27a and in Table 3.118 in Appendix A, indicator scores were "poor" across all provinces, except in Gauteng, the Northern Cape, and the Western Cape where scores were "inadequate". This result indicates that learners generally did not engage with relevant information in the home environment.

The **reading at home index r**efers to the frequency with which learners read magazines, newspapers, and books at home and is based on items from the Learner Questionnaire.

Figure 3.27b Community library and reading at home index by province
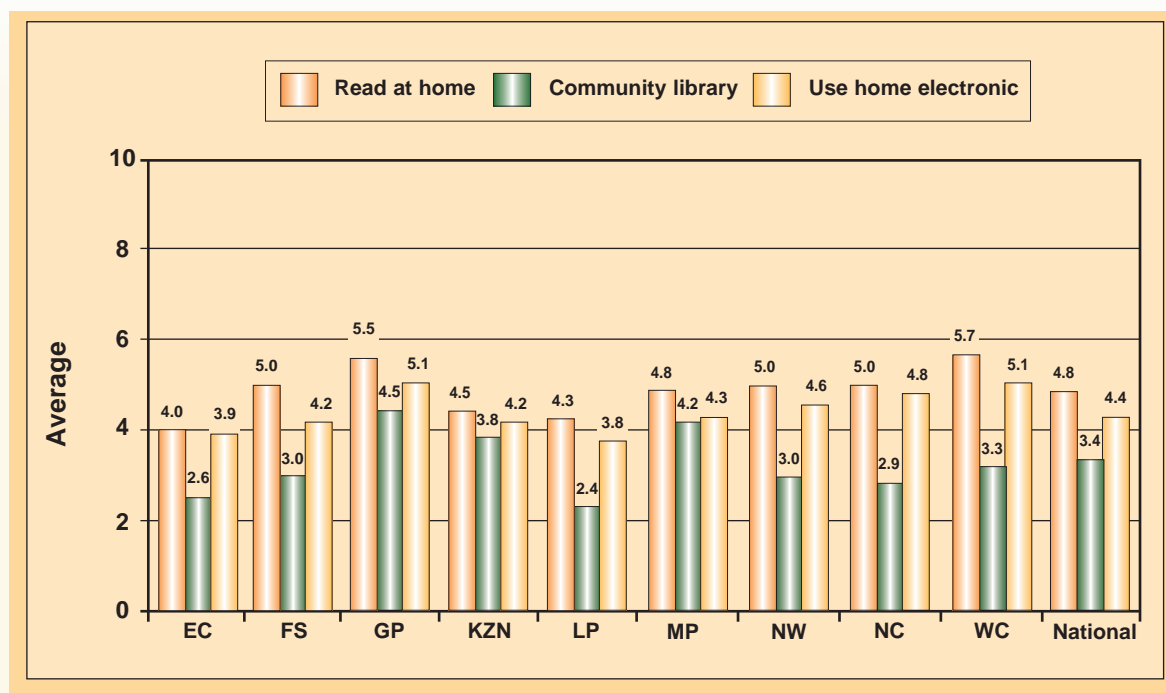
As shown in Figure 3.27b, scores were "problematic" for Gauteng and the Western Cape, and "largely problematic" for the rest of the provinces. The **community library index** refers to the use of the community library by learners. For this index, scores were "unacceptable" in three provinces (EC, LP, and NC), "largely problematic" in three provinces (FS, KZN, and MP) and "inadequate" for the rest. The low scores for the Eastern Cape, Limpopo, and North West provinces could be explained by the limited availability of community libraries in these provinces. These results indicate that the amount of time spent reading at home is limited, which may influence the effectiveness of the learning and teaching process (Tables 3.119 and 3.120 in Appendix A).

A **home electronic index** was also calculated to determine the frequency with which learners use a radio, television, video recorder, CD player, or computer at home. Index scores were "inadequate" for two provinces (GP, WC), and "largely problematic" for the other provinces (national average of 4.8).
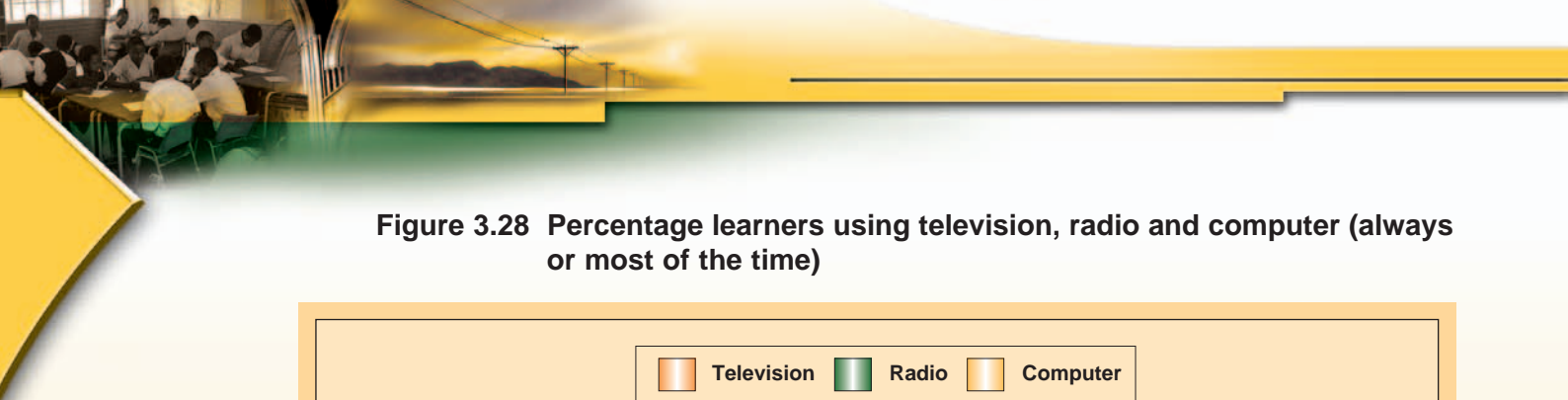
Figure 3.28 Percentage learners using television, radio and computer (always or most of the time)
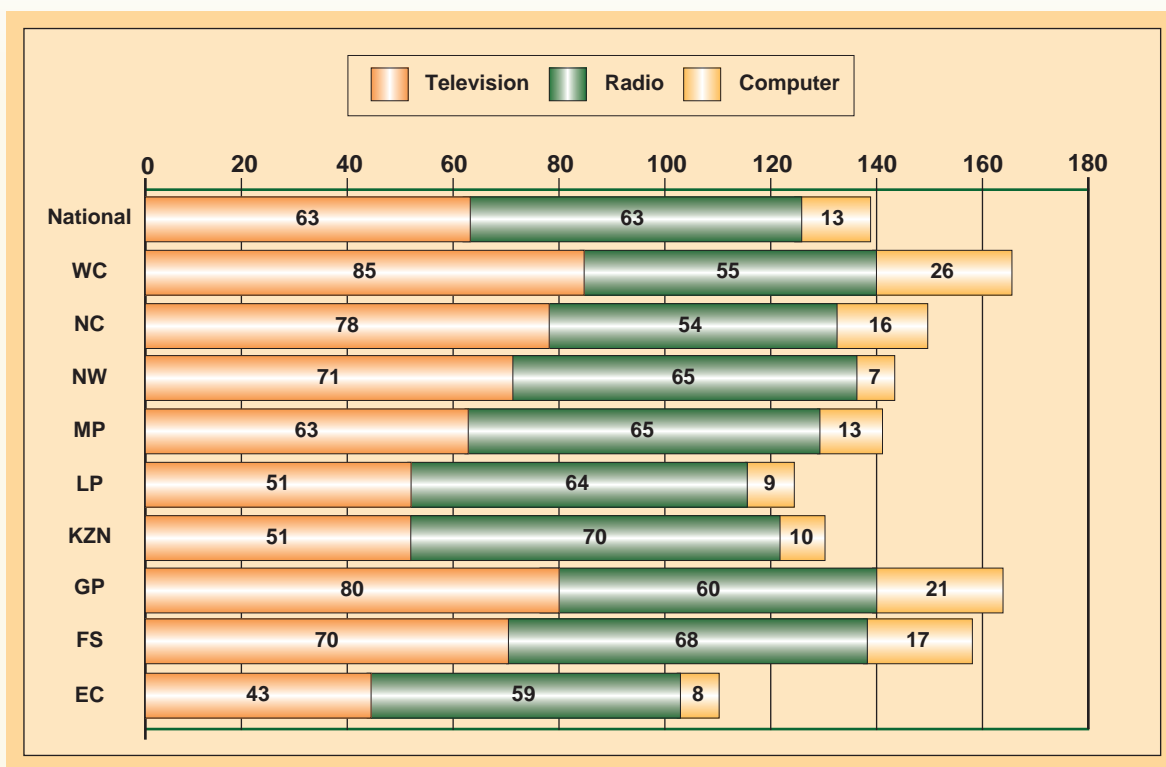
As illustrated in Figure 3.28, a high percentage of learners reported that they always or mainly used the radio or television for their schoolwork. In three provinces (EC, KZN, LP), learners mainly used the radio. In Mpumalanga, the use of the radio and television was approximately the same, while for the rest of the provinces, learners mainly used the television. In addition, nationally, only 13% of learners reported that they always or mainly used the computer at home, with higher percentages of these learners located in Gauteng and the Western Cape (Table 3.121 in Appendix A).

3.4 POLICY GOAL: EFFICIENCY

In many schooling systems, especially in developing countries, it has been found that the money/resources invested in education do not match the outputs. High dropout and repetition rates indicate wastage of educational resources and demand that national departments of education pay particular attention to efficiency within the education system (MLA, 1999). The limited availability of both human and physical resources is regarded by many role-players as one of the most important factors to contribute to the lack of delivery and effective management of the system at provincial and national levels within South Africa.

In practice, the concept of efficiency refers to the appropriate use of education resources and facilities to improve access to, and the quality of, education provided. This concept includes the mechanisms and structures in place to address the various needs of the education system (e.g. district offices). This is especially relevant in the context where resources are limited, given that the effective and efficient use

of available resources can make a significant difference in the provision of quality education. Efficiency generally comprises the following:

i) Financial resources, which refers to how the availability, allocation and use of human and financial resources within a system are managed and employed at different levels within a system (e.g. donations to the school from the community);

ii) Systems structures functioning, which refers to the functioning of the current structures and systems (e.g. provinces, regions, districts and schools) and how these are staffed and managed (e.g. district managers, School Governing Bodies, etc.) regarding the formulation, implementation and monitoring of policy and practice within the system; and

iii) Throughput, which refers to the number of learners that enter and leave a system, as well as the number of learners that repeat any grades.

3.4.1 School donations

The **school donations indicator** provides information from principals about whether their schools had received donations and for what purpose. This indicator excludes funds received by the school from school fees or from government.

Figure 3.29 School donations indicator by province
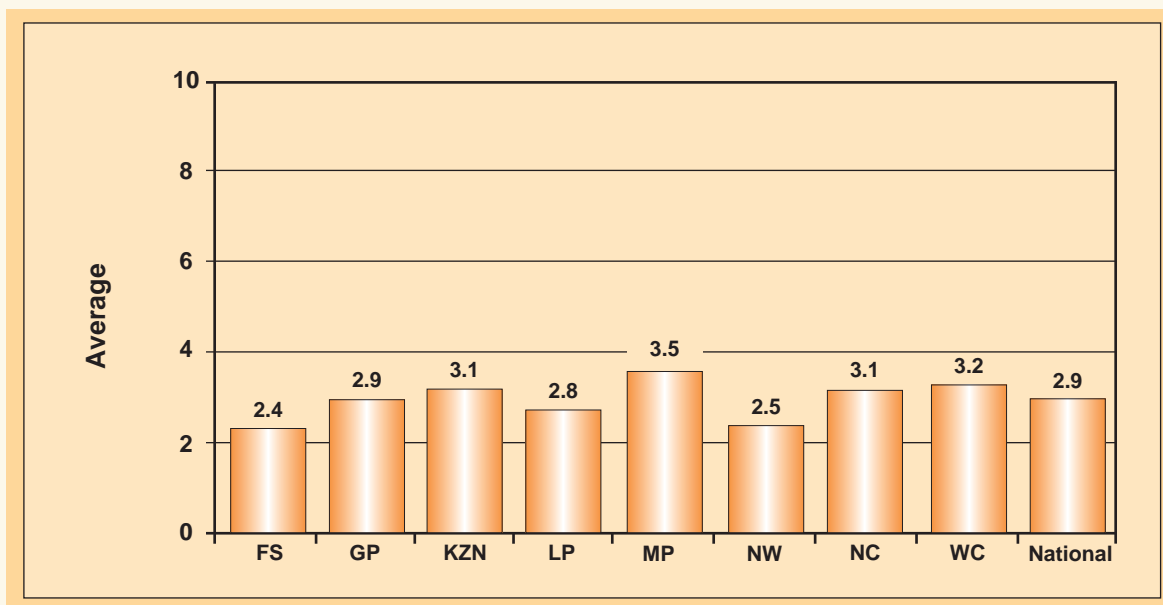
Across all provinces, scores on the school donations indicator were either "unacceptable" or "largely problematic", indicating that minimum funding was obtained via donations (Figure 3.29 and Table 3.122 in Appendix A).

Table 3.123 Use of donations received by the school by province (%)

	School facilities	Main-tenance of school facilities	Purchase of support materials	Payment of additional educators	Payment of non-educator staff	Voluntary assis-tance to educators	Prepara-tion of meals
EC	16	29	21	10	19	24	53
FS	28	22	25	13	8	25	38
GP	14	25	23	14	18	23	50
KZN	17	25	23	16	30	24	49
LP	14	31	23	7	16	12	73
MP	27	43	30	22	27	19	53
NW	16	33	27	10	13	16	37
NC	24	22	28	26	11	39	59
WC	18	22	25	20	18	39	53
National	18	28	24	14	19	23	52

The donations that schools received were used for a variety of purposes across the nine provinces (Table 3.123), foremost of which were the preparation of meals, the maintenance of facilities, and the purchase of support materials.

3.4.2 School functioning

The structures and systems that are in place within schools have an important effect on how schools function. Three aspects found to be important for effective functioning of schools relate to internal and external communication, existing structures in schools such as the governing body, and support provided by the district office.

The **communication indicator** provides information about the efficiency of communication channels within the school, between the school and the district office, and between the school and the community. This indicator was constructed from principal and educator responses and is made up of three indices: communication with the districts, communication internally and communication with the community. The national average was 5.8 and could be interpreted as "problematic" across provinces and learning areas.

Figure 3.30 School communication index by province
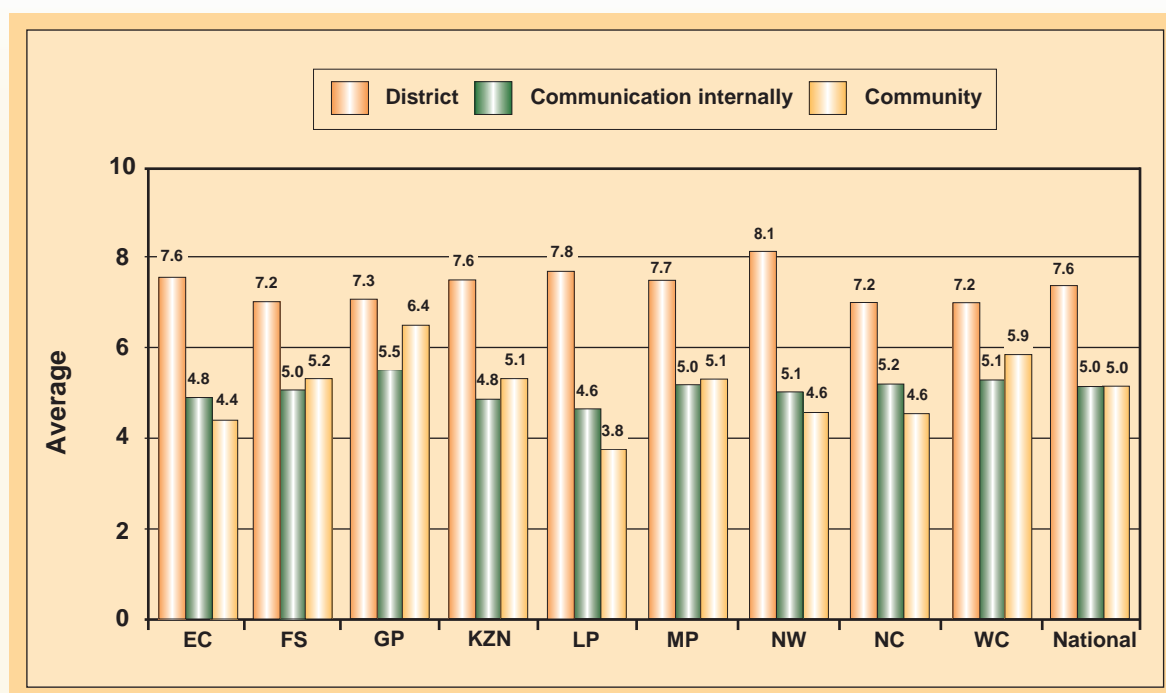
Further analyses by indices are reported in Figure 3.30. The results indicate that schools communicate mostly with **districts,** followed by **internal communication** (i.e. with educators) and with the **community.** School communication with the District was "satisfactory" (national average of 7.6), while communication within the school (national average of 5.0) and communication with the community (national average of 5.0) were "inadequate". This result points to the fact that principal-educator communication in most schools is not optimal nor is communication with the community (Tables 3.124a to 3.124c in Appendix A).

The **school governing body (SGB) indicator** provides information about the existence and functionality (e.g. regular meetings, receipt of training, effective functioning) of the school governing body (SGB). Responses obtained from principals and parents indicate that SGBs were in existence and functioning in the majority of schools (national average of 8.6), which could be interpreted as "satisfactory". The majority of parents across all provinces, approximately 80%, indicated that the SGBs were functioning effectively (Tables 3.125 and 3.126 in Appendix A).

The **department support indicator** provides information about the support provided by the DoE's officials to the SGB and school management team, and for the implementation of C2005 and HIV/AIDS policies in schools. Across all provinces, the support provided by district offices to schools was rated as "unacceptable" (national average of 3.0). In addition, less than a quarter of the principals reported that department officials observed educators regularly (Tables 3.127a to 3.127c in Appendix A).

3.4.3 Learner throughput rate

The **learner throughput rate indicator** provides information about the time taken by learners to complete grades 4 to 6. The throughput rate of learners fell in the "high" category across provinces (ranging from 9.4 to 9.8), which means that there are generally low repetition rates in all provinces (Table 3.128 in Appendix A).

3.5 POLICY GOAL: EQUITY

In developing countries, stark differences in learner achievement along the urban-rural divide continue to characterise the schooling system and remain a top priority of policy intervention in many countries. In South Africa, the issue of equity is particularly salient given the discriminatory racial policies of the apartheid government, which left a legacy of huge differences in learner achievement between the different racial groups. In the South African context, the achievement of equity is also important because of the gross levels of differential school funding that benefited the white population. Consequently, the present democratic government has made the achievement of equity in education funding a priority.

The concept of equity is based on the principle that all learners can learn and achieve and that they should be provided with an equal opportunity to do so irrespective of their background. Achieving equity is vital, as it is indicative of whether the education system is meeting the different needs of all sectors of society. Without addressing issues of equity, the provision of quality education cannot be attained. Equity within any education system is generally based on the following principles:

i) Inclusivity, which refers to the capacity of the education system to address the specific needs of all children, irrespective of their language, gender, religion, sexual orientation, or (dis)ability, for example; and

ii) Absence of unfair discrimination, which refers to the capacity of the education system to address unfair discriminatory practices and their consequences for any specific subgroup actively. (However, the use of practices targeted at specific groups to address inequity within the system is both acceptable and necessary; for example, the introduction of additional Mathematics and Science programmes specifically for female learners.)

3.5.1 Inclusivity-special educational needs

The **inclusivity-special educational needs indicator** refers to the capacity of the school to accommodate learners with special educational needs. This indicator was based on questions obtained from the principal, educator, and learner questionnaires pertaining to the availability of assistive devices, the adaptation of buildings and the provision of assistance to these learners by the school.

Figure 3.31 Inclusivity-special educational needs index by province
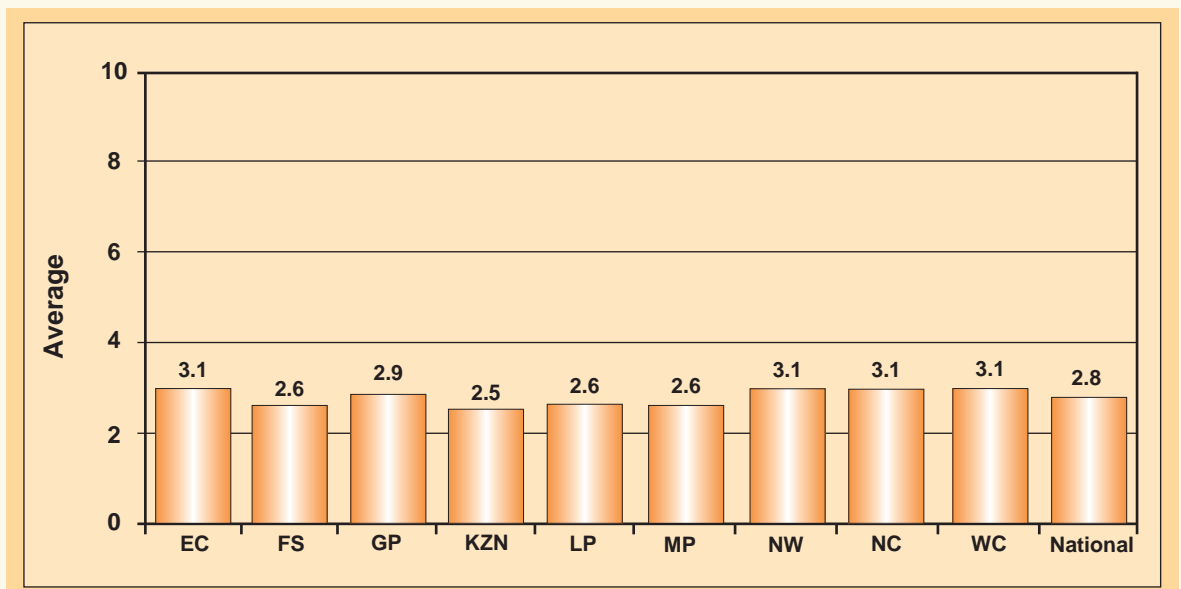
As depicted in Figure 3.31, scores for all provinces fell within the "unacceptable" to "largely problematic" range (Table 3.129 in Appendix A). This result indicates that nationally most schools do not have the capacity to accommodate learners with special educational needs.

3.5.2 Racial discrimination in the school

The **racial-discrimination-in-the-school indicator** provides information about incidents of racial discrimination at the school and the frequency with which principals have to deal with racist behaviour on the part of educators and learners. For all provinces, reported scores were "satisfactory" (national average of 8.6), which indicates that racist behaviour was not seen as a major problem in schools (Table 3.130 in Appendix A). However, approximately 28% of parents reported that their children's schools had experienced incidents of racial discrimination, with the highest incidents reported in the Gauteng and North West provinces (Table 3.131 in Appendix A).

Figure 3.32 Percentage of principals reporting on the frequency with which they have to deal with racist incidents involving learners and educators in the school
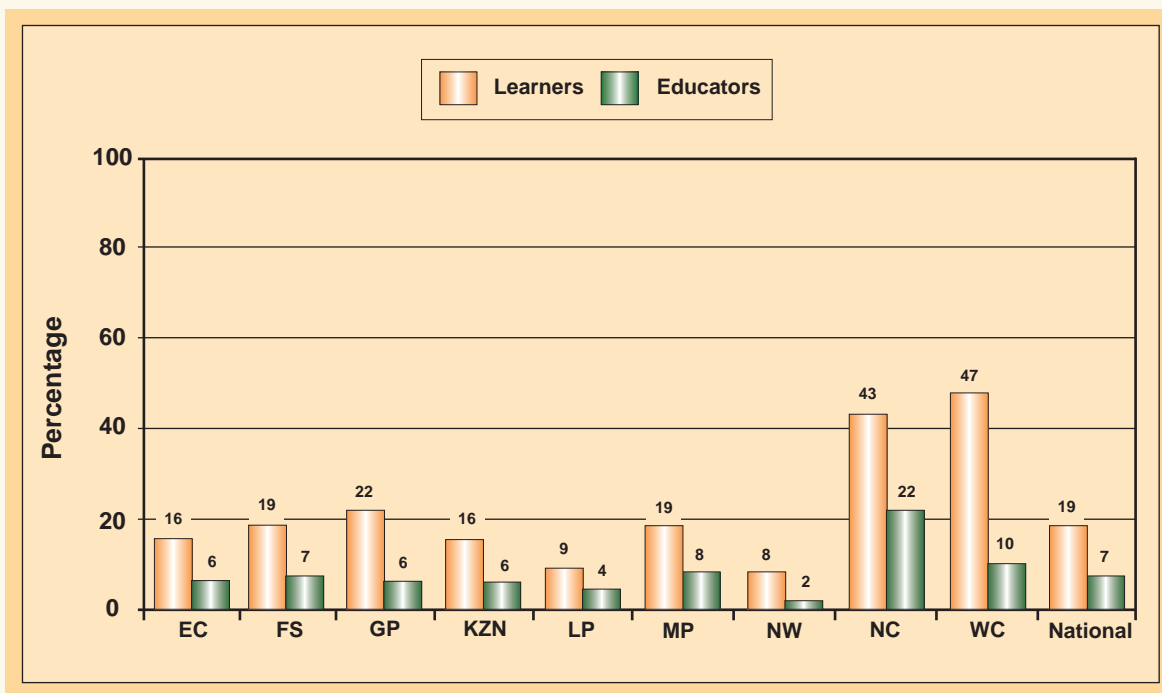
As depicted in Figure 3.32, 19% of principals reported that they often (i.e. in terms of the response categories of "sometimes", "most of the time" or "always") had to deal with racist incidents involving learners and incidents involving educators (7%). For both learners and educators, the highest percentages of racial incidents were reported by principals in the Northern and Western Cape provinces (Tables 3.132 to 3.133 in Appendix A).

3.5.3 Socio-economic status (SES) of learners and their immediate families

In the *Learning for tomorrow's world* report, the OECD (2003:147) reports the pervasive finding that socio-economic status (SES) was strongly associated with learner achievement in all countries taking part in the study. The socio-economic status indicator was comprised of two indices: home conditions and home possessions and was calculated from parent and learner responses. The home conditions index was based on questions pertaining to amenities such as the availability of water, electricity and toilets at home, as well as the type of dwelling lived in, while the home possession index was based on questions pertaining to what parents and learners owned, that is electronic equipment, livestock and mode of transportation.

Figure 3.33 Socio-economic status by province
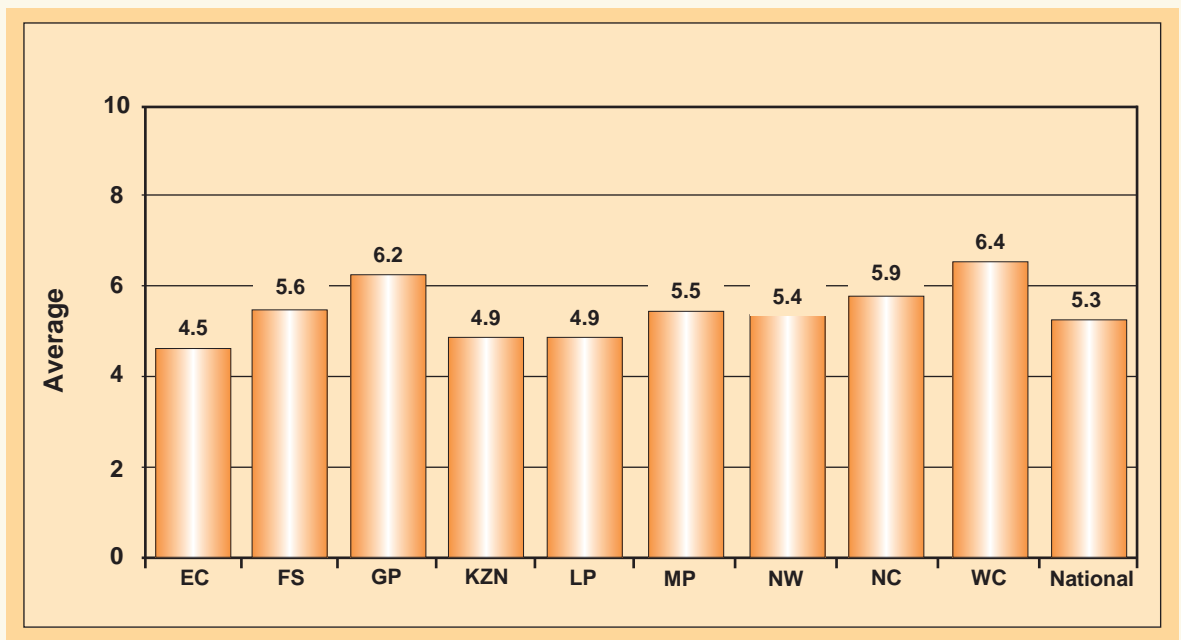
As presented in Figure 3.33, SES was reported to be "low" in three provinces (EC, KZN, and LP) and "average" in six provinces (MP, NW, FS, GP, NC, WC).

Figure 3.34 Home living conditions and possessions by province
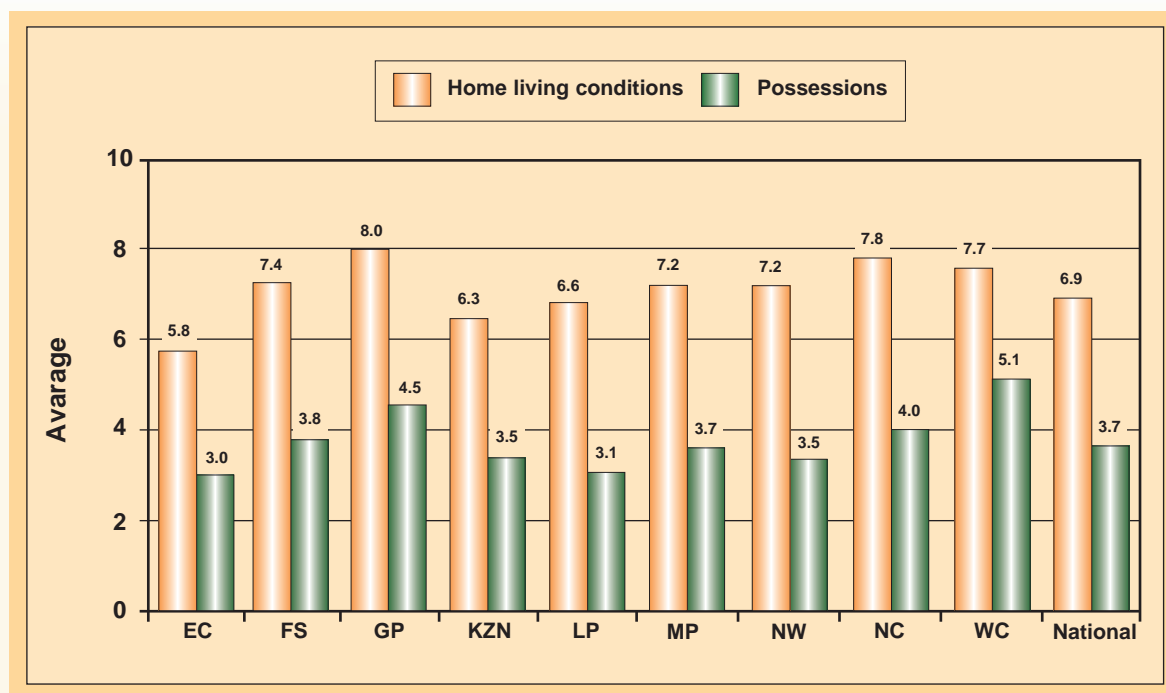
As depicted in Figure 3.34, the **home living conditions** (e.g. access to water and electricity, and what materials the walls were made of) were reported to be higher than home possessions for all provinces and could be interpreted as "problematic" to "satisfactory" (national average of 6.9). However, the index scores for **possessions** (e.g. television, VCR, telephone, car, CD player, livestock) were "unacceptable" for one province (EC), "inadequate" for another (WC) and "largely problematic" for the rest of the provinces (Table 3.134 in Appendix A).

3.6 CONCLUSION

This chapter reported on the context within which learning takes place in Grade 6 within the South African education system. While many contextual factors were reported on, only a few pertinent factors that are directly under the control of the national DoE will be discussed further.

Generally, most of the indicators under the policy goal of access could be regarded as "problematic" and in some cases "unacceptable" and need to be addressed by the DoE. Factors such as school fees, access for learners with special needs, access to information at school, school libraries, and access to textbooks and learning materials need to be addressed and appropriate policies put in place.

For the policy goal of quality, most of the factors that centred on resources (e.g. school resources, physical resources, learning resources, and teaching resources) were reported to be "problematic" and in some cases "unacceptable" and need to be addressed. Other factors that need improvement are: safety, the feeding scheme, the language in which teaching and learning occurs, and educator qualifications.

For the policy goal of efficiency, the main area of concern is the support provided by the DoE to schools.
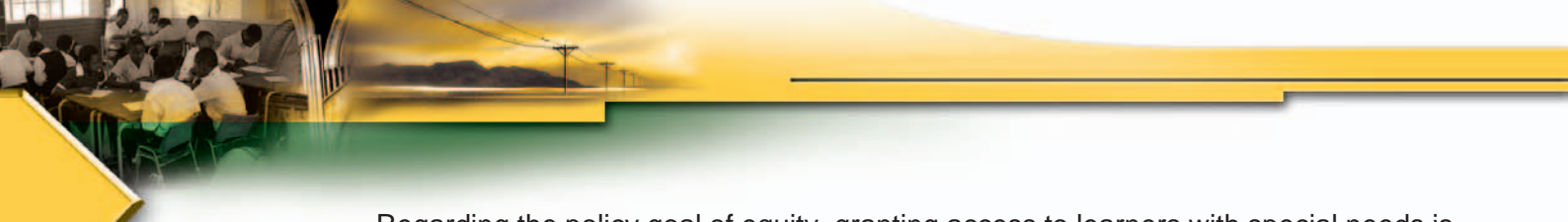
Regarding the policy goal of equity, granting access to learners with special needs is a matter of concern. It seems that the majority of schools currently do not have the capacity to accommodate learners with special educational needs.

While it is necessary for the DoE to address all of these contextual factors, Chapter 5 of this report will look at the effect of these contextual factors on learner achievement and highlight issues that should be given further priority. Table 3.135 (in Appendix A) depicts the indicators and indices used to identify factors related to learner achievement.

CHAPTER 4
Learner Achievement

In this chapter, the achievement of Grade 6 learners in terms of the instruments that were used to assess the three learning areas – Language (Language of Learning and Teaching – LOLT) (i.e. Listening Comprehension and Reading and Writing), Mathematics and Natural Sciences – is presented.

Results for each learning area are reported separately in three sections. All scores are expressed as percentages and disaggregated by province. For each learning area, percentage scores are also converted to achievement levels (see Chapter 2) as stipulated for Grade 9 in the Curriculum 2005 Assessment Guidelines for LLC, MLMMS, and NS. Results are also reported by Learning Outcomes, gender, LOLT, and the geographical location of the school. Weighted averages are calculated so that averages for the country and provinces represent learner achievement appropriately.

4.1 NATIONAL SCORES

Table 4.1a presents the national averages for all three learning areas.

Table 4.1a National averages for Language (LOLT), Mathematics and Natural Sciences

	Average	Std. Error	Std. Deviation
Language (LOLT)	38.03	0.65	23.79
Mathematics	27.08	0.47	17.14
Natural Sciences	40.77	0.46	18.09

The achievement of learners as depicted by the national average scores obtained in all three learning areas was generally poor, with learners obtaining the highest score for Natural Sciences, followed by Languages (LOLT) and Mathematics (Figure 4.1 and Table 4.1a). However, there was a wide variation in the level of achievement of learners, with scores ranging from 0% to 99% in the different learning areas.

Figure 4.1 Learner scores by learning area and province
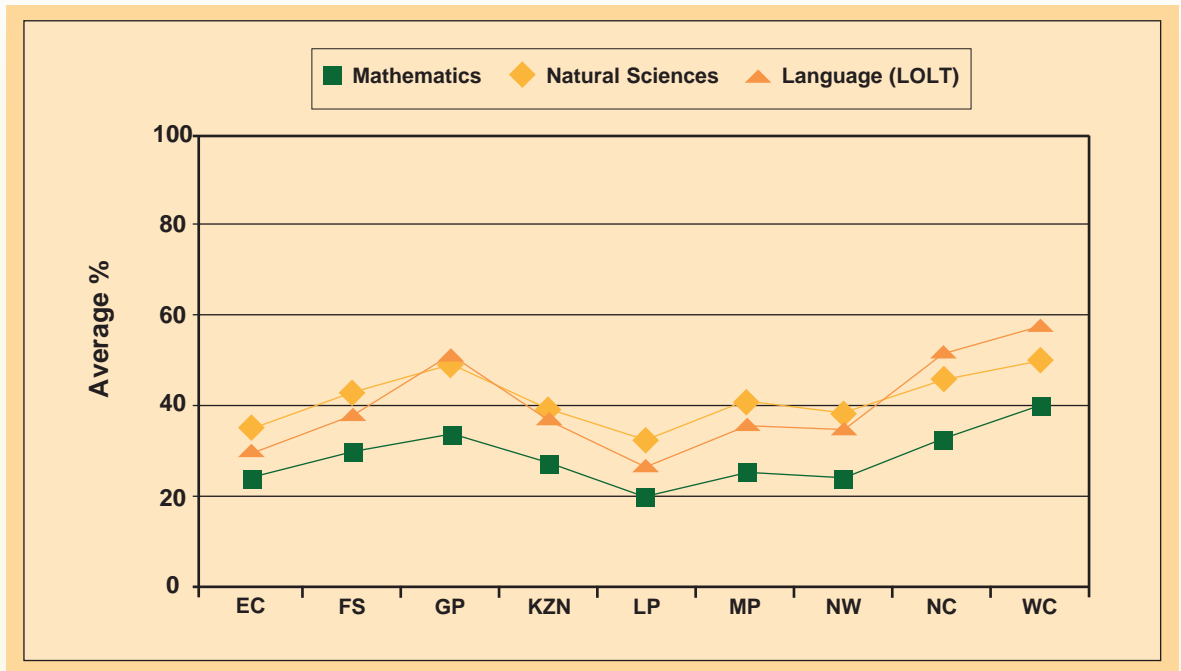
Across the provinces, similar low average scores were also recorded (Figure 4.1 and Table 4.2 in Appendix B). The pattern of achievement in the three learning areas remained consistent across all provinces, with considerably higher scores in Language (LOLT) and Natural Sciences than in Mathematics. On average, the highest scores in all three learning areas were obtained in the Western Cape, and the lowest in the Limpopo Province.

The correlations between the learning areas are presented in Table 4.1b.

Table 4.1b Correlation co-efficients between Language (LOLT), Mathematics and Natural Sciences

	Language (LOLT)	Mathematics	Natural Sciences
Language (LOLT)	1		
Mathematics	0.81	1	
Natural Sciences	0.85	0.79	1

The correlations between the learning areas are all close to 0.80. This is a high correlation, and indicates that learners who do well in one learning area are likely to do well in other learning areas. In the next sections, additional results are provided for each of the learning areas, beginning with Language (LOLT) and followed by Mathematics and Natural Sciences.

4.2   LANGUAGE (LOLT)

4.2.1   Language (LOLT) by achievement levels

Learners' achievement of the Language (LOLT) tasks is reported against the achievement levels suggested in the *Language, Literacy and Communication Curriculum 2005 Assessment Guidelines* (DoE, n.d.). The descriptions of the four achievement levels, their interpretation, and the cut-off percentages as set out by the DoE are presented in Chapter 2 of this report. Achievement across these levels is depicted in Figure 4.2.

Figure 4.2 Percentage of learners at each achievement level in Language (LOLT)
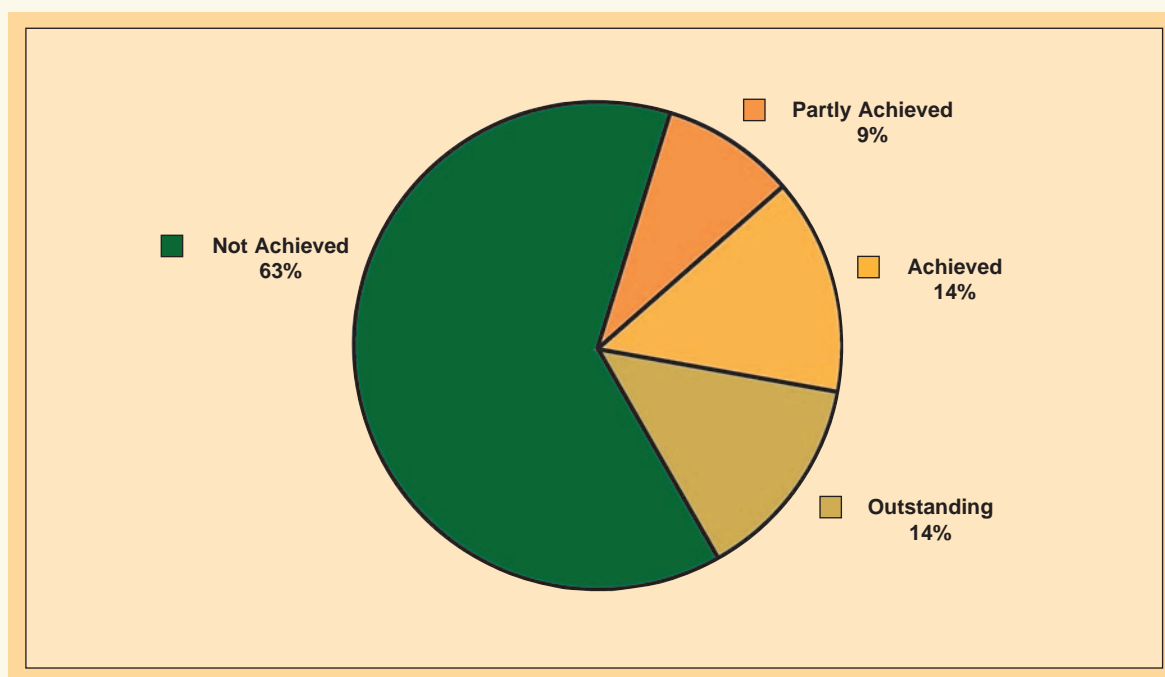
Only 28% of the learners performed at the "Achieved" and "Outstanding" levels combined, while 63% scored at the "Not Achieved" level. Achievement levels by province are depicted in Figure 4.3.

Figure 4.3 Language (LOLT) achievement by achievement level and province
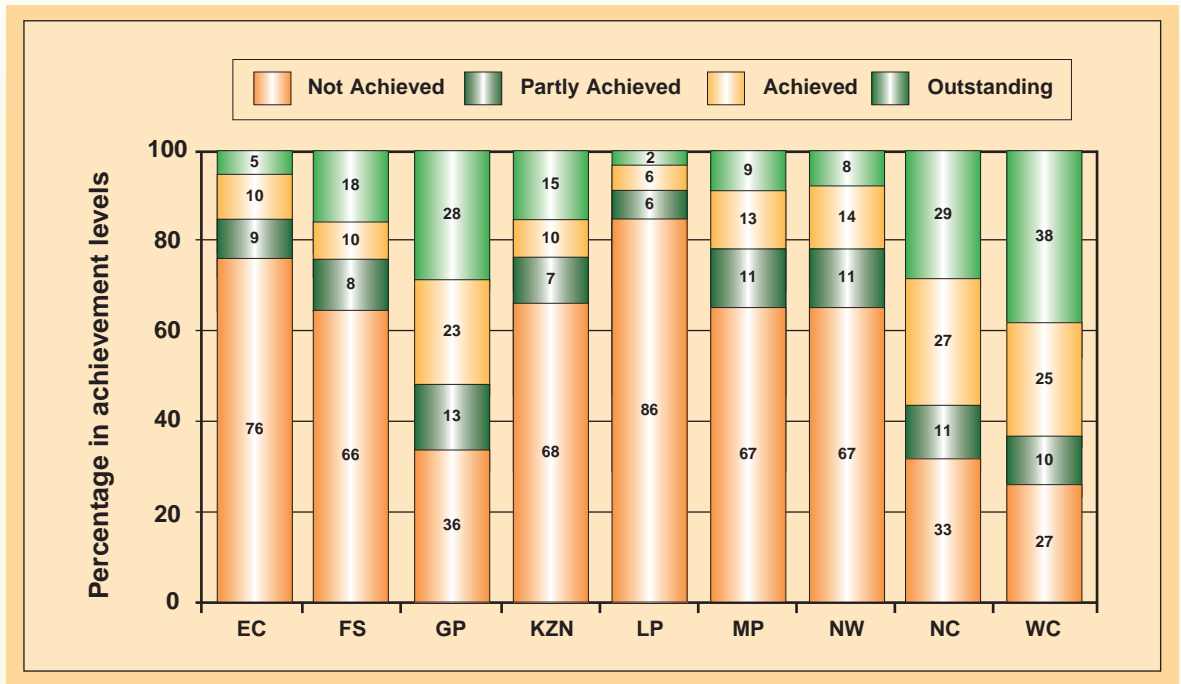
Achievement levels by provinces followed similar trends (Figure 4.3 and Table 4.3 in Appendix B.) However, considerable variations in scores were recorded across provinces, with only the Gauteng, the Northern Cape, and the Western Cape provinces having more than 50% of learners scoring at the two highest levels. In each of the remaining provinces, more than 65% of learners performed at the "Not Achieved" level.

4.2.2   Language (LOLT) achievement by Learning Outcomes

The Language (LOLT) learning area covers the language skills of listening comprehension, reading and writing. These skills have been grouped into the following Learning Outcomes (LOs) of the RNCS (DoE, 2002): Listening (LO1), Reading and Viewing (LO3), Writing (LO4), Thinking and Reasoning (LO5), and Language Structure and Use (LO6). The average achievement in each of the Learning Outcomes is depicted in Figure 4.4, while average scores for provinces are presented in Table 4.4 in Appendix B.

Figure 4.4 Language (LOLT) achievement by Learning Outcomes
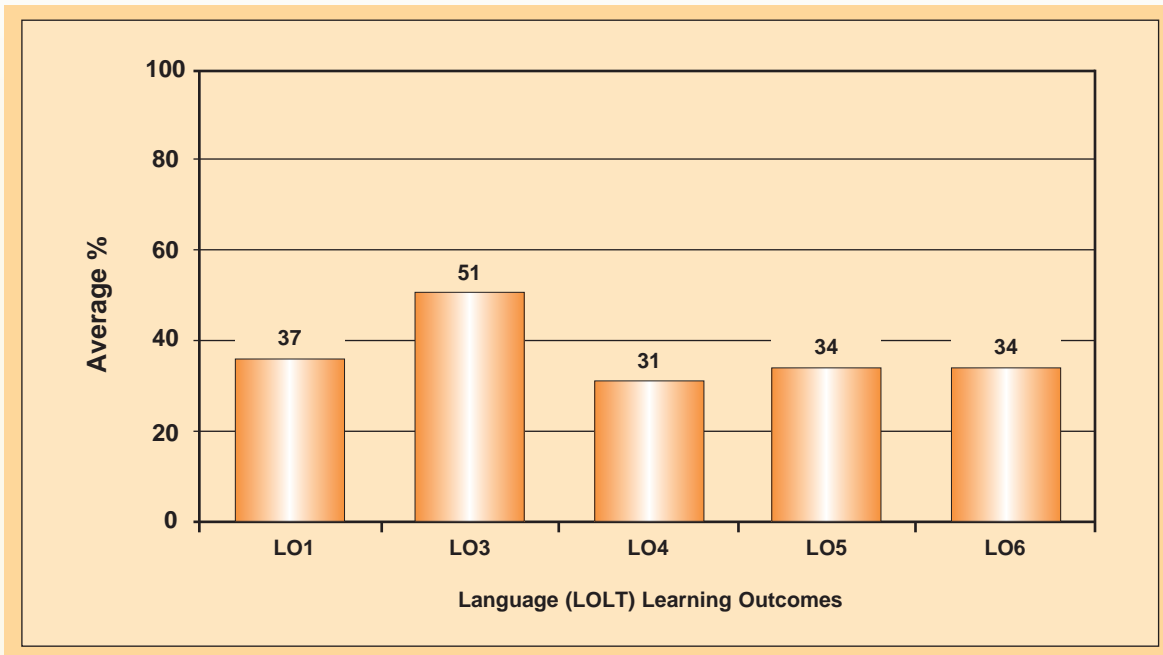
Only in Reading and Viewing (LO3) did learners score slightly above 50%. The average scores for the other Learning Outcomes are well below 50%. The low achievement levels could be attributed to the majority of learners having taken the tests that measured these Learning Outcomes in a language that was different from their home language. This pattern of achievement is consistent across all provinces, as is presented in Table 4.4 in Appendix B.

4.2.3 Language (LOLT) achievement by gender

In Figure 4.5, the achievement of boys and girls is compared through provincial and national averages.

Figure 4.5 Language (LOLT) achievement by gender and province
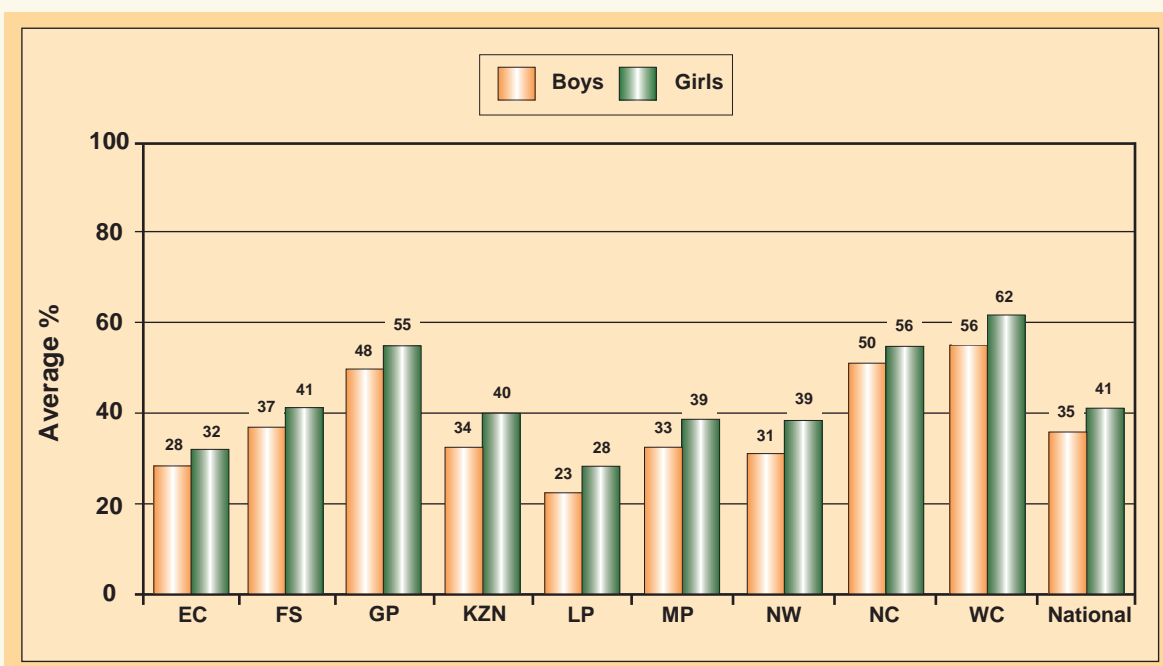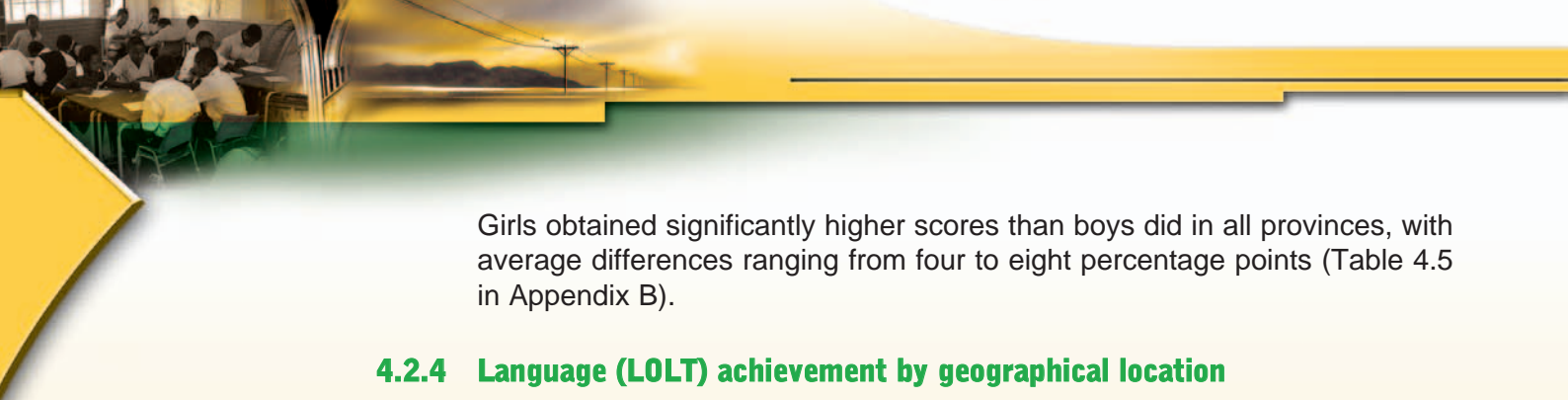
Girls obtained significantly higher scores than boys did in all provinces, with average differences ranging from four to eight percentage points (Table 4.5 in Appendix B).

4.2.4 Language (LOLT) achievement by geographical location

The average achievement scores of learners according to the geographical location of schools are depicted in Figure 4.6. Provincial scores are presented in Tables 4.6a and b in Appendix B.

Figure 4.6 Language (LOLT) achievement by geographical location
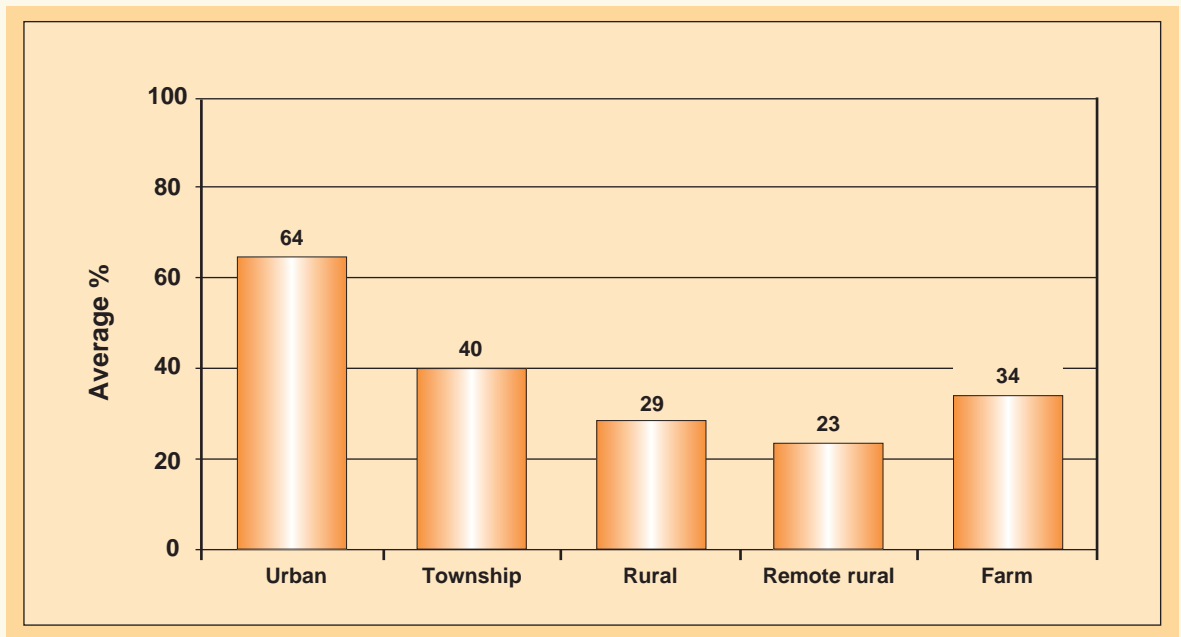
National average scores were substantially higher for learners that attended schools in urban areas than for learners who attended schools in rural areas. This trend was evident in all provinces, as is shown in Table 4.6 in Appendix B. However, in the Western Cape and Northern Cape provinces, the differences in the scores achieved by learners attending schools located in urban as opposed to rural areas were not as marked as those of learners in the other provinces. In general, the low national average scores in Language (LOLT) have been influenced to a large extent by the very poor scores received by learners in rural and remote rural areas.

4.2.5 Language (LOLT) achievement by home language same/different to LOLT

It is important to investigate the relationship between the results of Language (LOLT) tasks and the home language of learners, as many studies have pointed to positive correlations between these two factors. Learners are categorised according to those whose home language was the same as their LOLT and those whose home language was different from their LOLT. The average percentages are depicted in Figure 4.7 and presented in Table 4.7a in Appendix B.

Figure 4.7 Language (LOLT) achievement by home language same/different to LOLT and province
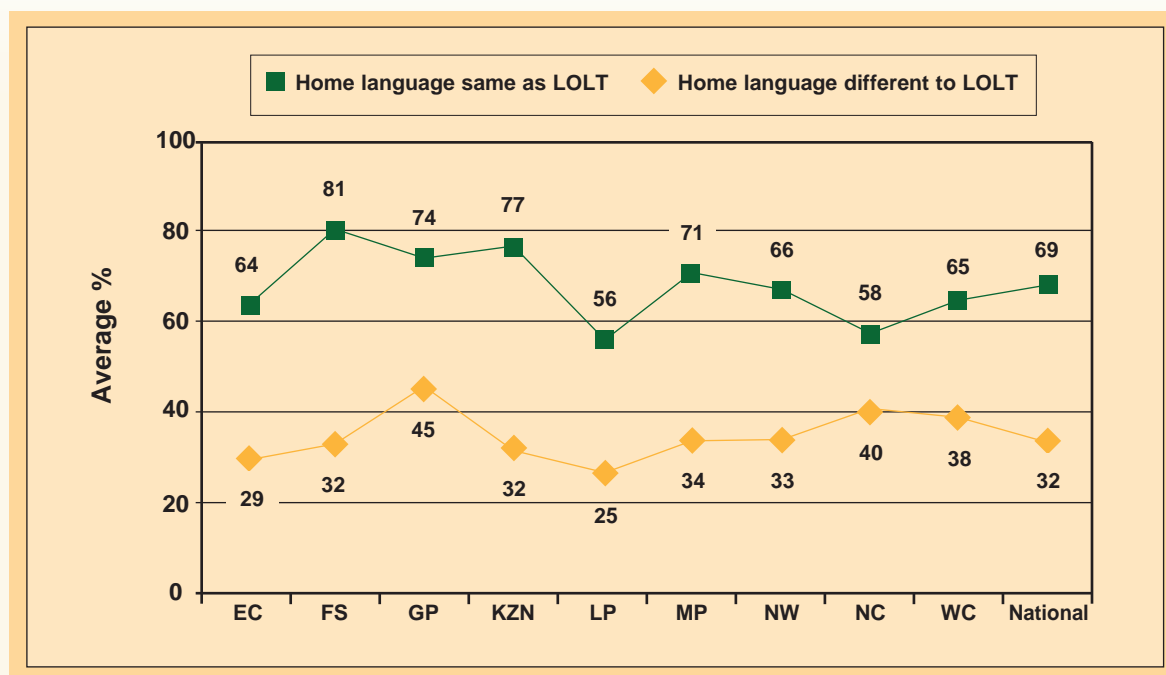
Learners who took the test in their home language, where this was the same as the LOLT, obtained substantially higher scores than learners whose home language was different from the LOLT and who, as a result, wrote the test in a second or third language. This trend was noted across all provinces, as is evident from Figure 4.7. However, the differences were far less prominent among learners from the Northern Cape Province. The national average score difference was 37 percentage points with the lowest percentage point difference of 18 noted in the Northern Cape and the highest of 49 recorded in the Free State (Table 4.7a in Appendix B).

4.2.6 Language (LOLT) achievement by question type

The average score for multiple-choice questions was 49%, whereas for open-ended questions the average score was only 31%. This trend, which was evident in all provinces, provides an indication that many learners struggled to formulate and write their own responses (Table 4.7b in Appendix B).

4.3 MATHEMATICS

4.3.1 Mathematics achievement by achievement levels

Learner achievement in Mathematics is analysed against the achievement levels suggested in the Mathematical Literacy, *Mathematics and Mathematical Sciences Curriculum 2005 Assessment Guidelines* (DoE, n.d.) and reported in Figure 4.8. The descriptions of the four levels, their interpretation, and the cut-off percentages as set out by the DoE are discussed in Chapter 2.

Achievement in Mathematics by achievement levels is presented in Figure 4.8 and Table 4.8 in Appendix B.

Figure 4.8 Percentage of learners at each achievement level in Mathematics
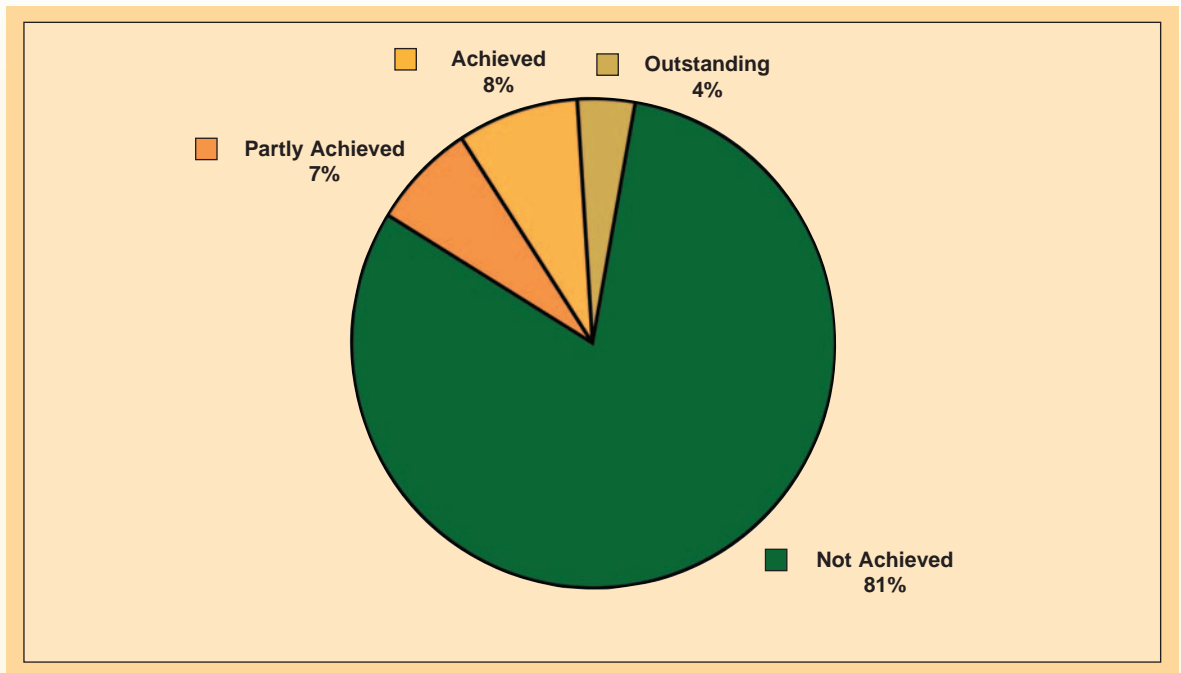
As seen in Figure 4.8, the majority of learners (81%) performed at the "Not Achieved" level. The highest two categories combined, "Achieved" and "Outstanding", comprised only 12% of learners, indicating that very few learners had achieved the required Mathematics knowledge and skills assessed (Table 4.8 in Appendix B). Achievement levels by province are depicted in Figure 4.9.

Figure 4.9 Mathematics achievement by achievement level and province
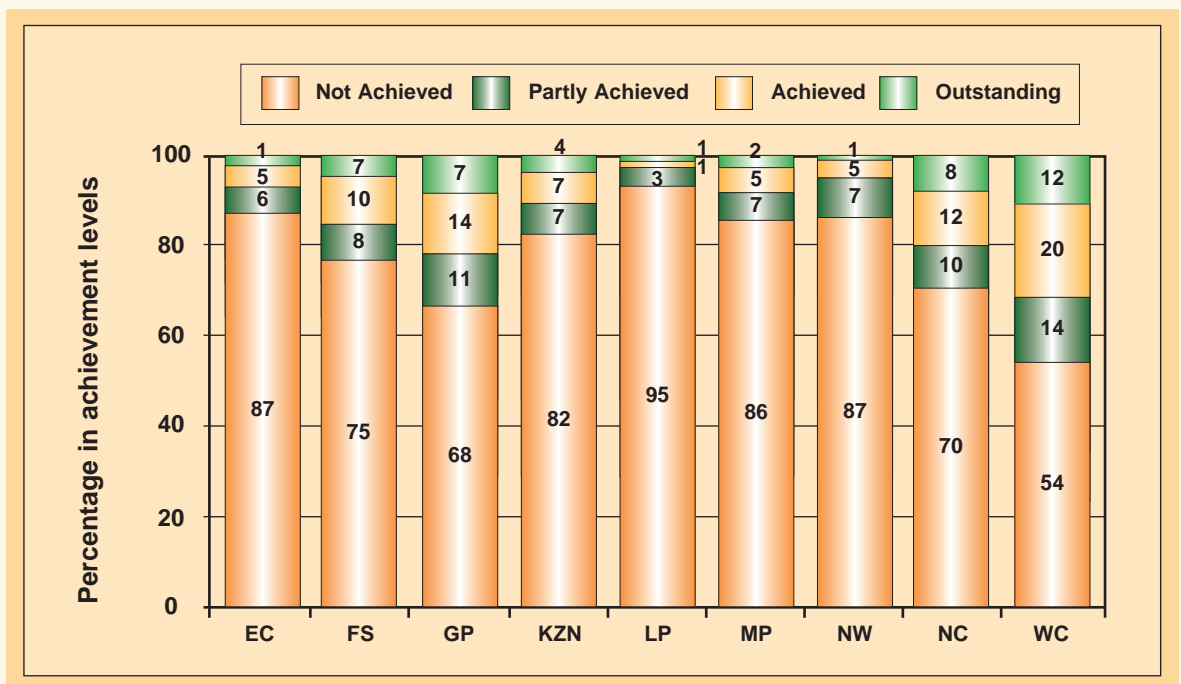
Across the provinces, similar trends were observed, with the majority of learners performing at the "Not Achieved" level. However, as shown in Figure 4.9 (Table 4.8 in Appendix B), large differences between provinces were detected, with 95% of learners in Limpopo Province and 54% of

learners in the Western Cape Province performing at the "Not Achieved" level. Only the Gauteng, Northern Cape, and Western Cape provinces had 20% or more learners in the two highest categories.

4.3.2 Mathematics achievement by Learning Outcomes

The RNCS (DoE 2002) consolidates the unique features and scope of the Mathematics learning area into five Learning Outcomes: Numbers, Operations and Relationships (LO1), Patterns, Functions and Algebra (LO2), Shape and Space (Geometry) (LO3), Measurement (LO4), and Data Handling (LO5). These Learning Outcomes and their Assessment Standards are cognitively dependent on and supportive of each other. Mathematics achievement by Learning Outcomes is depicted in Figure 4.10 and in Table 4.9 in Appendix B.

Figure 4.10 Mathematics achievement by Learning Outcomes
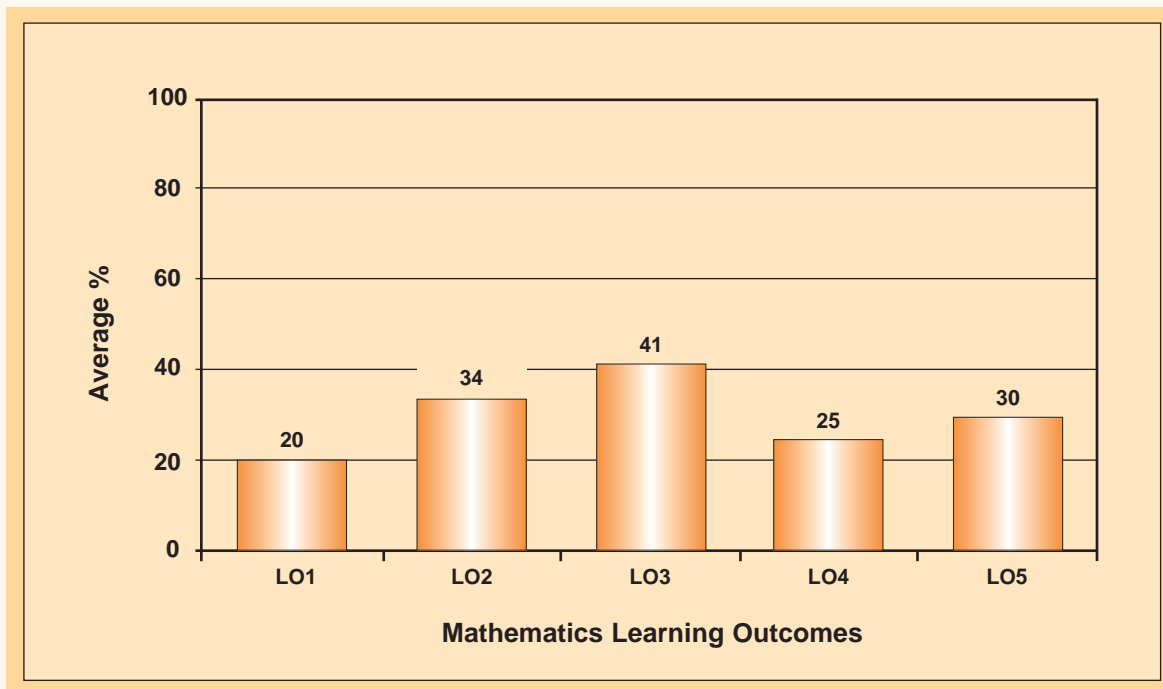
As seen in Figure 4.10 (Table 4.9 in Appendix B), learners obtained the highest average score in Space and Shape (LO3), followed by Patterns, Functions and Algebra (LO2), Data Handling (LO5), Measurement (LO4), and Numbers, Operations and Relationships (LO1). Since the knowledge and skills required for the achievement of LO1, Numbers, Operations and Relationships, are crucial for the attainment of the other Learning Outcomes, the low average score achieved for LO1 may have contributed to the overall poor achievement in Mathematics.

4.3.3 Mathematics achievement by gender

The achievement of boys and girls is compared in terms of provincial and national averages as depicted in Figure 4.11 and presented in Appendix B in Table 4.10.
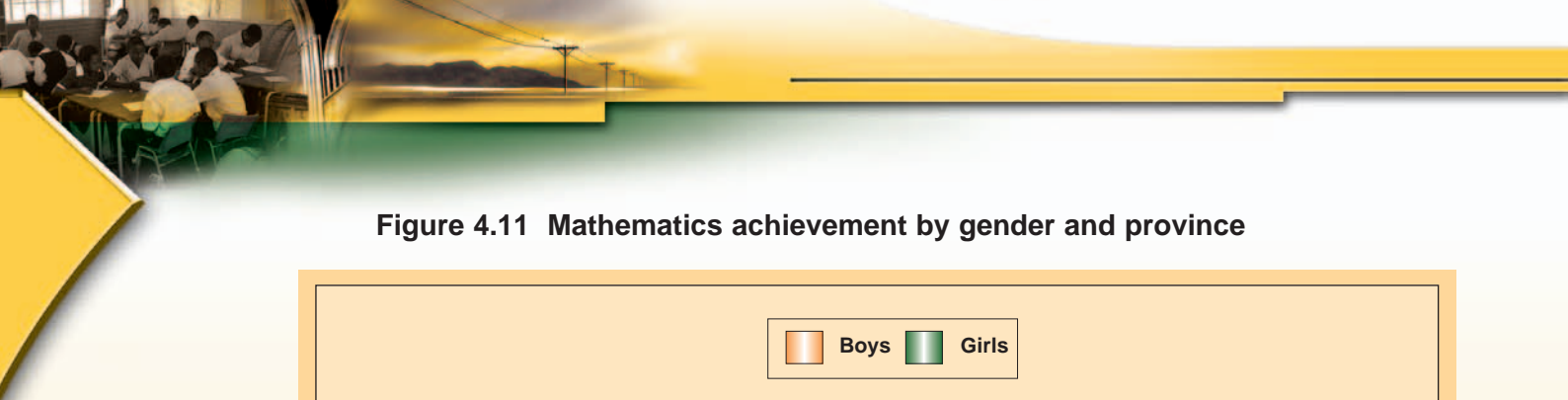
Figure 4.11 Mathematics achievement by gender and province
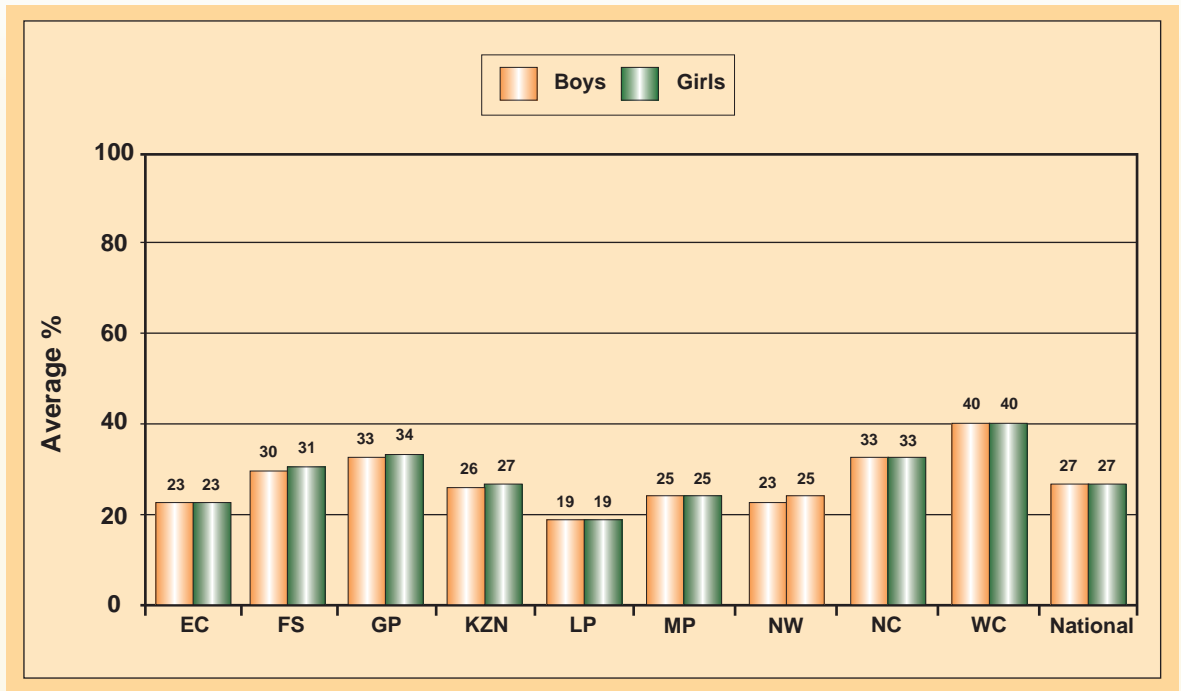
No differences were detected in the national average Mathematics scores for boys and girls nor were any differences noted in the average provincial scores. These results differ from the trend found for Language (LOLT) (see 4.2.3 above), where, on average, girls obtained higher scores than boys.

4.3.4 Mathematics achievement by geographical location

Average scores of learners attending schools in the different geographical locations (urban, township, rural, remote rural or farm areas) are depicted in Figure 4.12 (Table 4.11 in Appendix B).

Figure 4.12 Mathematics achievement by geographical location
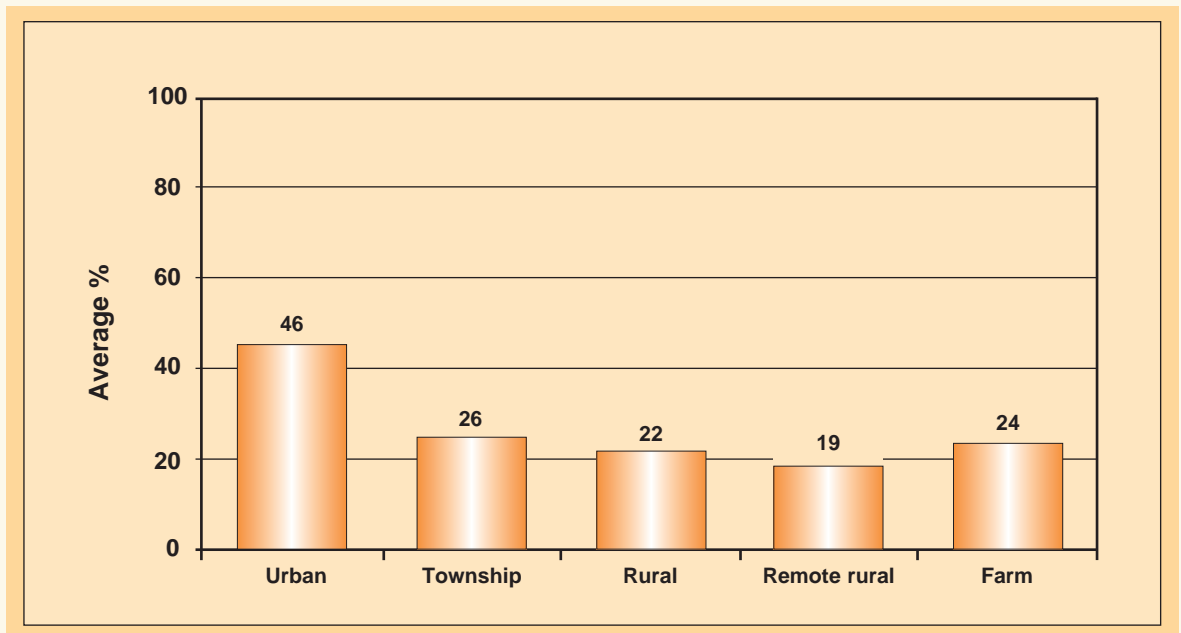
Learners attending urban schools obtained significantly higher scores than did learners in other geographical areas. The scores attained by learners attending township, rural, remote rural and farm schools ranged from 19% to 26%. The geographic distribution of Mathematics results reveals a similar pattern to that found in the Language (LOLT) scores, and demonstrates that learners in rural and remote rural areas perform far more poorly than their counterparts in urban areas.

4.3.5   Mathematics achievement by home language same/different to LOLT

The effect of the LOLT on learners' achievement in Mathematics was investigated. Learners were categorised according to those whose home language was the same as the LOLT and those whose home language was different from the LOLT. The results are depicted in Figure 4.13 and presented in Table 4.12a in Appendix B.

Figure 4.13 Mathematics achievement by home language same/different to LOLT and province
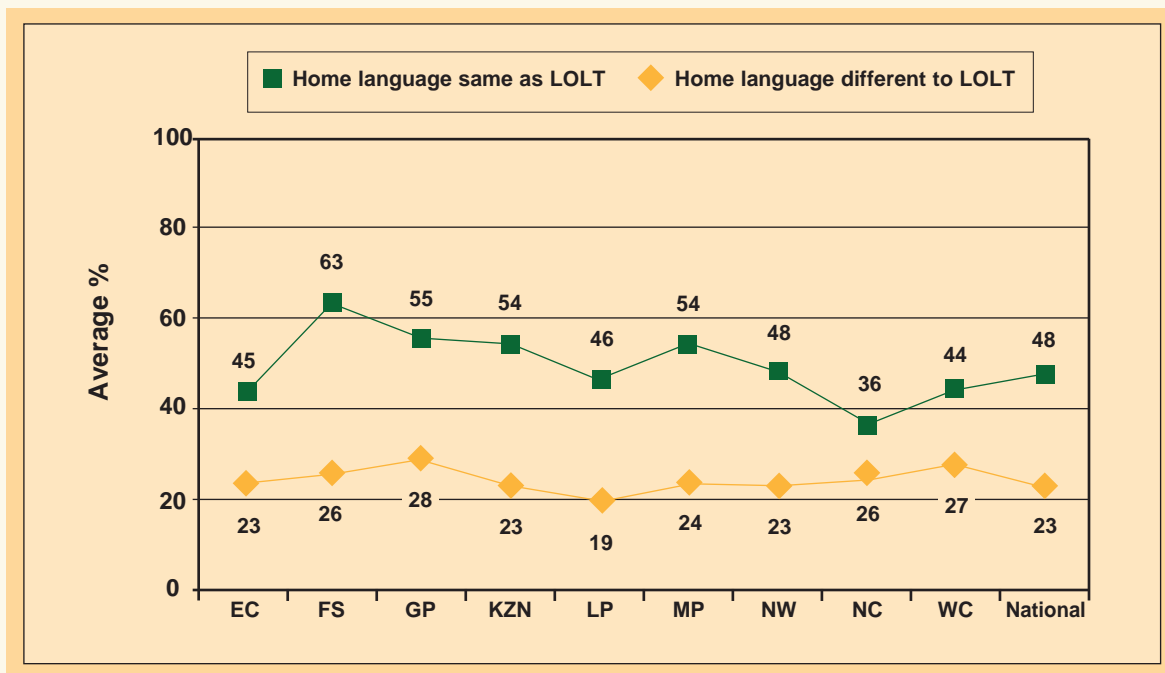
Learners who took the test in their home language obtained scores that were about 25 percentage points higher than the scores of learners for whom the LOLT was different from their home language. This may relate directly to language usage, but it may also relate to a variety of other factors such as home support, subject grounding of teachers, and teaching facilities. This trend was also evident within particular provinces. However, in the Northern Cape and, to a lesser extent, the Western Cape, the mean differences between the two groups were not as pronounced as in the other provinces (Table 4.12a in Appendix B).

4.3.6 Mathematics achievement by question type

The average score obtained for multiple-choice questions was 33%, which was considerably higher than the average of 25% obtained for the open-ended questions (short-answer and extended-response questions combined). This trend was evident across all provinces, which indicates that learners experienced greater difficulties when constructing correct responses than when selecting the correct response from a list of potential answers (Table 4.12b in Appendix B). Similar results were found in the previous systemic evaluation study conducted at the Grade 3 level in 2001.

4.4 NATURAL SCIENCES

4.4.1 Natural Sciences achievement by achievement levels

Learner achievement in Natural Sciences reported against the achievement levels set out in the *Natural Sciences Curriculum 2005 Assessment Guidelines* (DoE, n.d.). The descriptions of the four levels, their interpretation, and the cut-off percentages are covered in Chapter 2. The results are depicted in Figure 4.14.

Figure 4.14 Percentage of learners at each achievement level in Natural Sciences
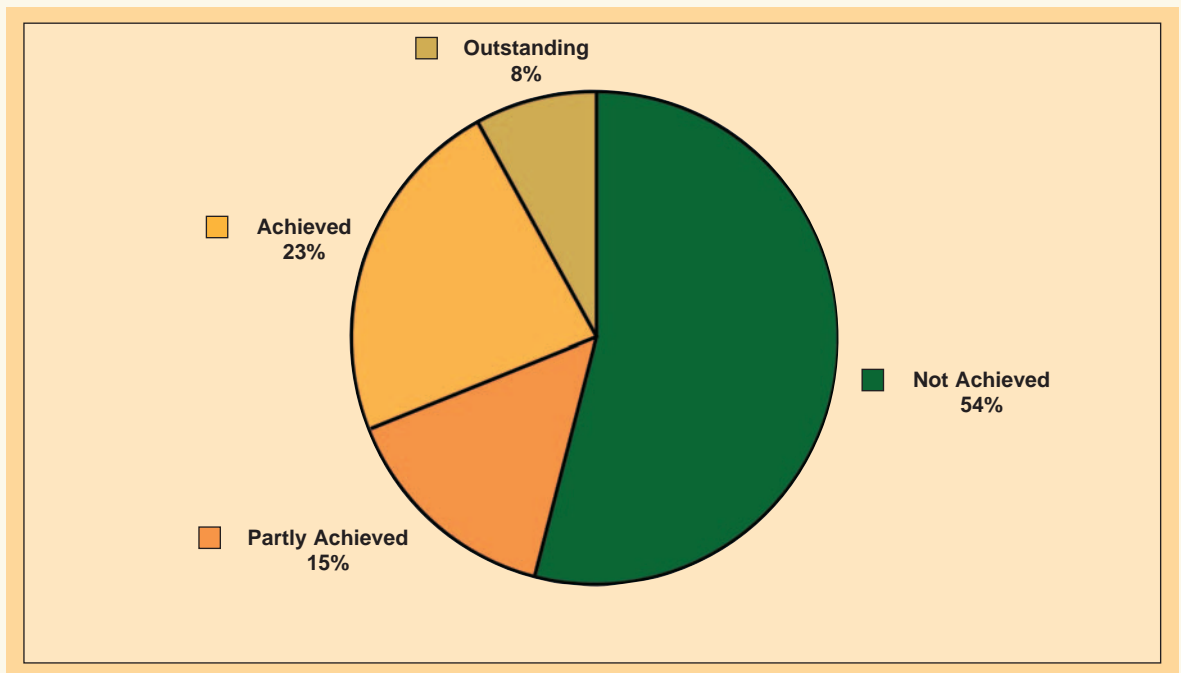
Relative to the Mathematics scores, learner scores for Natural Sciences were much higher, with 31% of the learners performing at the "Achieved" and "Outstanding" levels combined and 54% performing at the "Not Achieved" level. Achievement levels by provinces are depicted in Figure 4.15.

Figure 4.15 Sciences achievement by achievement levels and province
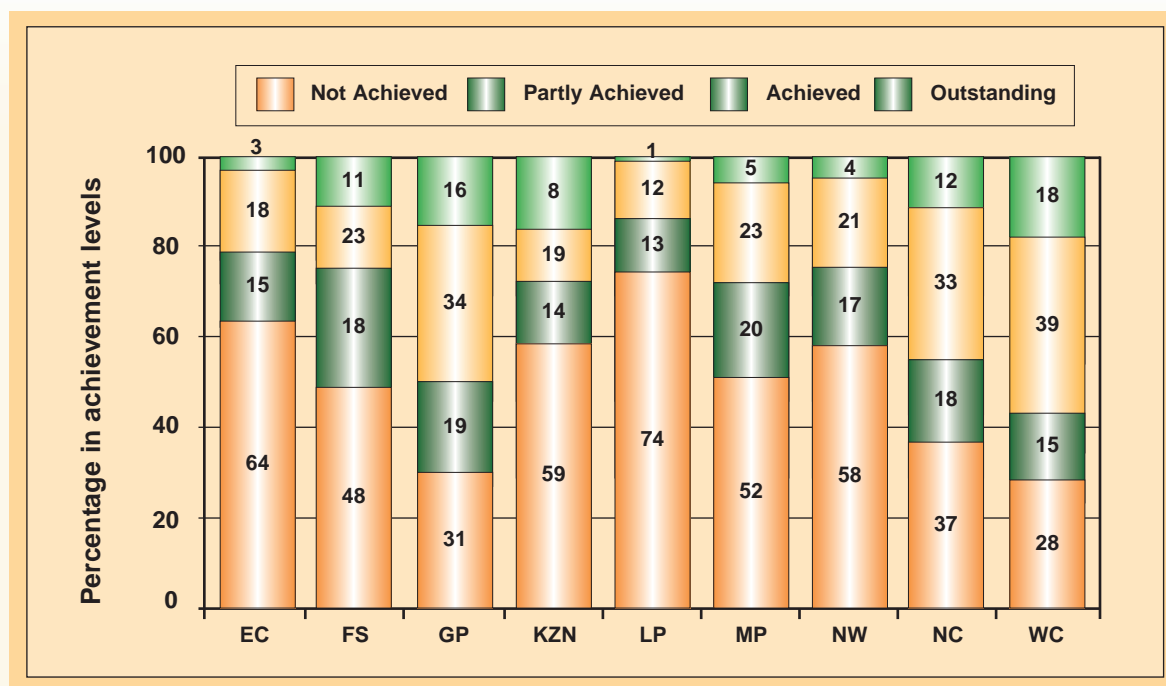
Similar to the provincial trends noted for Language (LOLT) and Mathematics, a large percentage of learners whose Natural Sciences scores fell in the two highest categories were from the Gauteng, Northern Cape and Western Cape provinces, while in the rest of the provinces the majority of learners were functioning at the "Not Achieved" level (Table 4.13 in Appendix B).

4.4.2 Natural Sciences achievement by Learning Outcomes

The Natural Sciences learning area deals with the promotion of scientific literacy (DoE, 2002) by pursuing the following Learning Outcomes: the development and use of science process skills in a variety of settings (LO1), the development and application of scientific knowledge and understanding (LO2), and the appreciation of the relationships and responsibilities between science, society and the environment (LO3). The achievement of the learners in the three Learning Outcomes is depicted in Figure 4.16.

Figure 4.16 Natural Sciences achievement by Learning Outcomes
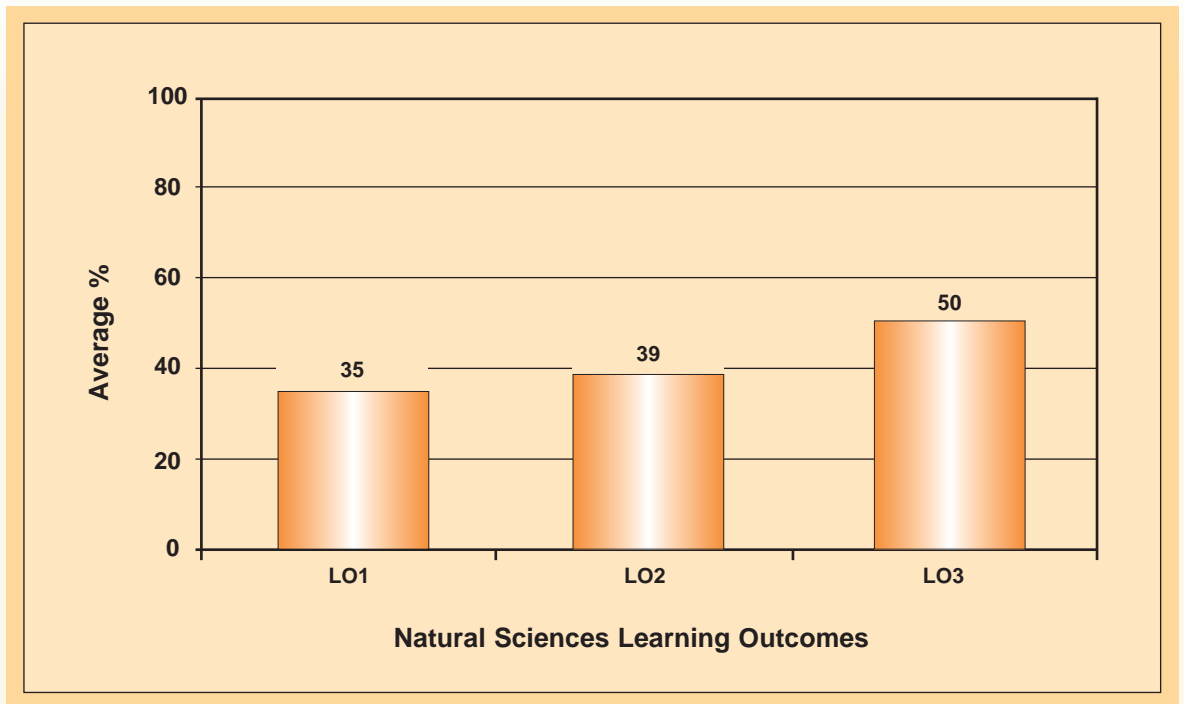
The highest average score (50%) was achieved for Science, Society, and the Environment (LO3), where the questions dealt with the relationship between science, society and the environment and mainly assessed the extent to which learners could readily relate to their immediate environment outside the classroom. The score for Constructing Science Knowledge (LO2) was about 11 percentage points lower than for Science, Society, and the Environment (LO3), while the score for Scientific Investigations (LO1), which focused on evaluating data and communicating findings, was the lowest (35%). In part, the low score for LO1 could be attributed to the nature of the questions in the assessment task, as six of the eight LO1 questions were of the open-ended response type. Across the provinces, similar achievement trends were noted (Table 4.14 in Appendix B).

4.4.3 Natural Sciences achievement by gender

The achievement of boys and girls is compared in terms of provincial and national averages, as depicted in Figure 4.17 and presented in Table 4.15 in Appendix B.

Figure 4.17 Natural Sciences achievement by gender and province
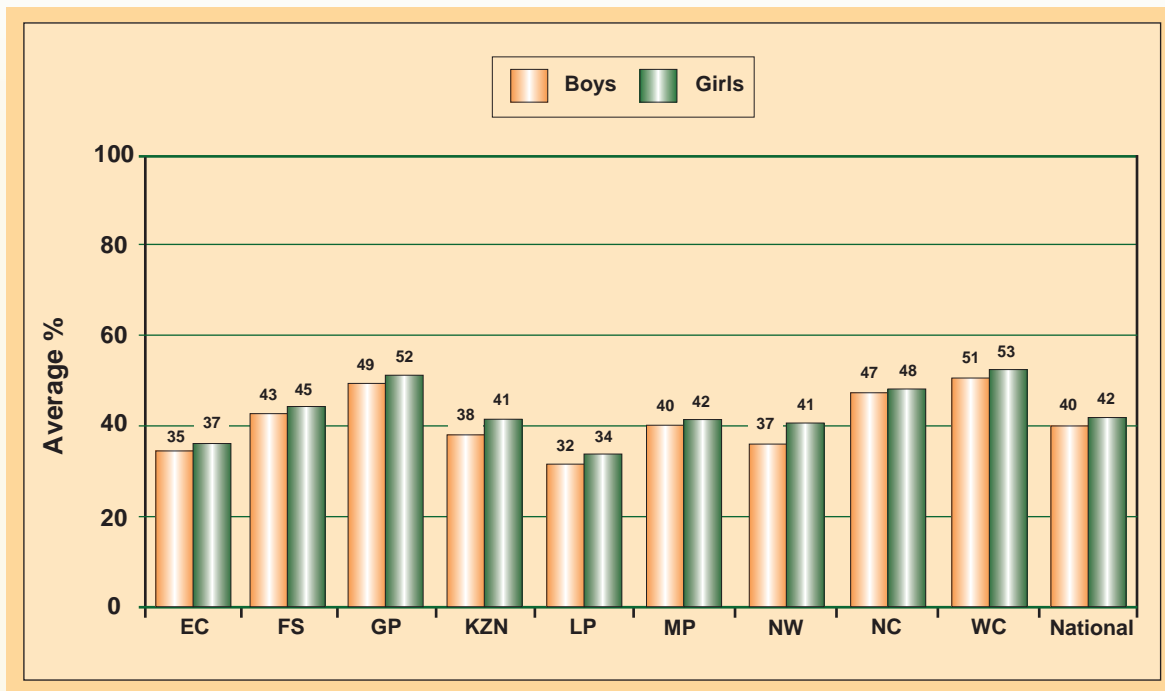
On average, girls obtained statistically significantly higher scores than boys did (with a difference of two percentage points on the national mean scores) for the Natural Sciences tasks. Across all provinces, girls also obtained higher scores, with differences ranging from one percentage point in the Northern Cape Province to four percentage points in the North West Province. The gender differences in the Natural Sciences scores are, however, not as great as those found for Language (LOLT), where the average difference nationally was about six percentage points (Table 4.15 in Appendix B).

4.4.4 Natural Sciences achievement by geographical location

The average Natural Sciences scores of learners that attended schools in the different geographical locations (urban, township, rural, remote rural or farm areas) are presented in Figure 4.18 (Table 4.16 in Appendix B).

Figure 4.18 Natural Sciences achievement by geographical location
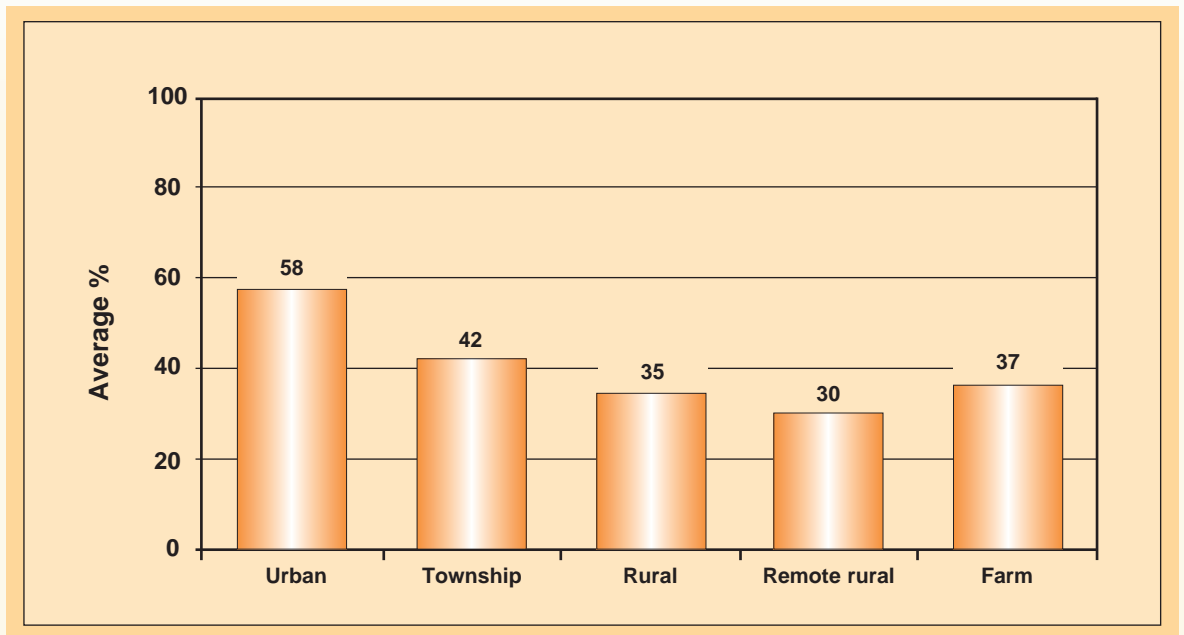
As with the other two learning areas, average scores were significantly higher for learners attending urban schools than for those attending rural schools. This trend was evident for all provinces, and is reflected in Table 4.16 in Appendix B. However, in the Western Cape Province, the differences among scores for the geographical locations were relatively smaller than those in the other provinces.

4.4.5 Natural Sciences achievement by home language same/different to LOLT

Additional analysis was also conducted to determine the effect of LOLT on Natural Sciences achievement. Learners were categorised according to those whose home language was the same as their LOLT and those whose home language differed from their LOLT. The average national and provincial percentages are depicted in Figure 4.19 and presented in Table 4.17a in Appendix B.

Figure 4.19 Natural Sciences achievement by home language same/different to LOLT and province
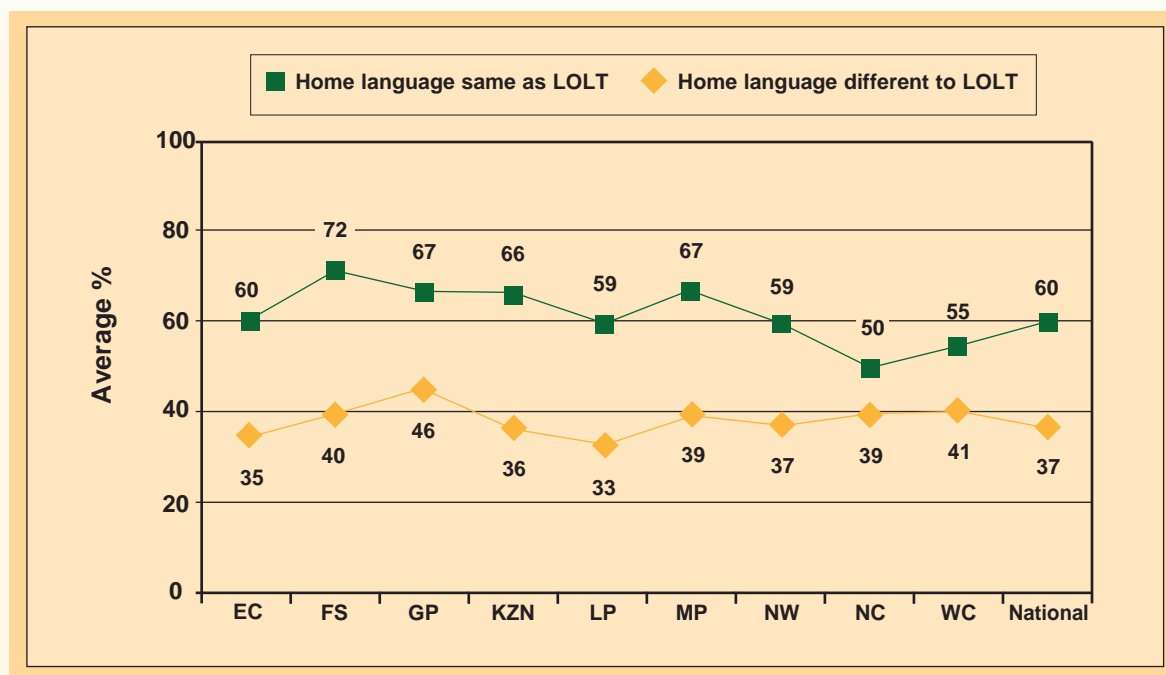
Similar to the other learning areas, learners whose home language was the same as the LOLT obtained significantly higher scores than those whose home language was different from the LOLT. This trend was evident in all provinces, with average differences at the national level of about 23 percentage points. However, in the Northern Cape and Western Cape provinces, the averages for the two language groups were slightly closer, with differences of between 11 and 14 percentage points (Table 4.17a in Appendix B).

4.4.6 Natural Sciences achievement according to question type

The average percentage obtained for multiple-choice questions was 50%, and 24% for the open-ended questions. As with the other learning areas, learners in Natural Sciences also had greater difficulty constructing and communicating their own responses (Table 4.17b in Appendix B).

4.4.7 Natural Sciences achievement according to Content Area

In the Natural Sciences curriculum four broad content areas are distinguished. They are Life and Living, Matter and Material, Energy and Change and Earth and Beyond. The average percentages for the four content areas are presented in Table 4.26.
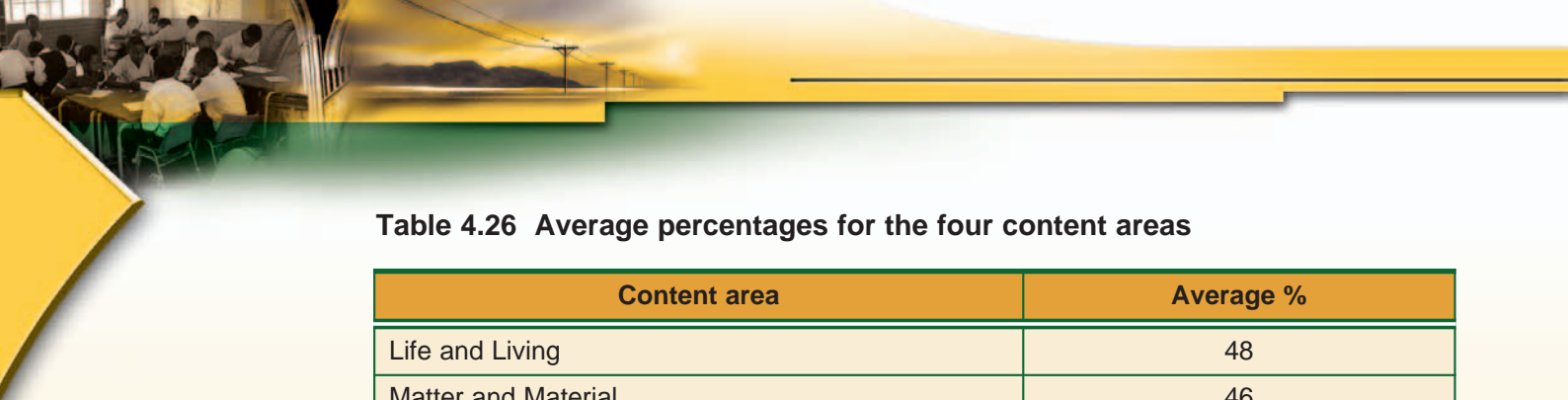
Table 4.26 Average percentages for the four content areas

Content area	Average %
Life and Living	48
Matter and Material	46
Energy and Change	51
Earth and Beyond	31

The average percentage for Energy and Change was the highest. The average percentage for Earth and Beyond is substantially lower than for the average percentages for the other content areas. Learners' understanding of the functioning of natural phenomena such as climate and their knowledge of phenomena such as the properties of soil are not up to expectations. It should also be noted that Earth and Beyond is the Content Area with the largest proportion of constructed response items.

4.5 CONCLUSION

This chapter reported on the academic achievement of learners through the four levels of achievement prescribed in the DoE's Curriculum 2005 Assessment Guidelines for LLC, MLMMS, and NS. The acquisition of the relevant knowledge and skills was assessed in three important learning areas: Language (LOLT), Mathematics, and the Natural Sciences. Learner achievement was assessed through a paper and pencil format, which placed some constraint on the nature of the skills that could be assessed. However, the assessment instruments sufficiently sampled the kinds of skills and knowledge expected from learners by the end of the Intermediate Phase and provided a clear picture of the extent to which the required skills had been mastered.

Although there was a wide distribution of scores in all learning areas, with some learners obtaining very high scores and others very low scores, the average scores obtained were generally low. The averages for Language (LOLT), Mathematics, and the Natural Sciences were 38%, 27%, and 41% respectively. Certain reasons are advanced for the patterns of achievement across the learning areas. These are outlined below.

Across all three learning areas, the learners' scores were higher for multiple-choice than for open-ended questions. Learners found the multiple-choice questions easier to answer than the open-ended ones. The fact that learners found questions for which they had to construct their own answers to be more difficult than questions for which they could select the answers from given options highlights the importance of exposing learners to open-ended type questions.

Gender differences in learner achievement were observed across two of the three learning areas, with girls obtaining higher average scores than boys in Language (LOLT) and Natural Sciences. The study found no gender differences in the Mathematics scores of boys and girls.

The achievement of learners was also affected by whether the language of assessment, which was the LOLT of the school, was the same as their home language or not. Where instruction in class was in a language other than the home language, learners obtained significantly lower scores across all learning areas. Given that education is about communicating meaning, the low scores of learners who are instructed in a language other than their home language are probably the result of difficulties experienced in communicating and grasping intended meanings.

Learner achievement was affected by the location of the school. Results indicate that learners whose schools were located in urban areas obtained higher average scores than their counterparts in rural and remote rural schools.

Of all the provinces, only the Gauteng, Northern Cape, and Western Cape provinces showed a relatively high proportion of learners performing at the two highest levels of achievement ("Outstanding" and "Achieved"). This trend was evident across all three learning areas.

CHAPTER 5
Factors Associated with Learner Achievement

5.1 INTRODUCTION

Systemic evaluation studies describe prevailing conditions within the system being evaluated as well as the relationships between various conditions and factors operating within the system. Knowledge of these relationships is essential for understanding the complex dynamics of the education system and for implementing specific strategies and policies to attain desired outcomes. The primary aim of this chapter is to identify factors associated with learner achievement since learner scores on their own only indicate the degree of mastery of a specific learning area.

5.2 IDENTIFYING FACTORS ASSOCIATED WITH LEARNER ACHIEVEMENT

A large number of studies have been conducted to identify factors that influence learner achievement (Simkins & Patterson, 2005; Chinapah et al., 2000; Crouch & Mabogoane, 2001; Govinda & Vargese, 1999; Kanjee, et al., 2001; Kingdon, 1999; OECD, 2004). Given the large variation between and within education systems, a range of data-collection designs has been employed in these studies. For example, these studies have applied an array of different instruments and utilised a variety of analytical techniques, including regression analysis and hierarchical linear modelling. Moreover, information in these studies has generally been collected at different levels of the system, such as district, national and international levels. The systemic evaluation of the Intermediate Phase draws on some of the lessons learnt from these studies to identify factors related to learner achievement in South Africa.

The research design of this study is discussed in Chapter 2. However, for the purposes of this chapter, it is useful to be reminded that two statistical techniques were used to identify factors related to learner achievement: correlation analysis and AID analysis.

5.3 CORRELATION ANALYSIS

The relationship between the context of learning and teaching and learner achievement was investigated with the aim of identifying those factors that are strongly associated with learner achievement. Pearson correlations were calculated between the contextual indicators discussed in Chapter 3 and learner scores in the three learning areas reported in Chapter 4. The correlation co-efficients are presented in Table 5.1 for those indicators with co-efficients of 0.20 or higher. Indicators were arranged from those with the highest correlation down to those with the lowest correlation.

Table 5.1 Pearson correlations of indicators with learner achievement

Indicator	Language (LOLT)	Mathematics	Natural Sciences
Socio-economic status	0.57	0.53	0.51
Information at home	0.58	0.52	0.51
Learner participation	0.52	0.48	0.45
School resources	0.52	0.45	0.45
Teaching resources available to teachers	0.49	0.45	0.40
School safety	0.45	0.42	0.42
Information at school	0.36	0.34	0.31
Parental involvement/perception	0.34	0.32	0.32
Discipline at school	0.31	0.30	0.30
Attendance	0.28	0.25	0.25
Entry into schools (school fees)	0.23	0.22	0.22
Staff qualification	0.20	0.22	0.19
Small class size	0.21	0.22	0.20
Homework practices	0.21	0.21	0.19

The four factors that correlated the strongest with learner academic achievement were socio-economic status (SES), information at home, learner participation, and school resources. The influence of these factors on learner achievement is discussed in detail in 5.5 below. Additional information on the correlation of achievement with the indices that made up the indicators is presented in Table 5.2 in Appendix C.

While correlations provide useful information, on their own they do not take into account the effect of other related variables. To obtain this information, additional Automatic Interaction Detection (AID) analysis was conducted, the results of which are provided in the next section.

5.4 AUTOMATIC INTERACTION DETECTION (AID) ANALYSIS

Automatic Interaction Detection (AID) analysis is used to determine the relationship between a large number of variables (e.g. indicators) and the outcome of a single variable (learner scores). AID is extremely useful when working with large data sets that comprise large numbers of variables. In addition, unlike correlation analysis, AID accounts for the effect of all the variables simultaneously. An AID analysis involves two steps. First, the indicator that has the strongest association with learner scores is identified and, second, this indicator is used to split the data into two groups in such a way that the two groups have the highest possible differences in their average learner scores. This process is then repeated for each of the two groups.

In this study, the SES indicator was identified as having the strongest association with learner scores and, thus, the data were split into high and low SES groups. This split occurred for each of the three learning areas, with indicator scores splitting at approximately 7 on the ten point scale. This meant that learners with an SES indicator score of lower than 7 were those learners who had obtained lower scores than

those with an SES indicator score of higher than 7. In Natural Sciences, the difference between learners in the high and low SES categories was approximately 15%; in Mathematics, it was 27%; and in Language (LOLT), it was approximately 30%. As the complete AID outputs cannot be represented on a single page, results for the first few splits in each learning area are presented in Appendix C (Tables 5.3 a and b for Language (LOLT), Tables 5.4 a and b for Mathematics and Tables 5.5 a and b for Natural Sciences). For each table, the significant paths that lead to improved performance are highlighted for each of the indicators at the different levels.

Table 5.6 Factors associated with learner achievement by learning area and level of SES according to AID analysis

Learning area	Indicators	
	Low & med SES	High SES
Language (LOLT)	School resources	School resources
	Information at home	Discipline
	Throughput rate	Entry into schools (school fees)
	Learner participation	Throughput rate
	Discipline	Information at home
	Parental involvement/perception	Learner participation
	School safety	Parental involvement/perception
	Teacher resources	
	Entry into schools (school fees)	
	Attendance	
Mathematics	Information at home	Information at home
	School resources	Information at school
	Discipline	Discipline
	Throughput rate	Entry into schools (school fees)
	Learner participation	Throughput rate
	Educator resources	Parental involvement/perception
	Parental involvement/perception	Staff qualification
	Entry into schools (school fees)	School safety
	Parental involvement	Learner participation
	School safety	
Natural Sciences	School resources	Attendance
	Throughput rate	School resources
	Information at home	Teacher resources
	Discipline	Throughput rate
	Attendance	Discipline
	Parental involvement/perception	Entry into schools (school fees)
	Records	Information at home

Table 5.6 (continued)

Learning area	Indicators	
	Low & med SES	**High SES**
Natural Sciences	School safety	Parental involvement/perception
	Teacher resources	Learner participation
	Learner participation	School safety
	Staff qualification	

The indicators identified by the AID analysis that are associated with learner achievement are set out in Table 5.6. Since SES was found to have the strongest association for all three learning areas, the significant variables are presented separately for the low and medium SES and the high SES groups in Table 5.6. In most cases, the same indicators were identified as having a strong association with learner scores for all three learning areas. In addition, the indicators identified through the AID analysis were very similar to those indicators that were identified through correlation analysis, which are presented in Table 5.1 in Appendix C.

5.5   LINKING SIGNIFICANT INDICATORS TO LEARNER SCORES

Each of the indicators found to be strongly associated with learner achievement from the correlation and AID analyses are discussed below. In each instance, the indicator scores are first disaggregated into the five interpretation categories with learner scores reported for each category.

5.5.1   Socio-economic Status (SES)

The socio-economic status indicator comprised two indices: home conditions and home possessions and was calculated from parent and learner responses. One of the key findings of the 2004 Education for All report is that international achievement scores reveal that socio-economic status (SES) has a strong influence on levels of school outcomes (2004:17). This result is supported by the findings of a number of South African studies (Simkins & Paterson, 2005; Crouch & Mabogoane, 2001) and international studies (OECD, 2004). This study found similar patterns regarding the socio-economic status (SES) of learners. In Table 5.7 the average percentage scores obtained by learners at different levels of SES are shown.

Table 5.7 Learner percentage scores according to levels of SES

Levels of SES	Language (LOLT) (Average %)	Mathematics (Average %)	Natural Sciences (Average %)
Unacceptable/very low	24	19	32
Largely problematic/poor	29	21	35
Problematic/inadequate/limited	40	27	42
Satisfactory	66	48	60
Very good/high	80	63	71

The average percentage Language (LOLT) and Mathematics scores for high SES learners are approximately three times higher than that of "very low SES" learners. For Natural Sciences, this figure reduces to approximately two times higher. This finding highlights the importance of addressing challenges relating to poverty and its impact on learning.

5.5.2 Parental involvement/perception

The **parental involvement and perception** indicator was calculated from parent and learner responses and is based on the following indices: parent support, parent feedback, parent education level and parent perceptions of the school and education. Parental involvement and perception was "satisfactory" in four provinces and "inadequate" in five provinces (Table 3.90 in Appendix A). Table 5.8 reports levels of achievement for learners in the various categories of parental involvement.

Table 5.8 Learner percentage score according to levels of parental involvement and perception

Parent involvement	Language (LOLT) %	Mathematics %	Natural Sciences %
Unacceptable/very low	23	18	30
Largely problematic/poor	28	21	34
Problematic/inadequate/limited	32	23	37
Satisfactory	43	30	44
Very good/high	64	48	60

Where parental involvement and perception was reported to be high, learner scores were also high across all three learning areas. The difference in learner scores in all three learning areas between the high and very low categories was at least 30%. Parental involvement in the education of their children has been found to be one of the critical factors leading to a successful schooling experience (Cotton & Wikelund, 2001). The challenge here is to maximise parental interest and support of teaching and learning, especially in communities hampered by low socio-economic conditions. Schools should place stronger emphasis on encouraging greater involvement of parents in their children's work and in the school activities. In this regard, the role of the School Governing Body (SGB) is vital.

5.5.3 Homework practices

The **homework practices indicator** is based on learner and parent responses and comprises information pertaining to the frequency with which homework is received in each of the three learning areas, the home environment in which learners complete their homework, and the frequency with which educators provide feedback. Homework practices were reported as "problematic" for all provinces (Table 3.73 in Appendix A).

Figure 5.1 Learner percentage score according to levels of homework practices
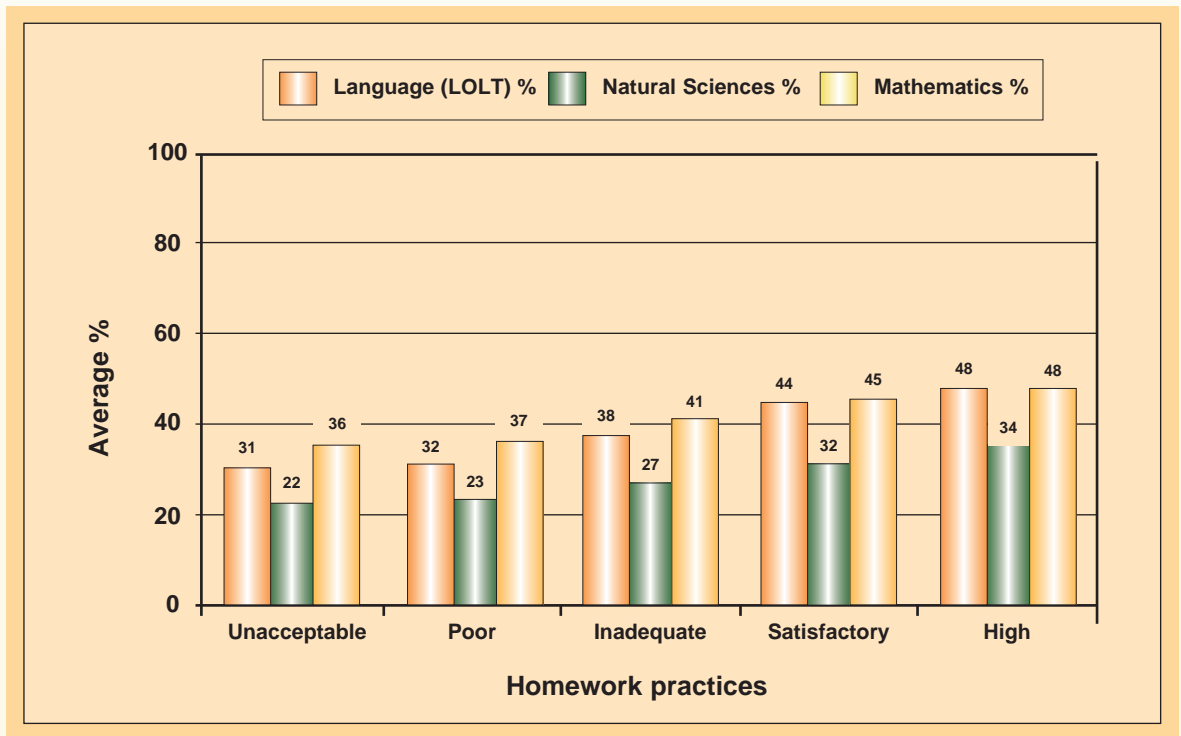
From Figure 5.1 it can be seen that learners generally obtained slightly higher scores when homework practices were high or satisfactory. Chinapah et al. (2000) found similar results for other African countries. In this study, average score differences between learners reporting "high" compared to learners reporting "very low" homework practices was 17% for Language (LOLT) and 12% for Mathematics and Natural Sciences. These findings complement findings, discussed earlier, concerning the importance of educators' interaction with learners, and of parental involvement. Of particular significance is the need for someone at home to monitor or assist learners with their homework.

5.5.4 Access to information at home

Access to information is essential for effective learning to take place. In this survey, access to information at home was identified as being strongly related to learner achievement (0.52). This indicator was defined as encompassing access to electronic media, print media, books at home, and a community library. Access to information at home was reported as being "poor" for five provinces (EC, LP, KZN, MP, NW) and "limited" for four provinces (FS, GP, WC and NC). The relationship between access to information at home and learner achievement is presented in Figure 5.2.

Figure 5.2 Learner percentage score according to levels of access to information
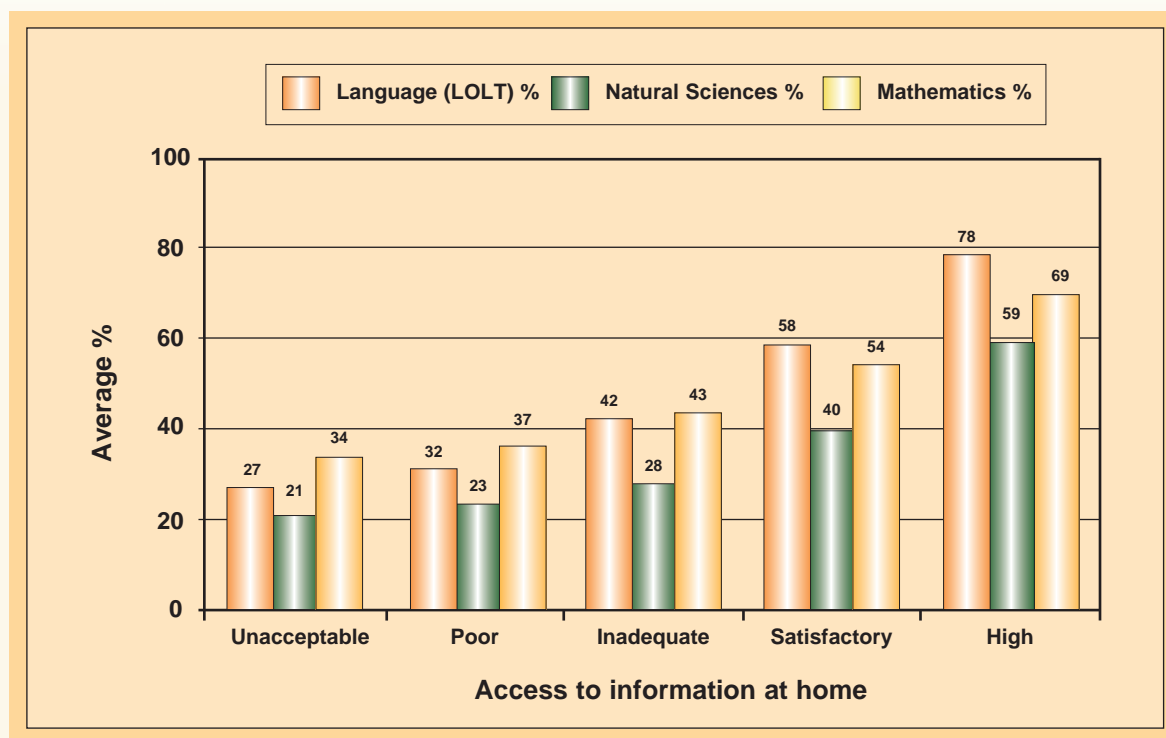
For the three learning areas, greater access to information at home was related to higher scores. The use made of information at home is reflected in Table 5.9.

Table 5.9 Use of information at home

Use of information at home	Language (LOLT) %	Mathematics %	Natural Sciences %
Unacceptable/very low	30	22	36
Largely problematic/poor	41	29	43
Problematic/inadequate/limited	48	33	47
Satisfactory	57	40	53
Very good/high	59	42	54

The same pattern of achievement holds for the use made of information at home; that is, learners who reported greater use of information at home obtained significantly higher scores.

While it is recognised that schools have minimum direct influence on the availability of learning resources outside school, it is possible for district and provincial officials to ensure that local libraries are made available to learners and/or that such libraries contain relevant material to support their learners.[5] In addition, schools can ensure that relevant books and old magazines and newspapers are available to learners for use at home.

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[5] This is not impractical even in very remote rural areas. In KwaZulu-Natal, for example, the offices of some traditional leaders have been equipped with computers to service the information needs of rural communities.

5.5.5 Access to information at school

Access to information at school, which provides information on learner access to the school library and to reading books in the class, was found to have a positive effect on learner scores (Table 5.10). Access to information at school was "unacceptable" in one province, "poor" in five, and "limited" in three provinces (Table 3.11 in Appendix A).

Table 5.10 Learner percentage score according to levels of access to information at school

Information at school	Language (LOLT) %	Mathematics %	Natural Sciences %
Unacceptable/very low	30	22	36
Problematic/inadequate/limited	38	27	41
Satisfactory	44	31	45
Very good/high	59	42	55

Learners who reported higher access to information at schools obtained significantly higher scores across all three learning areas. Of particular concern is the large number of learners (46%) who reported that they did not have a library at school. If schools are to function as centres of learning, then adequate and well-functioning libraries for learners are essential.

5.5.6 Access to learning material and textbooks

The availability of learning materials and textbooks is essential for raising the quality of the teaching and learning process. This indicator provides information on the level of access that learners have to learning materials and textbooks in the classroom. Access to learning material was reported as "limited" to "satisfactory" across all three learning areas and in the nine provinces (Table 3.14 in Appendix A).

Table 5.11 Learner percentage score by access to learning materials and textbooks

Access to learning materials and textbooks	Language (LOLT) %	Mathematics %	Natural Sciences %
Unacceptable/very low	23	18	31
Largely problematic/poor	30	22	35
Problematic/inadequate/limited	37	26	40
Satisfactory	39	28	42
Very good/high	51	36	49

As shown in Table 5.11, learners who reported very high access to learning materials and textbooks obtained scores that were significantly higher than the scores of learners that reported very low access. This significant difference confirms established knowledge about the importance of learners having access to basic learning materials such as textbooks.

5.5.7 Teaching resources available to educators

The **teaching resources indicator** provides information on the availability of relevant resources, such as libraries, Internet access, and teacher resource centres, for educators. Teaching resources were rated as "unacceptable" in six provinces, "inadequate" in two and "satisfactory" in one (Table 3.38 in Appendix A). Learner percentage scores according to levels of resources available to their educators are set out in Table 5.12 below.

Table 5.12 Learner percentage score according to levels of resources available to educators

Teaching resources	Language (LOLT) %	Mathematics %	Natural Sciences %
Unacceptable/very low	30	22	36
Problematic/inadequate/limited	39	27	41
Satisfactory	52	36	50
Very good/high	67	48	59

As shown in Table 5.12, learners whose educators reported having access to greater resources obtained significantly higher scores. The availability of optimal teaching resources is a vital component of the improvement of educator performance and confidence, and consequently has a ripple effect on learner achievement.

5.5.8 School resources

The **school resources indicator** comprised the following indices: classroom furniture, physical resources, school amenities, learning resources, sports resources, and vegetable gardens. The availability of school resources was reported to be similar for all three learning areas, with "largely problematic" scores reported in two provinces (EC, LP) and "inadequate" scores reported for the other seven provinces (Table 3.18 in Appendix A). In Table 5.13 the average scores of the learners in each of the five categories are presented for the indicator "school resources".

Table 5.13 Learner percentage score according to levels of school resources

School resources	Language (LOLT) %	Mathematics %	Natural Sciences %
Unacceptable/very low	23	19	31
Largely problematic/poor	28	21	34
Problematic/inadequate/limited	43	29	44
Satisfactory	61	44	56
Very good/high	72	46	68

In addition, the same information is graphically reported in Figure 5.3.

Figure 5.3 Learner percentage score according to levels of school resources
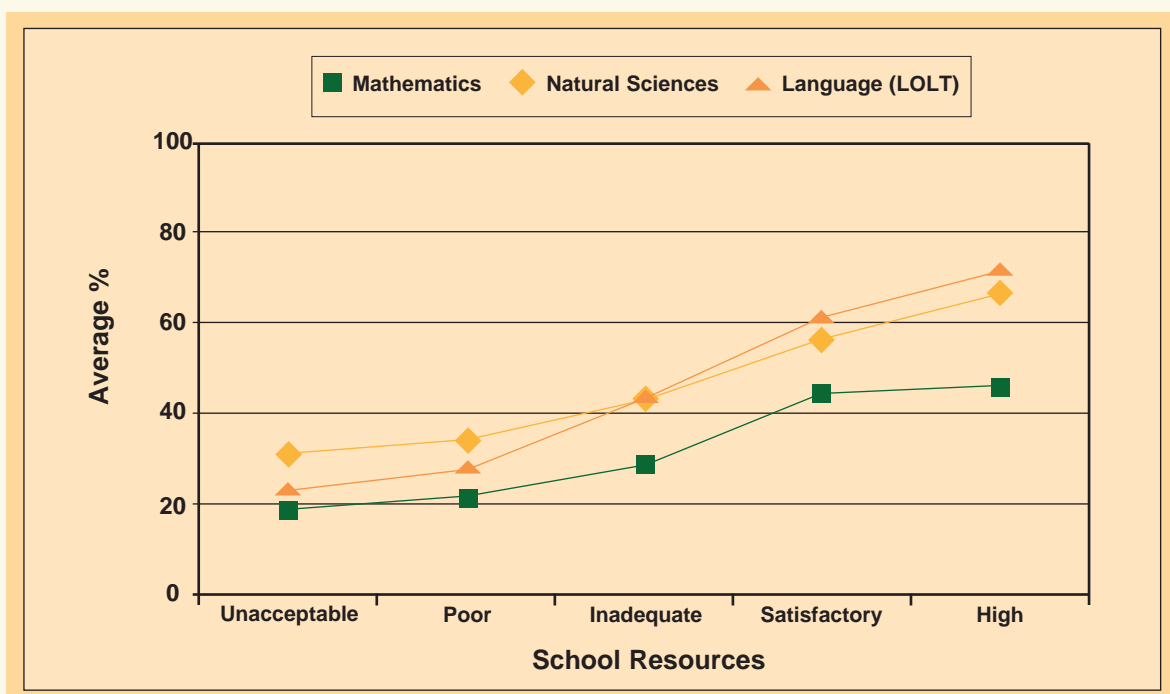
As shown in Figure 5.3, the average Language (LOLT) scores of learners increased as the level of school resources increased, with learners in schools where physical resources were reported as being "very low" scoring 23% as compared to the 72% scored by learners where resources were reported as being "high". The same pattern was observed for Mathematics and Natural Sciences.

The availability of a range of resources within the school is crucial for improving learning and teaching practices in the classroom. However, a number of authors have pointed out that having sufficient resources on their own do not necessarily translate into good and effective teaching practices. As Dembele and Miaro (2003) argue:

> "to believe that mere provision of those necessities, without attention to how they will be used in school and in the classroom, will guarantee a high-quality teaching process is unrealistic" (Association for the Development of Education in Africa, 2003).

While the argument advanced by Dembele and Miaro (2003) is valid, this study indicates clearly that the *availability* of resources is a crucial dimension of school effectiveness. Hence, a threshold level of school resources is desirable so that the necessary platform can be provided for effective teaching and learning to develop and flourish. The recent public announcement by the DoE that it will direct a significant proportion of the Education budget to school infrastructure is therefore very welcome.

5.5.9 Entry into schools (school fees)

The **entry into schools indicator** is made up of the following indices: school fees and access for learners with special needs. In this study most learners across the country reported that their access to schools was "limited" (Table 3.6 in Appendix A).

Table 5.14 Learner achievement by entry into school

Entry into schools	Language (LOLT) %	Mathematics %	Natural Sciences %
Unacceptable/very low	28	20	33
Largely problematic/poor	31	22	36
Problematic/inadequate/limited	39	28	42
Satisfactory	36	24	39
Very good/high	50	36	49

Where entry into schools was reported to be high, learners scores were also high. As presented in Table 5.14, average scores of learners who reported "very high" entry into schools were between 16% and 22% higher than the scores of learners reporting "very low" entry into schools. School fees was one of the important variables contributing to this indicator.

The relationship between school fees and learner achievement is presented in Table 5.15. Information on school fees charged in schools was obtained from each principal and categorized as indicated in Table 5.15.

Table 5.15 Learner achievement by school fees

School fees per year	Language (LOLT) %	Mathematics %	Natural Sciences %	% of learners in category
Less than R50	27	21	34	30.3
R50–R100	32	22	37	41.8
R101–R200	45	30	44	10.3
R201–R400	54	37	51	5.0
R401–R800	62	43	56	2.9
R801–R1 600	78	56	68	2.2
R2 001–R3 000	77	59	68	3.9
More than R3 000	82	62	71	3.6
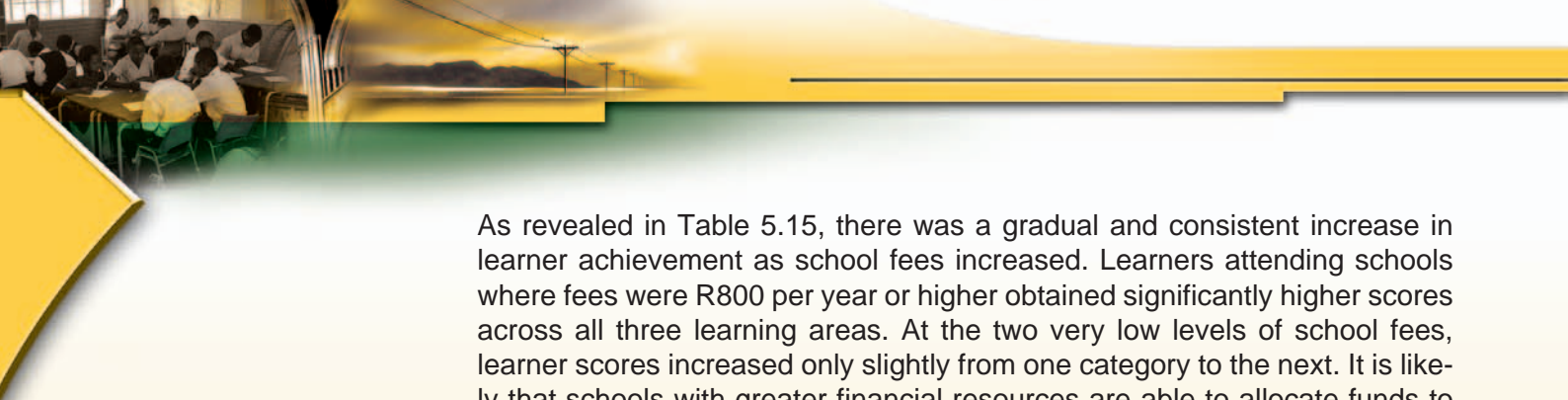
As revealed in Table 5.15, there was a gradual and consistent increase in learner achievement as school fees increased. Learners attending schools where fees were R800 per year or higher obtained significantly higher scores across all three learning areas. At the two very low levels of school fees, learner scores increased only slightly from one category to the next. It is likely that schools with greater financial resources are able to allocate funds to improving learning and teaching: for example, by employing additional educators or purchasing learning material. It needs to be noted that 72% of learners were in schools in the two lowest school fee categories. Ten percent of all learners were in schools charging R801 or more per year. The benefits of additional funding accrue to only a very small percentage of learners.

A particular concern is the relatively large percentage of parents who indicated that their children stayed at home at some stage because they were unable to pay fees. Learners who stayed at home because their parents were unable to pay fees obtained scores that were on average 14%, 8% and 10% lower for Language (LOLT), Mathematics and Natural Sciences respectively.

5.5.10 Staff qualifications

The staff qualifications indicator is made up of four indices: principal qualification, principal professional training, educator qualification, and educator professional training. This indicator was reported as "problematic" across all learning areas and in all provinces, and findings confirmed the benefit to learners of having better qualified staff. Learner achievement scores correlated positively with levels of staff qualification. Table 5.16 below reveals that higher levels of staff qualification are associated with higher levels of learner achievement. This finding is confirmed by international research, which points out that educators' credentials, experience, and years of education make a positive difference to learner achievement (Darling-Hammond, 2000; Darling-Hammond & Youngs, 2002).

Table 5.16 Learner percentage score according to level of staff qualification

Staff Qualification	Language (LOLT) %	Mathematics %	Natural Sciences %
Unacceptable/very low	34	25	37
Largely problematic/poor	37	25	39
Problematic/inadequate/limited	35	25	39
Satisfactory	48	35	47
Very good/high	72	56	64

Results in Table 5.16 reveal that the "high" and "very high" categories of qualification stand apart from the lower levels of qualification. It appears that extended training is required to make a meaningful difference to learner achievement. Of particular concern is that large percentages of both principals and educators possess only a Grade 12 academic qualification. Equally worrying is the finding that teachers of Natural Sciences and Mathematics are the least qualified, with a very low percentage of Physical Science teachers having a tertiary qualification.

5.5.11 Learner participation

Effective communication between educators and learners and the active participation of learners in the learning and teaching process are essential for meaningful learning to take place. The **learner participation indicator** refers to the frequency and nature of learner interaction and participation in the learning process. Learner participation was "problematic" for all provinces (Table 3.83 in Appendix A). The relationship is graphically presented in Figure 5.4.

Figure 5.4 Learner percentage score according to levels of learner participation
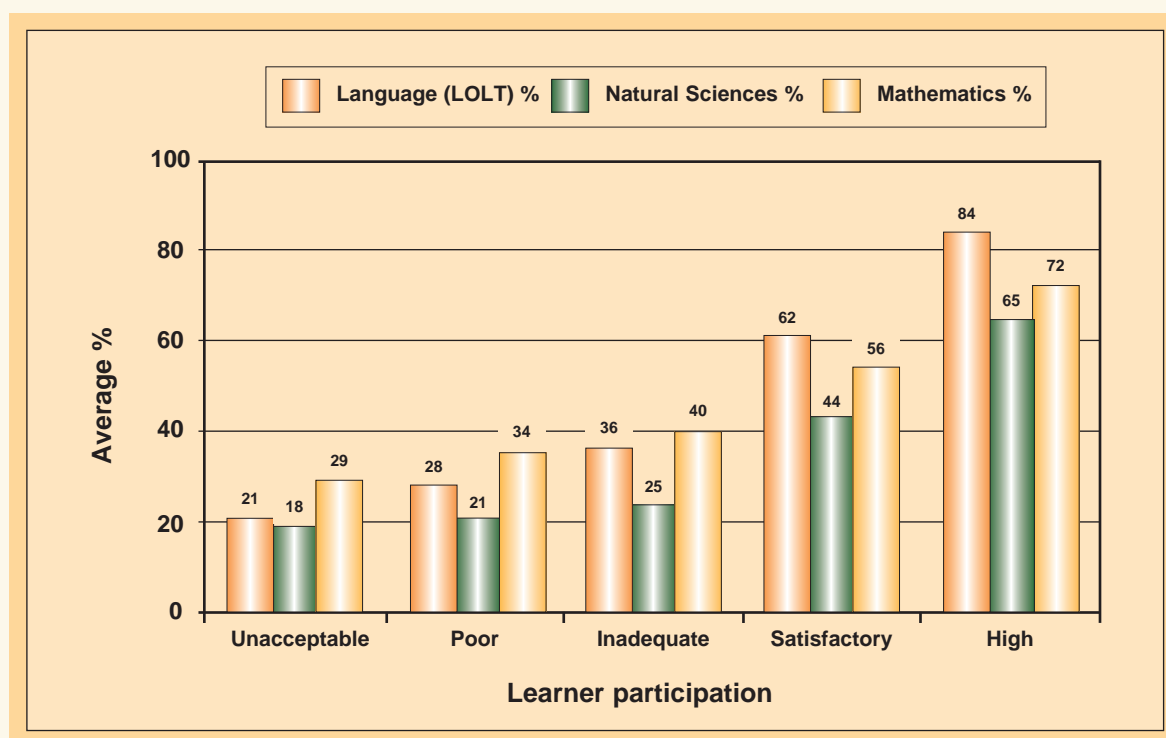
The trend shown in Figure 5.4 clearly highlights the strong positive relationship between learner participation in the classroom and learner achievement; that is, those learners who reported greater participation in the classroom obtained significantly higher scores than those who reported lower levels of engagement. International studies also demonstrate strong links between learner achievement and learner participation (Brophy & Good, 1986; Fraser, 1987; Stockard & Maybery, 1992).

The **learner participation indicator** comprised four indices: (1) learner morale, (2) learner attitude, (3) learner interaction with the educators and with their class mates, and (4) the language of learning and teaching. Of all of these indices, being taught in the home language yielded the greatest effects. In particular, instruction in the mother tongue (home language) of learners has been shown to have a significant impact on how learning takes place in the classroom, and on the learner's performance (Heugh, 1999). This suggests that there is a role for learners' home language as a medium of instruction. Pronouncements by the Minister of Education, Naledi Pandor (DoE, 2005b), and scholars alike (e.g. Kathleen Heugh, HSRC, (The Star,
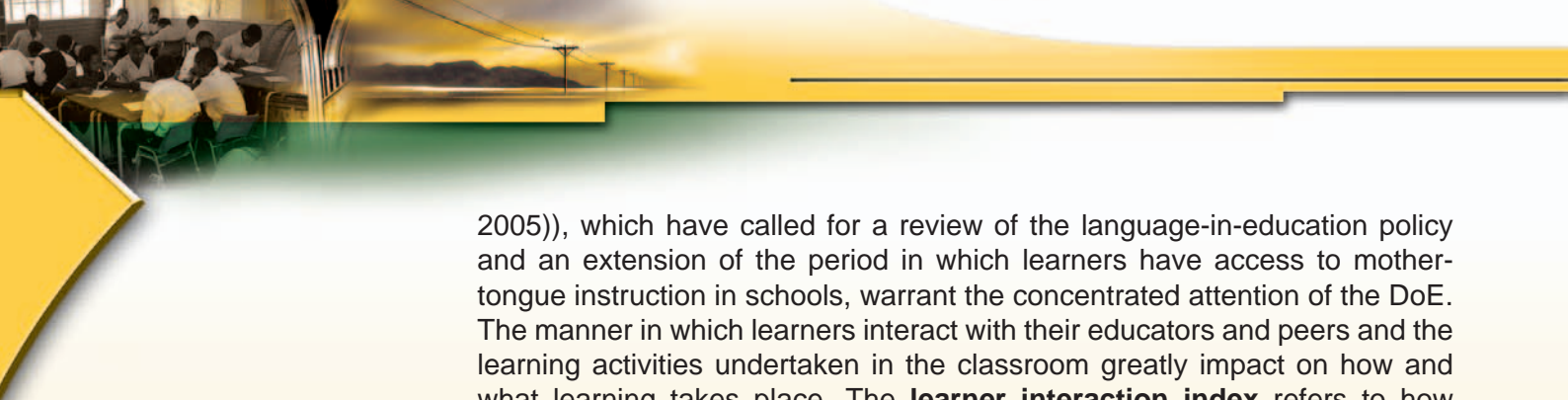
2005)), which have called for a review of the language-in-education policy and an extension of the period in which learners have access to mother-tongue instruction in schools, warrant the concentrated attention of the DoE. The manner in which learners interact with their educators and peers and the learning activities undertaken in the classroom greatly impact on how and what learning takes place. The **learner interaction index** refers to how learners participate in the Mathematics, Natural Sciences, and Language (LOLT) classroom, and is based on questions such as: do the learners play an active or passive role in their learning, do they work in groups, and are they given projects and assignments? The average percentage scores per learning area obtained by learners at different levels of classroom interaction have been shown in Table 5.17

Table 5.17 Learner percentage score according to level of learner interaction

Learner Interaction	Language (LOLT) %	Mathematics %	Natural Sciences %
Unacceptable/very low	22	20	31
Largely problematic/poor	32	24	38
Problematic/inadequate/limited	39	28	41
Satisfactory	54	35	50
Very good/high	81	58	70

Learners who reported higher interaction with educators and their peers also obtained higher scores across all learning areas. Learners in passive classes (very low interaction) performed far less than their counterparts in highly interactive classes. For instance, there was almost a fourfold difference in average percentage points between the "very low" and "very high" interaction categories of learners in language (LOLT). The differences in the other two learning areas were also remarkably high. Interactive engagement of learners during lessons is one of the critical professional skills which necessitate continuing professional development and support of educators. Based on these findings, greater attention should be paid to continuing professional development that seeks to equip educators with a range of researched effective methodologies that best suit the various learning areas.

5.5.12 School attendance by educators and learners

The **attendance indicator** is made up of two indices: attendance of educators, and attendance of learners. Attendance in five provinces fell within the "satisfactory but could improve" category while the rest of the provinces were rated as "high" (Table 3.76 in Appendix A). Across all provinces, relatively high attendance rates were reported, with higher rates reported for educators than for learners. Learner achievement as corresponding to various levels of attendance is presented in Table 5.18.

Table 5.18 Learner percentage score by level of school attendance by educators and learners

Attendance	Language (LOLT) %	Mathematics %	Natural Sciences %
Unacceptable/very low	30	19	34
Largely problematic/poor	25	20	32
Problematic/inadequate	27	21	34
Satisfactory	31	23	36
Very high	46	32	46

As indicated in Table 5.18, there were generally small differences in scores when attendance was reported as being "very low", "poor", "problematic" and "satisfactory", compared to when attendance was reported as being "very high". Only when attendance was reported as "very high" were learner scores significantly higher. This result indicates that attendance needs to be near perfect to make a substantial contribution to achievement. Based on this finding, schools should aim for optimal attendance of both educators and learners. The finding reinforces the earlier emphasis on extending the teaching contact time between learners and educators.

5.5.13 Discipline at school

The **discipline at school indicator** refers to how often schools experience disciplinary problems with learners and educators and the actions schools take to maintain discipline. Discipline was "satisfactory" for all provinces (Table 3.25 in Appendix A). The relationship between discipline and learner achievement is presented in Figure 5.6.

Figure 5.6 Learner percentage score according to levels of discipline
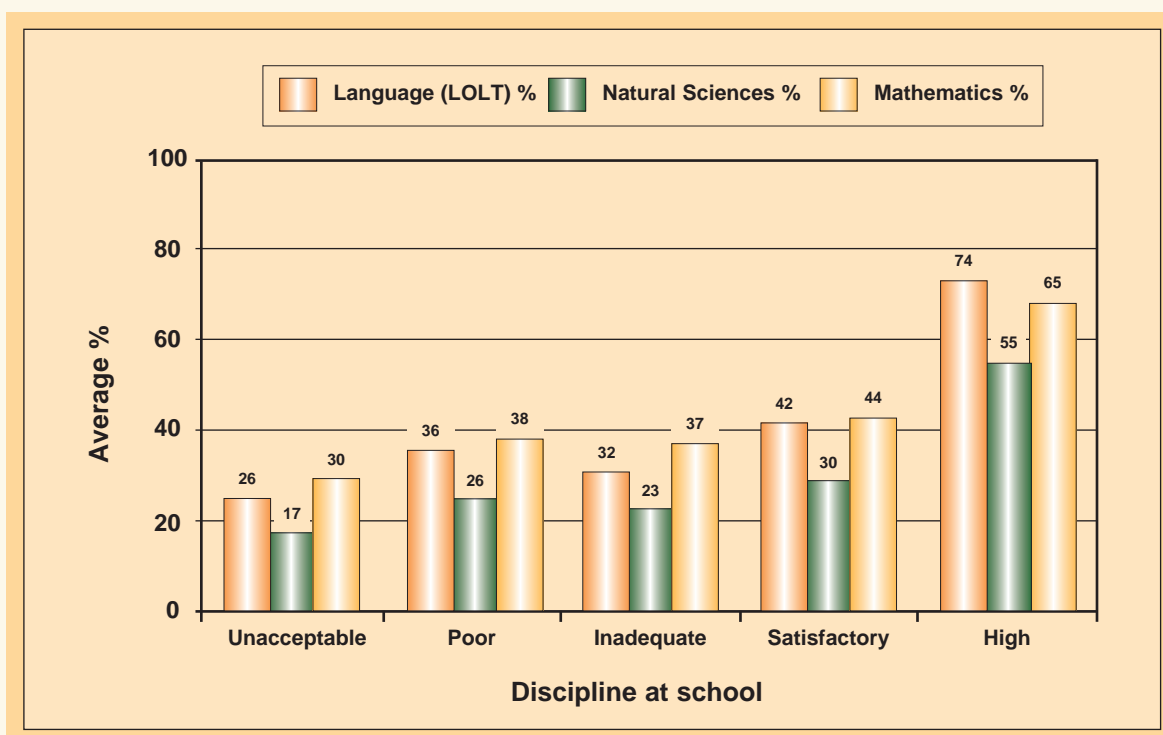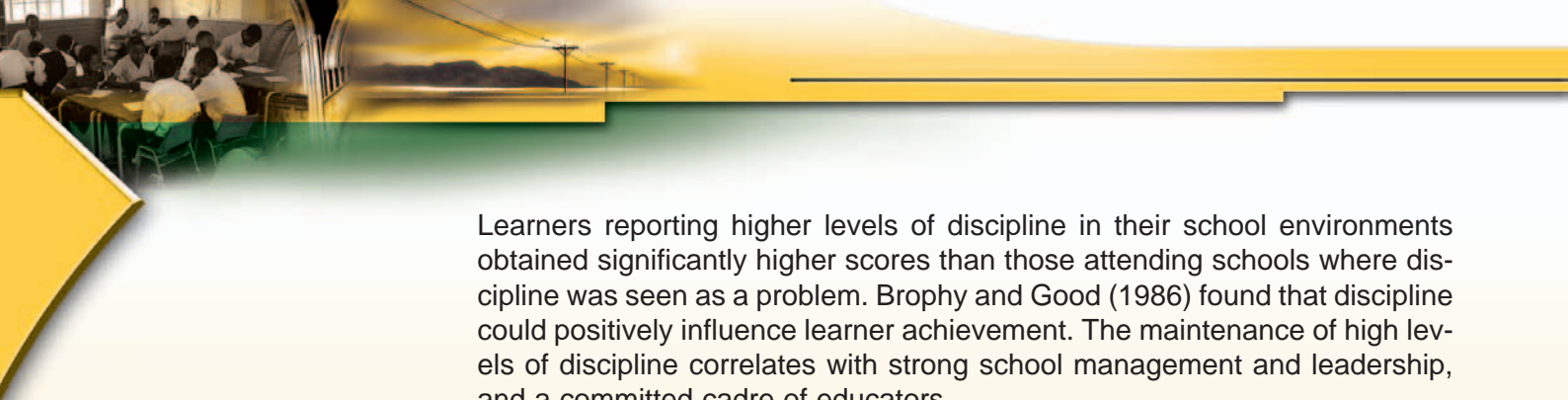
Learners reporting higher levels of discipline in their school environments obtained significantly higher scores than those attending schools where discipline was seen as a problem. Brophy and Good (1986) found that discipline could positively influence learner achievement. The maintenance of high levels of discipline correlates with strong school management and leadership, and a committed cadre of educators.

5.5.14 School safety

The **school safety indicator** was constructed from school principal, parent and learner responses pertaining to perceptions of feeling safe; experiences of intimidation, bullying and sexual harassment; the carrying of weapons in school; and school activities for ensuring safety (e.g. security services, scholar patrols, and fire extinguishers). Safety at school was reported as "problematic" in all provinces (Table 3.32 in Appendix A).

Figure 5.7 Learner percentage score according to levels of school safety
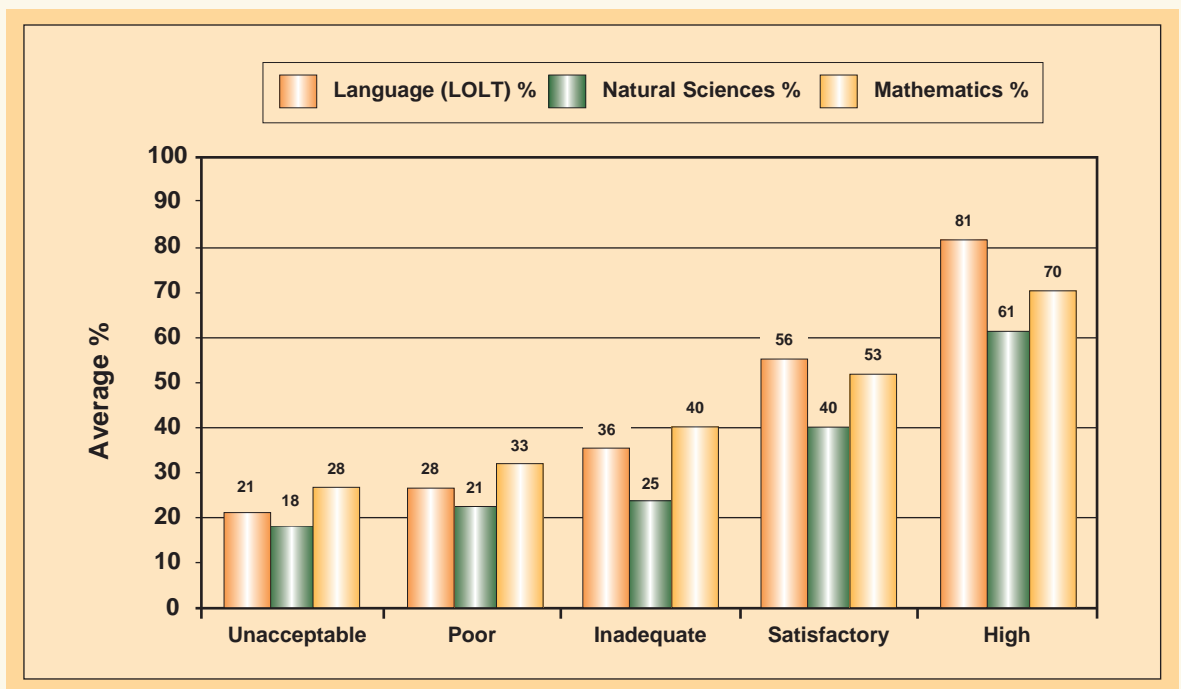
Where safety was reported to be "high", learner scores were significantly higher, as shown in Figure 5.7. Securing the safety of schools from all forms of harassment, intimidation, and violence is critical to providing an environment that is conducive to learning and teaching. As the Ministry of Education considers "a safe and disciplined learning environment as one of the critical elements to the successful delivery of quality education" (DoE, 2000), it is important that all education role-players comply with existing policy and institute additional measures, where required.

5.5.15 Throughput rates

The **throughput indicator** provides information about the time taken by learners to complete grades 4 to 6 and was calculated on the basis of information obtained from learners pertaining to whether they had repeated a year in Grade 4, 5 or 6. Throughput rates were "high" across all provinces (Table 3.127 in Appendix A), which indicated that the majority of learners reported that they did not repeat any grade. As shown in Table 5.19, average learner scores were calculated for three categories of throughput rates: learners who had not repeated any grade, learners who had repeated a single grade, and learners who had repeated more than one grade.

Table 5.19 Learner achievement by throughput rate
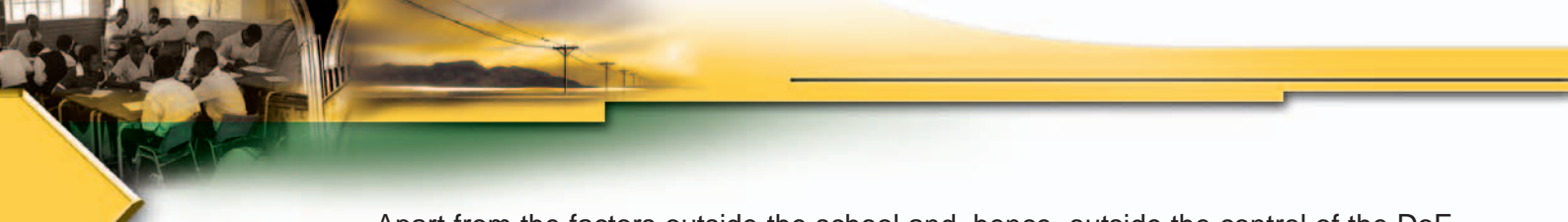
Years repeated in the Intermediate Phase	Language (LOLT) %	Mathematics %	Natural Sciences %
None	44	31	45
1 year	28	22	34
More than 1 year	24	19	30

Large differences were only recorded between learners who repeated and those who did not, with the latter obtaining scores that were between 50% and 100% higher across the three learning areas. The reasons for low achievement by learners who repeat need to be investigated and appropriately addressed. Hanushek (1995) notes that policies that improve the quality of schools (i.e. enhance learners achievement) will simultaneously lead to more rapid progress by learners through the grades.

5.6 CONCLUSION

This chapter commenced by arguing that learner achievement scores should not be seen in isolation from the contexts in which learners find themselves. Learner achievement scores are influenced by various contextual factors. The chapter identified a number of contextual factors that affected performance and illustrated their relationship to learner achievement. It drew on correlation and Automatic Interaction Detection (AID) analysis to illustrate the relationship. The contextual factors (indicators) were categorised according to the levels reported in Chapter 3 and learner percentage scores in each of the learning areas were then reported for each category.

Among the key factors found to be strongly related to learner achievement are the socio-economic status (SES) of the learners and their access to information at home. Learners with a high SES and with a wealth of information to draw on at home achieve better results in relative terms than learners with a low SES and little information available at home. These factors fall outside the sphere of operation of the DoE and call for inter-sectoral efforts to address conditions at home that will result in improved achievement.

Apart from the factors outside the school and, hence, outside the control of the DoE that affected learner achievement, there were factors that fell within the jurisdiction of the Department. It was found that effective participation of learners related strongly to learner achievement. Learner participation involves two critical issues: making sense of the material being taught/ or read, and communication between the learner and the educator. Essentially, these issues relate to the language of learning and teaching (LOLT). Learners taught through the medium of their home language outperformed learners who were taught in another language. A caveat is necessary here. The two groups of learners (home language same as LOLT and home language different from LOLT) also differ on a number of other variables relevant to school learning. The issue of mother-tongue instruction and meaningful communication needs further research.

There was also a high degree of correlation between school resources and learner achievement. Learners in schools with adequate resources tend to achieve much better results than learners in schools with insufficient resources. It was pointed out, however, that the optimal and efficient use of resources was critical. The starting point, nevertheless, remains that the provision of sufficient resources is essential. The availability of educator resources was also found to be very important.

There was also a strong relationship between achievement and other variables such as safety at school, entry into school (school fees), the availability of and access to information at school, parental involvement with the school, good school discipline, the availability of learning material, good school attendance and educator qualifications. The results have highlighted the contextual conditions, both at home and at school, that affect learner achievement, and the DoE needs to prioritise and address these factors for the improvement of the low learner achievement scores. Chapter 6 reviews the findings of the study and makes recommendations regarding these findings.

CHAPTER 6
Conclusion

Systemic evaluation studies offer a powerful lens through which to view the performance and health of the education system. In particular, the Grade 6 Systemic Evaluation study is intended to serve three purposes: first to determine the level of achievement of learners within the system; second, to highlight specific areas/issues within the system that require further attention/investigation; and third, to serve as a baseline for comparison against future systemic evaluation studies. It is particularly important to examine the connections and intersections of the various conditions and factors that influence performance of learners within the education system. Knowledge of these relationships is essential for understanding the complex dynamics of the education system and for implementing specific strategies and policies to improve learner achievement.
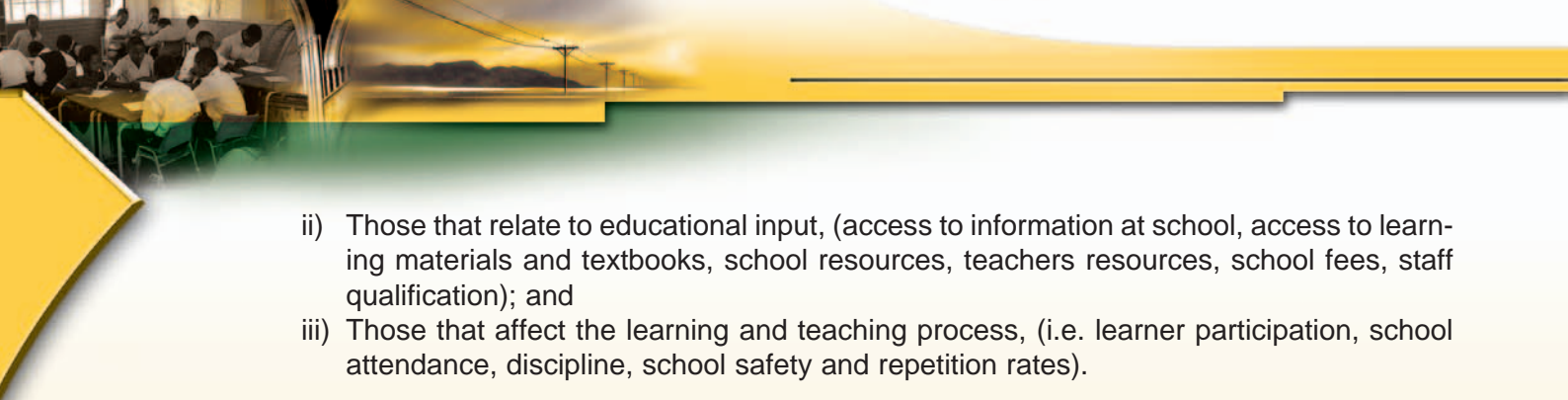
This systemic evaluation study of the intermediate phase, which builds on the foundation phase study (DoE, 2003), provides a comprehensive picture of the performance of learners as well as schooling conditions at this level. The design of the study was based on the methodological lessons of the foundation phase study and lays a solid foundation for future systemic evaluation studies.

The study indicates that the majority of Grade 6 learners have not achieved the expected assessment standards in the Learning Outcomes, a result that has serious implications for learning and teaching practices at Grade 7 and beyond. For instance, it can be expected that huge demands are likely to be placed on Grade 7 teachers in coping with a learner population at varying levels of ability and knowledge; this has implications for the required calibre of Grade 7 teachers, specifically their ability and versatility in the classroom, with corresponding policy implications for teacher recruitment and teacher education and development. In more specific achievement terms, there are significant differences between the average scores attained in Mathematics, on the one hand, and Language (LOLT) and Natural Sciences, on the other. Of the learners who participated in the survey, the average score for Mathematics was 27% compared to the average score of 38% for Language (LOLT) and 41% for Natural Sciences.

Of particular concern are the following trends that were evident across all three learning areas, and all provinces. First, learners whose home language was the same as the Language of Learning and Teaching (LOLT) obtained significantly higher scores than learners whose home language was different from that of the LOLT. Second, in a trend related to the first, provinces with more schools situated in urban localities achieved significantly higher scores than provinces with schools located predominantly in rural settings. Third, learner scores were extremely low for items that required learners to construct and provide their own responses (i.e. in response to open-ended questions – OEQs) compared to responses to multiple-choice questions (MCQs).

The learner achievement scores were analysed in relation to the contexts of schooling to identify factors related to learner performance. The factors fall within three broad categories:

i)   Those outside the sphere of influence of the Department of Education but that impact on performance, (socio-economic status – SES – of learners, access to, and use of, information at home, parental involvement and perceptions, and homework practices);

ii) Those that relate to educational input, (access to information at school, access to learning materials and textbooks, school resources, teachers resources, school fees, staff qualification); and

iii) Those that affect the learning and teaching process, (i.e. learner participation, school attendance, discipline, school safety and repetition rates).

In the section that follows, the key findings and recommendations in terms of the three categories sketched above are presented. Two caveats are worth noting in this regard. First, the recommendations made are for engagement and discussion among policy and decision makers and key education stakeholders, and are not intended to be prescriptive. These are "ideas" that suggest possible solutions, which need to take account of fiscal constraints and specific provincial, district and school conditions. Second, systemic evaluation is one of many sources of information that informs policy-making and implementation. Other research conducted between 2003 and 2005 relating to education in rural schools, the health of our educators, and educator workload, to name a few, need to be considered when making policy decisions and strategic interventions.

6.1 HOME AND COMMUNITY CONTEXT

The findings and recommendations pertaining to factors affecting home and community support are outlined below.

6.1.1 Socio-economic Status (SES)

Learners who reported coming from a high SES background obtained significantly higher scores than learners who reported coming from a low SES background.

Recommendations

Given the significant effect of SES on the performance of learners, it is recommended that the DoE, wherever possible, compensate for shortages in the home by providing basic resources necessary for effective learning at school level. In this regard, the DoE should support schools to attain optimal textbook retrieval rates and in the provision of alternative learning material (see specific recommendations under section 6.2.1).

6.1.2 Home support

Findings for the indicators detailed below (parental involvement/perceptions, homework practices and access to information at home) are clustered so that integrated recommendations on home support can be presented:

Finding: Parental involvement and perceptions

It has been found that in cases where parents have a positive perception of the school and support their children either by monitoring school work or by attending school activities, learners tend to obtain higher scores. Parental involvement and perceptions were also influenced strongly by their level of education.

Finding: Homework practices

The study found that learners who reported having someone at home to assist with homework or to monitor homework obtained higher scores.

Finding: Access to information at home

Learners who reported higher access to information at home (in terms of print and electronic media and access to a community library) obtained higher scores.

Recommendations

On the basis of the above findings, it is recommended that:

i)   Schools formulate strategies and programmes that foster greater parental involvement in their children's school work; for example by providing guidelines on how to assist and monitor their children's homework. This could be achieved through the distribution of school newsletters highlighting the role of parents in education and the organisation of parent day workshops at school at least twice a year, among other activities;

ii) The Department should support the establishment of community and adult-education learning centres and/or the use of mobile learning units in impoverished communities, with particular emphasis on improving parent literacy and education levels;

iii) The DoE should liaise with local municipalities to encourage the provision of community libraries where such facilities do not exist.

6.2   RESOURCE INPUTS FOR IMPROVING LEARNING

The findings and recommendations pertaining to factors affecting resources are provided below:

6.2.1   Access to information and resources

Findings for the indicators outlined below (information at school, access to learning materials and textbooks, teacher resources and school resources) are clustered so that integrated recommendations pertaining to access to information and resources can be presented.

Finding: Information at school

Learners who reported greater access to information at schools (school library and reading books in class) obtained higher scores than those who reported limited access to information at schools.

Finding: Access to learning materials and textbooks

Access to learning materials and textbooks was found to correlate significantly with learners' performance, and was reported to be "inadequate" in all provinces. No differences were detected between learners who reported high access to learning materials and learners who reported high access to textbooks across all three learning areas.

Finding: Teacher resources

Learners whose educators have access to and make effective use of better teaching resources (library, Internet, etc.) achieved significantly higher scores.

Finding: School resources

Learners attending schools that reported having high levels of resources obtained significantly higher scores than those attending schools that reported having low levels of resources. This was especially true for those schools that reported a high level of physical resources and office equipment (staff offices, telephones, etc.) and classroom learning resources (library, overhead projector, computer, etc.).

Recommendations

On the basis of the above findings, it is recommended that the DoE should:

i) Ensure the availability of reading material such as books, newspapers and magazines for learners, as well as access to electronic media, such as computers and radio, for effective learning and teaching to take place. In particular the provision of libraries should be made a priority. Libraries should be well stocked and properly managed. In the short term, schools that do not have libraries, should utilise available space to house reading and other learning material for learners and teachers to access. One option is to use "box libraries". In the medium to long term, appropriate funding should be sourced to build proper libraries for all schools.

ii) Require all schools to assign a dedicated staff member to manage all school library operations. Where necessary, the Department should provide training and support to develop the required capacity;

iii) Encourage all teacher education providers that do not include school library management as a course to do so. Providers should also be encouraged to make this course a core requirement of the educational qualifications they offer;

iv) Prioritise the provision of learning resources to schools that need them the most, especially classroom learning resources like overhead projectors, the Internet, etc., for educators, with appropriate training provided where necessary; and

v) In collaboration with the relevant line-function departments, accelerate the provision of basic infrastructure, particularly access to water, electricity and telephone lines to all schools, and prioritise the provision of infrastructure to rural schools, especially in Limpopo, the Eastern Cape and KwaZulu-Natal. In this regard, existing initiatives to address resource shortages in the Presidential Nodal Zones should be accelerated.

It is also recommended that schools should:

i) Actively encourage both learners and teachers to use the library regularly. Teachers can set assignments that require learners to access material available in the library while school time-tables should include specific periods for reading or for accessing the library; and

ii) In collaboration with district officials, establish appropriate systems to monitor the proper and effective utilisation of resources so that learning and teaching is improved.

6.2.2 School fees

Learners who reported easier entry into schools obtained higher scores than those learners for whom entry into schools was reported as being a problem. The biggest factor to influence entry into schools was school fees. Although the majority of parents paid school fees, approximately 13% of parents, especially in rural areas, reported that they had, on occasion, kept their children at home because they were unable to pay school fees.

Recommendations

It is recommended that:

i)   Existing education policies that no learners be turned away because of parents' inability to pay school fees be strictly adhered to and that disciplinary steps should be taken against the principals and schools found guilty of disregarding these policies;

ii) The Department should support public awareness campaigns that inform parents of the exemption of poor parents from paying school fees and the right of all children to access education; and

iii) Policies currently contemplated for the creation of "no-fee-schools" should be finalised and implemented as soon as possible.

6.2.3 Staff qualifications (initial training)

In schools where the academic qualifications and professional-training levels of both principals and educators were higher, learner achievement scores were also higher across all learning areas.

Recommendation

The Department should take immediate steps to improve the qualification levels of all educators and principals. In particular, all Mathematics, Natural Sciences, and Language (LOLT) educators with Grade 12 or lower should be encouraged to improve their qualifications in their respective areas of expertise and should be supported in their endeavours to do so.

Moreover, the provision of continuing professional development in the three learning areas should be optimised.

6.3 TEACHING AND LEARNING PRACTICES

The findings and recommendations pertaining to factors affecting teaching and learning practices are outlined below:

6.3.1 Learner participation

Learners who reported higher levels of participation in the classroom obtained higher scores. This was especially true for learners whose home language was the same as the LOLT.

Recommendations

It is recommended that:

i) Educators devise more effective strategies for the fostering of greater participation in all classroom activities; for example, through small groups or working in pairs, as well as through individual projects and assignments; and

ii) The Department review relevant studies on the value of mother-tongue instruction in improving learner achievement, particularly at the foundation phase, in order to formulate appropriate policy, taking cognisance of the specific multilingual context of particular schools, districts and provinces.

6.3.2 Attendance and discipline at school

Findings for the indicators below (school attendance and discipline) are clustered so that integrated recommendations can be made.

Finding: School Attendance

Learner scores were significantly higher in schools where attendance by both learners and educators was reported to be very high.

Finding: Discipline

In schools that reported fewer behavioural and disciplinary problems among both learners and educators, learners obtained higher scores.

Recommendations

It is recommended that:

i) Particular attention be paid to ensuring that schools have proper strategies for dealing with punctuality and absenteeism of learners and educators for the maximisation of available learning and teaching time. Principals should also enforce current policy that requires educators to attend school regularly and that educators encourage learners to do the same;

ii) The Department ensures that all schools implement their codes of conduct and that the DoE assists schools to formulate appropriate codes where these do not currently exist; and

iii) The Department considers the provision of relevant support services to schools where learners are prone to vandalism and where both learners and educators are found to be guilty of substance abuse.

6.3.3 School safety

Learners who reported feeling safe at school obtained higher scores. At least a third of the learners reported that sometimes other learners brought dangerous weapons to schools and that some form of bullying occurred most of the time.

Recommendations

It is recommended that:

i) All schools should be supported in their implementation of current poli-
    cies on "safe schools", and their effectiveness in ensuring safe and
    secure learning environments should be monitored; and

ii) Provincial education departments, in consultation with district offices,
    should establish safety call centres, as have already been established in
    some provinces, where learners and teachers can seek assistance in
    cases of emergencies.

6.3.4 Throughput rates

Learners who did not repeat a year in either Grade 4, 5 or 6 obtained higher
scores than learners who did repeat.

Recommendations

Since it has been found that repetition does not necessarily improve the per-
formance of learners, it is recommended that the Department:

i) Review current policies on repetition; and

ii) Support educators in developing appropriate intervention strategies to
    improve the performance of learners who are in the same grade but who
    function at different levels.

6.4 CONCLUDING REMARKS

In measuring the health of the education system, this systemic evaluation study indi-
cates that the context of schooling is still characterised by gross inequalities. In rel-
ative terms, schools in largely urbanised provinces have more resources than
schools in provinces that are largely rural. Since the context in which education takes
place has an impact on learner achievement, with consequences for further educa-
tion and training and labour market needs, this finding signals immense challenges
for the DoE specifically, and for government generally. At least two of these chal-
lenges demand urgent attention. First, inequalities in provincial resources should be
eradicated to make education provisioning equitable and to enable disadvantaged
provinces to maximise delivery. Second, provinces that are largely rural in character
must be targeted for appropriate redress measures. In this regard, the recommenda-
tions by the *Report of the Ministerial Committee on Rural Education* (DoE: 2005)[6] to
improve rural schooling have relevance.

A central message of the study is that the provision of quality education to learners
remains the biggest challenge to schools and the Department alike. One of the major
concerns in this regard is the overall low achievement of learners and the resulting
challenges for educators in Grade 7 and beyond. However, the study has revealed
that the academic performance of learners in Grade 6 is related to a number of fac-
tors, both school-based and related to the broader contextual conditions of learning
and teaching. It is heartening to note, therefore, that several of the factors that need
to be addressed, such as expanding the provision of learning resources and issues
relating to discipline and safety, are within the ambit of the DoE and its partners.

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[6] DoE (2005). *Report of the Ministerial Committee on Rural Education: A new vision for rural schooling. Pretoria.* Department of Education.

Finally, it should be borne in mind that education systems comprise complex and often multi-layered structures involving diverse role-players, each with different interests and roles. Effecting comprehensive and sustainable change within such complex systems is not only difficult but requires a sustained and concerted effort. Ideally, intervention processes should be monitored on a regular basis with relevant and recent information. This study should be viewed as contributing to the achievement of this objective; that is, by providing relevant information for policy makers to enhance evidence-based decision making for improving the quality of education in South Africa.

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APPENDIX A

POLICY GOAL: ACCESS

Access to the school

Table 3.2 Getting to school by province

	Getting to school	
	Average	**Std Err**
EC	7.84	0.10
FS	7.95	0.16
GP	7.97	0.10
KZN	7.34	0.11
LP	7.89	0.11
MP	7.66	0.13
NW	8.06	0.10
NC	8.59	0.12
WC	8.68	0.09
Total	**7.84**	**0.04**

Table 3.3 Time taken to get to school by province (%)

	< 15 min	15–30 min	30–45 min	45–60 min	> 60 min	
EC	50	28	11	6	5	100
FS	51	31	10	5	3	100
GP	50	30	9	6	5	100
KZN	42	29	12	9	8	100
LP	51	30	9	5	5	100
MP	46	31	11	6	6	100
NW	49	32	9	6	4	100
NC	61	27	8	2	2	100
WC	63	25	7	3	2	100
Total	**50**	**29**	**10**	**6**	**5**	**100**

Entry into schools

Table 3.6 Entry into schools by province

	Entry into schools	
	Average	**Std Err**
EC	5.70	0.16
FS	5.66	0.19
GP	6.11	0.18
KZN	5.98	0.14
LP	5.81	0.17
MP	5.91	0.19
NW	5.73	0.18
NC	5.91	0.31
WC	6.12	0.22
Total	**5.89**	**0.06**

Table 3.7a School fees by province

	School fees	
	Average	**Std Err**
EC	6.48	0.07
FS	6.81	0.14
GP	6.75	0.12
KZN	6.71	0.09
LP	6.89	0.09
MP	6.82	0.11
NW	6.90	0.13
NC	6.07	0.18
WC	6.79	0.18
Total	**6.73**	**0.04**

Table 3.7b Annual fees by learner in Grade 6 by province (%)

	< R50	50–100	101–200	201–400	401–800	801–1600	2001–3000	> R3 000	
EC	72	21	1	2	1	1	1	1	100
FS	36	33	3	3	4	11	10	0	100
GP	15	39	11	10	3	2	9	11	100
KZN	43	34	6	6	4	1	1	5	100
LP	22	64	11	1	2	0	0	0	100
MP	29	44	13	5	1	0	7	1	100
NW	12	65	15	3	0	3	1	1	100
NC	31	40	18	0	2	7	2	0	100
WC	10	31	22	11	7	2	9	8	100
Total	**33**	**40**	**10**	**5**	**3**	**2**	**4**	**3**	**100**

Table 3.8a Percentage of parents that pay school fees by province

	< 20%	21–40	41–60	61–80	> 81%	
EC	8	16	26	24	26	100
FS	4	18	14	33	31	100
GP	16	24	24	21	15	100
KZN	12	19	20	21	28	100
LP	5	12	17	26	40	100
MP	11	9	8	37	35	100
NW	6	20	13	23	38	100
NC	30	24	26	9	11	100
WC	14	27	28	18	13	100
Total	**10**	**18**	**20**	**24**	**28**	**100**

Table 3.8a Percentage of parents that pay school fees by province

	Yes	No	
EC	21	79	100
FS	10	90	100
GP	6	94	100
KZN	17	83	100
LP	11	89	100
MP	11	89	100
NW	12	88	100
NC	8	92	100
WC	8	92	100
Total	13	87	100

Table 3.8b Percentage of learners who stay at home because parents cannot pay school fees by district

	Yes	No	
EC	21	79	100
FS	10	90	100
GP	6	94	100
KZN	17	83	100
LP	11	89	100
MP	11	89	100
NW	12	88	100
NC	8	92	100
WC	8	92	100
Total	13	87	100

Access to information

Table 3.10 Access to information by province

	Access to information	
	Average	**Std Err**
EC	3.66	0.22
FS	4.94	0.32
GP	6.50	0.18
KZN	4.68	0.21
LP	3.23	0.17
MP	4.77	0.27
NW	4.27	0.25
NC	6.21	0.29
WC	6.44	0.29
Total	**4.79**	**0.08**

Table 3.11 Information at school by province and learning area

	Information					
	Mathematics		**Natural Sciences**		**Language (LOLT)**	
	Average	**Std Err**	**Average**	**Std Err**	**Average**	**Std Err**
EC	3.30	0.27	3.36	0.28	3.83	0.33
FS	4.13	0.50	4.38	0.51	5.25	0.52
GP	5.94	0.31	6.50	0.34	6.55	0.33
KZN	4.83	0.34	5.02	0.34	4.78	0.39
LP	2.84	0.29	3.08	0.31	3.37	0.30
MP	4.68	0.43	3.89	0.45	4.52	0.50
NW	3.93	0.41	4.61	0.50	4.40	0.50
NC	6.38	0.54	6.40	0.56	6.65	0.53
WC	5.70	0.45	5.74	0.52	5.93	0.44
Total	**4.44**	**0.13**	**4.63**	**0.14**	**4.78**	**0.14**

Table 3.11 Information at school by province and learning area

	Information at school					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	3.30	0.27	3.36	0.28	3.83	0.33
FS	4.13	0.50	4.38	0.51	5.25	0.52
GP	5.94	0.31	6.50	0.34	6.55	0.33
KZN	4.83	0.34	5.02	0.34	4.78	0.39
LP	2.84	0.29	3.08	0.31	3.37	0.30
MP	4.68	0.43	3.89	0.45	4.52	0.50
NW	3.93	0.41	4.61	0.50	4.40	0.50
NC	6.38	0.54	6.40	0.56	6.65	0.53
WC	5.70	0.45	5.74	0.52	5.93	0.44
Total	**4.44**	**0.13**	**4.63**	**0.14**	**4.78**	**0.14**

Table 3.12 Further breakdown of information at school by province

	At school Mathematics		At school Natural Sciences		At school Language (LOLT)		School library	
	Average	Std Err	Average	Std Err	Average	Std Err	Average	Std Err
EC	4.27	0.46	4.50	0.47	5.30	0.47	2.43	0.31
FS	3.66	0.67	4.17	0.70	5.72	0.71	4.77	0.64
GP	5.44	0.49	6.63	0.48	6.79	0.49	6.31	0.44
KZN	5.59	0.47	5.78	0.48	5.61	0.47	4.16	0.44
LP	3.36	0.47	3.74	0.48	4.48	0.50	2.41	0.35
MP	4.68	0.64	3.59	0.65	4.06	0.63	4.92	0.53
NW	3.93	0.55	4.47	0.67	3.94	0.61	4.29	0.50
NC	6.18	0.68	6.49	0.77	6.74	0.75	6.61	0.63
WC	5.82	0.62	5.86	0.65	6.57	0.61	5.62	0.49
Total	**4.71**	**0.19**	**5.04**	**0.20**	**5.39**	**0.19**	**4.21**	**0.16**

Table 3.13 Information at home by province

	At home		Electronic		Print		Books		Community Library	
	Ave	Std Err	Ave	Std Err	Ave	Std Err	Ave	Std Err	Ave	Std Err
EC	3.94	0.19	4.67	0.11	3.58	0.16	4.22	0.16	3.24	0.38
FS	5.63	0.20	5.66	0.15	4.73	0.21	5.18	0.27	6.48	0.53
GP	6.94	0.11	6.38	0.11	6.66	0.13	6.35	0.16	8.21	0.24
KZN	4.51	0.20	5.10	0.14	3.82	0.19	4.85	0.17	4.23	0.40
LP	3.58	0.13	4.80	0.09	3.23	0.13	4.37	0.14	2.13	0.27
MP	4.94	0.22	5.46	0.12	4.17	0.24	4.95	0.19	5.14	0.50
NW	4.87	0.23	5.54	0.09	4.71	0.17	5.54	0.19	3.62	0.60
NC	6.05	0.26	5.59	0.19	4.84	0.25	5.48	0.30	8.10	0.50
WC	6.99	0.17	6.54	0.16	6.21	0.18	6.41	0.24	8.45	0.29
Total	**5.02**	**0.07**	**5.41**	**0.05**	**4.47**	**0.07**	**5.11**	**0.06**	**4.84**	**0.15**

Access to learning materials and textbooks

Table 3.14 Learning material and textbooks by province

	Learning material and textbooks					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	5.81	0.21	6.63	0.20	6.74	0.17
FS	6.34	0.33	7.02	0.27	7.37	0.30
GP	6.80	0.24	7.27	0.20	7.33	0.17
KZN	5.84	0.19	6.06	0.16	6.55	0.19
LP	6.29	0.23	7.00	0.19	6.98	0.18
MP	6.05	0.29	7.22	0.25	7.28	0.18
NW	7.08	0.22	7.49	0.24	7.83	0.21
NC	7.66	0.31	8.07	0.23	8.24	0.23
WC	7.19	0.26	7.44	0.23	7.49	0.23
Total	**6.34**	**0.09**	**6.89**	**0.08**	**7.08**	**0.07**

Table 3.15a Learning material for the Mathematics learning area by province

	Mathematics learning material		General learning material		Access to chalk and chalkboard	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	2.62	0.41	5.76	0.27	9.75	0.09
FS	4.14	0.50	6.41	0.37	9.93	0.07
GP	6.38	0.36	7.65	0.20	10.00	0.00
KZN	5.35	0.38	6.90	0.20	9.69	0.16
LP	3.93	0.37	5.44	0.22	9.54	0.14
MP	3.68	0.45	6.24	0.31	9.75	0.13
NW	4.49	0.51	7.25	0.26	9.98	0.02
NC	5.03	0.77	7.15	0.32	10.00	0.00
WC	4.10	0.46	6.97	0.35	10.00	0.00
Total	**4.49**	**0.15**	**6.56**	**0.09**	**9.79**	**0.05**

Table 3.15b Learning material for the Natural Sciences learning area by province

	General learning material		Access to chalk and chalkboard	
	Average	Std Err	Average	Std Err
EC	5.52	0.26	9.85	0.07
FS	6.49	0.36	9.84	0.16
GP	7.99	0.18	9.87	0.09
KZN	6.82	0.20	9.83	0.08
LP	5.36	0.23	9.73	0.10
MP	6.06	0.30	9.77	0.13
NW	7.30	0.29	9.97	0.03
NC	7.15	0.38	10.00	0.00
WC	7.68	0.31	10.00	0.00
Total	**6.59**	**0.09**	**9.85**	**0.03**

Table 3.15c Learning material for the Language (LOLT) learning area by province

	General learning material		Access to chalk and chalkboard	
	Average	Std Err	Average	Std Err
EC	5.77	0.25	9.81	0.07
FS	6.66	0.38	9.81	0.15
GP	7.80	0.17	9.94	0.06
KZN	6.60	0.22	9.86	0.06
LP	5.66	0.24	9.60	0.15
MP	5.96	0.31	9.87	0.07
NW	7.46	0.23	9.90	0.09
NC	7.51	0.28	10.00	0.00
WC	7.00	0.30	10.00	0.00
Total	**6.57**	**0.09**	**9.84**	**0.03**

POLICY GOAL: QUALITY

Content and goals of the education system

Curriculum documents

Table 3.17 Curriculum documents by province (%)

	Mathematics			Natural Sciences			Language (LOLT)		
	Yes	No		Yes	No		Yes	No	
EC	96	4	100	96	4	100	94	6	100
FS	100	0	100	97	3	100	100	0	100
GP	98	2	100	98	2	100	98	2	100
KZN	95	5	100	96	4	100	95	5	100
LP	94	6	100	91	9	100	93	7	100
MP	88	12	100	93	7	100	92	8	100
NW	100	0	100	100	0	100	100	0	100
NC	98	2	100	98	2	100	96	4	100
WC	95	5	100	96	4	100	98	2	100
Total	**96**	**4**	**100**	**96**	**4**	**100**	**96**	**4**	**100**

Context within which learning occurs

School resources

Table 3.18 School resources by province

| | School resources | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	4.20	0.14	4.21	0.14	4.25	0.15
FS	6.28	0.18	6.29	0.18	6.36	0.17
GP	6.74	0.10	6.71	0.10	6.76	0.10
KZN	5.43	0.13	5.41	0.13	5.40	0.13
LP	4.17	0.11	4.13	0.11	4.18	0.10
MP	5.20	0.15	5.12	0.15	5.19	0.16
NW	5.20	0.15	5.24	0.15	5.26	0.15
NC	6.67	0.16	6.62	0.15	6.68	0.16
WC	6.38	0.15	6.43	0.14	6.38	0.15
Total	**5.34**	**0.05**	**5.32**	**0.05**	**5.35**	**0.05**

Table 3.19 Classroom furniture by province

| | Classroom furniture | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	7.21	0.24	7.28	0.24	7.40	0.22
FS	8.02	0.27	8.21	0.28	8.57	0.20
GP	8.99	0.10	8.99	0.09	9.07	0.07
KZN	8.50	0.11	8.42	0.12	8.38	0.14
LP	7.00	0.25	6.75	0.26	7.27	0.24
MP	7.21	0.33	6.90	0.33	7.08	0.32
NW	8.22	0.24	8.33	0.18	8.44	0.16
NC	9.33	0.04	9.15	0.11	9.34	0.04
WC	8.93	0.22	9.12	0.11	9.00	0.18
Total	**8.05**	**0.08**	**8.00**	**0.08**	**8.15**	**0.07**

Table 3.20 Physical resources by province

| | Physical resources | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	3.12	0.23	3.11	0.23	3.18	0.23
FS	6.17	0.23	6.18	0.23	6.13	0.22
GP	6.56	0.18	6.52	0.18	6.57	0.17
KZN	4.77	0.25	4.74	0.25	4.77	0.25
LP	2.56	0.14	2.57	0.14	2.52	0.13
MP	4.65	0.27	4.54	0.28	4.69	0.27
NW	4.15	0.24	4.13	0.24	4.15	0.23
NC	6.64	0.23	6.64	0.23	6.67	0.23
WC	6.84	0.23	6.82	0.23	6.82	0.23
Total	**4.59**	**0.08**	**4.56**	**0.09**	**0.08**	**0.08**

Table 3.21 School amenities by province

| | School amenities | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	5.58	0.20	5.59	0.20	5.57	0.20
FS	7.64	0.16	7.54	0.16	7.65	0.17
GP	7.83	0.10	7.79	0.10	7.78	0.11
KZN	6.65	0.16	6.67	0.16	6.66	0.16
LP	6.08	0.16	6.07	0.17	6.09	0.17
MP	7.02	0.15	6.99	0.15	6.99	0.15
NW	7.13	0.13	7.12	0.13	7.12	0.13
NC	8.09	0.14	8.08	0.14	8.11	0.14
WC	7.87	0.13	7.85	0.14	7.87	0.13
Total	**6.82**	**0.06**	**6.81**	**0.06**	**6.81**	**0.06**

Table 3.22 Learning resources by province

	Learning resources	
	Average	**Std Err**
EC	1.82	0.23
FS	6.07	0.27
GP	6.66	0.14
KZN	3.96	0.23
LP	2.40	0.15
MP	3.87	0.26
NW	3.87	0.26
NC	6.64	0.26
WC	6.08	0.23
Total	**4.08**	**0.08**

Table 3.23 Sports resources by province

	Sports resources	
	Average	**Std Err**
EC	5.49	0.16
FS	6.92	0.25
GP	6.86	0.16
KZN	6.00	0.19
LP	5.25	0.17
MP	5.80	0.26
NW	6.38	0.21
NC	7.03	0.22
WC	6.73	0.25
Total	**6.07**	**0.07**

Table 3.24a The condition of the vegetable garden by province (%)

	Not available	Excellent	Good	Poor	Very poor	
EC	59	1	14	17	9	100
FS	64		16	15	5	100
GP	50	9	19	18	4	100
KZN	51	4	17	18	10	100
LP	70	1	9	11	9	100
MP	52	6	24	14	4	100
NW	62	1	11	16	10	100
NC	60	2	12	14	12	100
WC	65	1	13	14	7	100
Total	**59**	**3**	**15**	**15**	**8**	**100**

Table 3.24b Percentage of schools that have vegetable garden by province

	Do not have	Have	
EC	59	41	100
FS	64	36	100
GP	50	50	100
KZN	52	48	100
LP	70	30	100
MP	52	48	100
NW	62	38	100
NC	60	40	100
WC	64	36	100
Total	**59**	**41**	**100**

Table 3.24c Percentage of schools that have vegetable gardens in good condition by province

	Good	Poor	
EC	37	63	100
FS	46	54	100
GP	57	43	100
KZN	43	57	100
LP	34	66	100
MP	63	37	100
NW	32	68	100
NC	35	65	100
WC	40	60	100
Total	**44**	**56**	**100**

Discipline at school

Table 3.25 Discipline at school by province

	Discipline at school	
	Average	**Std Err**
EC	7.23	0.09
FS	7.36	0.13
GP	7.45	0.11
KZN	7.40	0.10
LP	7.35	0.11
MP	7.29	0.15
NW	7.44	0.17
NC	7.01	0.22
WC	7.52	0.19
Total	**7.37**	**0.04**

Table 3.26 Learner behavioural problems at school by province

	Learner behavioural problems at school	
	Average	Std Err
EC	5.97	0.09
FS	5.98	0.15
GP	6.10	0.13
KZN	5.98	0.10
LP	6.33	0.13
MP	5.92	0.14
NW	6.04	0.22
NC	5.92	0.19
WC	5.86	0.17
Total	**6.04**	**0.05**

Table 3.27 Learner substance-abuse problems at school by province

	Learner substance-abuse problems at school	
	Average	Std Err
EC	8.42	0.14
FS	8.58	0.17
GP	8.79	0.15
KZN	8.67	0.14
LP	8.90	0.15
MP	8.69	0.18
NW	9.08	0.18
NC	7.96	0.26
WC	8.27	0.23
Total	**8.67**	**0.06**

Table 3.28 Addressing discipline problems at school by province

| | Addressing discipline problems at school | |
	Average	Std Err
EC	6.05	0.22
FS	6.50	0.31
GP	6.60	0.18
KZN	6.84	0.19
LP	5.95	0.20
MP	6.50	0.27
NW	6.31	0.25
NC	6.29	0.27
WC	7.68	0.32
Total	**6.50**	**0.08**

Table 3.29 Types of action principal used to address discipline problems by province (%)

| | Counselling | | | Inform parents | | | Detention | | | Suspension | | |
	Yes	No		Yes	No		Yes	No		Yes	No	
EC	80	20	100	100	0	100	45	55	100	13	87	100
FS	89	11	100	99	1	100	61	39	100	20	80	100
GP	96	4	100	100	0	100	54	46	100	17	83	100
KZN	93	7	100	99	1	100	56	44	100	19	81	100
LP	77	23	100	99	1	100	48	52	100	10	90	100
MP	93	7	100	100	0	100	45	55	100	12	88	100
NW	88	12	100	100	0	100	52	48	100	11	89	100
NC	96	4	100	100	0	100	45	55	100	18	82	100
WC	94	6	100	100	0	100	73	27	100	43	57	100
Total	**88**	**12**	**100**	**100**	**0**	**100**	**53**	**47**	**100**	**17**	**83**	**100**

Table 3.30 Educator discipline by province

	Disciplinary problems with educators	
	Average	**Std Err**
EC	8.25	0.13
FS	8.22	0.17
GP	8.13	0.22
KZN	8.19	0.17
LP	8.10	0.23
MP	7.88	0.32
NW	8.14	0.24
NC	7.81	0.42
WC	8.25	0.25
Total	**8.14**	**0.08**

Table 3.31 Types of disciplinary problems with educators by province

	Late	Absent	Learners unattended	Sexual harassment	Drug abuse	Alcohol abuse
	Average	**Average**	**Average**	**Average**	**Average**	**Average**
EC	2.80*	3.04	3.35	3.86	3.84	3.76
FS	3.01	3.35	3.24	3.90	3.94	3.65
GP	2.92	3.28	3.15	3.88	3.88	3.84
KZN	2.96	3.16	3.21	3.84	3.83	3.79
LP	2.86	3.16	3.20	3.86	3.91	3.86
MP	2.99	3.20	3.20	3.79	3.83	3.77
NW	2.84	3.26	3.23	3.98	3.96	3.90
NC	3.07	3.38	2.93	3.78	3.71	3.56
WC	3.08	3.43	3.11	3.74	3.78	3.73
Total	**2.92**	**3.21**	**3.21**	**3.85**	**3.86**	**3.78**
* range 1–4						

Table 3.32 School safety by province

	School safety	
	Average	**Std Err**
EC	5.64	0.09
FS	6.33	0.15
GP	6.90	0.08
KZN	6.08	0.10
LP	5.74	0.09
MP	5.68	0.14
NW	6.14	0.11
NC	6.26	0.17
WC	6.51	0.14
Total	**6.11**	**0.04**

Table 3.33 Percentage of learner that feel safe at school by province

	Yes	**No**	
EC	81	19	100
FS	89	11	100
GP	92	8	100
KZN	81	19	100
LP	82	18	100
MP	84	16	100
NW	89	11	100
NC	87	13	100
WC	89	11	100
Total	**85**	**15**	**100**

Table 3.34 Percentage of parents that feel their learner is safe at school by province

	Yes	No	
EC	80	20	100
FS	90	10	100
GP	92	8	100
KZN	83	17	100
LP	86	14	100
MP	85	15	100
NW	87	13	100
NC	89	11	100
WC	89	11	100
Total	**86**	**14**	**100**

Table 3.35a Principal's perception of the safety of the school by province (%)

	Very poor	Poor	Good	Excellent	
EC	42	33	23	2	100
FS	10	18	61	11	100
GP	6	19	65	10	100
KZN	22	35	38	5	100
LP	26	29	38	7	100
MP	27	27	38	8	100
NW	12	31	56	1	100
NC	7	22	67	4	100
WC	10	23	59	8	100
Total	**21**	**28**	**45**	**6**	**100**

Table 3.35b Percentage of learners reporting that dangerous weapons are brought to school by province

	Always	Most of the time	Sometimes	Never	
EC	10	5	15	70	100
FS	9	5	29	57	100
GP	4	4	28	64	100
KZN	8	6	19	67	100
LP	9	4	15	72	100
MP	6	7	23	64	100
NW	4	3	22	71	100
NC	7	5	31	56	100
WC	6	4	29	61	100
Total	**7**	**5**	**22**	**66**	**100**

Table 3.35c Percentage of learners reporting that bulling occurs at school by province

	Always	Most of the time	Sometimes	Never	
EC	17	11	29	43	100
FS	27	17	34	22	100
GP	21	15	39	25	100
KZN	17	16	32	35	100
LP	18	11	34	36	100
MP	21	13	32	33	100
NW	21	13	35	31	100
NC	27	20	36	17	100
WC	26	20	39	15	100
Total	**21**	**15**	**34**	**31**	**100**

Table 3.36 Meals by province

	Meals		Meals before school		Meals at school		Feeding scheme		Meals after school	
	Ave	Std Err	Ave	Std Err	Ave	Std Err	Ave	Std Err	Ave	Std Err
EC	6.26	0.09	7.69	0.11	4.68	0.22	5.12	0.21	7.69	0.12
FS	6.62	0.14	7.44	0.17	5.45	0.35	5.44	0.45	8.23	0.19
GP	6.80	0.06	7.28	0.11	6.62	0.15	5.58	0.17	7.72	0.11
KZN	6.63	0.09	7.87	0.11	5.26	0.24	5.93	0.32	7.54	0.15
LP	6.93	0.07	7.05	0.15	5.48	0.18	7.72	0.10	7.53	0.17
MP	6.64	0.10	7.26	0.18	5.45	0.28	6.63	0.20	7.38	0.21
NW	6.58	0.09	7.16	0.15	5.95	0.22	5.01	0.19	8.21	0.12
NC	7.29	0.10	8.16	0.15	4.93	0.28	7.55	0.41	8.49	0.16
WC	7.17	0.08	8.28	0.11	6.80	0.23	5.03	0.29	8.62	0.11
Total	**6.70**	**0.03**	**7.53**	**0.05**	**5.60**	**0.08**	**5.95**	**0.10**	**7.78**	**0.06**

Table 3.37 Grade 6 class size by province

	Average
EC	38.52
FS	35.72
GP	39.69
KZN	38.79
LP	44.27
MP	38.10
NW	35.29
NC	35.74
WC	35.00
Total	**38.50**

Educator classroom practices

Table 3.39 Educator classroom practices by learning area and province

	Educator classroom practices					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	7.39	0.07	7.54	0.10	7.59	0.09
FS	7.36	0.09	7.41	0.09	7.52	0.10
GP	7.33	0.10	7.32	0.08	7.50	0.09
KZN	7.30	0.08	7.31	0.07	7.29	0.07
LP	6.97	0.09	7.08	0.10	7.14	0.09
MP	7.25	0.09	7.42	0.09	7.48	0.10
NW	7.44	0.07	7.67	0.08	7.85	0.07
NC	7.06	0.18	7.27	0.13	7.33	0.13
WC	7.29	0.11	7.47	0.09	7.44	0.08
Total	**7.27**	**0.03**	**7.36**	**0.03**	**7.43**	**0.03**

Table 3.40 Teaching activities by learning area and province

	Teaching activities					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	5.31	0.12	5.91	0.13	6.02	145
FS	5.59	0.17	5.57	0.14	6.01	0.16
GP	5.59	0.12	5.77	0.12	6.29	0.12
KZN	5.69	0.12	5.57	0.10	5.82	0.10
LP	5.40	0.14	5.66	0.14	5.92	0.10
MP	5.59	0.12	6.02	0.18	6.16	0.13
NW	5.26	0.14	5.94	0.14	6.24	0.13
NC	5.38	0.27	5.70	0.18	5.80	0.27
WC	5.42	0.16	5.63	0.16	5.66	0.14
Total	**5.49**	**0.05**	**5.74**	**0.05**	**6.00**	**0.04**

Table 3.41 Percentage of educators who use story telling as part of their teaching and learning activities by province

	Always	Most of the time	Sometimes	Never	
EC	5	23	67	5	100
FS	8	21	61	10	100
GP	7	25	61	7	100
KZN	5	23	64	8	100
LP	5	20	57	18	100
MP	6	24	65	5	100
NW	7	19	65	9	100
NC	3	19	72	6	100
WC	8	28	62	2	100
Total	**6**	**23**	**63**	**8**	**100**

Table 3.42 Percentage of educators who repeating or rote as part of their teaching and learning activities by province

	Always	Most of the time	Sometimes	Never	
EC	8	18	62	12	100
FS	3	21	53	23	100
GP	7	21	49	23	100
KZN	7	17	59	17	100
LP	3	13	50	34	100
MP	5	19	56	20	100
NW	2	20	49	29	100
NC	17	25	51	7	100
WC	11	33	52	4	100
Total	**7**	**20**	**54**	**19**	**100**

Table 3.43 Percentage of educators who use problem solving in groups as part of their teaching and learning activities by province

	Always	Most of the time	Sometimes	Never	
EC	31	52	17		100
FS	34	45	21		100
GP	28	55	16	1	100
KZN	23	60	17		100
LP	37	47	15	1	100
MP	33	56	11		100
NW	28	55	16	1	100
NC	21	49	30		100
WC	13	52	35		100
Total	**28**	**53**	**18**	**1**	**100**

Table 3.44 Percentage of educators who encourage independent problem solving as part of their teaching and learning activities by province

	Always	Most of the time	Sometimes	Never	
EC	32	40	26	2	100
FS	34	49	16	1	100
GP	42	43	14	1	100
KZN	33	45	21	1	100
LP	37	36	24	3	100
MP	39	45	14	2	100
NW	43	46	10	1	100
NC	33	45	22		100
WC	33	46	21		100
Total	**36**	**43**	**20**	**1**	**100**

Table 3.45 Percentage of educators who use experiential learning as part of their teaching and learning activities by province

	Always	Most of the time	Sometimes	Never	
EC	7	13	72	8	100
FS	5	20	63	12	100
GP	10	27	60	3	100
KZN	4	24	62	10	100
LP	7	18	58	17	100
MP	10	20	61	9	100
NW	7	24	59	10	100
NC	6	11	67	16	100
WC	2	17	76	5	100
Total	**6**	**20**	**64**	**10**	**100**

Table 3.46 Percentage of learners who mark their own work as part of the teaching and learning activities by province

	Always	Most of the time	Sometimes	Never	
EC	8	14	61	17	100
FS	10	30	54	6	100
GP	8	25	61	6	100
KZN	7	18	62	13	100
LP	7	19	57	17	100
MP	7	24	56	13	100
NW	7	14	60	19	100
NC	7	16	71	6	100
WC	4	19	75	2	100
Total	**7**	**20**	**61**	**12**	**100**

Table 3.47 Percentage of educators that give learners feedback as part their teaching and learning activities by province

	Always	Most of the time	Sometimes	Never	
EC	53	40	7	0	100
FS	58	33	9	0	100
GP	55	41	4	0	100
KZN	49	43	8	0	100
LP	55	31	13	1	100
MP	64	32	4	0	100
NW	60	36	4	0	100
NC	53	35	12	0	100
WC	37	53	10	0	100
Total	**54**	**38**	**8**	**0**	**100**

Table 3.48 Percentage of learners that read aloud as part of the teaching and learning activities by province

	Always	Most of the time	Sometimes	Never	
EC	22	42	33	3	100
FS	12	37	44	7	100
GP	24	36	36	4	100
KZN	22	39	35	4	100
LP	24	31	36	9	100
MP	23	40	33	4	100
NW	18	44	35	3	100
NC	27	28	42	3	100
WC	17	48	34	1	100
Total	**21**	**39**	**36**	**4**	**100**

Table 3.49 Percentage of learners that read silently as part of the teaching and learning activities by province

	Always	Most of the time	Sometimes	Never	
EC	9	25	52	14	100
FS	12	27	46	15	100
GP	13	28	45	14	100
KZN	7	25	56	12	100
LP	9	24	46	21	100
MP	8	35	42	15	100
NW	12	37	36	15	100
NC	14	38	42	6	100
WC	8	45	44	3	100
Total	**10**	**30**	**47**	**13**	**100**

Table 3.50 47 Percentage of educators who teach writing skills in their teaching and learning activities by province

	Always	Most of the time	Sometimes	Never	
EC	34	31	32	3	100
FS	20	33	34	13	100
GP	25	28	39	8	100
KZN	35	26	32	7	100
LP	33	28	28	11	100
MP	33	33	28	6	100
NW	37	29	28	6	100
NC	20	35	37	8	100
WC	14	53	28	5	100
Total	**30**	**32**	**31**	**7**	**100**

Table 3.51 Educator marking by learning area and province

| | Educator marking | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	7.38	0.11	7.38	0.11	7.38	0.11
FS	7.24	0.14	7.24	0.14	7.24	0.14
GP	7.12	0.08	7.12	0.08	7.12	0.08
KZN	7.22	0.11	7.22	0.11	7.22	0.11
LP	7.12	0.12	7.12	0.12	7.12	0.12
MP	7.30	0.12	7.30	0.12	7.30	0.12
NW	7.52	0.12	7.52	0.12	7.52	0.12
NC	6.78	0.21	6.78	0.21	6.78	0.21
WC	7.07	0.15	7.07	0.15	7.07	0.15
Total	**7.23**	**0.04**	**7.23**	**0.04**	**7.23**	**0.04**

Table 3.52 Percentage of educators who mark/correct work in Mathematics by province

	Always	Most of the time	Sometimes	Never	
EC	52	25	21	2	100
FS	46	29	24	1	100
GP	42	32	24	2	100
KZN	51	31	16	2	100
LP	49	21	26	4	100
MP	50	28	20	2	100
NW	51	27	20	2	100
NC	41	31	25	3	100
WC	41	34	24	1	100
Total	**48**	**28**	**22**	**2**	**100**

Table 3.53 Percentage of educators who mark/correct work in Natural Sciences by province

	Always	Most of the time	Sometimes	Never	
EC	47	25	25	3	100
FS	41	31	27	1	100
GP	38	35	25	2	100
KZN	38	30	26	6	100
LP	47	20	29	4	100
MP	45	27	25	3	100
NW	49	25	24	2	100
NC	33	32	28	7	100
WC	33	35	27	5	100
Total	**42**	**28**	**26**	**4**	**100**

Table 3.54 Percentage of educators who mark/correct in Language (LOLT) by province

	Always	Most of the time	Sometimes	Never	
EC	52	23	22	3	100
FS	45	30	23	2	100
GP	42	35	22	1	100
KZN	50	30	18	2	100
LP	48	20	27	5	100
MP	47	29	22	2	100
NW	49	27	22	2	100
NC	40	33	25	2	100
WC	40	33	26	1	100
Total	**47**	**28**	**23**	**2**	**100**

Table 3.55 Teaching records by learning area and province

	Teaching records					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	9.36	0.12	9.17	0.17	9.29	0.15
FS	9.25	0.15	9.35	0.17	9.30	0.16
GP	9.24	0.20	9.12	0.15	9.12	0.19
KZN	8.97	0.14	9.08	0.14	8.89	0.15
LP	8.28	0.19	8.37	0.20	8.34	0.20
MP	8.84	0.20	8.97	0.18	8.97	0.19
NW	9.48	0.15	9.52	0.15	9.73	0.08
NC	9.00	0.27	9.29	0.22	9.46	0.16
WC	9.37	0.22	9.76	0.09	9.55	0.13
Total	**9.04**	**0.06**	**9.08**	**0.06**	**9.07**	**0.06**

Time spent on learning and teaching

Table 3.56 Time on task by learning area and province

	Time on task					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	7.50	0.10	7.54	0.11	7.56	0.11
FS	7.10	0.17	7.11	0.16	7.20	0.14
GP	7.22	0.09	7.26	0.08	7.24	0.09
KZN	7.52	0.09	7.47	0.08	7.55	0.09
LP	7.60	0.09	7.51	0.09	7.46	0.10
MP	7.59	0.12	7.52	0.13	7.54	0.11
NW	7.45	0.11	7.20	0.12	7.38	0.10
NC	7.55	0.14	7.36	0.16	7.37	0.17
WC	7.36	0.10	7.35	0.10	7.36	0.09
Total	**7.45**	**0.04**	**7.40**	**0.04**	**7.44**	**0.04**

Table 3.57 Teaching time spent on other tasks by learning area and province

	Teaching time spent on other tasks					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	8.57	0.18	8.32	0.19	8.58	0.17
FS	8.08	0.27	7.50	0.25	7.85	0.31
GP	8.47	0.18	8.33	0.17	8.24	0.20
KZN	8.17	0.18	8.17	0.20	8.39	0.15
LP	8.16	0.20	7.83	0.22	8.02	0.21
MP	8.57	0.21	8.37	0.24	8.24	0.22
NW	8.29	0.27	7.25	0.25	7.70	0.28
NC	8.17	0.25	7.33	0.29	7.62	0.32
WC	7.60	0.25	7.62	0.26	7.52	0.23
Total	**8.26**	**0.08**	**8.00**	**0.08**	**8.15**	**0.07**

Table 3.58 Educator workload by province (%)

	Less than 26 hours	From 26 to 30 hours	More than 30 hours	
EC	19	50	31	100
FS	32	57	11	100
GP	40	48	12	100
KZN	26	55	19	100
LP	31	43	26	100
MP	23	53	24	100
NW	38	43	19	100
NC	4	81	15	100
WC	6	90	4	100
Total	**26**	**55**	**19**	**100**

Table 3.59 Learning-area time by province and learning area

	Time spent on teaching Mathematics		Time spent on teaching Natural Sciences		Time spent on teaching Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	7.48	0.12	7.39	0.11	7.61	0.11
FS	7.80	0.14	7.24	0.19	7.44	0.17
GP	7.54	0.10	7.66	0.09	7.62	0.09
KZN	7.84	0.11	7.59	0.12	7.77	0.10
LP	7.81	0.10	7.64	0.18	7.71	0.12
MP	7.80	0.16	7.52	0.16	7.81	0.12
NW	7.71	0.15	7.46	0.14	7.57	0.14
NC	7.64	0.17	7.56	0.15	7.68	0.14
WC	7.74	0.10	7.44	0.12	7.50	0.10
Total	**7.71**	**0.04**	**7.53**	**0.05**	**7.66**	**0.04**

Table 3.60a Percentage of time the Mathematics educator is in class by province

	Always	Most of the time	Sometimes	Never	
EC	59	20	20	1	100
FS	58	26	15	1	100
GP	49	32	19	0	100
KZN	59	27	13	1	100
LP	65	15	18	2	100
MP	59	24	16	1	100
NW	55	27	17	1	100
NC	54	32	14	0	100
WC	55	32	12	1	100
Total	**58**	**25**	**16**	**1**	**100**

Table 3.60b Percentage of time the Natural Sciences educator is in class by province

	Always	Most of the time	Sometimes	Never	
EC	56	22	21	1	100
FS	48	29	22	1	100
GP	53	28	19	0	100
KZN	57	27	15	1	100
LP	62	15	21	2	100
MP	55	23	20	2	100
NW	51	26	22	1	100
NC	52	33	15	0	100
WC	49	32	18	1	100
Total	**55**	**25**	**19**	**1**	**100**

Table 3.60c Percentage of time the Language (LOLT) educator is in class by province

	Always	Most of the time	Sometimes	Never	
EC	58	24	17	1	100
FS	53	28	18	1	100
GP	50	31	18	1	100
KZN	58	28	13	1	100
LP	61	14	23	2	100
MP	56	28	15	1	100
NW	50	28	21	1	100
NC	49	36	15	0	100
WC	46	41	13	0	100
Total	**55**	**27**	**17**	**1**	**100**

Table 3.61a Mathematics lessons start on time by province (%)

	Always	Most of the time	Sometimes	Never	
EC	47	27	22	4	100
FS	50	29	19	2	100
GP	49	30	19	2	100
KZN	51	28	17	4	100
LP	55	20	19	6	100
MP	52	27	18	3	100
NW	49	24	23	4	100
NC	45	32	21	2	100
WC	44	34	20	2	100
Total	**50**	**27**	**20**	**3**	**100**

Table 3.61b Natural Sciences lessons start on time by province (%)

	Always	Most of the time	Sometimes	Never	
EC	45	27	25	3	100
FS	42	29	26	3	100
GP	49	30	20	1	100
KZN	47	29	20	4	100
LP	55	20	19	6	100
MP	49	27	20	4	100
NW	48	26	21	5	100
NC	42	33	23	2	100
WC	41	35	22	2	100
Total	**47**	**28**	**21**	**4**	**100**

Table 3.61c Language (LOLT) lessons start on time by province (%)

	Always	Most of the time	Sometimes	Never	
EC	51	23	21	5	100
FS	44	33	19	4	100
GP	48	32	18	2	100
KZN	52	27	16	5	100
LP	57	17	18	8	100
MP	53	25	19	3	100
NW	49	25	22	4	100
NC	48	31	19	2	100
WC	42	36	20	2	100
Total	**50**	**27**	**19**	**4**	**100**

Table 3.62 Percentage of multi-grade classes by province and learning area

	Mathematics			Natural Sciences			Language (LOLT)		
	Yes	No		Yes	No		Yes	No	
EC	24	76	100	26	74	100	25	75	100
FS	20	80	100	15	85	100	13	87	100
GP	13	88	100	12	88	100	12	88	100
KZN	22	78	100	24	76	100	20	80	100
LP	10	90	100	11	89	100	15	85	100
MP	28	72	100	28	72	100	26	74	100
NW	12	88	100	16	84	100	12	88	100
NC	11	89	100	13	87	100	13	87	100
WC	17	83	100	16	84	100	18	82	100
Total	**18**	**82**	**100**	**19**	**81**	**100**	**18**	**82**	**100**

Educator assessment practices

Table 3.63 Assessment practices by province

| | Assessment practices | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	6.61	0.10	6.71	0.09	6.68	0.10
FS	6.84	0.13	6.76	0.16	6.74	0.18
GP	6.84	0.10	6.66	0.11	6.67	0.10
KZN	6.68	0.09	6.59	0.10	6.62	0.10
LP	6.79	0.09	6.74	0.09	6.83	0.09
MP	6.49	0.12	6.46	0.10	6.43	0.10
NW	6.30	0.14	6.30	0.13	6.29	0.11
NC	6.95	0.21	6.93	0.20	6.94	0.19
WC	6.83	0.15	6.61	0.15	6.61	0.11
Total	**6.70**	**0.04**	**6.63**	**0.04**	**6.64**	**0.04**

Table 3.64 Exams by province

| | Exams | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	5.93	0.15	6.05	0.15	6.01	0.14
FS	6.33	0.21	6.28	0.23	6.33	0.24
GP	5.82	0.17	5.73	0.19	5.85	0.16
KZN	5.59	0.18	5.69	0.18	5.71	0.19
LP	6.47	0.14	6.44	0.15	6.39	0.16
MP	5.56	0.22	5.59	0.23	5.53	0.22
NW	5.07	0.26	5.15	0.26	4.96	0.25
NC	6.55	0.30	6.59	0.34	6.57	0.31
WC	6.33	0.19	6.18	0.20	6.28	0.17
Total	**5.89**	**0.07**	**5.91**	**0.07**	**5.90**	**0.07**

Table 3.65 Tests by province

	Tests					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	6.59	0.12	6.66	0.12	6.68	0.12
FS	6.63	0.19	6.56	0.20	6.75	0.22
GP	6.51	0.13	6.40	0.13	6.39	0.12
KZN	6.62	0.13	6.62	0.14	6.65	0.12
LP	6.92	0.13	6.89	0.12	6.88	0.13
MP	6.46	0.16	6.31	0.16	6.28	0.15
NW	6.21	0.18	6.20	0.17	6.04	0.19
NC	6.92	0.20	6.81	0.23	6.67	0.23
WC	6.91	0.17	6.86	0.14	6.87	0.13
Total	**6.63**	**0.05**	**6.59**	**0.05**	**6.59**	**0.05**

Table 3.66 Other forms of assessment by province

	Other forms of assessment					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	6.77	0.14	6.88	0.15	6.91	0.15
FS	7.09	0.24	6.98	0.25	6.83	0.25
GP	7.21	0.15	7.19	0.17	6.95	0.15
KZN	7.08	0.17	6.81	0.16	6.88	0.15
LP	6.62	0.14	6.80	0.17	6.73	0.16
MP	6.65	0.20	7.10	0.22	6.76	0.19
NW	6.81	0.14	6.78	0.16	6.90	0.15
NC	7.05	0.36	7.22	0.22	7.10	0.31
WC	6.76	0.26	6.75	0.26	6.57	0.24
Total	**6.90**	**0.06**	**6.91**	**0.07**	**6.85**	**0.06**

Table 3.67 Extent to which educators assess learners for participation in classroom (%)

	Always	Most of the time	Sometimes	Never	
EC	70	24	6	0	100
FS	62	25	12	1	100
GP	70	25	5	0	100
KZN	62	33	5	0	100
LP	68	26	5	1	100
MP	67	28	5	0	100
NW	69	26	5	0	100
NC	48	43	9	0	100
WC	40	46	13	1	100
Total	**64**	**29**	**7**	**0**	**100**

Table 3.68 Extent to which educators assess learners' homework (%)

	Always	Most of the time	Sometimes	Never	
EC	41	41	18	0	100
FS	43	36	21	0	100
GP	32	44	23	1	100
KZN	33	45	21	1	100
LP	45	38	16	1	100
MP	31	51	18	0	100
NW	29	53	17	1	100
NC	33	42	25	0	100
WC	25	43	29	3	100
Total	**36**	**43**	**20**	**1**	**100**

Table 3.69 Extent to which educators assess learners' class work (%)

	Always	Most of the time	Sometimes	Never	
EC	71	25	4	0	100
FS	59	33	8	0	100
GP	64	31	5	0	100
KZN	61	32	7	0	100
LP	67	28	4	1	100
MP	53	44	3	0	100
NW	76	22	2	0	100
NC	58	36	6	0	100
WC	51	40	9	0	100
Total	**64**	**31**	**5**	**0**	**100**

Table 3.70 Extent to which educators assess learners' assignments (%)

	Always	Most of the time	Sometimes	Never	
EC	9	30	59	2	100
FS	21	39	39	1	100
GP	16	41	42	1	100
KZN	13	41	44	2	100
LP	11	26	55	8	100
MP	13	29	56	2	100
NW	10	40	46	4	100
NC	22	47	30	1	100
WC	17	40	43	0	100
Total	**13**	**36**	**48**	**3**	**100**

Table 3.71 Extent to which educators assess learners' projects? (%)

	Always	Most of the time	Sometimes	Never	
EC	7	18	68	7	100
FS	12	23	61	4	100
GP	13	32	55	0	100
KZN	8	27	59	6	100
LP	7	18	58	17	100
MP	9	20	66	5	100
NW	8	23	62	7	100
NC	17	29	49	5	100
WC	11	29	59	1	100
Total	**9**	**24**	**60**	**7**	**100**

Table 3.72 How assessment information is utilised by province

	How assessment information is utilised					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	7.08	0.12	7.14	0.13	7.01	0.13
FS	7.19	0.20	7.15	0.22	7.14	0.21
GP	7.71	0.15	7.35	0.16	7.48	0.16
KZN	7.32	0.11	7.22	0.12	7.21	0.13
LP	7.07	0.13	6.84	0.14	7.22	0.14
MP	7.31	0.23	7.00	0.22	7.32	0.18
NW	7.27	0.20	7.20	0.16	7.31	0.15
NC	7.19	0.31	7.21	0.22	7.40	0.23
WC	7.31	0.24	6.78	0.20	6.73	0.17
Total	**7.28**	**0.06**	**7.12**	**0.06**	**7.21**	**0.06**

Homework practices

Table 3.73 Homework practices by learning area and province

	Homework practices	
	Average	**Std Err**
EC	6.45	0.10
FS	6.91	0.15
GP	6.93	0.08
KZN	6.50	0.11
LP	6.63	0.10
MP	6.57	0.12
NW	6.60	0.11
NC	6.82	0.16
WC	6.83	0.12
Total	**6.65**	**0.04**

Table 3.74a Homework by province for Mathematics

	Homework							
	Homework received		**Homework environ.**		**Mathematics homework received**		**Mathematics feedback**	
	Ave	**Std Err**	**Ave**	**Std Err**	**Ave**	**Std Err**	**Ave**	**Std Err**
EC	7.19	0.13	5.59	0.16	6.56	0.13	6.70	0.13
FS	7.91	0.16	6.22	0.20	7.20	0.20	7.18	0.18
GP	8.33	0.09	7.05	0.12	6.54	0.14	7.11	0.09
KZN	6.95	0.15	6.10	0.14	6.67	0.16	6.71	0.12
LP	7.07	0.17	5.91	0.18	6.80	0.17	6.57	0.12
MP	7.10	0.18	6.26	0.14	6.54	0.19	6.78	0.18
NW	8.29	0.10	5.80	0.19	5.91	0.22	6.80	0.18
NC	7.98	0.24	5.56	0.26	6.70	0.26	7.16	0.22
WC	8.05	0.16	5.88	0.24	6.85	0.20	7.25	0.11
Total	**7.49**	**0.05**	**6.10**	**0.06**	**6.62**	**0.06**	**6.84**	**0.05**

Table 3.74b Homework by province for Natural Sciences

| | Homework | | | | | | | |
| | Homework received | | Homework environ. | | Natural Sciences homework received | | Natural Sciences feedback | |
	Average	Std Err	Average	Std Err	Average	Std Err	Average	Std Err
EC	7.19	0.13	5.59	0.16	6.21	0.14	6.52	0.14
FS	7.91	0.16	6.22	0.20	6.30	0.23	6.82	0.22
GP	8.33	0.09	7.05	0.12	5.97	0.12	6.94	0.08
KZN	6.95	0.15	6.10	0.14	6.07	0.14	6.35	0.13
LP	7.07	0.17	5.91	0.18	6.82	0.17	6.45	0.17
MP	7.10	0.18	6.26	0.14	6.04	0.18	6.57	0.16
NW	8.29	0.10	5.80	0.19	5.94	0.14	6.91	0.16
NC	7.98	0.24	5.56	0.26	6.03	0.24	6.94	0.23
WC	8.05	0.16	5.88	0.24	5.99	0.17	6.85	0.16
Total	**7.49**	**0.05**	**6.10**	**0.06**	**6.19**	**0.06**	**6.62**	**0.05**

Table 3.74c Homework by province for Language (LOLT)

| | Homework | | | | | | | |
| | Homework received | | Homework environ. | | Language (LOLT) homework received | | Language (LOLT) feedback | |
	Average	Std Err	Average	Std Err	Average	Std Err	Average	Std Err
EC	7.19	0.13	5.59	0.16	6.32	0.15	6.79	0.14
FS	7.91	0.16	6.22	0.20	6.65	0.21	6.96	0.21
GP	8.33	0.09	7.05	0.12	6.23	0.15	7.18	0.08
KZN	6.95	0.15	6.10	0.14	6.61	0.15	6.64	0.12
LP	7.07	0.17	5.91	0.18	6.92	0.16	6.59	0.14
MP	7.10	0.18	6.26	0.14	6.52	0.17	6.77	0.17
NW	8.29	0.10	5.80	0.19	6.07	0.18	7.03	0.15
NC	7.98	0.24	5.56	0.26	6.44	0.25	7.50	0.16
WC	8.05	0.16	5.88	0.24	6.54	0.20	7.21	0.12
Total	**7.49**	**0.05**	**6.10**	**0.06**	**6.50**	**0.06**	**6.86**	**0.05**

Attendance

Table 3.76 Attendance by province

| | Attendance | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	8.00	0.19	7.95	0.18	7.95	0.19
FS	9.08	0.23	8.93	0.23	9.06	0.22
GP	9.32	0.11	9.32	0.12	9.32	0.11
KZN	8.90	0.10	8.80	0.12	8.80	0.13
LP	8.91	0.13	8.86	0.13	9.05	0.11
MP	9.19	0.10	9.23	0.11	9.17	0.11
NW	8.69	0.19	8.62	0.19	8.57	0.19
NC	9.32	0.15	9.33	0.15	9.31	0.16
WC	9.28	0.13	9.19	0.14	9.28	0.14
Total	**8.88**	**0.05**	**8.82**	**0.05**	**8.86**	**0.05**

HIV/AIDS policy

Table 3.78 Percentage of parents that feel the school provides support on the implemmentaion of the HIV/AIDS policy by province

	Yes	No	
EC	67	33	100
FS	70	30	100
GP	67	33	100
KZN	56	44	100
LP	61	39	100
MP	57	43	100
NW	60	40	100
NC	74	26	100
WC	73	27	100
Total	**64**	**36**	**100**

Educator and principal job satisfaction

Table 3.79 Educator and principal job satisfaction by province

| | Educator and principal job satisfaction | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	8.24	0.26	8.19	0.26	8.28	0.22
FS	7.84	0.36	7.41	0.34	7.78	0.33
GP	7.05	0.30	7.09	0.33	7.11	0.30
KZN	8.04	0.25	8.29	0.22	7.97	0.22
LP	7.60	0.21	7.63	0.24	7.66	0.24
MP	7.02	0.33	7.18	0.35	6.92	0.37
NW	7.68	0.28	8.04	0.29	8.41	0.27
NC	5.97	0.59	6.29	0.57	6.08	0.47
WC	6.52	0.34	6.70	0.41	6.63	0.37
Total	**7.59**	**0.10**	**7.70**	**0.10**	**7.67**	**0.10**

Table 3.80 Percentage of principals' that want to change career by province

	Yes	No	
EC	19	81	100
FS	21	79	100
GP	31	69	100
KZN	14	86	100
LP	28	72	100
MP	35	65	100
NW	23	77	100
NC	44	56	100
WC	35	65	100
Total	**25**	**75**	**100**

Table 3.81 Percentage of educators' that want to change career change career by province

	Yes	No	
EC	28	72	100
FS	44	56	100
GP	43	57	100
KZN	28	72	100
LP	39	61	100
MP	39	61	100
NW	34	66	100
NC	55	45	100
WC	43	57	100
Total	**37**	**63**	**100**

Table 3.82 Educator appreciation by province

	Educator appreciation					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	9.87	0.06	9.74	0.11	9.86	0.07
FS	9.52	0.17	9.29	0.27	9.78	0.09
GP	8.51	0.24	8.30	0.30	8.08	0.28
KZN	8.59	0.28	9.28	0.24	8.95	0.26
LP	9.91	0.06	9.64	0.12	9.78	0.09
MP	9.08	0.27	9.14	0.28	9.11	0.29
NW	9.59	0.18	9.58	0.19	9.42	0.21
NC	7.55	0.51	7.67	0.53	8.02	0.46
WC	7.45	0.49	7.18	0.49	7.51	0.39
Total	**9.09**	**0.09**	**9.14**	**0.09**	**9.11**	**0.08**

Learner participation in the learning process

Table 3.83 Learner participation by province

	Learner participation	
	Average	**Std Err**
EC	6.30	0.06
FS	6.45	0.09
GP	7.05	0.06
KZN	6.77	0.08
LP	6.17	0.07
MP	6.69	0.08
NW	6.47	0.07
NC	6.60	0.10
WC	6.87	0.07
Total	**6.30**	**0.06**

Table 3.84 Learner attitude by province

	Learner attitude	
	Average	**Std Err**
EC	9.06	0.10
FS	9.33	0.09
GP	9.48	0.06
KZN	9.22	0.08
LP	9.12	0.09
MP	9.19	0.19
NW	9.41	0.06
NC	9.44	0.12
WC	8.98	0.13
Total	**9.22**	**0.03**

Table 3.85 Learner morale by province

	Learner morale	
	Average	**Std Err**
EC	7.33	0.14
FS	8.00	0.18
GP	8.80	0.06
KZN	7.81	0.13
LP	7.57	0.15
MP	7.74	0.20
NW	8.06	0.12
NC	8.88	0.09
WC	8.61	0.12
Total	**7.95**	**0.05**

Table 3.86 Learner interaction by province

	Learner interaction					
	Mathematics		**Natural Sciences**		**Language (LOLT)**	
	Average	**Std Err**	**Average**	**Std Err**	**Average**	**Std Err**
EC	5.70	0.05	5.72	0.05	5.61	0.05
FS	5.80	0.09	5.90	0.09	5.73	0.10
GP	6.03	0.06	6.18	0.05	6.12	0.05
KZN	6.00	0.07	6.01	0.07	5.98	0.06
LP	5.63	0.06	5.56	0.08	5.49	0.05
MP	5.77	0.08	5.86	0.07	5.87	0.08
NW	5.63	0.07	5.73	0.06	5.72	0.07
NC	6.02	0.11	6.04	0.10	6.03	0.10
WC	6.18	0.05	6.23	0.08	6.28	0.06
Total	**5.85**	**0.02**	**5.90**	**0.03**	**5.85**	**0.02**

Table 3.87 Percentage of learners' that use the school library by province

	Once a week	Once a month	Once a quarter	Never	No library	
EC	15	8	5	28	44	100
FS	17	10	9	42	22	100
GP	28	13	8	34	17	100
KZN	26	10	5	25	34	100
LP	15	7	4	30	44	100
MP	27	11	6	27	29	100
NW	20	8	6	36	30	100
NC	20	6	6	54	14	100
WC	22	10	6	43	19	100
Total	21	9	6	33	31	100

Table 3.88 Percentage of learners' whose language (LOLT) of learning was the same as or different to their home language by province

	LOLT different	LOLT same	
EC	97	3	100
FS	78	22	100
GP	79	21	100
KZN	91	9	100
LP	100	0	100
MP	93	7	100
NW	96	4	100
NC	23	77	100
WC	20	80	100
Total	82	18	100

Table 3.89 Extramural activities by province

	Extramural activities	
	Average	**Std Err**
EC	7.42	0.11
FS	7.46	0.20
GP	8.03	0.13
KZN	8.30	0.08
LP	7.15	0.18
MP	7.69	0.13
NW	7.85	0.11
NC	7.04	0.32
WC	8.20	0.09
Total	**7.77**	**0.05**

Parental involvement/perception

Table 3.90 Parental involvement/perception by province

	Parental involvement/perception	
	Average	**Std Err**
EC	6.70	0.06
FS	7.14	0.07
GP	7.53	0.05
KZN	7.01	0.06
LP	6.84	0.06
MP	6.85	0.09
NW	7.06	0.06
NC	7.03	0.12
WC	7.48	0.09
Total	**7.05**	**0.02**

Table 3.91 Parental support by province

	Parental support	
	Average	**Std Err**
EC	5.03	0.06
FS	5.47	0.06
GP	5.06	0.05
KZN	5.16	0.04
LP	4.33	0.07
MP	4.96	0.07
NW	5.06	0.06
NC	4.67	0.10
WC	5.09	0.08
Total	**4.97**	**0.02**

Table 3.92 Percentage of parents that participate in school activities by province

	More than four times by year	**Three or four times by year**	**Once or twice by year**	**Never**	
EC	45	23	20	12	100
FS	51	23	18	8	100
GP	38	23	27	12	100
KZN	46	25	19	10	100
LP	35	21	23	21	100
MP	44	25	19	12	100
NW	43	24	20	13	100
NC	34	21	31	14	100
WC	40	21	26	13	100
Total	**42**	**23**	**22**	**13**	**100**

Table 3.93 How often the parent discusses the progress of the learner with the educator (%)

	More than four times by year	Three or four times by year	Once or twice by year	Never	
EC	33	20	22	25	100
FS	31	24	38	7	100
GP	27	26	32	15	100
KZN	27	25	28	20	100
LP	22	16	27	35	100
MP	27	21	28	24	100
NW	28	21	29	22	100
NC	23	19	34	24	100
WC	28	28	31	13	100
Total	**27**	**22**	**29**	**22**	**100**

Table 3.94 Frequency that parent discusses school work with learner (%)

	Daily	At least once by week	At least once by month	At least once by term	Never	
EC	62	22	6	3	7	100
FS	75	17	4	2	2	100
GP	62	26	5	4	3	100
KZN	70	20	4	3	3	100
LP	66	16	6	4	8	100
MP	70	19	5	3	3	100
NW	59	24	6	5	6	100
NC	66	22	4	4	4	100
WC	71	20	3	3	3	100
Total	**66**	**21**	**5**	**4**	**4**	**100**

Table 3.95 Parental feedback by province

	Parental feedback	
	Average	Std Err
EC	7.36	0.10
FS	8.15	0.10
GP	8.43	0.07
KZN	8.37	0.06
LP	7.79	0.10
MP	7.75	0.16
NW	8.02	0.10
NC	8.25	0.14
WC	8.46	0.10
Total	**8.04**	**0.03**

Table 3.97 Parent perceptions by province

	Parent perceptions	
	Average	Std Err
EC	8.59	0.08
FS	8.69	0.09
GP	9.16	0.06
KZN	8.57	0.08
LP	9.01	0.06
MP	8.69	0.11
NW	8.86	0.07
NC	8.94	0.14
WC	9.04	0.07
Total	**8.81**	**0.03**

Table 3.98 Percentage of learners' who attended a pre-primary school by province

	Yes	No	
EC	75	25	100
FS	72	28	100
GP	76	24	100
KZN	63	37	100
LP	71	29	100
MP	71	29	100
NW	71	29	100
NC	75	25	100
WC	76	24	100
Total	**72**	**28**	**100**

Profiles of school principals and educators

Staff qualification

Table 3.99 Staff qualification by province

	Staff qualification					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	6.20	0.17	5.84	0.19	5.82	0.18
FS	6.83	0.22	6.40	0.27	6.09	0.25
GP	6.51	0.16	6.40	0.16	6.54	0.13
KZN	6.34	0.20	6.32	0.12	6.45	0.13
LP	6.24	0.14	6.05	0.16	6.11	0.13
MP	6.91	0.19	6.47	0.25	6.39	0.16
NW	6.11	0.24	6.10	0.28	6.07	0.16
NC	6.91	0.24	6.77	0.32	6.82	0.20
WC	7.31	0.20	7.36	0.20	6.89	0.21
Total	**6.46**	**0.07**	**6.31**	**0.06**	**6.32**	**0.06**

Table 3.100 Qualification levels of principals by province (%)

	Less than Grade 12	Grade 12	Bachelors Degree	Honours Degree	Masters Degree	Doctorate	
EC	5	47	32	16	0	0	100
FS	0	27	37	27	9	0	100
GP	0	26	42	26	5	1	100
KZN	0	53	24	21	2	0	100
LP	2	47	33	16	2	0	100
MP	0	38	42	19	1	0	100
NW	3	44	29	22	2	0	100
NC	2	42	38	11	7	0	100
WC	0	42	34	15	9	0	100
Total	**2**	**43**	**33**	**19**	**3**	**0**	**100**

Table 3.101 Principal professional training by province (%)

	Less than 1 year	1 year educator training	2 years educator training	3 years educator training	More than 3 years	None	
EC	0	1	26	40	33	0	100
FS	0	1	13	26	60	0	100
GP	0	0	12	23	65	0	100
KZN	0	1	8	36	55	0	100
LP	0	2	33	29	36	0	100
MP	0	0	9	34	57	0	100
NW	1	0	24	36	37	2	100
NC	0	4	0	22	74	0	100
WC	0	3	6	32	59	0	100
Total	**0**	**1**	**16**	**33**	**50**	**0**	**100**

Table 3.102 Qualification levels of educators by province (%)

	Less than Grade 12	Grade 12	Bachelors Degree	Honours Degree	Masters Degree	Doctorate	
EC	2	64	26	8	0	0	100
FS	0	58	32	10	0	0	100
GP	2	54	34	11	1	0	100
KZN	2	67	21	9	1	0	100
LP	3	61	30	5	1	0	100
MP	1	66	26	7	0	0	100
NW	7	51	30	12	0	0	100
NC	2	68	25	5	0	0	100
WC	2	60	30	7	1	0	100
Total	**2**	**61**	**28**	**8**	**0**	**0**	**100**

Table 3.103 Mathematics educators' highest qualification in Mathematics by province (%)

	Lower than Grade 12	Grade 12	Tertiary	
EC	19	13	68	100
FS	17	18	65	100
GP	22	13	65	100
KZN	20	17	63	100
LP	26	17	57	100
MP	21	10	69	100
NW	28	12	60	100
NC	9	14	77	100
WC	25	5	70	100
Total	**22**	**14**	**64**	**100**

Table 3.104 Natural Sciences educators' highest qualification in General Science by province (%)

	Lower than Grade 12	Grade 12	Tertiary	
EC	38	11	51	100
FS	29	24	47	100
GP	39	18	43	100
KZN	32	13	55	100
LP	50	7	43	100
MP	43	13	44	100
NW	32	9	59	100
NC	33	10	57	100
WC	25	15	60	100
Total	**36**	**13**	**51**	**100**

Table 3.105 Natural Sciences educators' highest qualification in Biology by province (%)

	Lower than Grade 12	Grade 12	Tertiary	
EC	7	65	28	100
FS	10	39	51	100
GP	17	51	32	100
KZN	4	63	33	100
LP	8	43	49	100
MP	7	56	37	100
NW	19	58	23	100
NC	10	28	62	100
WC	6	34	60	100
Total	**9**	**52**	**39**	**100**

Table 3.106 Natural Sciences educators' highest qualification in Physical Science by province (%)

	Lower than Grade 12	Grade 12	Tertiary	
EC	54	23	23	100
FS	32	19	49	100
GP	45	27	28	100
KZN	56	24	20	100
LP	63	16	21	100
MP	62	10	28	100
NW	48	30	22	100
NC	38	13	49	100
WC	30	16	54	100
Total	**50**	**21**	**29**	**100**

Table 3.107 Language (LOLT) educators' highest qualification in English by province (%)

	Lower than Grade 12	Grade 12	Tertiary	
EC	3	19	78	100
FS	2	41	57	100
GP	3	17	80	100
KZN	3	19	78	100
LP	4	13	83	100
MP	1	28	71	100
NW	2	21	77	100
NC	0	19	81	100
WC	3	18	79	100
Total	**3**	**20**	**77**	**100**

Table 3.108 Language (LOLT) educators' highest qualification in Afrikaans by province (%)

	Lower than Grade 12	Grade 12	Tertiary	
EC	27	34	39	100
FS	0	40	60	100
GP	2	32	66	100
KZN	8	42	50	100
LP	4	38	58	100
MP	3	42	55	100
NW	3	40	57	100
NC	0	14	86	100
WC	3	17	80	100
Total	**7**	**34**	**59**	**100**

Table 3.109 Educator professional training by province (%)

	Less than 1 year	1 year educator training	2 years educator training	3 years educator training	More than 3 years	None	
EC	0	0	12	65	23	0	100
FS	0	6	9	45	40	0	100
GP	0	3	10	41	46	0	100
KZN	0	2	6	46	45	1	100
LP	0	2	17	62	19	0	100
MP	1	1	11	57	28	2	100
NW	0	1	19	50	29	1	100
NC	0	2	5	40	53	0	100
WC	0	3	4	37	56	0	100
Total	**0**	**2**	**11**	**51**	**35**	**1**	**100**

In-service training

Table 3.110 In-service training by province

	In-service training					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	5.99	0.22	5.96	0.27	6.10	0.28
FS	6.10	0.29	6.04	0.33	6.40	0.31
GP	6.15	0.23	6.18	0.26	6.23	0.25
KZN	6.84	0.23	7.03	0.20	7.17	0.21
LP	5.21	0.32	6.38	0.29	5.99	0.39
MP	6.30	0.30	5.85	0.30	6.11	0.34
NW	5.74	0.33	5.94	0.33	6.05	0.31
NC	5.80	0.28	5.76	0.26	5.86	0.29
WC	5.71	0.34	5.73	0.24	5.71	0.28
Total	**6.12**	**0.10**	**6.27**	**0.10**	**6.35**	**0.10**

Table 3.111 Principal training by province

	Principal training	
	Average	Std Err
EC	7.03	0.28
FS	8.32	0.40
GP	7.75	0.30
KZN	8.30	0.22
LP	6.41	0.34
MP	7.68	0.40
NW	8.08	0.31
NC	7.73	0.45
WC	7.87	0.36
Total	**7.62**	**0.11**

Table 3.112 Educator training by province

| | Educator training | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	3.78	0.34	3.53	0.38	3.53	0.36
FS	4.50	0.48	4.70	0.46	5.07	0.48
GP	4.91	0.38	5.11	0.39	5.83	0.34
KZN	4.25	0.33	4.70	0.32	5.08	0.34
LP	2.02	0.23	2.19	0.28	2.84	0.34
MP	4.48	0.47	3.88	0.43	4.02	0.36
NW	3.63	0.50	3.45	0.44	3.80	0.51
NC	5.32	0.61	4.94	0.44	5.68	0.58
WC	5.19	0.46	5.89	0.38	5.22	0.44
Total	**3.99**	**0.14**	**4.08**	**0.14**	**4.44**	**0.14**

Table 3.113 Curriculum training by province

| | Curriculum training | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	6.96	0.20	6.86	0.18	7.15	0.21
FS	7.74	0.33	7.27	0.27	8.28	0.22
GP	7.58	0.21	7.63	0.22	7.67	0.23
KZN	7.38	0.22	7.73	0.21	7.44	0.23
LP	6.80	0.32	7.04	0.30	6.57	0.38
MP	7.21	0.24	7.09	0.36	7.57	0.21
NW	6.70	0.40	6.86	0.30	7.21	0.26
NC	7.31	0.31	7.02	0.42	6.81	0.36
WC	7.35	0.28	7.21	0.31	7.17	0.29
Total	**7.25**	**0.09**	**7.30**	**0.09**	**7.36**	**0.09**

Table 3.104 Natural Sciences educators' highest qualification in General Science by province (%)

	Lower than Grade 12	Grade 12	Tertiary	
EC	38	11	51	100
FS	29	24	47	100
GP	39	18	43	100
KZN	32	13	55	100
LP	50	7	43	100
MP	43	13	44	100
NW	32	9	59	100
NC	33	10	57	100
WC	25	15	60	100
Total	**36**	**13**	**51**	**100**

Table 3.105 Natural Sciences educators' highest qualification in Biology by province (%)

	Lower than Grade 12	Grade 12	Tertiary	
EC	7	65	28	100
FS	10	39	51	100
GP	17	51	32	100
KZN	4	63	33	100
LP	8	43	49	100
MP	7	56	37	100
NW	19	58	23	100
NC	10	28	62	100
WC	6	34	60	100
Total	**9**	**52**	**39**	**100**

Table 3.106 Natural Sciences educators' highest qualification in Physical Science by province (%)

	Lower than Grade 12	Grade 12	Tertiary	
EC	54	23	23	100
FS	32	19	49	100
GP	45	27	28	100
KZN	56	24	20	100
LP	63	16	21	100
MP	62	10	28	100
NW	48	30	22	100
NC	38	13	49	100
WC	30	16	54	100
Total	**50**	**21**	**29**	**100**

Table 3.107 Language (LOLT) educators' highest qualification in English by province (%)

	Lower than Grade 12	Grade 12	Tertiary	
EC	3	19	78	100
FS	2	41	57	100
GP	3	17	80	100
KZN	3	19	78	100
LP	4	13	83	100
MP	1	28	71	100
NW	2	21	77	100
NC	0	19	81	100
WC	3	18	79	100
Total	**3**	**20**	**77**	**100**

Table 3.108 Language (LOLT) educators' highest qualification in Afrikaans by province (%)

	Lower than Grade 12	Grade 12	Tertiary	
EC	27	34	39	100
FS	0	40	60	100
GP	2	32	66	100
KZN	8	42	50	100
LP	4	38	58	100
MP	3	42	55	100
NW	3	40	57	100
NC	0	14	86	100
WC	3	17	80	100
Total	**7**	**34**	**59**	**100**

Table 3.109 Educator professional training by province (%)

	Less than 1 year	1 year educator training	2 years educator training	3 years educator training	More than 3 years	None	
EC	0	0	12	65	23	0	100
FS	0	6	9	45	40	0	100
GP	0	3	10	41	46	0	100
KZN	0	2	6	46	45	1	100
LP	0	2	17	62	19	0	100
MP	1	1	11	57	28	2	100
NW	0	1	19	50	29	1	100
NC	0	2	5	40	53	0	100
WC	0	3	4	37	56	0	100
Total	**0**	**2**	**11**	**51**	**35**	**1**	**100**

In-service training

Table 3.110 In-service training by province

	In-service training					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	5.99	0.22	5.96	0.27	6.10	0.28
FS	6.10	0.29	6.04	0.33	6.40	0.31
GP	6.15	0.23	6.18	0.26	6.23	0.25
KZN	6.84	0.23	7.03	0.20	7.17	0.21
LP	5.21	0.32	6.38	0.29	5.99	0.39
MP	6.30	0.30	5.85	0.30	6.11	0.34
NW	5.74	0.33	5.94	0.33	6.05	0.31
NC	5.80	0.28	5.76	0.26	5.86	0.29
WC	5.71	0.34	5.73	0.24	5.71	0.28
Total	**6.12**	**0.10**	**6.27**	**0.10**	**6.35**	**0.10**

Table 3.111 Principal training by province

	Principal training	
	Average	Std Err
EC	7.03	0.28
FS	8.32	0.40
GP	7.75	0.30
KZN	8.30	0.22
LP	6.41	0.34
MP	7.68	0.40
NW	8.08	0.31
NC	7.73	0.45
WC	7.87	0.36
Total	**7.62**	**0.11**

Table 3.112 Educator training by province

| | Educator training | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	3.78	0.34	3.53	0.38	3.53	0.36
FS	4.50	0.48	4.70	0.46	5.07	0.48
GP	4.91	0.38	5.11	0.39	5.83	0.34
KZN	4.25	0.33	4.70	0.32	5.08	0.34
LP	2.02	0.23	2.19	0.28	2.84	0.34
MP	4.48	0.47	3.88	0.43	4.02	0.36
NW	3.63	0.50	3.45	0.44	3.80	0.51
NC	5.32	0.61	4.94	0.44	5.68	0.58
WC	5.19	0.46	5.89	0.38	5.22	0.44
Total	**3.99**	**0.14**	**4.08**	**0.14**	**4.44**	**0.14**

Table 3.113 Curriculum training by province

| | Curriculum training | | | | | |
| | Mathematics | | Natural Sciences | | Language (LOLT) | |
	Average	Std Err	Average	Std Err	Average	Std Err
EC	6.96	0.20	6.86	0.18	7.15	0.21
FS	7.74	0.33	7.27	0.27	8.28	0.22
GP	7.58	0.21	7.63	0.22	7.67	0.23
KZN	7.38	0.22	7.73	0.21	7.44	0.23
LP	6.80	0.32	7.04	0.30	6.57	0.38
MP	7.21	0.24	7.09	0.36	7.57	0.21
NW	6.70	0.40	6.86	0.30	7.21	0.26
NC	7.31	0.31	7.02	0.42	6.81	0.36
WC	7.35	0.28	7.21	0.31	7.17	0.29
Total	**7.25**	**0.09**	**7.30**	**0.09**	**7.36**	**0.09**

Table 3.114 Percentage of principal studying further by province

	Yes	No	
EC	61	39	100
FS	36	64	100
GP	37	63	100
KZN	62	38	100
LP	60	40	100
MP	62	38	100
NW	53	47	100
NC	33	67	100
WC	22	78	100
Total	**51**	**49**	**100**

Staff perceptions

Table 3.115 Staff perceptions by province

	Staff perceptions	
	Average	Std Err
EC	8.88	0.07
FS	9.01	0.09
GP	9.00	0.07
KZN	8.95	0.07
LP	8.67	0.07
MP	8.90	0.08
NW	8.95	0.08
NC	9.11	0.13
WC	9.12	0.11
Total	**8.92**	**0.03**

Table 3.116 Principal perceptions by province

	Principal perceptions	
	Average	Std Err
EC	9.17	0.09
FS	9.38	0.09
GP	9.25	0.10
KZN	9.24	0.07
LP	8.98	0.09
MP	9.27	0.14
NW	9.30	0.10
NC	9.48	0.15
WC	9.45	0.11
Total	**9.22**	**0.03**

Table 3.117 Educator perceptions by province

	Educator perceptions					
	Mathematics		Natural Sciences		Language (LOLT)	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	8.59	0.09	8.50	0.09	8.43	0.10
FS	8.65	0.18	8.48	0.18	8.44	0.19
GP	8.77	0.10	8.60	0.10	8.57	0.11
KZN	8.68	0.10	8.49	0.09	8.73	0.09
LP	8.35	0.10	8.32	0.11	8.49	0.10
MP	8.51	0.12	8.57	0.16	8.48	0.15
NW	8.52	0.12	8.28	0.14	8.59	0.12
NC	8.75	0.16	8.43	0.17	8.80	0.21
WC	8.77	0.16	8.83	0.17	8.65	0.22
Total	**8.60**	**0.04**	**8.49**	**0.04**	**8.57**	**0.04**

Use of information at home

Table 3.118 Use of information at home by province

	Use of information at home	
	Average	**Std Err**
EC	3.74	0.16
FS	4.70	0.15
GP	5.56	0.09
KZN	4.26	0.17
LP	3.37	0.11
MP	4.51	0.18
NW	4.15	0.15
NC	5.23	0.23
WC	5.92	0.11
Total	**4.46**	**0.06**

Table 3.119 Reading at home by province

	Reading at home	
	Average	**Std Err**
EC	3.89	0.14
FS	4.24	0.16
GP	5.08	0.08
KZN	4.22	0.15
LP	3.83	0.15
MP	4.28	0.17
NW	4.60	0.17
NC	4.77	0.19
WC	5.13	0.12
Total	**4.37**	**0.05**

Table 3.120 Use of community library by province

	Use of community library	
	Average	**Std Err**
EC	2.93	0.27
FS	4.04	0.35
GP	5.15	0.19
KZN	3.48	0.30
LP	1.81	0.19
MP	3.89	0.37
NW	2.44	0.35
NC	5.34	0.43
WC	6.00	0.21
Total	**3.58**	**0.11**

Table 3.121 Use at home of electronic by province

	School donations	
	Average	**Std Err**
EC	2.65	0.23
FS	2.35	0.26
GP	2.87	0.23
KZN	3.11	0.22
LP	2.81	0.22
MP	3.51	0.37
NW	2.52	0.27
NC	3.09	0.43
WC	3.23	0.27
Total	**2.90**	**0.09**

Policy goal: efficiency

Table 3.122 School donations by province

	School donations	
	Average	**Std Err**
EC	2.65	0.23
FS	2.35	0.26
GP	2.87	0.23
KZN	3.11	0.22
LP	2.81	0.22
MP	3.51	0.37
NW	2.52	0.27
NC	3.09	0.43
WC	3.23	0.27
Total	**2.90**	**0.09**

School functioning

Table 3.124a Communication by province for Mathematics

	Communication		Community		District		Communication internally	
	Average	**Std Err**	**Average**	**Std Err**	**Average**	**Std Err**	**Average**	**Std Err**
EC	5.53	0.13	4.37	0.32	7.62	0.16	4.80	0.16
FS	5.81	0.23	5.16	0.55	7.16	0.29	4.97	0.31
GP	6.43	0.13	6.39	0.30	7.34	0.17	5.48	0.20
KZN	5.85	0.15	5.14	0.37	7.60	0.15	4.84	0.16
LP	5.38	0.14	3.77	0.36	7.77	0.16	4.64	0.16
MP	5.86	0.23	5.11	0.47	7.68	0.17	4.99	0.27
NW	6.05	0.22	5.08	0.50	8.10	0.20	5.17	0.30
NC	5.31	0.30	4.56	0.62	7.17	0.32	5.19	0.39
WC	6.13	0.23	5.91	0.50	7.24	0.23	5.08	0.24
Total	**5.83**	**0.06**	**5.02**	**0.14**	**7.58**	**0.06**	**4.97**	**0.07**

Table 3.124b Communication by province for Natural Sciences

	Communication		Community		District		Communication internally	
	Average	Std Err	Average	Std Err	Average	Std Err	Average	Std Err
EC	5.46	0.13	4.37	0.32	7.62	0.16	4.90	0.18
FS	5.91	0.19	5.16	0.55	7.16	0.29	5.33	0.22
GP	6.38	0.14	6.39	0.30	7.34	0.17	5.35	0.22
KZN	5.75	0.17	5.14	0.37	7.60	0.15	4.61	0.15
LP	5.42	0.15	3.77	0.36	7.77	0.16	4.70	0.18
MP	5.92	0.22	5.11	0.47	7.68	0.17	5.13	0.26
NW	5.95	0.19	5.08	0.50	8.10	0.20	5.09	0.26
NC	5.44	0.27	4.56	0.62	7.17	0.32	5.30	0.31
WC	6.26	0.20	5.91	0.50	7.24	0.23	4.79	0.23
Total	**5.81**	**0.06**	**5.02**	**0.14**	**7.58**	**0.06**	**4.93**	**0.07**

Table 3.124c Communication by province for Language (LOLT)

	Communication		Community		District		Communication internally	
	Average	Std Err	Average	Std Err	Average	Std Err	Average	Std Err
EC	5.58	0.14	4.37	0.32	7.62	0.16	4.79	0.16
FS	6.13	0.21	5.16	0.55	7.16	0.29	5.83	0.22
GP	6.38	0.13	6.39	0.30	7.34	0.17	5.30	0.21
KZN	5.76	0.15	5.14	0.37	7.60	0.15	4.69	0.16
LP	5.44	0.15	3.77	0.36	7.77	0.16	4.65	0.19
MP	5.86	0.19	5.11	0.47	7.68	0.17	4.97	0.27
NW	6.01	0.19	5.08	0.50	8.10	0.20	5.01	0.24
NC	5.79	0.31	4.56	0.62	7.17	0.32	5.98	0.42
WC	5.94	0.20	5.91	0.50	7.24	0.23	4.61	0.21
Total	**5.83**	**0.06**	**5.02**	**0.14**	**7.58**	**0.06**	**4.93**	**0.07**

Table 3.125 School governing body by province

| | School governing body | |
	Average	Std Err
EC	8.02	0.12
FS	8.97	0.17
GP	8.46	0.14
KZN	8.92	0.10
LP	8.48	0.14
MP	8.99	0.12
NW	8.88	0.14
NC	8.89	0.18
WC	8.48	0.25
Total	**8.61**	**0.05**

Table 3.126 Percentage of parents' who view the SGB as functioning effectively by province

	Yes	No	
EC	78	22	100
FS	84	16	100
GP	80	20	100
KZN	78	22	100
LP	84	16	100
MP	78	22	100
NW	81	19	100
NC	78	22	100
WC	78	22	100
Total	**80**	**20**	**100**

Table 3.127a Departmental support by province for Mathematics

	Departmental support		Support		Monitoring systems	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	2.88	0.18	3.98	0.19	1.72	0.20
FS	3.35	0.23	5.17	0.31	1.54	0.30
GP	3.35	0.18	4.42	0.20	2.26	0.23
KZN	3.06	0.24	4.51	0.26	1.63	0.26
LP	2.80	0.18	3.72	0.20	1.89	0.22
MP	3.31	0.25	4.21	0.30	2.32	0.36
NW	2.16	0.20	3.31	0.29	1.13	0.22
NC	3.02	0.29	3.90	0.32	2.18	0.35
WC	2.84	0.19	4.15	0.24	1.58	0.24
Total	**2.98**	**0.08**	**4.16**	**0.09**	**1.79**	**0.09**

Table 3.127b Departmental support t by province for Natural Sciences

	Departmental support		Support		Monitoring systems	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	2.92	0.18	4.06	0.20	1.72	0.20
FS	3.40	0.22	5.30	0.27	1.54	0.30
GP	3.39	0.18	4.46	0.21	2.26	0.23
KZN	2.97	0.24	4.37	0.25	1.63	0.26
LP	2.76	0.18	3.63	0.21	1.89	0.22
MP	3.45	0.26	4.33	0.29	2.32	0.36
NW	2.15	0.20	3.25	0.28	1.13	0.22
NC	3.07	0.27	4.05	0.31	2.18	0.35
WC	2.95	0.20	4.35	0.25	1.58	0.24
Total	**2.98**	**0.08**	**4.16**	**0.09**	**1.79**	**0.09**

Table 3.127c Departmental support by province for Language (LOLT)

	Departmental support		Support		Monitoring systems	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	2.92	0.17	4.09	0.19	1.72	0.20
FS	3.41	0.21	5.30	0.28	1.54	0.30
GP	3.35	0.17	4.41	0.20	2.26	0.23
KZN	3.05	0.23	4.49	0.24	1.63	0.26
LP	2.81	0.19	3.74	0.20	1.89	0.22
MP	3.30	0.25	4.21	0.26	2.32	0.36
NW	2.29	0.19	3.42	0.24	1.13	0.22
NC	3.14	0.31	4.14	0.38	2.18	0.35
WC	2.83	0.18	4.13	0.23	1.58	0.24
Total	**2.99**	**0.08**	**4.19**	**0.09**	**1.79**	**0.09**

Table 3.128 Learner throughput rate by province

	Throughput		Pass grade 4		Pass grade 5		Pass grade 6	
	Average	Std Err	Average	Std Err	Average	Std Err	Average	Std Err
EC	9.56	0.04	9.39	0.05	9.54	0.04	9.58	0.05
FS	9.63	0.04	9.58	0.05	9.63	0.05	9.64	0.05
GP	9.81	0.02	9.72	0.03	9.81	0.02	9.82	0.02
KZN	9.68	0.03	9.57	0.05	9.68	0.03	9.63	0.04
LP	9.40	0.05	9.28	0.06	9.32	0.06	9.40	0.07
MP	9.41	0.08	9.28	0.10	9.41	0.09	9.27	0.11
NW	9.66	0.04	9.55	0.06	9.66	0.05	9.60	0.05
NC	9.76	0.04	9.71	0.04	9.74	0.05	9.72	0.06
WC	9.79	0.04	9.75	0.05	9.82	0.04	9.74	0.05
Total	**9.63**	**0.01**	**9.51**	**0.02**	**9.61**	**0.02**	**9.59**	**0.02**

Policy goal: equity

Table 3.129 Inclusivity – special educational needs by province

	Inclusivity – special educational needs					
	Mathematics		**Natural Sciences**		**Language (LOLT)**	
	Average	**Std Err**	**Average**	**Std Err**	**Average**	**Std Err**
EC	3.07	0.07	3.06	0.06	3.04	0.07
FS	2.60	0.11	2.68	0.12	2.62	0.11
GP	2.93	0.06	2.89	0.04	2.91	0.04
KZN	2.54	0.06	2.58	0.07	2.59	0.06
LP	2.63	0.07	2.66	0.08	2.65	0.07
MP	2.56	0.09	2.56	0.09	2.63	0.10
NW	3.08	0.04	3.15	0.08	3.06	0.05
NC	3.09	0.05	3.08	0.05	3.01	0.09
WC	3.12	0.03	3.15	0.04	3.23	0.09
Total	**2.80**	**0.03**	**2.82**	**0.03**	**2.82**	**0.03**

Table 3.130 Racial discrimination in the school by province

	Racial discrimination in the school	
	Average	**Std Err**
EC	8.78	0.09
FS	8.92	0.08
GP	8.13	0.15
KZN	8.89	0.13
LP	9.03	0.14
MP	8.35	0.26
NW	8.42	0.14
NC	7.89	0.32
WC	8.20	0.20
Total	**8.64**	**0.05**

Table 3.131 Percentage of parents who feel that the school experiences incidents of racial discrimination by province

	Yes	No	
EC	25	75	100
FS	26	74	100
GP	39	61	100
KZN	20	80	100
LP	21	79	100
MP	33	67	100
NW	40	60	100
NC	31	69	100
WC	26	74	100
Total	**28**	**72**	**100**

Table 3.132 Racist behaviour by learners by province (%)

	Always	Most of the time	Sometimes	Never	
EC	6	2	8	84	100
FS	4	2	13	81	100
GP	5	1	16	78	100
KZN	4	1	11	84	100
LP	1	2	6	91	100
MP	2	0	17	81	100
NW	1	1	6	92	100
NC	7	0	36	57	100
WC	10	2	34	54	100
Total	**4**	**1**	**14**	**81**	**100**

Table 3.133 Racist behaviour by educators by province (%)

	Always	Most of the time	Sometimes	Never	
EC	3	1	2	94	100
FS	0	0	7	93	100
GP	3	0	3	94	100
KZN	2	1	3	94	100
LP	2	0	2	96	100
MP	4	1	3	92	100
NW	0	0	2	98	100
NC	5	4	13	78	100
WC	6	1	3	90	100
Total	**2**	**1**	**4**	**93**	**100**

Table 3.134 Socio-economic status by province

	SES		Home living conditions		Possessions	
	Average	Std Err	Average	Std Err	Average	Std Err
EC	4.45	0.12	5.82	0.15	3.04	0.11
FS	5.61	0.14	7.44	0.09	3.75	0.20
GP	6.23	0.10	7.95	0.06	4.46	0.15
KZN	4.91	0.13	6.32	0.13	3.48	0.15
LP	4.85	0.09	6.58	0.10	3.09	0.08
MP	5.48	0.11	7.20	0.10	3.74	0.14
NW	5.36	0.10	7.21	0.09	3.50	0.12
NC	5.94	0.17	7.84	0.10	4.01	0.25
WC	6.38	0.14	7.65	0.08	5.06	0.21
Total	**5.28**	**0.04**	**6.86**	**0.04**	**3.66**	**0.05**

Table 3.135 Indicators and indices used to identify factors related to learner achievement

Policy Goal	Indicator	Index
Access	Getting to school	Time taken to get to school
	Entry into schools	School fees
		Access for learners with special educational needs
	Access to information	Information at school
		Information at home
	Access to learning material and textbooks	Learning materials
		Access to textbooks
Quality content and goals	Curriculum documents	Curriculum policy documents
Quality context within which learning occurs	School resources	Classroom furniture
		Physical resources
		School amenities
		Learning resources
		Sports resources
		Vegetable garden
	Discipline at school	Behavioural problems
		Substance-abuse problems
		Addressing discipline problems
		Educator discipline
	School safety	Learner and parent perceptions of safety at school
	Meals	Meals eaten by learners
	Class size	Number of learners in each class
	Teaching resources at school	Teaching resources available at the school
Quality teacher and learner interaction	Educator classroom practices	Teaching activities
		Educator marking
		Teaching records
	Time on task	Time spent on other tasks
		Educator workload
		Learning-area time
		Multi-grade classes

Policy Goal	Indicator	Index
Quality teacher and learner interaction (continued)	Assessment practices	Exams
		Tests
		Other forms
		Assessment utilisation
	Homework practices	Homework received
		Homework feedback
		Homework environment
	Attendance	Attendance of educators
		Attendance of learners
	HIV/AIDS policy	HIV/AIDS policy in the school
	Job satisfaction	Educator appreciation
		Educator change career
		Principal change career
	Learner participation	Learner attitude
		Learner morale
		Learner interaction
		Library use
		Language
		Extramural activities provided by the school
	Parental involvement/perception	Parental support
		Parental feedback
		Education level of parents
		Parent perception
	Attendance at pre-primary school	Learner attended pre-primary
	Staff qualification	Principal qualification
		Educator qualification
		Principal professional training
		Educator professional training
	In-service training	Principal training
		Educator training
		Curriculum training
	Staff perceptions	Principal perceptions
		Educator perceptions
	Use of information at home	Reading at home
		Use of community library
		Home electronic

Policy Goal	Indicator	Index
Efficiency	School donations	Donations
	Communication	Districts
		Communication internally
		Community
	School governing body (SGB)	Functioning of the SGB
	Departmental support	Support received from DoE
	Learner throughput rate	Repetition of learners
Equity	Inclusivity - special educational needs	Special-needs learners are catered for in the schools
	Racial discrimination in the school	Racial discrimination among teachers and learners
	Socioeconomic status	Socioeconomic status of learners

APPENDIX B

Table 4.2 Average for three learning areas by province

	Averages			Standard Error			Standard Deviation		
	Language (LOLT)	Mathe-matics	Natural Sciences	Language (LOLT)	Mathe-matics	Natural Sciences	Language (LOLT)	Mathe-matics	Natural Sciences
EC	30.16	23.40	36.01	1.32	1.02	1.14	19.22	14.86	16.93
FS	38.64	30.80	44.14	2.54	1.98	1.76	24.09	18.98	17.81
GP	51.58	33.76	50.00	1.76	1.44	1.26	24.03	18.94	18.22
KZN	36.92	26.38	39.65	1.86	1.27	1.27	23.94	16.78	18.15
LP	25.54	19.38	32.57	1.03	0.52	0.76	15.61	9.97	13.51
MP	35.64	25.28	41.01	1.79	1.40	1.29	20.36	14.70	15.99
NW	34.70	24.26	38.43	1.65	1.15	1.31	19.89	13.32	16.50
NC	53.02	32.97	46.89	2.65	2.42	2.03	24.51	19.38	18.74
WC	58.79	40.22	51.93	2.31	2.09	1.58	24.60	21.09	18.14
National	38.03	27.08	40.77	0.65	0.47	0.46	23.79	17.14	18.09

Table 4.3 Percentage of learners at each Language (LOLT) achievement level by province

	Not Achieved	Partly Achieved	Achieved	Outstanding
EC	75.89	8.68	10.13	5.30
FS	65.47	7.78	10.41	16.34
GP	36.36	12.73	23.43	27.49
KZN	67.53	7.20	10.30	14.96
LP	85.57	5.69	6.21	2.54
MP	67.10	10.59	13.37	8.95
NW	67.17	11.13	14.28	7.42
NC	32.79	11.22	26.64	29.35
WC	26.64	9.96	24.91	38.48
National	62.98	8.93	13.64	14.44

Table 4.4 Averages for Language (LOLT) Learning Outcomes by province

	LO1	LO3	LO4	LO5	LO6
EC	29.41	43.03	22.61	25.69	27.41
FS	38.72	51.04	31.04	35.44	34.07
GP	50.56	65.38	44.18	46.84	47.09
KZN	34.96	51.31	29.54	31.09	34.19
LP	24.10	38.92	18.80	21.41	20.46
MP	33.02	49.02	29.63	30.57	32.09
NW	33.46	46.61	29.46	30.17	28.83
NC	51.66	64.23	46.47	52.83	48.49
WC	57.45	70.94	51.84	55.68	55.99
National	36.71	51.32	31.09	33.54	34.25

Table 4.5 Averages for Language (LOLT) by gender and province

	N			Average		Standard Error		Standard Deviation	
	Boys	Girls	Total	Boys	Girls	Boys	Girls	Boys	Girls
EC	2 551	2 631	5 182	28.20	31.95	1.54	1.26	19.20	18.74
FS	1 276	1 165	2 441	36.59	41.11	2.46	2.68	23.08	24.98
GP	2 212	2 128	4 340	48.38	54.88	1.89	1.73	24.30	23.29
KZN	2 747	2 759	5 506	33.81	39.51	1.86	1.92	23.19	24.08
LP	2 505	2 440	4 945	23.46	27.69	0.85	1.26	13.72	17.08
MP	1 594	1 403	2 997	33.12	38.58	1.62	2.09	19.12	21.36
NW	1 717	1 591	3 308	30.95	38.61	1.65	1.69	18.87	20.16
NC	786	889	1 675	50.06	55.70	2.65	2.85	24.43	24.20
WC	1 535	1 544	3 079	55.97	61.62	2.45	2.33	24.60	23.79
National	16 923	16 550	33 473	35.39	40.74	0.66	0.67	23.18	24.07

Table 4.6a Average percentages in Language (LOLT) according to location and province

	Average					Standard Error					Standard Deviation				
	Urban	Township	Rural	Remote rural	Farm	Urban	Township	Rural	Remote rural	Farm	Urban	Township	Rural	Remote rural	Farm
EC	42.62	36.27	27.88	24.19	25.38	6.26	2.70	1.74	1.60	0.48	23.82	18.45	18.26	14.79	14.40
FS	52.28	34.80	40.08	21.15	20.49	9.10	2.34	7.42	1.12	0.83	30.32	19.07	27.55	12.37	7.88
GP	67.25	41.99	47.11		33.28	2.87	1.39	3.52		1.61	21.90	19.88	19.16		14.98
KZN	66.41	43.55	27.13	22.35	35.31	3.82	3.67	1.19	0.82	6.74	23.27	22.44	14.89	10.37	23.20
LP		40.36	24.28	20.84	39.66		5.67	0.77	1.07	9.24		23.59	12.84	11.93	23.61
MP	59.84	37.19	31.86	23.96	25.77	8.53	2.06	1.92	3.89	1.16	22.85	18.73	17.64	12.81	13.34
NW	60.71	37.79	30.11	21.02	28.77	6.83	1.99	1.44	1.85	4.29	21.60	18.27	16.40	12.45	18.13
NC	60.58	47.28	52.15	53.15	42.42	6.04	2.92	4.36	4.62	3.82	23.54	22.25	25.41	21.63	21.79
WC	72.50	43.71	56.73	62.64	48.85	2.77	2.67	1.87	2.29	3.24	20.66	20.66	20.79	18.29	20.54
National	64.19	40.07	29.42	23.11	33.52	1.86	0.93	0.65	0.75	2.82	24.28	20.36	18.05	13.79	20.57

Table 4.6b Number of learners according to location and province

	Urban	Township	Rural	Remote rural	Farm	Total
EC	345	564	2 845	1 438	28	5 220
FS	535	1 264	483	80	79	2 441
GP	1 702	2 268	185	0	185	4 340
KZN	861	548	2 756	1 006	341	5 512
LP	0	433	3 051	1 336	114	4 934
MP	300	652	1 503	183	371	3 009
NW	273	839	1 624	457	167	3 360
NC	354	278	867	117	61	1 677
WC	1 317	908	663	72	124	3 084
National	5 687	7 754	13 977	4 689	1 470	33 577

Table 4.7a Language (LOLT) averages for home language the same as LOLT and home language different to LOLT by province

	N			Average		Standard Error		Standard Deviation	
	Same	Different	Total	Same	Different	Same	Different	Same	Different
EC	159	5 008	5 167	63.83	29.00	7.29	1.14	27.60	17.60
FS	524	1 891	2 415	80.50	32.22	1.61	1.66	13.28	18.24
GP	907	3 361	4 268	74.46	45.49	2.09	1.48	17.60	21.84
KZN	491	5 006	5 497	76.50	31.66	1.85	1.17	17.52	19.34
LP	13	4 919	4 932	56.17	25.49	10.06	1.02	30.77	15.50
MP	216	2 759	2 975	71.26	33.50	3.92	1.43	16.87	18.53
NW	120	3 143	3 263	65.91	33.18	6.05	1.33	18.45	18.69
NC	1 240	364	1 604	57.51	40.44	2.67	4.21	22.99	23.55
WC	2 375	577	2 952	64.62	38.32	1.99	2.49	22.02	20.78
National	6 045	27 028	33 073	68.55	32.39	1.17	0.50	21.41	19.53

Table 4.7b Language (LOLT) achievement by question type by province

	Language (LOLT)	
	Multiple-choice questions	Open-ended questions
EC	41.96	21.81
FS	55.69	37.71
GP	60.98	46.47
KZN	45.95	26.55
LP	38.75	17.53
MP	46.85	29.80
NW	45.01	26.90
NC	64.30	50.11
WC	67.58	54.43
National	49.79	31.90

Table 4.8 Percentage of learners at each Mathematics achievement level by province

	Not Achieved	Partly Achieved	Achieved	Outstanding
EC	87.58	6.08	4.47	1.87
FS	74.91	8.50	9.86	6.73
GP	67.74	11.11	14.32	6.83
KZN	81.62	7.14	7.63	3.60
LP	95.31	2.95	1.53	0.21
MP	85.56	6.74	5.77	1.94
NW	87.57	6.48	4.86	1.09
NC	69.98	10.36	12.13	7.54
WC	54.05	14.08	19.16	12.71
National	80.69	7.50	7.90	3.91

Table 4.9 Averages for Mathematics Learning Outcomes by province

	LO1	LO2	LO3	LO4	LO5
EC	18.59	27.83	34.37	21.52	25.90
FS	22.75	37.65	44.52	28.87	37.72
GP	25.38	44.24	52.06	30.01	37.10
KZN	19.99	33.92	39.29	25.31	27.80
LP	13.93	22.20	31.80	19.70	20.77
MP	18.15	32.68	40.00	24.28	27.20
NW	17.51	30.06	37.79	24.13	26.32
NC	24.75	44.64	50.73	28.92	35.80
WC	31.98	54.26	57.56	33.89	44.45
National	20.46	34.23	41.09	25.27	29.61

Table 4.10 Mathematics averages by gender and province

	Average		Standard Deviation		Standard Deviation	
	Boys	Girls	Boys	Girls	Boys	Girls
EC	23.33	23.16	1.19	0.89	15.13	13.79
FS	30.43	31.33	1.96	2.07	18.45	19.59
GP	33.46	34.07	1.52	1.44	19.06	18.82
KZN	25.57	27.07	1.30	1.30	16.70	16.87
LP	19.34	19.43	0.45	0.64	9.24	10.68
MP	25.23	25.45	1.31	1.58	14.43	15.02
NW	23.21	25.33	1.23	1.13	13.44	13.17
NC	33.20	32.86	2.36	2.60	19.21	19.50
WC	40.05	40.41	2.23	2.08	21.37	20.85
National	26.75	27.41	0.49	0.48	17.11	17.13

Table 4.11 Average Mathematics percentages according to location and province

	Average					Standard Error					Standard Deviation				
	Urban	Township	Rural	Remote rural	Farm	Urban	Township	Rural	Remote rural	Farm	Urban	Township	Rural	Remote rural	Farm
EC	28.87	23.80	23.09	21.39	16.61	4.18	1.49	1.62	1.77	1.51	17.01	11.26	15.57	14.05	10.47
FS	42.15	27.86	30.76	17.17	15.60	6.88	1.89	5.44	0.35	1.43	24.55	14.80	21.10	7.85	6.79
GP	47.84	24.81	32.56		23.49	2.57	0.53	3.32		1.39	20.22	11.25	13.26		9.77
KZN	46.43	27.76	20.00	18.29	25.53	2.95	2.35	0.69	1.13	3.34	19.58	14.77	9.95	9.49	15.08
LP		27.47	18.51	17.28	27.60		2.62	0.40	0.61	4.62		14.56	8.49	8.48	13.55
MP	43.46	25.42	22.88	13.49	21.92	7.97	1.41	1.42	3.12	1.55	20.58	11.08	12.31	9.94	11.15
NW	42.33	25.19	21.31	18.01	20.00	5.17	1.26	0.95	1.44	1.44	18.28	11.64	10.47	9.42	9.61
NC	39.77	26.75	33.14	28.95	24.63	6.60	1.21	3.67	3.53	2.25	22.17	13.32	19.85	13.51	11.27
WC	53.11	28.79	33.54	35.89	25.94	3.04	1.70	1.70	3.31	1.48	21.09	13.94	16.05	15.70	12.62
National	45.84	26.10	21.76	19.04	23.79	1.53	0.52	0.46	0.70	1.44	21.22	12.84	12.70	11.34	12.94

Table 4.12a Mathematics averages for home language the same as LOLT and home language different to LOLT by province

	Average		Standard Error		Standard Deviation	
	Same	**Different**	**Same**	**Different**	**Same**	**Different**
EC	44.58	22.54	8.09	0.87	24.35	13.50
FS	63.50	25.81	2.68	1.21	18.21	13.35
GP	55.38	28.11	2.39	0.89	19.12	14.34
KZN	54.07	22.80	2.31	0.71	18.35	12.84
LP	46.18	19.35	11.99	0.51	25.47	9.88
MP	53.98	23.56	3.92	1.05	17.51	12.57
NW	48.18	23.09	5.61	0.85	18.11	11.93
NC	35.53	26.06	2.81	2.61	19.95	15.10
WC	43.99	27.12	2.25	1.80	21.22	14.46
National	48.19	23.19	1.29	0.31	21.33	12.93

Table 4.12b Mathematics achievement by question type by province

	Mathematics	
	Multiple-choice questions	**Open-ended questions**
EC	30.11	16.08
FS	39.82	28.42
GP	39.83	28.76
KZN	30.69	17.73
LP	26.98	11.03
MP	31.81	19.09
NW	29.86	16.05
NC	40.60	29.40
WC	45.57	34.55
National	33.77	20.76

Table 4.13 Percentage of learners at each Natural Sciences achievement level by province

	Not Achieved	Partly Achieved	Achieved	Outstanding
EC	64	15	18	4
FS	48	18	23	11
GP	32	17	35	16
KZN	59	14	19	8
LP	74	13	12	1
MP	52	20	23	5
NW	57	17	21	4
NC	37	17	33	13
WC	28	15	39	18
National	54	15	23	8

Table 4.14 Averages for Natural Sciences Learning Outcome by province

	LO1	LO2	LO3
EC	30.29	34.05	46.01
FS	38.79	42.19	53.77
GP	44.81	47.44	61.01
KZN	33.56	38.78	47.31
LP	25.79	31.60	41.13
MP	34.70	39.57	50.28
NW	32.95	36.63	47.85
NC	43.17	44.44	56.30
WC	45.65	49.93	62.55
National	34.93	39.21	50.15

Table 4.15 Natural Sciences average by gender and province

	Average		Standard Error		Standard Deviation	
	Boys	Girls	Boys	Girls	Boys	Girls
EC	34.80	37.04	1.32	1.04	17.43	16.18
FS	43.47	45.04	1.79	1.78	17.81	17.70
GP	48.52	51.53	1.36	1.24	18.78	17.48
KZN	38.03	41.00	1.32	1.28	18.20	17.83
LP	31.74	33.46	0.75	0.87	13.18	13.79
MP	40.24	41.98	1.28	1.43	15.98	15.90
NW	36.44	40.49	1.35	1.32	16.48	16.34
NC	46.29	47.52	2.05	2.14	19.19	18.28
WC	50.89	53.00	1.72	1.55	18.58	17.29
National	39.61	42.03	0.49	0.47	18.26	17.79

Table 4.16 Natural Sciences average percentages according to location and province

	Average					Standard Error					Standard Deviation				
	Urban	Township	Rural	Remote rural	Farm	Urban	Township	Rural	Remote rural	Farm	Urban	Township	Rural	Remote rural	Farm
EC	43.03	39.40	35.35	31.49	29.99	4.47	2.38	1.61	1.92	0.92	17.56	15.58	17.08	15.96	11.26
FS	54.74	41.92	41.52	34.32	29.17	5.48	1.65	5.67	0.00	0.75	20.57	14.47	21.61	9.57	9.87
GP	61.28	42.99	47.90		38.80	2.31	0.76	2.88		0.88	17.92	14.57	13.76		12.35
KZN	59.23	43.74	32.86	30.98	37.32	2.74	2.47	0.95	1.51	3.56	17.76	16.62	13.07	12.88	17.07
LP		42.30	32.02	28.69	41.66		2.92	0.76	1.19	6.16		15.25	12.45	12.72	16.32
MP	55.32	42.62	39.63	21.66	35.50	6.47	1.60	1.27	6.08	1.57	18.12	14.14	13.75	16.20	13.43
NW	57.69	41.17	34.90	27.83	33.00	4.82	1.80	1.19	2.11	2.33	16.52	15.46	14.27	13.19	14.67
NC	50.70	42.41	47.40	45.17	41.43	5.59	1.82	3.09	2.43	1.43	20.20	16.26	19.14	14.27	16.06
WC	61.20	42.56	49.35	52.76	41.29	2.14	1.68	1.65	2.33	1.90	16.34	15.29	15.81	14.84	15.01
National	58.04	42.23	35.25	30.30	37.15	1.32	0.61	0.53	0.88	1.52	18.51	15.17	15.10	14.43	15.39

Table 4.17a Natural Sciences averages for home language the same as LOLT and home language different to LOLT by province

	Average		Standard Error		Standard Deviation	
	Same	Different	Same	Different	Same	Different
EC	59.75	35.15	5.36	1.05	21.02	16.11
FS	71.95	39.85	1.43	1.23	12.02	14.33
GP	67.10	45.51	1.97	0.93	16.06	16.04
KZN	66.26	36.15	1.35	0.85	14.75	15.45
LP	59.30	32.54	5.70	0.76	13.82	13.47
MP	66.54	39.49	2.13	1.09	14.45	14.75
NW	59.46	37.40	3.80	1.15	15.24	15.94
NC	49.89	39.02	2.20	2.83	18.20	17.17
WC	55.14	40.92	1.56	1.99	17.34	15.70
National	60.02	37.27	0.96	0.38	17.89	15.75

Table 4.17b Natural Sciences achievement by question type by province

	Natural Sciences	
	Multiple-choice questions	Open-ended questions
EC	43.76	19.71
FS	56.22	31.73
GP	59.76	33.93
KZN	46.76	20.41
LP	41.36	16.44
MP	50.48	24.21
NW	46.58	21.28
NC	57.92	32.22
WC	61.41	34.81
National	50.06	24.60

Table 5.2 Pearson correlation of Mathematics with Indicators and Indices

Indicator		Index		No of items
Name	Correlation	Name	Correlation	
Socio-economic status	0.53	Possessions of family at home	0.50	16
Socio-economic status	0.53	Physical condition of home	0.40	15
Information at home	0.52	Electronic equipment in the home	0.43	6
Information at home	0.52	Number of books at home	0.40	2
Information at home	0.52	Periodicals and newspapers at home	0.36	5
Information at home	0.52	Presence of community library	0.32	1
Learner participation	0.48	Mother tongue is LOLT	0.53	1
Learner participation	0.48	Learner interaction LLC	0.29	11
Learner participation	0.48	Learner interaction science	0.25	11
Learner participation	0.48	Prevalence of extramural activities	0.22	4
Learner participation	0.48	Learner morale	0.21	4
Learner participation	0.48	Learner interaction math	0.19	11
Learner participation	0.48	Use school library	0.16	1
Learner participation	0.48	Learner attitude to school	-0.03	3
School resources	0.45	Physical resources in the school	0.52	8
School resources	0.45	School office and admin resources	0.47	11
School resources	0.45	School amenities (toilet, water etc)	0.40	10
School resources	0.45	Sport resources	0.37	4

| Indicator | | Index | | No of items |
Name	Correlation	Name	Correlation	
School resources	0.45	Adequate classroom furniture	0.25	5
School resources	0.45	School has vegetable garden	-0.14	1
Teaching resources available to teachers	0.45	Teaching resources available to teachers	0.45	4
School safety	0.42	Good safety at school	0.42	15
Use of information at home	0.35	Electronic equipment in the home	0.43	3
Use of information at home	0.35	Use of community library	0.19	1
Use of information at home	0.35	Reading done at home	0.15	3
Information at school	0.34	School library	0.39	2
Information at school	0.34	Book corner	0.12	1
Parental involvement/perception	0.32	Parent educational level	0.36	1
Parental involvement/perception	0.32	Regular feedback to parents on learner	0.15	4
Parental involvement/perception	0.32	Parent has positive view of school	0.12	2
Parental involvement/perception	0.32	Parental support	0.10	3
Discipline at school	0.30	Absence of disciplinary problems	0.30	4
Discipline at school	0.30	Absence of behaviour problems at school	0.21	10
Discipline at school	0.30	No discipline problems with educators	0.12	6
Discipline at school	0.30	Little or no substance abuse problem at school	0.12	4
Attendance	0.25	School attendance by learners	0.26	2
Attendance	0.25	School attendance by educators	0.16	1
Entry into schools	0.22	School fees	0.32	5
Entry into schools	0.22	Parents pay for a uniform	0.14	1

Indicator		Index		No of items
Name	Correlation	Name	Correlation	
Entry into schools	0.22	Access to learners with special educational needs	0.08	1
Staff qualification	0.22	Afrikaans qualification of educator	0.19	1
Staff qualification	0.22	Principal professional training	0.19	1
Staff qualification	0.22	Physics qualification of educator	0.16	1
Staff qualification	0.22	Educator professional training	0.15	1
Staff qualification	0.22	Educator academic training	0.14	1
Staff qualification	0.22	Biology qualification of educator	0.12	1
Staff qualification	0.22	Principal academic qualification	0.10	1
Staff qualification	0.22	Mathematics qualification of educator	0.10	1
Staff qualification	0.22	English qualification of educator	0.04	1
Small class size	0.22	Small class size	0.22	1
Homework practices	0.21	Homework environment	0.26	3
Homework practices	0.21	The child receives homework	0.16	1
Homework practices	0.21	The child receives Mathematics homework	0.11	1
Homework practices	0.21	Educator gives feedback on Math homework	0.10	2
Homework practices	0.21	The child receives Language homework	0.10	1
Homework practices	0.21	Educator gives feedback on LLC homework	0.09	2
Homework practices	0.21	Educator gives feedback on Science homework	0.04	2
Homework practices	0.21	The child receives science homework	-0.04	1
Communication	0.19	Communication of school with community	0.29	2
Communication	0.19	Communication internally	0.10	5
Communication	0.19	Communication of school with district	-0.23	5
Access to learning material and textbooks	0.19	Learning materials	0.25	11

Indicator		Index		No of items
Name	Correlation	Name	Correlation	
Access to learning material and textbooks	0.19	Access to textbooks	0.11	3
School donations	0.18	Donations to the school	0.18	8
Attendace to pre-primary	0.16	Did learner attend Pre-Primary school	0.16	1
Learner throughput rate	0.15	Pass Gr4	0.14	1
Learner throughput rate	0.15	Pass Gr5	0.13	1
Learner throughput rate	0.15	Pass Gr6	0.11	1
Getting to school	0.13	Little time taken to get to school	0.13	1
Sound assessment practices	0.09	How assessments are used	0.14	7
Sound assessment practices	0.09	Learners write tests regularly	0.08	4
Sound assessment practices	0.09	Exams are used	0.02	4
Sound assessment practices	0.09	Various ways learners are assessed	0.01	5
Inclusivity – special educational needs	0.07	School provides for learners with special needs	0.07	4
HIV/Aids policy	0.06	School supports HIV policy implementation	0.06	1
Curriculum documents	0.06	Availability of Curriculum policy documents	0.06	1
Meals	0.06	Learner brings food to school	0.20	1
Meals	0.06	Meals After school	0.12	1
Meals	0.06	Meals Before school	0.06	1
Meals	0.06	Meals: feeding scheme at school	-0.30	2
School governing body	0.05	Healthy SGB	0.05	4
Staff perceptions	0.03	Principal's perceptions of requirements for good teaching	0.05	8
Staff perceptions	0.03	Educator's perceptions of what is important for good teaching	-0.02	13

| Indicator | | Index | | |
Name	Correlation	Name	Correlation	No of items
Educator classroom practices	0.02	Teaching records such as mark sheets and portfolios	0.07	6
Educator classroom practices	0.02	Educator marking work	0.02	3
Educator classroom practices	0.02	Teaching activities in line with C2005	-0.06	10
Time on task	0.01	Multigrade classes	0.06	1
Time on task	0.01	Appropriate utilisation of time allocated to Math	0.01	2
Time on task	0.01	Appropriate utilisation of time allocated to LOLT	0.01	2
Time on task	0.01	Appropriate utilisation of time allocated to Science	0.00	2
Time on task	0.01	Educator workload	-0.02	1
Time on task	0.01	Educator does no other tasks during lesson time	-0.03	5
Department support	-0.02	Department official observes educator	-0.01	1
Department support	-0.02	Frequency of departmental support from district	-0.02	5
Absence of racial discrimination	-0.06	No racial discrimination perceived by parent	0.03	1
Absence of racial discrimination	-0.06	School experiences little or no racist behav. by educ.	-0.04	1
Absence of racial discrimination	-0.06	School experiences little or no racist behav. by learn.	-0.18	1
In-service training	-0.07	Educator in service training	0.11	7
In-service training	-0.07	Principal in service training	0.03	5
In-service training	-0.07	Educator attitude about curriculum training	0.00	6
In-service training	-0.07	Principal induction after appointment	-0.07	1
In-service training	-0.07	Principal Further Study	-0.28	1
Job satisfaction	-0.14	Principal does not want to change career	-0.03	1
Job satisfaction	-0.14	Educator does not want to change career	-0.04	1
Job satisfaction	-0.14	Educator feeling appreciated	-0.33	3
Total number of items				387

Table 5.3a Automatic Interaction Detection – Language – Low & Med SES

Low & Med SES < 7 82% Ave=32%				
	Low Resources < 5.4 50% Ave=27%	Low SES < 4.7 32%; Ave=24%		
		Medium SES 4.7 < SES < 6.9 17%; Ave=32%	Low Repetition Rate < 9.9 6%; Ave=25%	
			High Repetition Rate > 9.9 12%; Ave=35%	Low Information at Home < 5.5 8%; Ave=32%
				High Information at Home > 5.5% 4%; Ave=40%
	High Resources > 5.4 32%; Ave=40%	Information at Home < 5.2 15%; Ave=34%		
		Information at Home > 5.2 17%; Ave=46%	Discipline < 8.2 13%; Ave=42%	
			Discipline > 8.2 4%; Ave=57%	Learner Engagement < 6.4 2%; Ave=47%
				Learner Engagement > 6.4 2%; Ave=65%

Table 5.3b Automatic Interaction Detection – Language – High SES

High SES > 7 18% Ave=66%	Low Resources < 6.3 6%; Ave=49%	Low Discipline < 8.2 4%; Ave=43%		
		High Discipline > 8.2 2% Ave=65%	Low Information at Home < 6.5 1%; Ave=47%	
			High Information at Home > 6.5 1%; Ave=72%	
	High Resources > 6.3 12%; Ave=74%	Low School Fees < 7.9 5%; Ave=64%		
		High School Fees > 7.9 7%; Ave=80%	Low Information at Home < 8.6 3%; Ave=76%	
			High Information at Home > 8.6 5%; Ave=83%	Low Learner Engagement < 7.5 2%; Ave=81%
				High Learner Engagement > 7.5 2% Ave=85%

Table 5.4a Automatic Interaction Detection – Mathematics – Low & Med SES

Low & Med SES Ses < 7.2 84%; Ave=23%	Info at Home < 6.1 66%; Ave=22%	Resources < 5.5 46%; Ave=18%		
		Resources > 5.5 19%; Ave=21%	Discipline < 8.3; 17%; Ave=234%	
			Discipline > 8.3 3%; Ave=30%	Teacher Resources < 5.7 2%; Ave=26%
				Teacher Resources > 5.7 1%; Ave=39%
	Info at Home > 6.1 18%; Ave=29%	Low Discipline < 8.2 15%; Ave=27%		
		High Discipline > 8.2 4%; Ave=39%	Learner Engagement < 6.3 2%; Ave=31%	
			High Learner Engagement > 6.3; 2%; Ave=44%	Med Resources < 7.1 1%; Ave=40%
				High Resources > 7.1 1%; Ave=52%

Table 5.4b Automatic Interaction Detection – Mathematics – High SE

High SES > 7.2 16%; Ave=50%	**Low & Med Access to Info < 6.8 5%; Ave=35%**	Low & Med Discipline < 8.2 4%; Ave=30%	
		High Discipline > 8.2 2%; Ave=47%	Low Access to Information < 5.2 1%, Ave=34%
			Medium Access to Information **5.2 < AI < 6.8 1%; Ave=52%**
	High Access to Info > 6.8 11%; Ave=56.9%	Low School Fees < 7.9 4%; Ave=47%	
		High School Fees < 7.9 7%; Ave=63%	Low Parental Involvement < 8.3 3%; Ave=59%
			High Parental Involvement > 8.3 3%; Ave=67%

Table 5.5a Automatic Interaction Detection – Natural Sciences – Low & Med SES

Low & Med SES < 7 82%; Ave=37%	Low Resources Resources < 5 43%; Ave=33%	Low Throughput Throughput < 9.9 16% Ave=30%		
		High Repetition rate > 9.9 28%; Ave=35%	Low SES SES < 4.6 17%; Ave=32%	
			Medium SES 4.6 < SES < 6.7 11%; Ave=38%	Low Parent Involvement < 6.5 6%; Ave=35.9
				High Parent Involvement > 6.5 5%; Ave=40.2
	High Resources > 5 39%; Ave=41%	Low Information at Home < 5.4 21%; Ave=37.6%		
		High Information at Home > 5.4 18%; Ave=45%	Low Discipline < 8.3 15% Ave=43%	
			High Discipline > 8.3 3%; Ave=54%	Low Attendance < 9.8 1%; Ave=49%
				High Attendance > 9.8 2%; Ave=59%

Table 5.5b Automatic Interaction Detection – Natural Sciences – High SES

High SES > 7 18% Ave=60%	Low Attendance < 9.7 7%; Ave=49%	Low Teacher Resources < 7 4%; Ave=44%	
		High Teacher Resources > 7 3%; Ave=57%	Low Discipline < 8.1 2%; Ave=51%
			High Discipline > 8.1 1%; Ave=64%
	High Attendance > 9.7 11%; Ave=66%	Low Resources Resources < 6.4 2% Ave=54%	
		High Resources > 6.4 9%; Ave=70%	Low Information at Home < 8.8 4%; Ave=67%
			High Information at Home > 8.8 5%; Ave=73%