



**Ministry of Education and Human development
National Institute for Education development**

THE SACMEQ IV PROJECT IN MOZAMBIQUE

**A STUDY OF THE CONDITIONS OF SCHOOLING
AND THE QUALITY OF BASIC EDUCATION IN
MOZAMBIQUE**

**SACMEQ- Southern and Eastern African Consortium for Monitoring Educational
Quality**

The SACMEQ IV project in Mozambique

**A study of the conditions of schooling and the quality of primary education in
Mozambique**

National Institute for Education Development

Mozambique working report

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LIST OF ABBREVIATIONS AND ACRONYMS

EFA	Education For All
EP1	Ensino Primário do 1 ^o Grau (Lower Primary Education)
EP2	Ensino Primário do 2 ^o Grau (Upper Primary Education)
ESG1	Ensino Secundário do 1 ^o Grau (Lower Secondary Education)
ESG2	Ensino Secundário do 2 ^o Grau (Upper Secondary Education)
GDP	Gross Domestic Product
GER	Gross Enrolment Rate
HDI	Human Development Index
HLM	Hierarchical Linear Modelling
IIEP	International Institute for Educational Planning
ICC	Intraclass Correlation
IEA	International Association for the Evaluation of Educational Achievement
INE	Instituto Nacional de Estatística (National Institute of Statistics)
MINED	Ministry of Education
MDG	Millennium Development Goals
NER	Net Enrolment Rate
OECD	Organisation for Economic Cooperation and Development
PASEC	Programme d' Analyse des Systém Educatifs de la CONFEMEN (Programme on the Analysis of Education System)
PISA	Program for International Student Assessment
PIRLS	Progress in International Reading Literacy Study
SACMEQ	Southern and Eastern Africa Consortium for Monitoring Education Quality
SD	Standard deviation
SES	Socio-economic Status
SNE	Sistema Nacional de Educação (National Education System)
UNESCO	United Nations Education Scientific and Cultural Organization

1. Chapter 1- The Background of the study

1.1 Introduction

Background information on Mozambique and its educational system has been provided in this first chapter. First, there is information about the general characteristics of the country, with a focus on its geographical features, administrative divisions, and population characteristics. This has been followed by a general overview of Mozambique's education system, namely, its key features, its historical development and the challenges it faces. In short, this is a framework for the interpretation of the data analyses presented later in the report.

1.2 Brief description of Mozambique

The Republic of Mozambique is situated in the south eastern part of Africa and covers an area of 799 380 square kilometres. According to the 2011 population estimates by the National Statistics Institute census, Mozambique has a population of 24.58 million inhabitants. The country was a Portuguese colony from the fifteenth century until it attained political independence in 1975 after 10 years of a bitter armed struggle. Peace was interrupted once again during the early 1980s when the country experienced a civil war which caused the loss of many lives and left in its wake a trail of destruction. As a result, a lot of infrastructure had to be rebuilt. Peace finally returned to Mozambique in 1992 and since then, the country has undergone rapid socio-economic development.

The country can be broadly divided into 3 regions namely: North, Centre and South and it is administratively divided into 11 provinces namely Cabo Delgado, Niassa, Nampula, Tete, Zambézia, Manica, Sofala, Inhambane, Gaza, Maputo Province and Maputo City. Table 1 shows the population, area and population density of Mozambique and its provinces

Figure 1.1: Political map of Mozambique



Figure 1-1 Political map of Mozambique

Table 1-1 Population, area and inhabitants per square kilometre

Province	Population	Area/km ²	Inhab/km ²
Cabo Delgado	1 830 124	82 625	22
Cidade de Maputo	1 209 993	300	4 033
Gaza	1 367 849	75 709	18
Inhambane	1 451 081	68 615	21
Manica	1 800 247	61 661	29
Maputo Provincia	1 571 095	26 058	60
Nampula	4 767 442	81 606	58
Niassa	1 531 958	129 056	12
Sofala	1 951 011	68 018	29
Tete	2 322 294	100 724	23
Zambezia	4 563 018	105 008	43
Moçambique	24 366 112	799 380	30

* Statistical Yearbook 2013

The most populated provinces are the provinces of Nampula and Zambézia. The biggest and the most sparsely populated province is Niassa. Maputo City is the smallest and the most densely populated province. The gross illiteracy rate was 49,9 percent*

Mozambique is a multicultural and multilingual country with 18 main Bantu languages (Sitoe and Ngunga, 2000) and many dialects. It is predominantly a rural country, with about 71.4 percent of the Mozambican population living in many small settlements located in areas that are difficult to access due to a poor transport and communication network. The official language is Portuguese and this is the main language of instruction. However, this language is spoken by only about 30 percent of the population, mainly those who are resident in urban areas. The Ministry of Education (MINED) has officially introduced the mother tongue as the medium of instruction as from 2004, in the first grades in some schools located in linguistically homogeneous zones. Currently less than 3 percent of the school population are having instruction in their mother tongue. The mother tongue, as a medium of instructions, is to be used in the first 3 grades of the schooling.

According to the Ministry of Education, in 2013 the gross school enrolment ratio by level was as follows:

Lower Primary school (Grade 1 to 7)	110 percent
Junior Secondary (Grade 8 to 10)	34 percent
Senior Secondary (Grade 11 & 12)	13 percent

According to the Ministry of Education statistics, in 2013 the dropout rate at the lower primary school level was about 7.0 percent. The pass rate was 83,8 percent. The dropout rate for upper primary level (Grades 6 and 7) was about 6.9 percent and the pass rate was 66.8 percent.

1.3 Mozambique's school system

The National System of Education (SNE) was introduced in 1983. It is the first system designed by Mozambicans themselves after independence. Before 1975, Mozambique's education system consisted of missionary schools, public schools and private schools. The

missionary schools catered for the “natives”, mainly in the rural areas. The public schools catered for the Portuguese and the “assimilados”. These were located mainly in the urban areas. The private schools (mostly church owned) were mainly for the well-off Portuguese and “assimilados”. One of the characteristics of the pre-independence education system was that it was very selective and this has been retained by the post-independence education system. According to Martins (1992), out of every 1,000 pupils enrolled in the first grade, only 77 successfully completed lower primary school, (namely, Grade 1 to 5).

The SNE comprises five sub-systems, namely General Education, Adult Education, Technical/Vocational Education, Teacher Training and Higher Education. The education system is organized into three levels, namely, primary, secondary and higher education.

The 1983 Education Law, which created the National System of Education, was reviewed in 1992. The new law structured the education system into 3 subsystems, namely: pre-school education which caters for all pre-primary education and is under the Ministry of Women and Social Affairs and non-governmental institutions; school education, which caters for general education (primary and secondary), technical and vocational education and tertiary education; and extra school education which caters for literacy classes.

1.3.1 Pre-primary education

Pre-school education is provided in the crèches and kindergartens, initially was under the Ministry of Health and later transferred to the Ministry of Woman and Social Affairs. This education is provided mainly by NGOs and private institutions. This education is not compulsory and is beyond the means of most Mozambican citizens. As a result, only a small percentage of the target age group participates in formal pre-school education.

1.3.2 General Education

General education is the backbone of the National System of Education, and has the following levels:

Level 1 - General primary education

In Mozambique, primary education is free and compulsory. It is subdivided into two levels, namely, the lower primary, which consists of five years of schooling (Grades 1 to 5), and

upper primary, which comprises two years (Grades 6 and 7). The official age of entry into school is 6 years old. Usually, primary schools operate in two shifts. Because of the shortage of school places at this level, some primary schools operate three shifts. After seven years of primary education the pupils have a choice of enrolling for general secondary education, basic technical and vocational schools or secondary education for adults.

Level 2 - General secondary education

General secondary education is divided into two stages. The first stage, junior secondary, comprises three years (Grades 8 to 10). The second stage, senior secondary (also known as pre-university) comprises two years (Grades 11 and 12). Both levels of education are offered on the same premises.

Level 3 - Higher education

Public and private universities, higher institutes, and schools of higher education and academies provide higher education to those who have completed Grade 12. As a result of the stiff competition for limited places at this level, all pupils have to sit for an entry examination.

1.3.3 Teacher education

Teacher education is provided by primary school teacher training institutes and higher education institutions. To qualify for entry into primary school teacher training colleges, one has to hold a junior secondary school certificate. The teachers trained in these institutes can teach in both lower and upper primary schools. The teachers for both lower and higher secondary education are trained in universities.

1.3.4 Technical and vocational training

Technical and vocational training institutions equip students with skills that are required by the industry and other sectors of the country's economy, and largely prepare the workforce needed for the social and economic development of the country.

1.4 Number of schools between 2007 and 2013

During the period between 2007 and 2013, Mozambique continued to expand its primary education, particularly its upper primary schools, which increases almost threefold (see Table 1.2).

Table 1-2 Number and percentage of increase of schools between SACMEQ III and SACMEQ IV

	EP 1 - 2007*	EP 1 – 2013**	Diff - school s	Diff - %		EP 2 - 2007	EP 2 - 2013	Diff - school s	Diff - %
Cabo Delgado	823	893	70	8,5		185	325	140	75,7
Cidade de Maputo	103	103	-	-		72	92	20	27,8
Gaza	666	715	49	7,4		173	326	153	88,4
Inhambane	674	777	103	15,3		110	542	432	392,7
Manica	577	729	152	26,3		147	332	185	125,9
Maputo Provincia	423	457	34	8,0		161	269	108	67,1
Nampula	1.579	2.028	449	28,4		231	821	590	255,4
Niassa	788	944	156	19,8		304	244	-60	-19,7
Sofala	687	805	118	17,2		161	289	128	79,5
Tete	903	1.060	157	17,4		137	293	156	113,9
Zambezia	2.080	2.946	866	41,6		161	1054	893	554,7
Moçambique	9.303	11.457	2.154	23,2		1842	4.587	2.745	149,0

*Agenda do Professor 2008

** 2013 School survey

Primary education is provided in three types of school, namely, lower primary schools that teach from grades 1 to 5; upper primary schools that teach grades 6 and 7 and complete primary schools that teach from grade 1 to 7. With the introduction of a 7 years basic education, it is priority for the government that all children complete 7 years of primary education, thus, leading to the rapid expansion of upper primary education.

1.4.1 The administration of school education

In Mozambique, the Ministry of Education headquarters assumes overall responsibility for the administration of all education institutions in the country. The Minister of Education, the Vice-Minister and the Permanent Secretary, sit at the apex of the Ministry.

The Ministry of Education is structured in 19 Directorates and Departments and has four subordinate institutions and four supervised institutions namely,

- General Inspectorate of Education;
- National Directorate of Primary Education
- National Directorate of Secondary Education

- National Directorate for Technical and Vocational Education
- National Directorate of Literacy and Adult Education
- National Directorate of Teacher Training
- Directorate of Quality Assurance and Management
- Directorate for Qualifications Administration
- Directorate of Special Programs
- Directorate for the Coordination of Higher Education
- Directorate of Planning and Cooperation
- Human Resources Directorate
- Administration and Finance Directorate
- Minister's office
- Special Education Department
- Department of School Book and Education Materials Management
- Legal Department
- Department of Information and Communication Technology
- Documentation Centre

subordinate institutions

- National Institute for Educational Development
- Institute of Open and Distance Education
- National Board of Examinations, Certification and Equivalency
- Language Institute

institutions supervised

- Scholarship Institute
- International School of Maputo
- National Institute of Distance Education
- National Council for Higher Education Quality Assessment

There is a Provincial Directorate of Education for each of the 11 provinces, and this directorate falls under the command of a Provincial Director. Below the Provincial Directorate there is the District Directorate headed by a District Director. There are 146 districts in Mozambique. Below the District Directorate there is the school which is headed by a School Director.

Curriculum development for general education (primary, secondary and pre-university) and teacher training (basic and intermediate) is carried out by the National Institute for Educational Development (INDE).

In 2000, the Ministry of Education initiated the process of decentralizing curriculum development and monitoring. This system allows 20 percent of the national curriculum for basic education to be the “local curriculum”, implying that this portion of the curriculum was to be developed locally. This is one of the major innovations of the “Basic Education Curriculum Transformation in Mozambique” It is expected that the “local curriculum” will provide for the specific learning needs of the learners.

1.5 Financing of education

One of the fundamental challenges facing the Mozambique’s education system is the cost of expanding access and improving quality. The budget for the education sector is considered as a whole and financed by different sources: i) internal source , financed by tax revenue and the direct support to the State budget; ii) external source, including bilateral projects , sector support through the common fund (FASE) and contributions from various non-governmental organizations.

Internal Source finances most of the education sector spending (about 80 % in 2011) including the salaries of teaching and non- teaching staff and the goods and services for the operation of the institutions. A considerable part of the national budget for investment funds as the Government contribution in bilateral investment projects still require government reimbursement. The annual contribution from the external source is estimated at about 20-25% of sector spending. About 75 % of these external funds come from 12 bilateral and multilateral partners (2011) and is channelled through the Fund for Support to Education Sector (FASE) – (source: Education Sector Strategic Plan 2012 – 2016)

In order to ensure the highest possible level of co-operation among external donors to education, every year the Ministry of Education convenes a meeting with representatives of the major financial and technical agencies involved in the sector. By so doing, the Ministry of Education is able to provide leadership and facilitate coordination among donors in the implementation of the Ministry’s strategy.

1.6 Educational policy and policy reforms since 1995

Within the context of its overall development strategy, the government adopted in 1995 the *National Education Policy*, which established the policy framework for the National

Education System. The *National Education Policy* identified the government's main goals, with regard to the education system as a whole, and defines specific policies for every sub-sector within the system.

While acknowledging that the various educational needs have remained unfulfilled in the country, the government nevertheless also recognises that the scarcity of financial and human resources would not allow all of the needs to be addressed at once. The *National Education Policy* therefore identified basic education (Grades 1 to 7) and adult literacy as "the topmost priority of the government".

In its *Strategic Plan for Education*, the Ministry of Education has stressed the priorities identified in the *National Education Policy*, among them, increasing Mozambicans' access to the basic education. The *Strategic Plan for Education* defined the Ministry's fundamental objectives for basic education, and identified the means by which the Ministry, together with its partners, intended to move to accomplish them.

The 2006-2011 *Strategic Plan for Education* was rooted in a vision of an education system that was responsive to the needs and expectations of Mozambican citizens, and that was more closely aligned with the needs and requirements of the country's economy. The three main objectives of the education system, proposed by the *Strategic Plan for Education* were:

- a) To increase access and educational opportunities at all levels of the education system, for all Mozambicans;
- b) To maintain and improve the quality of education; and
- c) To develop an institutional and financial framework that would sustain Mozambican schools and pupils in future.

The central objective of the *Strategic Plan for Education* was the universalisation of access to primary education for all Mozambican children. Additional objectives included improvements in the quality of basic education and in the establishment of a sustainable, flexible, and decentralised system in which responsibility would be widely shared with those who work at lower levels of the system and those to whom it serves.

The 2012 -2016 strategic plan built on the previous plans defined these as the main objectives for the coming years:

- Ensure the inclusion and equity in access and retention in school;
- Improve student learning;
- Ensure a good system of governance.

In order to effect improvement in the quality of education, the Ministry of Education has, since 1997, undertaken a process of curriculum transformation for basic education. The target year for the introduction of the new curriculum was 2004. Procedures for curriculum reforms in the secondary, technical and vocational and teacher training were also underway.

Another relevant change for improving quality has been the changes in the textbook production with the development of the *National Book Policy*, which involved the private sector in the process. This policy was expected not only to enhance the provision of books, but also to ensure that the books were more responsive to the needs and circumstances of Mozambique.

After the SACMEQ III, Mozambique introduced two major education programs, aiming at monitoring education quality at early grades, and a project, aiming at improving the curriculum, especially for the early grades. The first program was the piloting of an early grade reading assessment with the objective of immediate intervention, called “Provinha Já Sei Ler”. This is a pencil and paper assessment of grade 3 pupils, assessing early reading skills, which should have been developed by end of grade 2. This test was applied twice a year, the first time, in the first school term, to identify the weaknesses, which teachers should address, and the second time, in the third school term, to evaluate the effectiveness of the intervention. The goal of this assessment was to ensure that by the end of grade 3 most pupils have learned to read. The second program was the development of a national assessment to be run every three years. For this; the Ministry of Education used the SACMEQ experience and national team to design, manage and administer the National Assessment. The first National assessment which was to serve as a baseline was administered in September 2013. The results showed that only 6.3 percent of grade three pupils could read short simple texts.

1.7 The main policy concerns of the Ministry of Education

There are three fundamental problems in the Mozambican education system, and these affect all levels of the system and virtually all institutions at each level. The first concern is limited

access to education, the second is poor quality, and the third is the cost of expanding access and improving quality. Each one of these is dealt with in greater detail below.

1.8 Limited access

Universal access to primary education was achieved shortly after independence but it dropped significantly in the subsequent years due to the economic crisis and civil unrest experienced by the country. The gross enrolment rate in lower primary increased from 59% in 1988 to 92.1 percent in 2000. According to MINED (2013) in 2013 there were as many as 11 457 schools for lower primary, but only 4 587 schools for upper primary. Consequently only a small proportion of children was able to complete the full primary education cycle.

Opportunities are even more restricted in secondary and tertiary institutions and in technical and professional schools, especially for girls and young women. In 2013, there were about 593 264 pupils enrolled in lower secondary (Grade 8 to 10) and only 129 513 in upper secondary (Grade 11 to 12). About 48 percent of pupils at this level were girls (MINED, 2013).

1.9 Quality of education

The quality of education provided in schools is perceived to be poor. At the lower primary level, the average pupil/teacher ratio was 61 in the year 2013. Most primary school pupils attend school on a double shift basis. The common basic learning materials are scarce or absent in many schools. The quality of educational facilities is often poor.

A large proportion of teachers at all levels is under-qualified for the posts they hold. Twenty one percent of all teachers at lower primary level and seventeen percent of upper primary level teachers are untrained and the majority received only ten years of academic preparation and one year of professional training.

The structure and content of the primary and secondary school curriculum is increasingly inappropriate for the economic and social changes that have taken place. The curriculum is rigid and prescriptive in orientation, allowing a few opportunities for local adaptation. There is a general perception that much of what is taught in primary schools is of doubtful relevance and practical utility. These are the main reasons why the Ministry of Education decided to

initiate, in 1997, the Transformation of the Curriculum for Basic Education, as a first step towards the improvement of the quality of education, and in 2012 it initiated the review of the 2004 curriculum.

1.10 Costs of sustaining reforms

The third problem is that the cost of sustaining expansion and improving quality within the present budget of the Ministry of Education is considered to be largely inadequate. Maintaining the current system, with all of its problems, is beyond the means of the Ministry, and a significant share of the annual budget is consequently met with funds provided by external partners.

1.11 SACMEQ and its importance and benefits in educational policy research and training

The importance and benefits of SACMEQ to Mozambique can be seen in two different perspectives. Within the national system of education, SACMEQ is one of the few known research projects that carried out a cross-national study using a truly representative sample. Generally, the studies carried out in the field of education in Mozambique are restricted in scope and do not employ truly representative national samples in their design.

Consequently, SACMEQ IV promised to provide not only a great training opportunity for local team members on how to conduct a large-scale research project, but also provided valid and reliable data on which important decisions could be based. On the other hand, SACMEQ IV promised to provide relevant, high quality data about the academic profile of teachers, the level of performance in the areas assessed, school management and other aspects that are relevant for policy making.

Within the educational context of the region

Mozambique, as a Portuguese speaking country, has a unique history, tradition and system of education that is different from that of the other participating countries. The data collected through SACMEQ IV can be considered to be of extreme importance for Mozambique's education system, since it can provide the country with important data to promote a reflection on its primary education sector, identify the position of Mozambique's education system within the region, and work towards its improvement.

One limitation of this study is that the school children in Mozambique are not used to multiple-choice questions. In Mozambique, the assessment is based on tests using short answers, and this could have affected pupils' achievement results.

1.12 Conclusion

This chapter provided a general background on Mozambique and its education system. A fuller understanding of the country context, the structure of the education system, the educational reforms that have taken place and the outstanding challenges should help the reader contextualise better the results to be presented in subsequent chapters. The importance of Mozambique's participation in SACMEQ IV was highlighted, and the benefits will certainly be worth its participation.

2. Chapter 2 The Conduct of the study

2.1 Introduction

Over the years since its first project in 1995, SACMEQ has developed research instruments and collected useful information using advanced research methods. An important principle in the studies is to ensure that SACMEQ can generate valid measures of levels and changes in achievement: (a) across countries at single time points, and (b) across time points for individual countries. To achieve this goal, SACMEQ follows virtually the same methodologies across studies and uses the same instruments which must be kept confidential to remain valid. The methodology and instruments that were used in the SACMEQ IV project in 2013 were, therefore, the same as in SACMEQ II and III. For a detailed account of the study design, sampling techniques and the development of the instruments, reference should be made to the second chapter of the SACMEQ II report. The SACMEQ IV research project also includes a HIV/AIDS knowledge test (HAKT) for Grade 6 learners and their teachers.

The SACMEQ IV project represents a major increase in the scale and complexity of SACMEQ's research and training programmes. The focus of the project was on conditions of schooling and the quality of education in 14 school systems: Botswana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania (Zanzibar), Uganda, Zambia and Zimbabwe. The purpose of the project was to gather information on a) the general conditions of schooling, b) the reading and mathematics achievement levels of Grade 6 learners and their teachers, and c) the knowledge that learners and their teachers have about HIV/AIDS. The main data collection for the project covered a total of around 62 218 pupils, 6 667 teachers and 2 507 school heads. In this chapter, specific aspects of the methodology followed in SACMEQ IV study are outlined. These include a description of the sample used, data collection, cleaning and analysis.

2.1. The study population

(a) Desired and target population

The desired target population definition for SACMEQ IV study was the same (except for the year) as was employed for the SACMEQ II and III studies. This consistency was maintained

to make valid cross-national and cross-time estimates of change in the conditions of schooling and the quality of education. The desired target population definition for the SACMEQ IV study is as follows:

“All learners at Grade 6 level in 2013 (at the first week of the eighth month of the school year) who were attending registered mainstream (primary) schools.”

(b) Excluded target population

One of the rules followed by SACMEQ to ensure valid data in large-scale studies is that no more than 5% of the learners in the desired target population may be excluded from the defined target population. Like in SACMEQ II and III, special schools which provide education to learners with severe educational needs were excluded from SACMEQ IV sample. Schools which had less than 15 learners enrolled in Grade 6 in 2013 were also allocated to the excluded population to reduce data collection costs – without the risk of leading to major distortions in the study population.

(c) Defined target population

The defined target population was constructed by removing the excluded target population from the desired target population. In Table 2.1, the numbers of schools and learners in the desired, defined and excluded populations have been presented.

Table 2-1 **Desired, Defined, and Excluded Populations**

Desired		Defined		Excluded		Excluded pupil %
Schools	Pupils	Schools	Pupil	Schools	Pupils	
4185	406777	3841	400607	344	6170	1.52

From the last column of Table 2.1, it can be observed that the excluded population of learners was less than the stipulated 5% to meet the SACMEQ criteria for accuracy in large-scale assessment data.

2.2 Data collection

In this report “Data Collection” includes preparations before the fieldwork, the actual fieldwork and activities that followed field work.

Preparations for the main data review

Preparations focused on instrument review, communication to schools, printing and distribution of instruments and training of data collectors.

(a) Instrument review

As soon as the 2011 SACMEQ Assembly of Ministers took a decision to conduct SACMEQ IV project in 2013, the National Research Teams (NRTs) under the auspices of the SACMEQ Coordinating Centre in Paris, set out to prepare and update the instruments (tests and questionnaires). Between 2012 and 2013 the SACMEQ Coordinating Centre hosted at least three working sessions for the NRTs in Nairobi (Kenya), Lusaka (Zambia), and Pretoria (South Africa) that were focused on reviewing existing test items and ensuring that, where there had been curriculum changes, the items were still relevant. Invariably, there were no significant changes on the Reading, Mathematics and Health Knowledge test items. SACMEQ IV test items were piloted, first, in a few primary schools in South Africa, and then in individual member countries. The pilot study was intended to ensure that the language in SACMEQ IV tests were accessible to learners, that there were no cultural biases in the items and learners comprehended how to write their responses.

In some countries the tests were subsequently translated into respective language(s) of instruction (Portuguese]). Care was taken to ensure that the English and other languages used for the tests were equivalent to avoid unfair advantage in any of the language(s).

The final statistical and content validity and reliability checks of the instruments were carried out by NRTs and specialists at the SACMEQ Coordinating Centre who then declared the instruments ready to print and take to the field.

(b) Communication to schools

The sampled schools were notified by the office of the Permanent Secretary through the Provincial Directorates of Education (PDE) at the beginning of 2013. In addition, National Institute for Education Development (INDE) identified a coordinator for data collection and teams of data collectors from provincial officials. The teams were responsible for distributing the data collection schedules as well as intensifying and monitoring communication to schools in their respective provinces and districts.

(c) Printing and distribution of data collection instruments

Data collection instruments included a) school head booklets, b) school information booklets, c) teacher booklets, d) learner booklets e) learner name forms and school forms. Each participating country received print-ready copies from the coordinating centre and was responsible for printing correct numbers of copies for their respective schools. In the case of Mozambique, the instrument were translated into Portuguese before printing.

After all instruments were printed, experts from INDE verified if there were no missing/extra pages, misprints or omissions. All work related to the printing and packaging of the data collection instruments was undertaken under strict security arrangements – so that there was no possibility of ‘leakage’ of information about the content of the learner and teacher reading, mathematics and health knowledge tests.

The printed materials were distributed to leaders of research teams who were assigned to collect data in each school. The team leaders were responsible for checking the accuracy of the instruments in terms of correctness of numbers and languages before carrying the instruments to the schools. The first level of checking was done during data collection training sessions. The data collectors were charged with further and final checks a day before the data collection.

(d) Training of data collectors

In Mozambique, a total of 159 data collectors were trained. At first, 29 data collector trainees were trained by the NRCs in a training of trainers (TOT) workshop. The **trained** data collectors went on to train 130 data collectors from their respective provinces. On the first day of training, the NRCs presented a simulated data collection exercise in which the SACMEQ NRTs acted as data collectors and the trainee data collectors took the roles of learners, teachers and school heads. The second day involved an intensive study of the manual for data collectors. This document set down, in sequential order, all the actions to be taken by the data collector from the time of receiving packages of data collection instruments from **the** INDE, time when the data collector had completed the data collection and was preparing all materials for return. The third day, the trainees were taken through the within and between checks that should be necessary. The experiences gathered during these exercises were shared and discussed during a meeting so that all data collectors understood the procedures to be completed within schools.

2.3 Main data collection

Main data collection in this report refers to the actual field work. Special effort was made to ensure that the data collection was conducted according to explicit and fully-scripted steps so that the same verbal instructions were used (for learners, teachers and school heads) by the data collectors in all sampled schools in all countries for each aspect of the data collection. This was a very important feature of the study because the validity of cross-national comparisons arising from the data analyses depended, in large part, on achieving carefully structured and standardized data collection environments.

The main SACMEQ IV data collection occurred for most SACMEQ ministries of education over the period of September 2013 to December 2013. In Mozambique additional information was collected in first quarter of 2014. Two days of data collection were required for each sample school. On the first day, the data collectors had to sample learners from all the Grade 6 classes in the sampled schools, using a list of provided random numbers. The sampled learners were then given the learner questionnaire, the HAKT and the reading test. On the second day, they were given the mathematics test. Part of the learner questionnaire required learners to get confirmation on the accuracy of the information from their parents and so the questionnaire was taken home and returned the following day. In addition to completing a questionnaire, one teacher who taught majority of the sampled learners for each of reading, mathematics and health education (for the HIV/AIDS test) also completed the relevant tests.

The data collectors were provided with a 40-point checklist to ensure that they completed all important tasks that were required before, during and after their visits to schools. Each task was cross-referenced to specific pages of instructions in the data collectors' manual. The data collectors also checked all completed questionnaires (learner, teacher and school head) and, if necessary, obtained any missing or incomplete information on the second day before they left the school. The materials were then handed over to the regional coordinator for safekeeping, hand editing and dispatching to the National Research Coordinator (NRC) in Windhoek as soon as all data collection was completed.

2.2 Sampling and sample characteristics(2.4)

A two-stage sampling design was employed. In the first stage, schools in the defined target population were sampled on a Probability Proportional to Size (PPS) basis from sampling frames that individual countries submitted to the SACMEQ Coordinating Centre. In the second stage of sampling, learners were sampled from all the Grade 6 classes in each of the sampled schools using simple random sampling. Computer-generated random numbers were used to facilitate the sampling of pupils. Twenty-five (25) learners (minimum cluster size) were sampled where the total number of all enrolled Grade 6 learners at the time of data collection was greater than 25. Where the number of Grade 6 learners was 25 in a school, all the Grade 6 learners were included in the sample.

For a detailed account of how the sampling of schools and learners was carried out, including the software that was used in the SACMEQ IV project, the reader may refer to Ross and Saito (in press). The numbers of schools and learners in the planned and actually achieved sample have been presented in Table 2.2.

Table 2-2Planned and Achieved Samples for SACMEQ IV

	Planned		Actual		%	
	Schools	Learners	Schools	Learners	Schools	Learners
2013 SACMEQ IV	200	5000	189	4820	94%	96.4%

2.5 Response rate, design effect effective sample size

The size and the quality of the sample are critical to the accuracy of the research. The response rate, the design effect and the effective sample size are some of the characteristics that SACMEQ monitors in all the projects. The response rates, design effects and effective sample sizes for the SACMEQ IV project have been presented in Table 2.3.

Table 2-3Response rates, design effects, effective sample sizes for SACMEQ IV

Response rate		Design effect			Effective sample size		
Schools	Pupil	Reading	Mathematics	HHKT	Reading	Mathematics	HHKT
94.5	96.4	14.20	14.33	9.97	339	241	386

Figures in the first two columns under the heading Response Rate (%) in Table 2.3 are the response rates for schools and learners respectively. The third, fourth and fifth columns under the heading Design Effects are numbers (ratios) that indicate the amount of sampling error associated with the two-stage sample for each of Reading, Mathematics and HAKT estimates. Columns six, seven and eight under the heading Effective Sample Sizes are numbers of sample units (learners) in a simple random sample that would give the same level of accuracy as the two-stage sample that was used in the study for each of reading, mathematics and Response rate in surveys refers to the percentage of the total sample units that were planned who actually participated in the study. The SACMEQ rule is that the overall response rate for both the schools and the learners should not be less than 90%. In the SACMEQ IV project, the Mozambican overall response rates for schools and learners were 94.5% and 96.4% respectively.

Design effect is a number (ratio) which indicates the amount of sampling error that is introduced by the use of a clustered (two-stage) sampling method in relation to the sampling error that would result if a simple random sample of the same size had been used. Alternatively, the design effect is the ratio of the variance (of the sample mean) for a multi-stage sample to the variance for a simple random sample of the same size. Generally, the inaccuracy associated with a multi-stage sample is many times greater than the inaccuracy associated with a simple random sample of the same size. Applied to SACMEQ IV, this means that for reading, the achieved two-stage sample of 4 had a variance (of the sample mean) which was 8.8 times the variance that would be realised if a simple random sample of the same size was used. For mathematics, this ratio was 8.9, while for HAKT it was 9.0.

Effective sample size is calculated from the design effect. It is the size of a simple random sample that would be required to give the same level of accuracy as the given multi-stage sample. For Reading in this case, a simple random sample of 841 learners would have given the same level of accuracy as the two-stage sample of 7 423 learners. The Effective Sample Size for Reading = $4820/14.2 = 339$ learners. Possible (small) inaccuracies in this calculation may be due to the fact that not all 4820 learners in Mozambique took all three tests. The Effective Sample Sizes of each of Mathematics and HAKT can be calculated in the same way provided care is taken to use the correct values. Generally, the Effective Sample Size will be smaller than the given actual multi-stage sample.

The sample designs used in the SACMEQ IV project were selected to meet the standards set by the International Association for the Evaluation of Educational Achievement (IEA). These standards require that sample estimates of important learner population parameters in multi-stage designs should have sampling accuracy that is at least equivalent to a simple random sample of 400 learners (thereby guaranteeing 95% confidence limits for sample means of plus or minus one tenth of a learner standard deviation unit).

2.6 Data entry, Data checking and Data cleaning

In this section, the processes that were followed at national level to check, enter and clean the data have been described.

Data preparation started soon after data collection was completed. The NRCs organized safe return of all materials to the Ministry of Education where data collection instruments could be checked, entered into computers, and then “cleaned” to remove errors prior to data analyses. Data-checking involved “hand editing” of data collection instruments by a team of trained staff. They were required to check that: (i) all questionnaires, tests, and forms had arrived back from the sampled schools, (ii) the identification numbers on all instruments were complete and accurate, and (iii) certain logical linkages between questions made sense (for example, the two questions to School Heads concerning “Do you have a school library?” and “How many books do you have in your school library?”)

The next step was the entry of data into computers using the Data Management Expert (DME) software. A team of 5-10 staff members normally undertake this exercise. Trained data capturers, supervised by the NRT, double cleaned all the questionnaires using the checks used. In Mozambique Data capturers entered the data into computers using DME software supplied by the SACMEQ Coordinating Centre. Data was double entered in order to monitor accuracy. Mozambique had 50 data enterers who worked for a maximum of eight hours per day, and the data entry operation took around 25 working days (four weeks).

At individual country level, NRTs followed a “cyclical” process whereby data files were cleaned by the NRT and then emailed to the Coordinating Centre for checking and then emailed back to the NRC for further cleaning. The Mozambican NRT received the completed materials from the regional coordinators and kept these safely while they were being checked, captured into computers, and then cleaned to remove errors prior to data analysis.

To clean the data, using the Data Management Expert (DME) software, the NRTs followed specific directions to (i) identify major errors in the sequence of identification numbers, (ii) cross-check identification numbers across files (for example, to ensure that all learners were linked with their own Reading and Mathematics teachers), (iii) ensure that all schools listed on the original sampling frame also had valid data collection instruments and vice-versa, (iv) check for “wild codes” that occurred when some variables had values that fell outside pre-specified reasonable limits, and (v) validate that variables used as linkage devices in later file merges were available and accurate.

Data checking and data cleaning

In this section, the processes that were followed at national level to check, enter and clean the data have been described.

(a) Data checking and data entry

The Mozambique NRT received the completed materials from the regional coordinators and kept these safely while they were being checked, captured for analysis. Data-checking involved the hand editing of data collection instruments by a team of trained staff and trained data capturers. The staff checked that: (i) all expected questionnaires, tests and forms had been received, (ii) the identification numbers on all instruments were complete and accurate, and (iii) certain logical linkages between questions made sense (for example, they had to verify if the two questions to school heads concerning “Do you have a school library?” and “How many books do you have in your school library?” were answered consistently).

Trained data capturers, supervised by the NRT, double cleaned all the questionnaires using the checks used. Data capturers entered the data into computers using data DME supplied by the SACMEQ Coordinating Centre. Data was double entered in order to monitor accuracy. Mozambique had 50 data enterers who worked for a maximum of eight hours per day, and the data entry operation took around 25 working days (four weeks).

(b) Data cleaning

To clean the data, using the DME software, the NRTs followed specific directions to (i) identify major errors in the sequence of identification numbers, (ii) cross-check identification numbers across files (for example, to ensure that all learners were linked with their reading and mathematics teachers), (iii) ensure that all schools listed on the original sampling frame also had valid data collection instruments and vice-versa, (iv) check for wild codes that occurred when some variables had values that fell outside pre-specified reasonable limits, and (v) validate that variables used as linkage devices in later file merges were available and accurate.

2.7 Merging and weighing

When data cleaning was complete, the NRT merged the data from all the sources and submitted to SACMEQ Coordinating Centre for further processing. At the coordinating centre, a further merging process required the construction of a single data file in which learners were the units of analysis and the rest of the data from the other respondents were

linked to the learner data. That is, each record of the final data file for the country consisted of the following four components: (a) the questionnaire and test data for an individual learner, (b) the questionnaire and test data for his/her mathematics, reading and health teacher, (c) the questionnaire data for his/her school head, and (d) school and learner forms.

To illustrate, with the merged file it was possible to examine questions of the following kind: “What are the average reading and mathematics test scores (based on information taken from the learner tests) for groups of learners who attend urban or rural schools (based on information taken from the school head questionnaire), and who are taught by male or female teachers (based on information taken from the teacher questionnaire)?” The calculation of sampling weights could only be conducted after all files had been cleaned and merged. Sampling weights were used to adjust for missing data and for variations in probabilities of selection that arose from the application of stratified multi-stage sample designs. There were also certain country-specific aspects of the sampling procedures, and these had to be reflected in the calculation of sampling weights.

Two forms of sampling weights were prepared for the SACMEQ IV project. The first sampling weight (RF2) was the inverse of the probability of selecting a learner into the sample. These raising factors were equal to was the inverse of the probability of selecting a learner into the sample. These raising factors were equal to

2.8 Data analysis

The data analysis for the SACMEQ IV project was very clearly defined because it focused specifically on generating results that could be used to fill in the blank entries in given dummy tables. There were two main tasks in this area. First, SPSS software was used to construct new variables (often referred to as ‘indices’) or to re-code existing variables. For example, an index of socio-economic level was constructed by combining re-coded variables related to learners’ homes, and the number of possessions in their homes. Second, the coordinating center used SPSS tools to populate dummy tables with appropriate estimates and corresponding sampling errors.

2.9 Writing the SACMEQ IV National Reports

The NRT commenced the process of drafting their national reports during 2015. A working meeting held in Mbabane, Swaziland during February 2015 was organized to support the NRT in this work. This working meeting permitted the NRT to work together and exchange ideas concerning the policy implications of the research results.

A note on the interpretation of the data analyses

Before presenting the results, two points should be stressed. The first is that the variables presented in this chapter represent a small subset of the larger number of variables for which data were collected. The Ministry will produce a separate publication containing descriptive statistics for all variables available in the study to interested readers.

The second point is that it is important to interpret each statistic in association with its sampling error. It will be recalled from Chapter 2 that the sample was drawn in order to yield standard errors of sampling for pupils in Grade 6 in Mozambique, such that a sample estimate of a population percentage would have a standard error of $\pm 2.5\%$. For this level of sampling accuracy one can be sure that 19 times out of 20 the population mean of a percentage lies within $\pm 5\%$ of the estimate derived from the sample. The sampling errors for means are also given in the tables and a similar magnitude in terms of the confidence interval for values within two standard errors. The analysis of whether the changes from SACMEQ III to SACMEQ IV are statistically significant will be done by comparing the confidence interval (mean value ± 2 standard error).

2.3 Conclusion

The aim of this Chapter was to describe the research procedures that were applied for the execution of SACMEQ IV project. The Chapter was prepared to give an overview of how the study was conducted in individual countries. The sample design procedures and the construction of the Reading, Mathematics and HAKT tests for learners and their teachers were to a large extent modeled on the SACMEQ II and III projects.

Following the trend started in SACMEQ II project, the fourth SACMEQ project moved away from traditional approaches of calculating test scores (based on numbers of correct responses to test items) to the use of Modern Item Response Theory to generate descriptions of “levels of increasing learner competence”. This approach to describing learner Reading, Mathematics

and HAKT achievements offered a mechanism for describing the performance of learners in a manner that was more meaningful within a teaching and learning context.

One of the important messages that emerged from this part of the Project was that the speed at which a cross-national research project proceeds is strongly influenced by the speed with which the slowest country can complete all aspects of its data collection and data preparation.

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3. Chapter 3 Pupils' Characteristics and their Learning Environments

3.1 Introduction

In this chapter, information on some of the characteristics of pupils and their homes is presented, for three reasons. First this information provides a context for the subsequent analyses in this report. Second, SACMEQ III and SACMEQ IV distribution of the indicators is useful to compare the types of pupils in Grade 6 at different time periods. The third reason is related to home background. From the home context variables, a socio-economic scale is constructed, and it is important for the reader to know which variables are included in this scale.

Schools that have an intake of pupils from 'better' home backgrounds should achieve better than schools that have an intake of pupils from less well-off home backgrounds. Indeed, the research literature abounds with such examples. It is schools that have high scores but have an intake of low socio-economic status children that are remarkable. Many of the school and teacher variables in this report will be examined for their effect on pupil achievement. It is important to examine their relationship with achievement in SACMEQ III and SACMEQ IV to understand their effect once socio-economic status (SES) of pupils has been taken into account, to make it possible for the Ministry of Education to invest in the malleable variables that have a significant impact on student achievement.

3.2 Specific policy questions related to educational inputs

As a starting point, in order to guide the data analyses, the very broad educational policy question, posed in the title to this chapter, was divided into specific questions. These questions were used to develop a more structured response to the educational policy issues surrounding the main question.

1. What was the age distribution of Grade 6 pupils?
2. What were the home circumstances of Grade 6 pupils?
3. How much did parents help children with their schoolwork?
4. What was the location of the school?

5. Which were the changes from SACMEQ III to SACMEQ IV on questions 1 to 4?

3.3 What was the age and sex, distribution of Grade 6 pupils?

In Table 3.1, the age in months as well as the percentage of Grade 6 pupils who are girls are shown.

Table 3-1 Means, percentages and sampling errors for the pupil age, sex, and home-related characteristics (SACMEQ IV)

Province	SACMEQ IV (2013)											
	Age (months)		Sex (female)		Books at home (number)		Possessions at home (index)		Meals (index)		Parent education (index)	
	Mean	SE	%	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
CAB	176.6	2.19	36.8	4.88	5.5	1.30	3.7	0.62	6.6	0.30	2.6	0.23
GAZ	159.1	0.83	57.0	2.09	11.6	2.00	6.5	0.32	7.4	0.25	2.9	0.11
INH	160.0	1.44	52.7	2.99	7.3	0.97	5.4	0.40	8.0	0.18	2.9	0.16
MAC	155.9	1.53	57.6	2.89	10.1	2.25	7.9	0.16	8.2	0.15	3.5	0.08
MAN	166.7	2.54	49.9	3.45	9.1	1.90	5.4	0.43	7.1	0.35	2.9	0.10
MAP	156.3	1.64	52.0	2.52	11.4	1.91	7.3	0.29	8.0	0.13	3.6	0.14
NAM	172.7	1.43	47.9	2.76	5.6	1.12	4.0	0.41	6.9	0.21	2.8	0.13
NIA	171.0	2.23	46.3	3.22	12.8	4.40	4.6	0.35	6.8	0.24	2.9	0.16
SOF	169.3	1.66	43.2	4.06	8.9	1.16	5.9	0.46	7.4	0.26	2.9	0.12
TET	167.3	1.76	40.1	4.22	8.9	0.94	5.4	0.58	6.7	0.66	2.8	0.19
ZAM	170.7	2.01	39.1	3.40	6.8	1.34	4.3	0.45	7.0	0.29	2.5	0.17
MOZ	166.3	0.55	47.2	1.02	8.4	0.51	5.4	0.13	7.3	0.09	2.9	0.05

Table 3-2 Means, percentages and sampling errors for the pupil age, sex, and home-related characteristics (SACMEQ III)

Provinces	SACMEQ III (2007)					
	Age (months)	Sex (female)	Books at home (number)	Possessions at home (index)	Meals (index)	Parent education (index)

	Mean	SE	%	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
CAB	191.2	3.4	42.	3.5	7.4	2.0	3.5	0.4	7.2	0.1	2.0	0.1
GAZ	166.4	1.0	51.	2.4	9.9	2.6	4.9	0.4	7.6	0.2	2.3	0.1
INH	164.9	1.9	51.	2.3	12.9	2.3	5.4	0.3	8.1	0.1	2.4	0.1
MAC	157.8	2.0	54.	2.6	17.1	2.6	7.1	0.1	8.2	0.0	2.6	0.0
MAN	170.1	2.0	43.	3.4	6.1	0.6	4.4	0.4	8.4	0.1	2.2	0.1
MAP	160.6	2.0	51.	2.8	12.2	1.7	6.4	0.3	8.1	0.2	2.5	0.1
NAM	176.0	2.1	38.	3.1	5.9	1.1	4.3	0.4	7.4	0.3	2.2	0.1
NIA	175.0	3.7	49.	3.8	6.0	1.0	3.1	0.3	7.9	0.2	2.0	0.1
SOF	163.6	1.9	42.	2.9	7.5	1.1	4.0	0.5	7.8	0.2	2.4	0.1
TET	171.9	2.5	46.	3.2	7.9	1.7	3.7	0.4	7.5	0.2	1.9	0.0
ZAM	177.9	2.4	38.	3.9	5.0	1.3	3.7	0.3	7.7	0.1	2.2	0.0
MOZ	170.2	0.7	45.	1.0	8.9	0.5	4.7	0.1	7.8	0.0	2.3	0.0

The data summarized in Table 3.1 shows that the mean age, for all the Mozambican Grade 6 pupils in 2013, was 166.3 months (13.8 years). If all pupils had entered school at the official age of entry and there had been no grade repetition, then the expected age would have been 132 months (11 years). Pupils enter school in January if they have turned or will turn 6 years by 31 December. The figure of 132 months was derived by adding 6 years of study to 5.5 years (the average age of entry). Thus, the pupils in the sample were around 3 years older than expected. There were big variations among the regions. For example, Cabo Delgado had the oldest pupils (almost 14.6 years old) and Maputo Cidade the youngest (13.0 years old). The high numbers of over-age pupils could be due to a combination of high levels of grade repetition and late entry into the first grade.

Comparing these results with the 2007 ones, one can conclude that there was an improvement (see Table 3-2). While in SACMEQ III the mean age for all the Mozambican grade 6 pupils was 170.2 months, by 2013, it had dropped to 166.2 months, and this difference is statistically significant. However, it is still far above the expected age of 132 months. That improvement might be the result of policy of automatic promotion consolidation which has

reduced repetition and dropout rates. It could be also attributed to the expansion of access to education, which allowed children to start school earlier and progress to upper primary level.

Although imbalance in gender distribution at the national level persists, there was an improvement from 2007 to 2013, although not statistically significant. While the percentage of girls in Grade 6 was 45.7 % in 2007, by 2013 that percentage had increased to 47.2%. The gender gap across provinces has improved. Particularly, in Southern provinces (Gaza, Inhambane, Maputo Province and Maputo Cidade), the gender gap was in favour of girls. However, despite the improvement, the gender gap remains large in the provinces located in the Central and Northern parts of the country. For instance, Zambézia had the lowest percentage of girls (39.1%). These figures are consistent with findings from the annual school census. One of the plausible reasons for gender gap persistence in the provinces located in Northern and Central parts of the country is related to the tradition of initiation rites and premature marriage, as well as school location. It is important that the Ministry of Education continues to develop and implement policies which promote gender balance, especially in the North and Centre of the country.

Policy suggestion 3.1. The Ministry of Education should disseminate the National Gender Policy in the Education Sector.

Policy suggestion 3.2. The Ministry of Education should commission a study to identify the impact and constraints in the implementation of the Gender Policy particularly in Central and Northern Provinces.

3.4 What were the Home circumstances of grade 6 pupils?

The benefits of a favourable home background in terms of education have various components. One component concerns the wealth of the home in monetary terms. It is impossible to ask children what their parents earn. Thus, proxy or indirect methods of assessing the wealth of a home were used. One aspect are the goods they possess at home (home possessions). A second component is the intellectual milieu as characterized by the education of parents and the books they have at home. Both can be of use to the child's learning.

The data summarized in Table 3.1 and Table 3.2 shows that between 2007 and 2013 there was a no statistically significant changes in the number of books at home. The average Grade 6 pupil had 8.5 books at home in 2013, and in 2007 the average was 8.9. The figure for the provinces ranges from a low of 6.0 books for Zambézia to the highest of 11.6 books, on average, for Gaza. In provinces such as Zambézia, poverty and low literacy levels may explain the low level of parents' book possession at home. Given that it is important for pupils to be able to read at home if they are to perform well in reading tests (Elley, 1992), it is disappointing to learn that there were so few books at home in Mozambique. If there are few books in the home, then the Ministry may wish to overcome this deficit by ensuring that children can take library books home. The Ministry can also provide mobile libraries that visit villages at least once every two weeks.

The other data summarized in Table 3.1 relates to the number of possessions that the pupils stated they had in their homes. In the pupil questionnaire, a question was asked about thirteen assets they might possess in the home. These were: daily newspaper, weekly or monthly magazine, radio, TV set, video cassette recorder (VCR), cassette player, telephone, car, motorcycle, bicycle, piped water, electricity (mains, generator, solar) and a table to write on. The number of assets present at home was summed for each pupil. The lowest score possible was zero and the highest 13. The average number of assets was 5.2 items, that is, less than half.

Comparing the results of 2007 to 2013, there was a slight increase, from 4.7 to 5.2 items. The variation across provinces was higher. The highest was in Maputo Cidade with 7.9 assets, and the lowest was in Cabo Delgado with 3.7.

A further question was included concerning the nutrition of pupils in terms of having three meals a day, even if the nutritional value of each meal was not considered. The question asked about a morning meal, a midday meal and an evening meal, and sought to establish how many times a week pupil ate each of the meals. A score of 3 meant that they did not eat at all while a score of 12 indicated that they ate every meal each day. The average Grade 6 pupil in 2013 had a score of 7.3 on this meal index. There were no big changes from 2007 (average meal index score 7.8) to 2013. Although the average for Cabo Delgado was the lowest for all provinces (6.6), it was still quite high in absolute terms. Despite the reasonable

number of the meals it is important to stress that according to MPD (2013) the level of chronic malnutrition is high, especially in rural areas where it reaches 50% for children aged between 0 and 60 months. It seems that the meals are not nutritious enough to allow balanced physical and psychological development. It could be important for the Ministry of Education to increase the school feedings schemes to supplement the nutrition of children.

The final data summarized in Table 3.1 concerned the parental education of Grade 6 pupils. Separate questions were asked on the mother's and father's educational levels. The results were summed and divided by 2. A score of '0' indicated that neither parent had received any school education and a score of 6 indicated that both parents had completed senior secondary and had had some tertiary education. In 2013, the average was 2.9 years for Mozambique as a whole and the variation among regions was small. The highest figure was 3.5 (Maputo Cidade) and the lowest 2.6 in Cabo Delgado. The level of parent's education between 2007 and 2013 has increased from 2.3 to 2.9. That significant improvements could be explained by the rapid expansion of literacy programs.

3.5 Place where pupil is living during the school year

The places where pupil stayed during the school week are presented in Table 3.3. Across the two surveys no significant changes was observed in the distribution pattern where pupil is living during school year. In both surveys, 4 out of 5 pupils live with their parents during the school year. No big variation was observed among the provinces.

Table 3-3 Place where pupil is living during the school year

SACMEQ II (2013)								
Place where pupils stay during the school week								
Provinces	Parent/Guardian		Relatives/Family		Hostel/Board		Self/Children	
	%	SE	%	SE	%	SE	%	SE
CAB	89.7	2.41	6.9	1.67	0.6	0.56	0.0	0.00
GAZ	94.0	1.06	4.3	0.79	0.0	0.00	0.8	0.42
INH	86.0	2.07	9.8	1.64	0.6	0.40	0.0	0.00
MAC	90.7	1.60	6.5	1.43	0.0	0.00	0.0	0.00
MAN	84.4	2.57	6.2	1.33	1.0	0.67	0.2	0.19
MAP	89.3	1.84	6.9	1.15	0.3	0.31	0.0	0.00
NAM	82.1	2.93	11.1	2.20	0.9	0.43	0.5	0.32
NIA	78.6	2.53	14.0	2.02	0.2	0.22	0.5	0.35
SOF	82.3	2.85	12.5	3.21	1.1	0.66	0.3	0.35

TET	83.0	3.65	12.1	1.89	1.8	0.93	1.1	0.63
ZAM	88.8	2.03	9.4	2.15	1.1	0.67	0.0	0.00
MOZ	86.1	0.82	9.3	0.67	0.8	0.18	0.3	0.09

SACMEQ III (2007)

Place where pupils stay during the school week

Provinces	Parent/Guardian		Relatives/Family		Hostel/Board		Self/Children	
	%	SE	%	SE	%	SE	%	SE
CAB	89.8	2.24	6.8	1.88	0.4	0.42	0.7	0.51
GAZ	95.3	1.54	4.3	1.43	0	-	0.3	0.31
INH	89.9	2.44	8.1	1.88	0.8	0.50	0.6	0.38
MAC	90.3	1.88	8.3	1.87	0.5	0.54	0.9	0.52
MAN	97.0	1.35	2.8	1.35	0	-	0.2	0.24
MAP	92.6	1.73	7.0	1.77	0	-	0.2	0.24
NAM	83.1	2.79	10.0	2.21	3.4	1.88	6.3	1.87
NIA	81.8	3.66	12.2	2.30	2.6	1.59	4.4	2.57
SOF	77.9	4.44	9.6	1.58	1.0	0.55	11.8	4.43
TET	85.7	2.00	9.5	1.83	2.6	1.30	2.9	1.35
ZAM	86.6	1.85	9.7	1.89	0.5	0.36	3.0	1.80
MOZ	88.1	0.77	8.1	0.59	1.1	0.29	3.0	0.58

3.6 Pupil's home quality

One of the ways of measuring the quality of pupils' home is to assess the materials that make up the walls and roof of their homes. Information on the condition of lighting, floors, walls and roofs, where Grade 6 pupils stayed, has been summarized in Table 3.4. An index for the general quality of Grade 6 learner's home was constructed from the sum of the indices for (a) lighting, (b) condition of floors, (c) condition of walls and (d) condition of roofs. For each of the aspects (a) to (d) the minimum value of the index was 1 for basic or poor condition, and the maximum was 4 if the condition was the best achievable. Therefore, the minimum value of the index for general quality was 4 if all the aspects were basic or poor and the maximum was 16 if all the aspects were good. The means for the general quality of the learners' homes have been summarized in figure 3.1 for each province and for Mozambique in general.

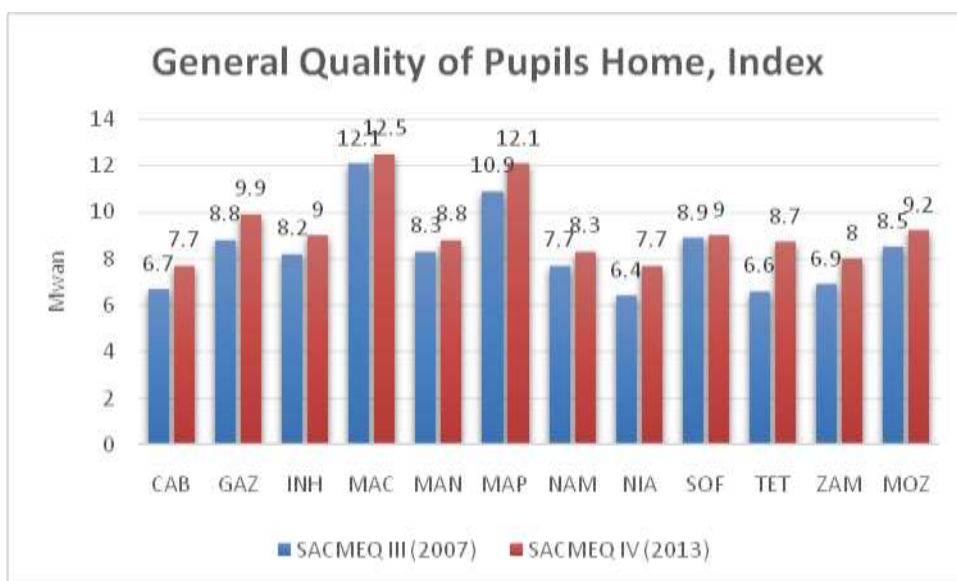


Figure 3.1 Means and sampling errors for the general quality of pupils' homes

The average index for the quality of pupils' homes, in Mozambique, has improved slightly from 2007 to 2014. It has increased from 8.5 to 9.2. It is also noteworthy that the pattern of variation across provinces has not changed. For instance, both in 2013 and 2007, Niassa, and Cabo Delgado were the provinces with lower level of pupils' home quality (7.7 in 2013 and 6.4 in 2007), on contrary, Maputo Cidade was the province which pupils' home quality has the highest score (12.5 in 2013 and 12.1 in 2007, see figure 3.1). These results may reflect the disparity in the income distribution between the regions.

One other aspect of interest is the extent to which the pupils spoke Portuguese rather than their local language outside school. The percentages of pupils who spoke Portuguese ‘sometimes’, ‘often’ and ‘all of the time’ have been presented in Table 3.4.

Table 3.4 percentages, mean, and sampling errors for the pupil language, and mother and father alive

Provinces	SACMEQ III (2013)					
	Speak Portuguese		Mother Alive		Father Alive	
	%	SE	%	SE	%	SE
CAB	76.3	4.76	92.6	1.59	86.0	3.26
GAZ	89.1	2.65	90.4	2.09	75.4	2.40
INH	90.7	2.05	93.7	1.65	87.3	2.14
MAC	98.7	0.59	91.9	1.93	87.3	1.56
MAN	89.3	4.24	92.9	2.47	82.5	2.73
MAP	94.6	1.54	91.5	2.68	85.5	2.30
NAM	83.1	3.25	88.1	1.82	83.8	2.20
NIA	83.4	3.32	87.4	1.77	80.3	1.68
SOF	90.1	2.82	87.9	2.66	74.3	3.04
TET	82.3	4.95	91.4	1.91	85.3	2.66
ZAM	85.7	3.38	85.9	2.19	78.2	2.64
MOZ	87.6	1.05	89.8	0.70	82.0	0.81

Province s	SACMEQ III (2007)					
	Speak Portuguese		Mother Alive		Father Alive	
	%	SE	%	SE	%	SE
CAB	89.7	1.93	88.1	1.71	78.7	2.64
GAZ	91.7	4.27	90.1	1.43	76.4	2.56
INH	94.7	1.99	90.0	3.09	81.2	2.16
MAC	98.7	0.51	91.6	2.12	80.3	2.22
MAN	88.8	5.84	86.6	2.87	74.8	3.25
MAP	96.3	1.36	89.2	2.38	77.7	2.92
NAM	94.2	1.67	87.2	1.76	79.8	2.12
NIA	89.8	2.64	85.7	2.76	82.4	3.10
SOF	94.5	1.31	82.3	3.13	71.9	2.91
TET	78.8	4.83	84.0	3.84	78.4	3.60
ZAM	91.1	3.08	84.2	2.01	70.4	2.58
MOZ	92.2	0.9	87.2	0.76	76.9	0.82

From 2007 to 2013, there was a statistically significant decrease of pupils who spoke Portuguese outside school at least sometimes from 92.2% in 2008 to 87.6% in 2013. One could argue that, with the expansion of the school network to the rural areas; the percent of pupils speaking Portuguese out of school has decreased.

From Table 3.5, it can be seen Pupils whom the parents are alive have increased significantly from 2007. In 2013, mothers of 89.9% of pupils and the fathers of 82% were alive, while in 2007 the percentage were 87.2 and 76.9 respectively. The improvement could be attributed to the increase in life expectancy.

3.7 What is the level of absenteeism and Repetition?

The data summarized in Table 3.5 indicates the levels of absenteeism and repetition. The figures suggest that there has been a considerable increase in pupil absenteeism from 2007 to 2013. There was an increase by 100% in the number of days absent during the month preceding the survey: Grade 6 pupils were absent for 1.1 days during the month preceding the testing in 2007, while in 2013 the value was 2.4 days. If this figure was consistent throughout the school year, then this would add up to large number of days.

The variation across the provinces is huge. Nampula is the province where pupil have largest numbers of days absent (3.2, see Table 3.5) , while, Maputo Cidade has pupil with the lowest number of absent days (1.3, see Table 3.5).

Table 3.5 Percentages, mean, and sampling errors for days absent, and repetition

Provinces	SACMEQ IV (20013)				SACMEQ III (2007)			
	Days absent		Repetition		Days absent		Repetition	
	%	SE	%	SE	%	SE	%	SE
CAB	3.0	0.24	35.4	8.51	1.4	0.26	40.8	3.74
GAZ	1.6	0.21	27.6	3.59	1.0	0.14	64.0	3.63
INH	1.4	0.20	23.2	3.02	1.1	0.24	58.8	4.90
MAC	1.3	0.26	25.1	2.93	0.7	0.16	68.2	3.53
MAN	2.2	0.43	35.9	4.77	0.9	0.22	59.6	3.43
MAP	1.8	0.28	27.6	3.32	0.9	0.12	61.5	2.90
NAM	3.2	0.38	27.1	1.81	1.9	0.24	58.5	2.51
NIA	2.9	0.33	30.6	2.53	1.2	0.35	59.1	3.30
SOF	2.7	0.61	36.2	4.32	0.5	0.13	51.0	4.63
TET	2.7	0.45	37.8	5.76	1.2	0.19	44.7	4.79
ZAM	2.5	0.26	32.1	4.97	1.2	0.23	73.4	2.94
MOZ	2.4	0.12	30.5	1.29	1.1	0.1	59.6	1.16

Contrary to the absenteeism, there was progress in reducing repetition rates, by halve, across the two surveys. In 2007 nearly 59.6% of pupils had repeated a grade at least once, while in 2013 only 30.5% did. The pattern of reduction of repetition across provinces was similar. The policy of automatic progression within cycles, introduced in 2004, could be one plausible reason for the decline in the repetition rate. While in 2007, the policy was in early stage of implementation, in 2013, the cohort of pupil entering 2007 were under the automatic promotion policy in all primary education cycle.

Using PASEC and SACMEQ data, Fehrler, Michaelowa and Wechtler (2006) have stressed that repetition generates high costs because the system has to cope with an increased overall number of pupils and a rise of early drop-out. Although repetition of under-prepared learners is at times necessary, the effects of repetition on pupils' learning have consistently been shown to be negative rather than positive.

3.8 How often was homework given and corrected?

Homework is important if pupils are to have sufficient practice of what they learn, and if they are to extend their knowledge. Walberg, (1994), has shown that those pupils receiving homework more often achieve better than those pupils who get it less often. Furthermore, when the homework is marked by the teacher and worked through with the pupils, either collectively or individually, pupils achieved more than those who did homework but did not have it marked by the teachers. Pupils were therefore asked to provide information on the frequency with which they received homework, whether the homework was corrected by the teacher, and the extent to which parents or others at home ensured that homework was done.

Table 3-6 Percentages and sampling errors for the frequency of homework given most days

Provinces	SACMEQ IV (2013)		SACMEQ III (2007)	
	Usually given homework %	SE	Usually given homework %	SE
CAB	39.6	7.41	37.9	5.35
GAZ	65.9	6.80	79.1	5.95
INH	61.8	5.09	78.4	4.01
MAC	60.5	4.19	67.3	3.78
MAN	47.5	9.19	68.7	8.44
MAP	65.0	3.98	71.5	4.70
NAM	43.3	5.29	55.1	5.59
NIA	36.1	7.68	49.9	8.24
SOF	42.8	5.98	51.9	5.79
TET	50.2	11.06	37.5	4.63
ZAM	37.2	6.35	44.7	5.51
MOZ	49.3	2.09	58.7	1.77

The information presented in the first column of Table 3.6 concerns the extent to which homework was given most week days. It can be seen that, from 2007 to 2013, there was a decrease on pupils given homework. While in 2007 around 58.7% of pupils were given

homework, in 2013, the number of pupils given homework was reduced to 49.3%. The variation across provinces was very large. For instance, in Niassa only 36.1% of pupils were usually given homework while in Gaza the figure was almost double to 65.9.

Information on the frequency of homework correction by the teacher is presented in Tables 3.7. Between 2007 and 2013, there was progress with respect to the frequency of homework correction. In 2013, for both reading and mathematics, 52.2 % of pupils said that the homework was ‘always or mostly corrected’, and 26.9% said ‘sometimes corrected’, while in 2007 the corresponding figures were 49.8 % and 40.3% (for the case of reading homework).

Table 3-7 Percentages and sampling errors for the frequency of reading homework being corrected by teacher

SACMEQ IV (2013)								
Provinces	No homework Given		Never corrected		Sometimes corrected		Mostly/always corrected	
	%	SE	%	SE	%	SE	%	SE
CAB	8.9	3.75	6.9	1.57	31.4	7.05	52.7	7.37
GAZ	4.1	1.98	8.2	2.32	18.8	3.08	68.9	5.09
INH	5.1	1.66	9.8	4.73	32.8	6.51	52.2	6.47
MAC	3.3	0.98	7.7	2.27	23.6	5.39	65.4	5.23
MAN	12.3	4.09	20.3	4.13	17.8	4.66	49.7	9.00
MAP	2.0	0.80	9.0	2.03	31.3	4.48	57.6	4.34
NAM	7.2	3.01	17.6	2.77	24.9	2.90	50.3	5.31
NIA	11.5	4.01	19.1	3.58	28.8	3.82	40.6	5.65
SOF	9.8	2.18	17.1	2.56	32.4	4.16	40.7	5.20
TET	8.5	3.26	10.4	3.07	22.9	6.37	58.1	8.90
ZAM	15.2	4.87	10.0	1.99	30.0	4.97	44.8	5.62
MOZ	8.2	1.08	12.6	0.89	26.9	1.50	52.2	1.94

SACMEQ III (2007)								
Provinces	No homework Given		Never corrected		Sometimes corrected		Mostly/always corrected	
	%	SE	%	SE	%	SE	%	SE
CAB	12.0	2.39	6.8	2.21	40.1	3.55	41.1	4.78
GAZ	0.6	0.40	0.5	0.38	33.7	5.89	65.1	5.87
INH	2.5	1.19	4.6	1.35	26.9	3.04	65.9	4.25
MAC	-	-	3.6	1.01	42.6	3.34	53.9	3.58
MAN	-	-	1.1	0.65	52.3	9.53	46.5	9.37
MAP	1.1	0.62	6.8	2.30	41.1	4.49	51.0	5.35
NAM	8.3	3.90	6.4	1.78	38.4	5.10	46.9	5.32
NIA	10.3	4.67	4.1	1.94	39.2	7.03	46.4	7.30
SOF	7.9	1.7	5.1	1.41	47.6	5.79	39.3	5.14
TET	9.6	3.11	6.9	1.29	46.2	5.00	37.3	5.03
ZAM	3.4	2.48	8.8	2.46	38.8	2.99	49.0	4.17
MOZ	4.6	0.74	5.3	0.58	40.3	1.56	49.8	1.69

Policy suggestion 3.3 Taking into consideration the role of homework for pupil achievement, it is important that the Ministry of Education continues promoting and monitoring this activity.

3.9 How much did parents help children with their schoolwork?

In most schools, pupils are required to take some school work home. This provides parents with the opportunity to directly support their children’s learning. However, not all parents provide the assistance required. Where assistance is provided, pupils tend to learn better. Pupils were, therefore, asked to indicate whether their parents or someone else at their home provides assistance with their schoolwork. The results are presented in figure 3.2.

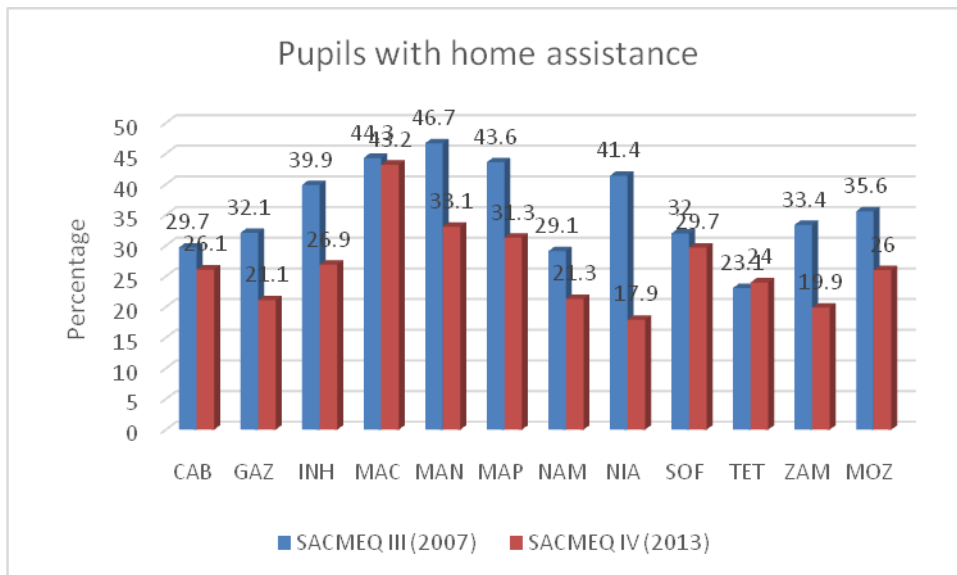


Figure 3.2 Home assistance with school related work (SACMEQ III and SACMEQ IV)

From the results summarized in figure 3.2, parents gave very little help to the pupils with their homework. Between 2007 and 2013, the level of assistance with homework has decreased. In 2007, about 35.6% of pupils had someone who helped them with their homework, while in 2013 the corresponding figure was 26.0% only. The figures were more or less equally prevalent across provinces, with the highest in Maputo Cidade (43.2 %), and the lowest in Zambeze (19.9%). It is important to stress that even when the parents are illiterate, when they show interest in their children school activities, pupils tend to perform better. Students achieve personal and academic development if their families emphasize

schooling, let their children know that they are concerned about their education, and do so continually over the years [Epstein (1988) in Gold and Miles (1981)].

Policy suggestion 3.4. The Ministry of Education should continue to advocate the importance of homework and correction of such homework in schools and at home.

Policy suggestion 3.5. The Ministry of Education should commission a study to understand the reason behind the drop out pupils given homework.

3.10 To what extent did pupils have extra tuition and how was it paid for?

In many countries, large numbers of pupils take part in additional learning sessions that are organized by the teachers, who regularly teach them, or by other teachers hired to provide this service. Such sessions, known as extra tuition or private tuition, are ordinarily provided outside the normal school hours, be it inside the school or outside it. While the teacher may provide such lessons free of charge, in most cases parents are required to pay for them. There are many reasons for pupils' participation in extra tuition, but in most cases the overriding aim is to enhance their chances of success in school. This is more common in situations where places at the next level are restricted, requiring selection on the basis of performance, or where good performance may be required in order to gain access to schools that are considered to be particularly good. Pupils were asked to indicate whether they participated in extra tuition and whether they paid for it. The information concerning the extent to which pupils had extra tuition is presented in Table 3.8.

Table 3-8 Percentages and sampling errors for the extra tuition taken by pupils outside school hours

Provinces	SACMEQ IV		SACMEQ III	
	%	SE	%	SE
CAB	46.0	11,1 3	27.1	8.95
GAZ	15.8	4,89	6.7	3.55
INH	35.7	8,14	18.1	5.32
MAC	40.8	6,10	19.9	3.66
MAN	48.4	9,14	14.0	5.89
MAP	38.1	6,01	11.7	3.66
NAM	31.9	6,42	16.1	4.76
NIA	34.5	9,28	7.3	3.83
SOF	58.0	7,58	32.4	7.66
TET	19.5	7,52	19.4	6.02

ZAM	35.9	8,08	10.7	3.41
MOZ	36.6	2.41	16.6	1.59

Across the surveys, the figure shows a significant increase of pupils having extra tuition. In 2007, only 16,6 % received extra tuition, while in 2013, the number of pupils receiving extra tuition increased to 36.6%. The variation across provinces ranged from 58% in Sofala to 15.8% in Gaza. It could be the reflection of parent's economic conditions improvement.

Table 3-9 Percentages and sampling errors for the payment of extra tuition taken by pupils outside school hours

Province	<i>SACMEQ IV</i>				<i>SACMEQ III¹</i>			
	There is payment		There is no payment		There is payment		There is no payment	
	%	SE	%	SE	%	SE	%	SE
CAB	46.5	8.9 3	53.5	8.93	48.5	4.98	51.5	4.98
GAZ	42.5	10. 70	57.5	10.70	45.2	9.56	54.8	9.56
INH	45.5	7.3 3	54.5	7.33	48.8	4.99	51.2	4.99
MAC	74.9	3.2 2	25.1	3.22	70.4	6.41	29.6	6.41
MAN	40.9	7.1 6	59.1	7.16	44.5	6.89	55.5	6.89
MAP	70.5	3.7 3	29.5	3.73	67.3	7.18	32.7	7.18
NAM	56.1	5.3 8	43.9	5.38	67.6	6.14	32.4	6.14
NIA	62.6	4.5 0	37.4	4.50	60.6	20.82	39.4	20.82
SOF	58.9	5.3 6	41.1	5.36	64.3	3.68	35.7	3.68
TET	46.4	15. 78	53.6	15.78	49.8	10.56	50.2	10.56
ZAM	63.7	7.5 1	36.3	7.51	54.3	8.39	45.7	8.39
MOZ	56.7	2.2 6	43.3	2.26	58.2	2.17	41.8	2.17

Looking at Table 3.9, from SACMEQ III to SACMEQ IV, the percentage of pupils that paid for extra classes has not changed significantly. The percentage of pupils that said that there are payments across the two surveys was 58.2 % for both SACMEQ III and SACMEQ IV. There was considerable variation across provinces. Maputo cidade was the place with highest number of pupil reporting paying extra tuition (74.9%), while Gaza was the lowest (42.5%)

3.11 Conclusion

The chapter shows the progress and the challenges faced by the Mozambican education sector on issues related to the pupils and their school environment across the latest two

SACMEQ surveys. The picture is mixed, there are indicators where improvement was observed, while in others no progress was observed. Indicators related to age, gender and socioeconomic status have shown slight improvement, while on issues related to school such as homework and pupil absenteeism has shown no progress.

With regard to age distribution there was a slight improvement. While in SACMEQ III the mean age of a grade 6 pupil was 170.2 months, in SACMEQ IV it dropped to 166.2 months, and the difference is statistically significant. However, it is still far from the expected age of 132 months.

Although there was a continued imbalance in gender distribution at the national level, there was a slight progress from 2007 to 2013. The percentage of girls in Grade 6 for Mozambique was 46% in 2007 and increased to 47.2% by 2013. The imbalances across regions persist, especially in the provinces located in the Centre and North of the country. Initiation rites and premature marriages could be associated with the imbalances in gender distribution in those provinces. The Directorate of Primary Education should put more emphasis on implementation of the Gender Policy, mobilizing the parents for the importance of girls' education, especially in the Northern and Central parts of the country.

On the home circumstances of Grade 6 pupils, there was slight progress. From SACMEQ III to SACMEQ IV, there was a slight increase from 4.7 to 5.2 items. Additionally, the level of parent's education between 2007 and 2013 has increased from 2.3 to 2.9. That significant improvements could be explained by the rapid expansion of literacy programs.

The level of parent's education between 2007 and 2013 has increased from 2.3 to 2.9. That significant improvements could be explained by the rapid expansion of literacy programs.

Between 2007 and 2013 the level of assistance with homework have decreased. In 2007 about 35.6% of pupils had someone who helped them with their homework, while in 2013, the corresponding figure was 26.0% only. The figures were more or less equally prevalent across provinces, with the highest in Maputo Cidade (43.2 %), and the lowest in Zambezia (19.9%).

Furthermore, the level of absenteeism has increased considerable between 2007 and 2013. There was an increase of almost 100% in the number of days absent during the previous month. There is need to understand the reason behind this lack of progress in some school indicators.

4. Chapter 4 Teacher's Characteristics and their Views on Teaching, Classroom Resources, and Professional Support

4.1 Introduction

In a sense, this chapter continues where the previous chapter left off. Chapter 3 was concerned with the characteristics of Grade 6 pupils and their home circumstances. The aim of this chapter is to describe the characteristics of teachers in terms of gender, age, social status, academic education, professional training and professional experience, as reported by teachers at the Grade 6 level in primary schools in Mozambique, and the problems that they encounter. This chapter also compares information from SACMEQ III and SACMEQ IV to identify major changes and trends. This information is presented, firstly, to provide a context for the subsequent analysis and interpretation of teacher and pupil performance discussed in Chapter 7, and secondly, so that teacher characteristics can be related to teacher and pupil performance. The chapter is divided into two parts: The first part presents and discusses characteristics of reading and mathematics teachers, while the second part presents and discusses characteristics of health teachers', given that in Mozambique the Grade 6 pupils were taught by more than one teacher. That is, each teacher teaches two or more subjects in different classes. In this report, the three aspects of pupil achievement that were measured were reading comprehension, mathematics and HIV knowledge.

The next section presents and discusses characteristics of teachers and their views on teaching, classroom resources, and professional support in reading and mathematics.

4.2 Teacher's Characteristics and their Views on Teaching, Classroom Resources, and Professional Support in reading and mathematics

The major questions that have been posed and compared across SACMEQ III and SACMEQ IV were:

- What were the ages, gender, and housing conditions of Grade 6 pupils' teachers?
- What was the teaching and training experience of the Grade 6 teachers?
- How many in-service courses did Grade 6 teachers attend? Were these deemed to be effective?

- Were the living conditions of the teachers acceptable?
- How often were reading and mathematics tests given?
- What were the ages, gender, and possessions in the homes of Grade 6 pupils' teachers?

The means, percentages, and sampling errors for age, gender, and socio-economic background of reading and mathematics teachers across the 11 provinces of Mozambique are presented in figure 4.1.

4.2.1 Distribution of teachers' age

Although there was a slightly increase in teacher's age, no statistically significant change was observed from SACMEQ III to SACMEQ IV. While in SAMEQ III, pupils were taught by reading and mathematics teachers who were 33.3 and 31.1 years old respectively, SACMEQ IV the average pupil had a reading and mathematics teacher who was 33.8, and 33,2 years old respectively. Education expansion and teacher's high turnover could have been contributing to no significant changes in the teachers age between 2007 and 2013. It is important to stress that high turnover has likely hampered the building of teaching experience.

The age variation among the provinces ranged from 29.5 years in Zambezia to 41.8 in Maputo Cidade for reading teachers. The age range across provinces for mathematics and reading teachers is quite similar. Pupil from Niassa had the youngest mathematics teachers (27.5), while pupil from Maputo Cidade had the oldest mathematics teachers (38.1). It is important that the Ministry of Education investigates the reasons behind such high turnover in other provinces. In some provinces the high number of young teachers may have resulted from the rapid expansion of the school system.

Table 4-1 Means, percentages, and sampling errors for age, gender, and socio-economic background of reading and mathematics teachers

SACMEQ IV (2013)												
Provinces	Reading teachers						Mathematics teachers					
	Age (years)		Gender (female)		Housing in acceptable condition		Age (years)		Gender (female)		Housing in acceptable condition	
	Mean	SE	%	SE	%	SE	Mean	SE	%	SE	%	SE
CAB	33.2	1.65	Na		48.0	16.52	31.3	1.59	Na		23.1	12.49
GAZ	31.9	1.38	51.4	13.64	44.7	12.57	32.7	1.30	29.5	13.32	59.8	13.42
INH	35.2	2.89	41.0	14.34	26.7	11.92	35.0	2.79	27.0	12.24	37.5	12.88
MAC	41.8	1.27	35.1	14.36	51.1	12.51	38.1	1.39	59.1	12.73	34.4	10.92
MAN	34.3	1.95	32.7	12.07	75.3	9.92	32.7	1.11	21.9	11.78	43.7	12.15
MAP	35.1	1.15	53.5	12.47	37.5	11.66	30.7	1.19	56.6	12.54	50.2	14.22
NAM	33.4	1.44	30.5	9.21	24.2	8.59	31.9	1.67	10.3	6.04	58.9	10.28
NIA	32.3	1.50	23.2	11.19	61.2	13.44	27.5	0.99	15.5	5.77	11.4	11.19
SOF	35.3	1.48	43.5	12.67	57.8	13.12	34.4	2.42	31.6	12.86	39.4	14.61
TET	34.1	2.92	65.4	14.12	41.3	17.35	32.3	1.99	32.7	13.78	7.7	7.83
ZAM	29.5	1.71	49.1	10.91	41.6	11.03	31.2	1.67	14.5	8.06	33.5	11.07
MOZ	33.8	0.58	41.6	3.84	44.0	3.79	32.6	0.58	25.9	3.43	39.6	3.88

SACMEQ III (2007)												
Provinces	Reading teachers						Mathematics teachers					
	Age (years)		Gender (female)		Housing in acceptable condition		Age (years)		Gender (female)		Housing in acceptable condition	
	Mean	SE	%	SE	%	SE	Mean	SE	%	SE	%	SE
CAB	30.2	1.16	20.8	9.12	22.5	9.88	30.9	1.41	14.9	8.05	14.5	7.50
GAZ	33.9	1.92	27.7	9.97	38.4	9.29	28.9	1.34	50.0	11.52	28.3	8.94
INH	29.7	1.36	46.1	9.01	50.9	8.95	30.6	1.32	28.3	8.55	54.4	9.47
MAC	38.8	1.75	62.3	10.21	50.7	8.50	37.5	1.14	39.7	5.94	39.6	7.27
MAN	35.8	1.43	49.7	10.67	57.5	11.24	30.5	1.40	19.1	8.28	44.7	8.94
MAP	32.3	0.94	39.6	9.42	32.0	10.19	30.7	1.19	41.8	9.57	59.3	10.60
NAM	33.1	1.72	40.4	9.22	49.1	10.54	30.1	1.28	20.1	7.65	9.9	4.37
NIA	34.9	2.09	31.4	11.16	25.9	10.80	31.7	1.37	28.4	10.34	25.9	10.90
SOF	33.9	1.39	48.1	10.01	27.7	7.89	31.1	1.38	40.6	9.96	31.8	9.76
TET	30.0	1.93	26.8	10.9	46.3	11.85	29.0	1.65	25.9	10.61	23.7	9.81
ZAM	33.7	1.95	26.1	8.42	34.4	9.59	30.6	1.22	12.9	7.11	19.4	8.29
MOZ	33.3	0.52	38.5	2.98	40.3	3.08	31.1	0.41	28.7	2.69	31.5	2.69

4.2.2 Teacher's gender distribution

From Table 4.1 it can be observed that there was an improvement with respect to female representation amongst reading teachers. Overall, 38.5 % of grade 6 pupils in SACMEQ III and 41.6% in SACMEQ IV had reading teachers who were female. However, the same progress was not observed in Mathematics. There was a slight decline in the percentage of

pupils that had female mathematics teachers, from 28.7% in SACMEQ III to 25.7% in SACMEQ IV.

The gender gap in reading teachers has declined dramatically in some provinces, notably in Zambezia (from 26.1% in 2007 to 49.1% in 2013) and Tete (from 26.8% in 2007 to 65.4% in 2013). Contrary, to reading teachers, among maths teachers the gap is still huge across provinces. For instance, in Cabo Delgado and Zambezia less than 15% of pupil had female mathematic teachers.

Policy suggestion 4.1. The Ministry of Education should conduct a study to find out why in some provinces there was regression with respect to gender balance, especially in Mathematics

4.2.3 Housing in acceptable condition

Teachers' housing conditions are an indicator of socio-economic status and it is an important factor in terms of job satisfaction. Teachers usually build cheaper houses made of mud with roofs that are thatched with grass. Table 4.1 shows the percentage of teachers who felt that their housing was in an acceptable condition, from which one could conclude that they are comfortable with their current living conditions. In SACMEQ III 40.3% and 31.5% of Grade 6 pupils were taught by reading and mathematics teachers who indicated that their living conditions were acceptable. While in SACMEQ IV, 44% and 39% of pupils had reading and mathematics teachers, respectively, that affirmed that they were living in acceptable conditions, which represents a welcome increase.

There are provinces with big improvement in teachers housing condition across the two surveys. For instance, in Cabo Delgado, from 2007 to 2013, the number OF pupils that had reading teachers reporting houses in acceptable conditions increased from 22% to 48%. Between provinces there are differences with respect to the satisfaction of the reading teachers. For instance, in Manica 75% of pupils with reading teachers being satisfied with their living conditions, while in Nampula only 24% were happy with housing condition.

Some of the progress with respect to teachers' living conditions may be related to the policy of school construction, which includes building teacher houses. However, this is not enough to ensure teacher satisfaction, since the houses do not belong to them and there are not enough houses. It could be important for the Ministry of Education to support teachers

getting bank loans for constructing their own homes. Very likely, teachers' living conditions were a determining factor for the high turnover levels reported in this chapter.

4.2.4 Level of academic qualification

A question was also asked about the academic education the teachers had received. The results are presented in Table 4.2 and Table 4.3.

Table 4-2 Academic education of reading teachers

Provinces	SACMEQ IV (2013)										SACMEQ III (2007)									
	Reading Teachers										Reading Teachers									
	Primary		Junior Secondary		Senior Secondary		A-Level		First degree		Primary		Junior Secondary		Senior Secondary		A-Level		First degree	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	15.0	11.29	58.3	16.62	26.7	13.74	0.0	0.00	0.0	0.00	13.9	8.5	3.1	3.11	67.9	10.45	15.1	8.32	-	-
GAZ	10.5	7.44	18.0	9.83	69.4	11.73	7.2	6.55	0.0	0.00	16.7	9.2	17.6	8.7	52.5	10.34	13.3	6.43	-	-
INH	15.9	10.36	22.5	13.02	61.6	14.26	0.0	0.00	0.0	0.00	4.6	3.34	28.1	7.82	64.8	8.84	2.5	2.54	-	-
MAC	15.3	9.07	5.7	5.34	54.2	20.19	21.5	10.22	32.5	12.41	2.7	1.87	25.7	8.41	37.0	7.63	28.4	7.6	6.2	3.12
MAN	25.6	10.62	7.1	5.04	56.9	16.39	14.3	10.34	9.7	9.52	2.8	2.76	30.6	10.74	66.6	10.49	-	-	-	-
MAP	7.5	5.14	6.3	4.82	68.8	15.17	10.2	9.60	45.7	12.52	4.4	3.00	31.6	11.43	56.1	10.81	5.4	2.74	2.4	2.42
NAM	31.5	8.84	5.8	6.60	59.2	11.27	0.9	2.96	7.6	5.61	6.5	4.52	17.7	7.83	61.1	9.29	9.2	6.8	5.5	4.21
NIA	8.8	9.28	42.6	14.63	47.4	14.39	0.0	0.00	2.2	0.00	13.3	7.95	38.8	12.12	28.4	10.89	19.4	10.89	-	-
SOF	27.9	12.30	10.1	7.13	54.9	15.53	7.2	4.68	8.7	9.79	7.7	6.08	3.4	3.39	63.9	10.36	23.3	10.02	1.7	1.69
TET	9.2	7.87	13.3	9.24	77.5	11.66	0.0	0.00	0.0	0.00	7.3	7.23	21.7	10.47	54.3	12.60	16.8	9.33	-	-
ZAM	15.7	6.91	16.7	6.37	64.9	9.63	2.0	0.00	5.7	5.41	-	-	11.3	7.35	70.1	9.15	10.9	5.95	7.7	5.43
MOZ	16.6	2.85	17.8	2.56	59.7	4.19	5.2	1.71	9.4	2.27	6.3	1.51	19.8	2.65	58.4	3.09	12.6	2.09	2.8	1.04

The indicators of teacher's academic qualification show a mixed picture between the two surveys. Progress could be seen in the number of pupils taught by teachers with university degree in both subjects, mathematics and reading. From 2007 to 2013 the number of pupils taught by reading teachers with university degree has increased from 2.8 % and 9.4%. However, the percentage of pupils taught by reading teachers who had completed only primary education also increased from 6.3%, to 16.6%, probably as a result of the rapid expansion of enrolment. It is important to stress that around 60% of pupils, in both SACMEQ III and SACMEQ IV, were taught by teachers who had completed senior secondary school.

Sofala and Nampula are the provinces on which the number of pupils taught by teachers with primary education has increased significantly (Nampula, from 6.5% to 31.5 in from 2007 to 2013, Sofala from 7.7% in 2007 to 27.9% in 2013).

Table 4.3 presents descriptive statistics on the academic education of mathematics teachers. As was the case with the reading teachers, the majority of pupils in SACMEQ III (62.1%) as well as in SACMEQ IV (67.5%), had mathematics teachers who had completed senior secondary education. In the country as a whole, 3.1% of pupils in SACMEQ III and 9.7% in SACMEQ IV had mathematics teachers with only primary education completed. Manica (30.2%) and Sofala (18.6%) had the highest percentage of pupils with mathematics teachers who had only primary education. Across the two surveys, the proportion of pupils with reading and/or mathematics teachers with only primary education completed increased, again probably as a result of expanded enrolment. This fact might have contributed to the deterioration in pupil performance.

Table 4-3 Academic education of mathematics teachers

Provinces	SACMEQ IV (2013)										SACMEQ III (2007)									
	Mathematics Teachers										Mathematics Teachers									
	Primary		Junior Secondary		Senior Secondary		A-Level		Tertiary		Primary		Junior Secondary		Senior Secondary		A-Level		Tertiary	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	6.0	8.42	23.9	12.20	70.1	13.81	0.0	0.00	0.0	0.00	-	-	18.7	8.73	73.1	8.70	8.2	4.44	-	-
GAZ	0.0	0.00	12.3	9.49	86.6	10.30	0.0	0.00	8.3	8.23	-	-	8.7	4.56	79.4	7.08	11.9	6.66	-	-
INH	15.7	12.32	52.2	13.76	27.8	12.32	0.0	0.00	6.0	7.24	-	-	29.2	10.25	65.3	11.09	5.5	5.54	-	-
MAC	2.8	3.04	6.5	4.69	83.9	12.27	11.7	7.79	30.4	8.19	1.0	1.00	9.4	6.03	48.5	9.08	33.3	9.35	7.7	5.46
MAN	30.2	10.11	3.6	5.07	58.8	12.77	8.1	5.09	9.9	9.04	-	-	14.7	9.80	61.5	12.08	23.8	9.95	-	-
MAP	3.3	2.84	18.0	9.96	60.9	19.15	5.3	3.67	40.4	13.60	0.9	0.91	34.5	11.64	56.8	10.65	7.8	4.21	-	-
NAM	0.3	1.18	22.8	7.74	73.5	8.80	12.4	8.79	0.6	0.75	5.9	4.23	6.9	3.73	79.7	7.88	6.5	6.46	0.8	0.85
NIA	10.0	6.37	11.4	11.78	76.8	14.08	7.3	6.63	0.0	0.00	9.9	6.71	24.9	9.66	49.8	11.66	15.3	10.19	-	-
SOF	18.6	13.00	8.5	4.53	68.2	15.92	0.0	0.00	14.6	11.31	3.9	3.89	2.3	2.36	50.9	11.18	40.9	12.14	1.9	1.93
TET	18.3	8.41	18.7	9.74	63.0	12.34	0.0	0.00	0.0	0.00	10.3	7.65	37.9	11.6	49.0	11.05	2.7	2.73	-	-
ZAM	9.6	7.28	7.2	5.70	77.3	11.56	14.9	10.08	11.4	5.99	3.9	2.98	19.5	8.46	60.2	11.01	16.4	7.79	-	-
MOZ	9.7	2.46	17.3	2.61	67.5	4.00	6.0	2.27	10.7	2.40	3.1	1.01	18.0	2.54	62.1	3.21	15.7	2.43	1.0	0.56

4.2.5 What was the teaching experience and training of the Grade 6 teachers?

Teachers were asked about the number of years of teaching experience they had and about the type of teacher training and education they had received. The results are shown in Table 4.4.

Before presenting and discussing teachers' experience and training, it is important to note the view that "the quality of teachers' training is one of the controversial issues under discussion among the stakeholders in the Ministry of Education. Mozambique has had, since 1975, many models of teacher training curricula, but by 2008, the Ministry of Education and Culture did not have an ideal model for teacher training. The lack of effectiveness of the education system may, in some way, be explained by the lack of a coherent teacher training policy" (Passos, 2009:125). The poor performance of the Mozambican pupils in the reading and mathematics tests, described later, might be associated with the lack of a clear and coherent teacher training policy.

Table 4-4 Means and sampling errors for experience and training of reading and mathematics teachers

SACMEQ IV (2013)									
Reading teachers					Mathematics teachers				
	Experience (years)		Teacher Training (at least 3 years)			Experience (years)		Teacher Training (at least 3 years)	
	Mean	SE	%	SE	Mean	SE	%	SE	
CAB	8.4	1.28	13.7	8.96	7.2	1.53	6.4	6.51	
GAZ	9.1	1.14	10.6	7.75	8.3	1.19	36.4	13.15	
INH	11.5	2.58	36.2	13.70	10.8	2.67	40.0	13.45	
MAC	17.1	2.17	41.7	12.26	14.4	1.47	26.9	12.80	
MAN	9.6	1.93	38.1	12.14	8.0	1.15	24.7	11.60	
MAP	11.6	1.10	44.7	12.06	8.0	1.06	38.4	13.75	
NAM	8.9	1.70	17.0	7.82	9.3	1.58	5.1	3.47	
NIA	8.6	2.08	14.2	8.60	4.9	0.86	14.1	9.58	
SOF	10.4	1.41	29.2	12.40	11.3	2.32	31.6	12.85	
TET	10.2	1.94	17.4	11.97	6.3	1.14	6.4	6.20	
ZAM	7.4	1.64	32.6	10.45	5.6	0.84	11.4	6.81	
MOZ	10.0	0.55	27.6	3.47	8.6	0.51	21.1	3.07	

SACMEQ III (2007)									
Reading teachers					Mathematics teachers				
	Experience (years)		Training (years)			Experience (years)		Training (years)	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	
CAB	6.0	0.99	2.1	0.26	6.1	1.18	1.6	0.24	
GAZ	10.8	1.96	1.9	0.23	5.6	1.17	1.4	0.22	
INH	7.7	1.21	1.0	0.17	8.5	1.48	0.9	0.19	
MAC	17.1	2.31	2.7	0.18	13.3	1.12	2.7	0.15	
MAN	12.3	1.74	2.1	0.24	8.4	1.56	1.6	0.24	
MAP	9.5	0.98	1.9	0.17	7.7	1.03	2.2	0.22	
NAM	8.7	2.23	2.1	0.13	6.4	1.35	1.9	0.19	
NIA	11.9	2.51	1.8	0.14	7.5	1.32	1.7	0.18	
SOF	10.1	1.68	2.0	0.23	7.8	1.45	2.5	0.26	
TET	6.8	1.82	1.24	0.22	5.6	1.45	1.7	0.12	
ZAM	9.2	1.79	1.6	0.23	6.7	1.26	1.3	0.24	
MOZ	10.0	0.57	1.9	0.07	7.6	0.41	1.8	0.07	

From 2007 to 2013 no significant improvement of teacher's experience was observed. Both, 2007 and 2013, pupils were taught by reading teachers with 10 years of experience. A similar pattern could be seen in mathematics, teacher experience has not changed significantly (from 7.6 years of experience in 2007 to 8.6 years of experience in 2013). As referred in section

4.2.1, education expansion and teacher high turnover could have been contributing to no significant changes in the teachers experiences between 2007 and 2013.

There is huge variation between provinces. For instance, In SACMEQ IV, Maputo Cidade had pupils with reading teachers with the longest experience (17.1 years), while pupil from Zambezia had teachers with least experience (7.4 years only).

4.2.6 How many in-service courses did Grade 6 teachers attend?

Teachers can only maintain high levels of performance in their work if their pedagogical skills are continuously upgraded. One systematic way of ensuring that teachers receive additional pedagogical skills is through in-service training. Teachers were asked to report the number of in-service courses they had attended in the past three years.

The figures from Table 4.5 shows that there was improvement between 2007 and 2013. In SACMEQ III, the average Grade 6 pupil had a reading teacher who had attended one courses and a mathematics teacher who had attended 0.9 courses over the last three years. In SACMEQ IV, the Mozambican pupils had a reading teacher who had attended 1.4 courses and a mathematics teacher who had attended 1.3 courses.

There is no big variation across provinces. In all the provinces, there was an increase in the numbers of courses, attend by teachers of Grade 6 pupils.

Table 4-5 Mean and sampling errors for teacher in-service courses and days attended in the last three years

Provinces	SACMEQ IV (2013)							
	Reading teachers				Mathematic teachers			
	In service courses		Days		In service courses		Days	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
CAB	2.0	0.7	5.28	1.97	1.1	0.30	4.1	1.94
GAZ	0.7	0.2	3.58	1.44	1.4	0.53	5.4	1.71
INH	2.1	0.7	8.11	2.54	1.4	0.53	5.8	2.24
MAC	1.7	0.6	5.05	1.48	0.9	0.25	4.3	1.38
MAN	1.4	0.5	6.19	2.39	1.4	0.75	5.3	2.40
MAP	1.4	0.2	5.13	1.18	1.6	0.41	4.8	1.45
NAM	2.0	0.4	7.38	1.62	1.5	0.28	6.5	1.55
NIA	0.6	0.2	5.07	2.77	1.0	0.45	2.7	1.17
SOF	1.6	0.5	6.86	1.78	1.8	0.45	6.5	1.70
TET	0.5	0.2	2.84	1.74	0.8	0.27	3.9	1.60
ZAM	0.9	0.24	3.5	1.15	0.9	0.25	4.7	2.08
MOZ	1.4	0.13	5.5	0.56	1.3	0.13	5.2	0.59

Provinces	SACMEQ III (2007)							
	Reading teachers				Mathematic teachers			
	In service courses		Days		In service courses		Days	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
CAB	1.2	0.45	8.4	1.92	1.0	0.40	7.5	4.50
GAZ	1.2	0.43	10.7	4.52	0.4	0.23	5.9	3.28
INH	0.8	0.33	3.7	1.20	0.7	0.28	6.4	3.56
MAC	1.1	0.31	8.7	2.98	1.5	0.62	6.3	1.80
MAN	1.0	0.36	5.1	1.69	1.1	0.38	3.9	1.03
MAP	0.7	0.27	4.9	1.99	0.7	0.28	4.4	2.08
NAM	0.8	0.31	4.4	1.52	1.0	0.39	7.3	4.38
NIA	1.5	0.60	20.4	15.12	0.4	0.15	3.0	1.62
SOF	1.1	0.32	12.3	6.3	2.1	0.59	22.4	8.70
TET	0.6	0.25	9.4	6.15	0.2	0.08	1.7	0.75
ZAM	1.1	0.37	23.0	16.92	0.7	0.18	6.9	2.35
MOZ	1.0	0.11	10.2	2.68	0.9	0.12	7.2	1.23

Teachers were also asked the number of days they had attended the courses. The figures show a substantial decline in the number of days of In-service teacher training from 2007 to 2013. In 2007, the average pupil had teacher of reading and mathematics who had attended in-service training that lasted about 10.2 and 7.2 days, respectively; while in SACMEQ IV, the corresponding average for reading teachers in-service courses over the past three years was 5,5 days and 5.2 days for the mathematics teachers.

It is difficult to improve education quality in the classroom without a coherent and comprehensive strategy on teacher in-service training. The government has been reviewing its in-service policies, as part of an ongoing formulation of the teacher education strategy. The implementation of the strategy will be the main challenge for improvement of in-service teacher training.

4.2.7 Number of Hours Spent on Lessons Preparation per Week

Teachers were also asked how much time they spent on lesson preparation and marking homework. The results are presented in Figure 4.1. Conscientious teachers spend a lot of time preparing lessons each week and marking pupils’ written work. In particular, a beginner teacher has to spend a lot more time preparing lesson, but all teachers have to revise their lesson plans each term and continually correct homework.

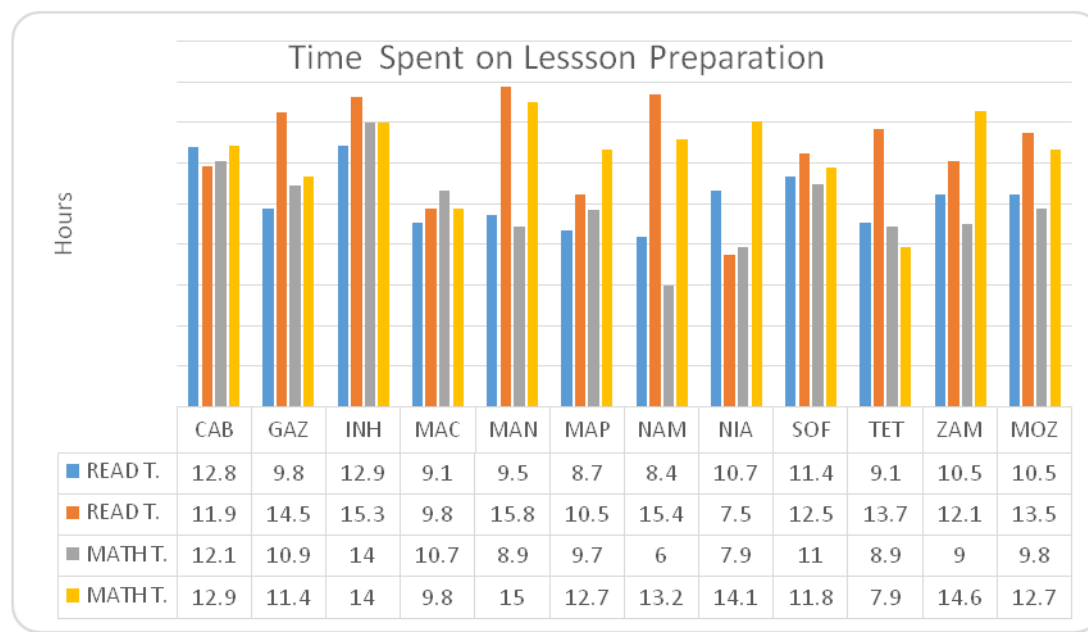


Figure 4-1 Teacher time spent on lesson preparation

There was an improvement across the two surveys in the time spent by teacher of Grade 6 pupil, preparing lessons and marking homework. Reading and mathematics teachers spent, respectively, an average of 10.5 and 9.8 hours in 2007, whilst in 2013 the corresponding figure was 13.5 and 12.7.

In 2007 the provinces where more time was spent preparing lessons and marking homework were Inhambane (12.9 hours for reading) and Cabo Delgado (12.8 hours for mathematics), while in Niassa teachers spent least time for these purposes (5.4 hours for reading and 5.9 hours for mathematics). In 2013, Manica was the province where most time was spent preparing lessons and marking homework in reading (15.8 hours). The province that spent the least time was Niassa (7.5 hours for reading). The reason for this is not clear, and so, there is a need to find out why Grade 6 teachers, in Niassa, spent so little time on lesson preparation and marking.

4.2.8 Teaching hours per week

The teaching load established by the Government for a teacher is 24 hours per week. To measure teacher utilization, teachers were asked to indicate the average number of lessons they taught each week, the results are presented in Table 4.6. There was a slight decrease in the working load for both, mathematic and reading teacher of Grade 6 pupil.

Table 4-6 Means and sampling errors for the periods and time spent on teaching per week across the two surveys

Provinces	SACMEQ IV (2013)							
	Reading teachers				Mathematic teachers			
	Periods per week		Hours per week		Periods per week		Hours per Week	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
CAB	16.3	2.81	Na		14.7	2.68	Na	
GAZ	25.0	3.98	Na		26.0	3.19	Na	
INH	18.7	2.76	Na		24.1	2.45	Na	
MAC	17.9	2.16	Na		21.8	1.45	Na	
MAN	18.5	2.05	Na		18.0	2.16	Na	
MAP	21.7	2.73	Na		26.6	1.03	Na	
NAM	16.0	2.27	Na		19.3	1.68	Na	
NIA	15.0	2.40	Na		17.2	2.48	Na	
SOF	12.8	2.18	Na		15.1	2.62	Na	
TET	18.8	2.69	Na		16.0	2.68	Na	
ZAM	19.1	2.58	Na		28.1	4.30	Na	
MOZ	18.2	0.83	Na		21.2	0.93	Na	

Provinces	SACMEQ III (2007)							
	Reading teachers				Mathematic teachers			
	Periods per week		Hours per week		Periods per week		Hours per week	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
CAB	26.1	3.09	18.9	2.30	27.8	2.72	20.0	2.03

GAZ	28.1	1.45	20.6	1.12	27.8	2.58	20.5	2.01
INH	22.8	3.27	16.9	2.44	25.2	2.00	18.8	1.52
MAC	24.6	0.69	17.7	0.49	24.3	1.34	17.6	1.03
MAN	27.0	1.76	20.1	1.39	19.5	1.66	14.4	1.26
MAP	25.8	0.85	18.2	0.84	25.2	2.25	17.8	1.77
NAM	23.9	1.67	17.6	1.30	25.4	1.84	18.8	1.42
NIA	16.6	1.86	12.2	1.40	20.7	1.81	15.4	1.38
SOF	22.1	1.77	15.7	1.28	22.6	1.89	15.9	1.31
TET	23.6	2.75	17.6	2.06	26.9	2.21	15.6	2.25
ZAM	24.9	3.85	18.4	2.90	23.0	3.25	16.7	2.49
MOZ	24.4	0.79	17.8	0.60	24.4	0.79	17.9	0.56

The average number of hours that a teacher actually taught per week in SACMEQ III was 24.4 hours for the reading teacher and 17.6 for the mathematics one, while the corresponding figures for SACMEQ IV were 18.2 and 21.2 hours.

4.2.9 Frequency of tests

It is very important for teachers to have constant feedback from pupils on how they are faring with what they are learning. One way of doing this is through tests. Table 4.6 shows the test frequency in both subjects.

The test frequency has decreased across the two surveys. In 2007, 45% of pupils had teachers who gave them reading tests less often. This is in sharp contrast to 2013, here, only around 30% of pupils had teachers who reported that they gave reading tests less often. The pattern of the results in Mathematics is similar to what was observed in reading (from 27% in 2007 to 51.4% in 2013).

It would seem worthwhile examining what happens to those pupils whose teachers give tests less frequently and, if necessary, take remedial actions. It is suggested that the Ministry of Education should commission a study to examine this matter.

Table 4-7 . Percentages and sampling errors for frequency of Reading and Mathematics tests for the average pupil

SACMEQ IV (2013)												
	Reading teachers						Mathematics teachers					
	Less often		2/3 per month		1 + per week		Less often		2/3 per month		1 + per week	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	59.2	15.75	35.6	16.05	2.2	3.39	64.5	15.53	35.8	15.53	0.0	0.00
GAZ	35.1	13.06	58.1	13.47	7.5	6.78	37.6	12.11	55.3	12.70	8.3	7.64
INH	58.2	13.40	30.2	11.18	16.6	10.26	60.6	12.47	13.6	8.19	31.7	11.41
MAC	43.4	12.76	52.2	12.56	2.9	2.71	51.0	10.02	47.8	10.02	0.0	0.00
MAN	31.6	11.90	51.7	11.80	18.5	9.22	56.4	12.16	11.0	7.49	26.8	11.87
MAP	47.0	12.09	46.5	11.67	3.5	3.82	70.1	10.68	16.3	6.72	16.3	9.78
NAM	43.5	9.90	40.8	10.28	10.5	6.63	48.8	10.97	37.4	11.02	11.8	6.07
NIA	40.3	14.03	48.5	14.29	13.2	7.01	42.9	16.65	62.1	16.65	0.0	0.00
SOF	56.3	12.58	27.4	10.32	23.1	10.91	65.0	13.48	21.6	12.71	10.6	7.64
TET	21.8	10.99	51.3	14.37	17.7	11.38	35.2	15.36	43.9	15.82	20.2	11.42
ZAM	56.7	10.94	35.7	10.59	12.0	4.81	38.9	11.31	56.6	11.85	8.2	7.64
MOZ	45.5	3.84	43.5	3.77	11.8	2.45	51.4	3.94	37.5	3.73	12.6	2.68

SACMEQ III (2007)												
	Reading teachers						Mathematics teachers					
	Less often		2/3 per month		1 + per week		Less often		2/3 per month		1 + per week	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	29.0	8.72	39.9	9.75	31.1	8.47	35.7	9.45	39.7	10.26	24.6	10.24
GAZ	50.4	12.2	43.2	12.67	6.4	4.66	42.7	11.87	52.2	11.08	5.1	3.70
INH	22.0	9.51	58.8	11.02	19.2	8.07	25.9	10.52	61.8	11.98	12.3	7.83
MAC	29.2	9.16	58.2	8.40	12.6	5.86	23.8	9.89	62.5	10.44	13.6	6.01
MAN	10.0	5.56	81.8	7.61	8.2	6.00	12.8	5.84	59.0	9.71	28.2	9.57
MAP	31.5	10.5	62.4	10.62	6.0	3.42	9.3	5.48	72.4	9.91	18.3	6.68
NAM	28.7	8.47	50.0	10.26	21.3	9.31	21.2	6.99	72.8	7.14	5.9	3.61
NIA	17.1	9.25	56.7	11.87	26.3	10.71	34.2	12.76	49.2	12.91	16.6	8.82
SOF	19.8	8.61	67.0	10.30	13.3	7.34	23.1	10.41	66.3	10.53	10.6	6.43
TET	14.7	7.14	62.8	10.68	22.5	8.96	42.3	11.45	34.3	12.74	23.4	9.19
ZAM	60.1	9.80	25.8	7.98	14.1	6.14	36.1	10.69	41.4	10.67	22.5	9.50
MOZ	31.1	3.02	53.3	3.17	15.7	2.24	27.3	3.00	56.7	3.27	16.0	2.35

Policy suggestion 4.2. It is suggested that the Ministry of Education commission a study to examine feedback practices in classrooms of those pupils who are given tests less frequently than two or three times per month. Recommendations from such a study on the ideal number of tests that a teacher should give to pupils can thereafter be implemented, and review accordingly the “Regulamento de avaliação”.

4.2.10 How frequently did teachers meet pupils' parents?

Postlethwaite & Ross (1992) have shown that in many countries, the more the school director and teachers had contact with parents, the more effective the school was in promoting pupils' reading achievement. Frequent and regular meetings between school staff and parents provide opportunities for important mutual consultations on how best to support pupil learning, and this has a positive impact on achievement.

Fullan (2001) stresses that parents and the wider community have largely untapped expertise essential to the partnership. However well or badly parents do, they are the first educators. As part of the community, schools need to develop an 'invitational' attitude towards parents and do more to help parents assist their children. Dustmann, Rajah and Soest (1998) and Van Wyk (2001) support Fullan's position about the impact parents and the community have on pupils' performance. Hence a question was asked about the frequency of teachers meeting parents in a year. The teacher was said to meet frequently with parents if these meetings took place at least once a term. The results are presented in Table 4.6.

Table 4-8 Percentages and sampling errors for pupils on how frequently their teachers meet with parents

Provinces	SACMEQ IV (2013)				SACMEQ III (2007)			
	Reading Teachers		Mathematics Teachers		Reading teachers		Mathematics Teachers	
	%	SE	%	SE	%	SE	%	SE
CAB	100.0	0.00	100.0	0.00	100.0	0.00	100.0	0.00
GAZ	93.2	6.78	100.0	0.00	100.0	0.00	100.0	0.00
INH	100.0	0.00	100.0	0.00	100.0	0.00	98.9	1.13
MAC	100.0	0.00	99.5	0.54	97.7	2.36	100.0	0.00
MAN	95.7	4.25	83.7	9.06	92.8	6.63	93.3	6.65
MAP	100.0	0.00	100.0	0.00	100.0	0.00	97.9	2.12
NAM	100.0	0.00	99.0	1.00	96.3	3.73	99.2	0.85
NIA	100.0	0.00	100.0	0.00	100.0	0.00	100.0	0.00
SOF	100.0	0.00	100.0	0.00	100.0	0.00	100.0	0.00
TET	100.0	0.00	89.9	9.94	100.0	0.00	96.9	3.11
ZAM	100.0	0.00	95.1	3.58	95.8	4.24	95.8	4.24
MOZ	99.1	0.68	96.8	1.30	98.2	0.95	98.2	0.86

Across the two surveys, close to 100 % of Grade 6 pupils had teachers who met frequently with their parents, an impressive situation. The effect of this meeting on pupil achievement needs to be studied.

4.2.11 Availability of education resource centre

In a country such as Mozambique with lack of libraries, resource centres could play an important role in providing teachers with basic resources to prepare their lessons and to improve their knowledge as well as teaching skills. Teachers were, therefore, asked to indicate whether: (a) there was a resource centre available to them; (b) whether they have ever visited the resource centre; and (c) whether they have used the resource centre. In Table 4.8 data related to the availability of education resource centres for teachers as well as the percentage of teachers visiting and using them are presented.

Table 4-9 Percentages and sampling errors for the availability of education resource centre for teachers across the two surveys

SACMEQ IV (2013)													
Reading teachers							Mathematics teachers						
None available		Have not visited		Have used			None available		Have not visited		Have used		
%	SE	%	SE	%	SE		%	SE	%	SE	%	SE	
CAB	15.8				17.7		15.5		10.0		15.4		
	37.4	5	6.5	6.41	56.1	3	49.1	1	10.2	2	40.7	8	
GAZ							11.3						
	83.6	9.58	3.6	3.57	12.8	7.75	80.3	8	8.2	8.15	11.5	8.78	
INH							12.3		12.1				
	65.6	3	0.0	0.00	34.4	3	69.8	7	26.8	9	3.4	3.55	
MAC	100.						100.						
	0	0.00	0.0	0.00	0.0	0.00	0	0.00	0.0	0.00	0.0	0.00	
MAN							13.5						
	34.7	7	20.5	9.99	44.8	0	38.5	2	6.8	4.99	54.7	1	
MAP							100.						
	98.2	1.91	0.0	0.00	1.8	1.91	0	0.00	0.0	0.00	0.0	0.00	
NAM							11.0		10.3				
	50.2	3	4.8	4.84	45.0	8	41.7	6	36.5	8	21.8	8.78	
NIA													
	94.0	6.17	0.0	0.00	6.0	6.17	93.5	6.69	0.0	0.00	6.5	6.69	
SOF							13.4						
	68.4	5	0.0	0.00	31.6	5	68.9	3	0.0	0.00	31.1	3	
TET							12.9						
	74.9	7	4.8	5.02	20.3	5	73.3	9	3.9	4.08	22.8	2	
ZAM							11.6						
	49.8	9	17.9	9.83	32.3	7	45.8	2	12.1	8.30	42.1	6	
MOZ	65.9	3.78	6.4	2.09	27.8	3.61	64.5	3.78	12.5	2.60	23.1	3.36	

SACMEQ III (2007)

Reading teachers							Mathematics teachers					
None available		Have not visited		Have used			None available		Have not visited		Have used	
%	SE	%	SE	%	SE		%	SE	%	SE	%	SE
CAB	78.0	10.71	-	-	22.0	10.71	82.5	9.89	-	-	17.5	9.89

GAZ	95.0	5.05	-	-	4.9	5.05	89.9	6.89	-	-	10.1	6.89
INH	87.9	5.96	4.4	4.39	7.7	4.46	84.3	8.14	8.8	6.49	6.9	5.42
MAC	86.9	7.40	3.1	2.97	10.0	7.23	88.1	7.35	3.5	3.54	8.4	6.70
MAN	68.3	10.80	3.5	3.46	28.2	10.92	62.2	10.21	5.8	3.83	31.9	10.05
MAP	94.2	5.85	-	-	5.8	5.85	91.4	6.32	2.8	2.81	5.8	5.85
NAM	71.9	10.5	4.5	3.78	23.6	9.78	78.1	8.12	8.2	5.93	13.7	6.54
NIA	66.2	12.78	8.3	8.14	25.5	11.73	73.9	11.04	2.3	1.81	23.8	10.90
SOF	72.5	10.80	14.7	8.13	12.7	7.17	57.9	10.87	18.6	8.85	23.5	8.66
TET	78.4	9.83	5.7	5.72	15.9	8.61	82.8	9.67	1.9	1.88	15.3	9.45
ZAM	84.9	8.28	5.3	5.29	9.7	6.75	85.9	7.52	3.8	3.69	10.2	7.04
MOZ	81.4	2.78	4.5	1.42	14.2	2.47	80.5	2.62	5.47	1.47	14.0	2.35

Looking at the table, across the two surveys, availability of resource centres has improved. While in SACMEQ III, around 80 % of pupils had reading and mathematics teachers that had no resource centre available to them, around 14% of pupils had reading and mathematics teachers who had used the resources centres, the corresponding figures in SACMEQ IV were 66% and 28% respectively. That is the number of teachers visiting it have increased two fold (from 14% to 28% in reading), and the number of pupils who had teachers with no availability of resource centre has reduced from 80% to 66%.

The decrease in numbers of Grade 6 pupils with teachers with no availability of resources is more pronounced in some provinces than in others. For instance, in Cabo Delgado, the number has reduced from 78% in 2007 to 37% in 2013, while in Tete the reduction was only four percentage points (from 78.4% to 74.9%). Furthermore, in 2013, the variation among provinces ranged from 44% in Manica to 6% in Niassa IN RELATION TO teachers reading WHO used the resource centre.

Policy suggestion 4.3. The Ministry of Education should maintain and invest in opening more resource centres.

4.2.12 Did teachers receive advice from the school directors?

If teachers are left teaching on their own without feedback on how they are doing, except when an inspector visits their classroom, they can feel very lonely and unsupported. Most teachers welcome constructive comment from the school director and other colleagues. But this assumes that other colleagues and the director can see the teacher teach. Teachers were asked how frequently they received advice from the school director and those saying

‘sometimes’ or ‘often’ were grouped together, meaning that they received advice at least once a year. The results are presented in Table 4.10.

Table 4-10 . Percentages and sampling errors for the frequency of advice from the school director given to teachers

Provinc es	SACMEQ IV (2013) “Sometimes or often”				SACMEQ III (2007) “Sometimes or often”			
	Reading teacher		Mathematics teacher		Reading teacher		Mathematics teacher	
	%	SE	%	SE	%	SE	%	SE
CAB	80.7	11.05	83.9	11.62	82.4	9.88	73.0	11.28
GAZ	64.2	13.22	64.0	13.05	84.0	8.53	82.5	8.66
INH	69.9	13.02	79.0	11.20	90.6	7.38	98.9	1.13
MAC	79.5	11.53	81.3	9.35	77.7	8.49	90.0	4.60
MAN	100.0	0.00	100.	0.00	100	0.00	100.	0.00
MAP	68.2	11.54	90.0	5.04	87.9	6.80	87.1	4.85
NAM	94.0	5.22	97.7	1.66	96.3	3.64	86.6	7.98
NIA	64.9	14.37	87.9	11.78	96.9	2.24	90.6	7.29
SOF	96.9	3.08	92.0	7.98	96.0	2.81	78.6	11.12
TET	67.6	15.07	73.9	14.16	90.8	4.94	93.6	4.43
ZAM	92.3	5.44	69.4	10.65	85.2	7.04	92.3	4.83
MOZ	82.7	2.83	83.9	2.83	89.6	1.98	88.6	2.13

The results summarized in Table 4.10 show that most pupils had teachers that received advice from school directors in both surveys. The slight decline for both reading and mathematics teachers in SACMEQ IV is not statistically significant. It is desirable that the management courses that the school directors attend emphasize this aspect of school director behaviour so that all directors advise their teachers in this way.

4.3 Health Teacher’s Characteristics and their Views on Teaching, Classroom Resources and Professional Support

As referred to in section 4.1, several important characteristics of health teachers were also measured. The major questions that have been posed for this part of the chapter were like those for reading and mathematics teachers:

- What were the ages and gender of Grade 6 pupils' health teachers?
- What was the teaching experience and training of the Grade 6 health teachers?

- How many in-service courses did Grade 6 health teachers attend? Were they deemed to be effective?
- Were the living conditions of the health teachers acceptable?

4.3.1 Age distribution

The age of health teachers, teaching the average Grade 6 pupil, are presented in Table 4.11. The results suggest a slight increase of teachers age from 2007 to 2013. The average pupil in Mozambique had a teacher of health who was 33.2 in 2013, while in 2007 the teachers 31 years old; across provinces the average age ranged from 29 years in Tete to 40 years in Maputo Cidade.

Table 4-11 Means, percentages, and sampling errors for age, gender, socio-economic background, experience, training and in service training of health teachers

SACMEQ IV (2013)															
Health Teachers															
Province	Age (years)		Gender (female)		Housing in acceptable conditions		Experience (Years)		Teacher Training (at least 3 years)		In Service Courses		Days		
	Mean	SE	%	SE	%	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	
CAB	39.4	2.19	40.8	18.17	32.7	4	15.9	12.2	1.86	42.6	18.24	3.0	0.75	12.2	3.68
GAZ	31.6	1.41	24.2	12.80	35.5	4	13.4	7.6	1.24	26.7	11.95	1.1	0.35	3.5	1.02
INH	34.9	2.99	20.4	11.37	45.5	5	13.8	11.9	2.59	27.8	12.79	1.1	0.37	4.6	2.24
MAC	40.0	2.36	51.7	14.34	66.9	5	11.0	14.6	3.08	20.6	11.64	1.4	0.79	4.8	1.77
MAN	32.8	1.30	27.7	13.66	35.8	5	11.8	8.6	1.39	26.6	11.65	1.4	0.86	5.1	2.72
MAP	32.2	1.21	39.9	12.46	41.7	9	14.4	8.5	1.34	62.5	12.95	1.1	0.28	3.2	0.86
NAM	33.0	1.56	22.9	9.66	30.4	7	10.3	9.0	1.61	18.6	8.58	1.6	0.37	6.1	2.00
NIA	32.0	1.85	48.7	16.42	11.6	5	11.4	6.4	2.14	11.1	10.90	0.9	0.54	2.2	1.10
SOF	32.6	0.99	45.8	17.38	57.6	4	18.2	9.2	1.19	29.4	16.16	3.1	0.83	17.4	8.15
TET	29.0	1.76	31.9	15.06	58.4	0	16.2	6.1	1.20	4.7	4.92	1.3	0.45	5.9	2.52
ZAM	31.3	2.23	33.7	12.03	30.5	7	11.9	6.5	1.77	5.7	4.06	0.6	0.24	2.4	1.08
MOZ	33.0	0.62	33.1	4.09	40.2	4.16	9.0	9.0	0.59	23.0	3.37	1.4	0.16	5.6	0.87

	2						3							
	SACMEQ III (2007)													
	Health Teachers													
Province	Age (years)		Gender (female)		Housing in acceptable conditions		Experience (Years)		Training (years)		In Service courses		Days	
	Mean	SE	%	SE	%	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
CAB	30.7	1.1	24.	11.0	5.6	9.00	5.6	0.9	1.5	0.2	0.7	0.3	5.3	3.4
		2	1	3				2		6		7		2
GAZ	28.6	1.1	42.	11.2	5.1	10.3	5.1	1.1	1.1	0.2	0.6	0.3	6.7	3.2
		8	4	9		8		7		5		1		6
INH	29.3	1.0	38.	9.78	6.3	8.13	6.3	0.6	0.7	0.2	0.6	0.2	4.3	1.9
		4	3					5		3		7		2
MAC	36.6	1.1	36.	5.31	13.	7.29	13.1	1.1	2.66	0.1	1.2	0.4	6.3	1.8
		6	6		1			6		4		5		5
MAN	30.8	1.2	25.	9.73	8.4	10.5	8.4	1.4	1.7	0.2	1.1	0.3	4.2	1.1
		8	8			1		9		1		8		6
MAP	30.0	1.3	49.	10.7	7.4	10.0	7.4	1.0	2.2	0.2	0.8	0.2	5.9	3.3
		1	3	7		9		5		1		7		7
NAM	33.6	1.9	21.	7.76	10.	9.73	10.6	2.1	2.1	0.1	0.7	0.2	5.3	1.7
		0	5		6			7		7		2		2
NIA	28.4	1.2	31.	11.9	4.4	11.6	4.4	1.0	1.6	0.2	0.9	0.6	2.5	1.3
		6	6	5		8		8		1		1		5
SOF	31.9	2.1	53.	12.9	7.2	11.9	7.2	1.7	1.9	0.2	3.2	1.3	19.	5.9
		1	9	6		5		4		3		2	2	7
TET	28.4	1.5	10.	6.72	5.6	7.27	5.6	1.4	1.7	0.2	0.4	0.1	1.9	0.9
		2	9					8		9		5		4
ZAM	30.1	1.2	10.	4.86	6.9	9.36	6.9	1.3	1.3	0.2	0.6	0.2	16.	13.
		4	2					5		3		3	2	5
MOZ	31.0	0.4	30.	2.79	7.7	3.00	7.7	0.4	1.69	0.0	1.0	0.1	7.9	2.1

6 7 6 7 5 2

4.3.2 Gender

Although there was a slight increase of pupils who had female health teacher, the gender gap is still significant. In 2007, 30.7% of Grade 6 pupils had a female health teacher, the corresponding figure in 2013 was 33.1%. Therefore, in both surveys, less than 1/3 of pupils had female health teacher.

Provinces such as Zambézia and Tete, have seen the largest increase of pupils who had female health teachers (in Tete and Zambézia from around 10 % in 2007 to around 30 % in 2013). Maputo Cidade is the province with highest number of pupils with female health teachers (51%), while Gaza presents the lowest number 24%.

4.3.3 Housing condition

In terms of housing condition, it can be observed that overall in Mozambique there was a significant improvement across the surveys. In 2007, only 7.7% of pupils had health teachers who felt that their housing was in an acceptable condition, while in 2013 the corresponding number is around 40.2%.

Although, across provinces there was an increase in pupils who had health teacher with acceptable condition, there was a substantial variation between provinces. Maputo Cidade was the province where most of pupil had a health teacher satisfied with the house condition (66%), whereas Niassa was the place with highest level of unhappy health teachers with their house condition (11%).

4.3.4 Years of experience

Looking at the years of experience in the same table, it can be observed teachers' years of experience has increased, although not significantly. In 2007, on average, pupils in Grade 6 had health teachers that had 7.7 years of experience; in 2013, teachers' experiences was 9 years.

Although, across provinces there was an increase in teacher experience, there was a substantial variation between provinces. In Cabo Delgado, the teacher experience has increased two folders (from 5.6 in 2007 to 12.2 in 2013), whereas in Zambézia no significant changes was observed (6.9 in 2007 to 6.5 in 2013). Furthermore, the average experience ranges from an average of 14.6 in Maputo Cidade to 6.4 years in Niassa.

4.3.5 How many in-service courses did Grade 6 health teachers attend?

As mentioned in section 4.1, teachers can only maintain high levels of performance in their work if their pedagogical skills are continuously upgraded. One systematic way of ensuring that teachers receive additional pedagogical skills is through in-service training.

From Table 4.11 can be seen that from 2007 to 2013, there was a slight increase in the average number of in-service courses over the last three years (from 1 course in 2007 to 1.4 courses in 2014).

The variation ranged from 3.1 in Sofala to 0.6 in Tete. Taking into consideration that HIV-AIDS are new contents in the curriculum, this low number of in-service training courses attended is a matter of concern. As shown later, teachers had received little information on these matters in their initial training course, therefore the in-service training is particularly important.

4.3.6 Teachers academic qualification

Table 4.12 presents descriptive statistics on the academic education of health teachers. As it was the case with the reading and mathematics teachers, majority of pupils in SACMEQ III (64%), as well as in SACMEQ IV (62.9%), had health teachers who had completed senior secondary education. In the country as whole, 2.6% of pupils in SACMEQ III and 14.2% in SACMEQ IV had health teachers with only primary education completed. Manica (33.3%) and Niassa 44.1%, had the highest percentage of pupils with health teachers who had only primary education. Across the two surveys, the proportion of pupils with health teachers with only primary education completed increased, again probably as a result of expanded enrolment. This fact might have contributed to the deterioration in pupil performance.

Table 4-12 Academic education of health teachers

SACMEQ III (2013)										
Health Teachers										
Province	Primary		Junior secondary		Senior secondary		A-level		First Degree	
	%	SE	%	SE	%	SE	%	SE	%	SE
	CAB	13.4	12.80	33.5	17.38	53.0	17.83	0.0	0.00	0.0
GAZ	0.0	0.00	5.6	5.79	93.2	6.82	9.3	8.17	8.9	6.67
INH	0.0	0.00	28.6	13.03	69.3	14.01	0.0	0.00	6.7	8.11
MAC	2.7	2.66	6.1	4.14	85.8	10.94	12.6	9.41	25.3	10.40
MAN	33.3	11.44	4.0	5.76	55.4	14.00	9.0	5.83	7.5	7.96
MAP	0.0	0.00	3.2	2.28	93.3	6.01	11.0	8.41	41.1	13.40
NAM	14.0	5.43	19.0	6.83	66.6	8.71	1.4	5.60	0.0	0.00
NIA	44.1	16.18	34.9	15.72	21.0	13.67	0.0	0.00	0.0	0.00
SOF	0.0	0.00	35.5	16.60	53.0	22.20	9.1	7.33	15.5	13.28
TET	28.3	12.78	10.6	7.40	54.9	16.93	13.7	11.77	0.0	0.00
ZAM	18.6	9.34	22.3	11.03	57.3	13.07	3.4	5.65	0.9	2.42
MOZ	14.1	2.37	17.5	2.99	62.9	4.22	5.9	2.18	8.8	2.23

SACMEQ III (2007)										
Health Teachers										
Province	Primary		Junior Secondary		Senior secondary		A-level		First Degree	
	%	SE	%	SE	%	SE	%	SE	%	SE
	CAB	-	-	17.9	10.20	69.4	11.02	12.6	7.08	-
GAZ	-	-	11.2	7.81	76.9	9.54	11.9	6.66	-	-
INH	-	-	31.2	10.84	66.7	11.46	2.1	2.16	-	-
MAC	1.0	1.00	10.6	6.47	50.0	8.49	30.6	8.69	7.7	5.46
MAN	-	-	6.8	5.38	76.1	9.23	17.1	8.37	-	-
MAP	0.9	0.91	27.1	11.17	56.3	11.18	15.7	7.98	-	-
NAM	5.5	3.91	12.4	6.59	65.4	10.6	6.5	6.46	10.2	6.65
NIA	1.7	1.70	23.4	10.65	55.2	12.25	19.7	10.67	-	-
SOF	5.9	5.94	4.1	4.09	67.2	11.15	22.8	10.09	-	-
TET	3.0	3.05	24.3	11.24	72.6	11.25	-	-	-	-
ZAM	6.1	3.73	15.9	7.15	56.9	10.32	21.1	8.95	-	-
MOZ	2.6	0.96	16.4	2.57	64.2	3.31	14.7	2.41	2.0	0.99

4.3.7 Frequency tests

Across the two surveys, tests frequency has not improved. The figures show that the number of pupils with teachers giving tests less often has increased from 2007 to 2013. In 2007, there were 34.6 % of pupils who had health teachers that gave tests less often, while in 2013 that

number has increased to 52%. Additionally, the number of pupils who had teachers who gave test 2 to 3 times per month has decreased from 52.1 in 2007 to 35.5 in 2013.

Among the provinces, there is a variation to be considered. For instance, while in Maputo province the number of Grade 6 pupils who had health teachers giving less often tests have increased sharply from 26.8% to 72.9% between 2007 to 2013, the corresponding figure in Zambézia has not changed significantly (35.5% in 2007 to 32% in 2013).

It would seem worthwhile examining what actually happens to those pupils whose teachers give tests less frequently and, if necessary, taking remedial action. It is suggested that the Ministry of Education commission a study to examine this matter.

Table 4-13 . Percentages and sampling errors for frequency of tests on health

SACMEQ IV (2013)						
Provinces	Less often		2/3 per month		1 + per week	
	%	SE	%	SE	%	SE
CAB	43.5	17.45	48.5	17.90	10.9	8.24
GAZ	52.5	13.24	48.9	13.24	0.0	0.00
INH	56.2	13.95	21.1	12.04	26.2	11.80
MAC	66.7	11.73	30.3	11.73	0.0	0.00
MAN	59.0	12.33	12.1	8.38	23.2	11.14
MAP	72.9	10.60	23.7	10.23	5.9	4.60
NAM	63.6	10.41	17.3	9.41	17.6	6.83
NIA	17.3	12.29	74.2	13.32	5.2	6.34
SOF	66.6	15.71	10.0	9.44	20.9	14.34
TET	14.0	10.39	55.3	15.44	23.5	13.40
ZAM	32.1	11.40	44.4	12.26	22.2	10.18
MOZ	51.4	3.92	35.5	3.74	14.2	2.91

SACMEQ III (2007)						
Provinces	Less often		2/3 per month		1 + per week	
	%	SE	%	SE	%	SE
CAB	43.1	11.19	29.9	9.57	26.9	11.33
GAZ	47.8	12.61	47.1	11.68	5.1	3.70
INH	22.6	10.37	72.7	10.49	4.7	3.46
MAC	25.2	9.77	63.5	9.97	11.3	4.51
MAN	15.3	7.06	61.9	10.03	22.8	8.94
MAP	26.8	10.12	57.1	12.06	16.1	6.93
NAM	36.01	10.67	54.7	11.11	9.32	6.51
NIA	56.6	12.57	27.5	11.95	15.9	7.70
SOF	43.0	11.93	37.7	12.22	19.3	10.03
TET	41.9	11.23	35.04	11.38	22.9	10.75

ZAM	35.5	9.84	58.4	10.48	6.05	3.34
MOZ	34.6	3.35	52.1	3.51	13.3	2.10

4.3.8 Availability of education resource centre

The importance of resource centres in a country, like Mozambique, with a lack of libraries was already pointed out in the section 4.1. Health teachers were asked to indicate whether: (a) there was a resource centre available for them; (b) whether they have ever visited the resource centre; and. (c) whether they have used the resource centre. In Table 4.14 data related to the availability of education resource centres for health teachers, as well as the percentage of such teachers visiting and using them, have been presented.

Table 4-14 . Percentages and sampling errors for the availability of education resource centre for teachers

SACMEQ IV (2013)						
	None available		Have not visited		Have used	
	%	SE	%	SE	%	SE
CAB	44.8	17.58	0.0	0.00	55.2	17.58
GAZ	83.7	11.06	0.0	0.00	16.3	11.06
INH	70.7	13.29	14.7	9.98	14.6	10.84
MAC	100.0	0.00	0.0	0.00	0.0	0.00
MAN	39.7	14.37	7.7	5.52	52.6	13.07
MAP	86.6	12.58	0.0	0.00	13.4	12.58
NAM	46.4	11.37	19.5	8.42	34.0	10.47
NIA	93.9	6.34	0.0	0.00	6.1	6.34
SOF	75.0	16.26	0.0	0.00	25.0	16.26
TET	78.5	12.44	9.3	9.35	12.2	9.01
ZAM	49.3	12.28	14.0	8.16	36.7	12.16
MOZ	66.2	4.01	8.5	2.34	25.4	3.75

SACMEQ III (2007)						
	None available		Have not visited		Have used	
	%	SE	%	SE	%	SE
CAB	85.4	9.56	-	-	14.6	9.56
GAZ	89.9	6.89	-	-	10.1	6.89
INH	91.0	6.50	5.1	5.20	3.9	3.98
MAC	88.9	7.23	3.5	3.54	7.6	6.55
MAN	64.5	9.71	5.8	3.83	29.7	9.40
MAP	91.4	6.32	2.8	2.81	5.8	5.85
NAM	75.4	9.93	7.4	5.88	17.3	8.87
NIA	74.8	11.10	16.0	8.97	9.2	7.69
SOF	58.6	11.63	23.0	10.91	18.4	8.27

TET	62.3	12.71	5.7	5.72	32.0	12.28
ZAM	92.7	5.58	-	-	7.3	5.58
MOZ	80.8	2.68	5.8	1.58	13.5	2.37

Improvement could be observed in availability and use of resource centres across the two surveys. In 2007, 80.8% of pupils had health teachers that did not have a resource centre available to them, while in 2013 the number has reduced to 66%. Out of this figure in 2007, only 13.5% of pupils had health teachers that had used the resource centres, whereas in 2013 that number increased to 25%. Manica was the province with the highest proportion of pupils whose health teachers had a resource centres available to them (52%), while Niassa had the lowest 6.1%.

4.3.9 Did teachers receive advice from school directors?

Health teachers were also asked how frequently they received advice from the school director and those saying ‘sometimes’ or ‘often’ were grouped together. The results are presented in Table 4.15

Table 4-15 Percentages and sampling errors for the frequency of advice to health teacher from school director

Province	SACMEQ IV (2013)		SACMEQ III (2007)	
	“Sometimes or often”			
	%	SE	%	SE
CAB	44.6	19.76	71.5	11.52
GAZ	76.9	12.07	86.9	8.47
INH	83.5	11.10	92.0	6.87
MAC	53.7	14.11	89.7	4.67
MAN	100.0	0.00	100	0.00
MAP	81.2	9.42	79.3	7.92
NAM	92.1	7.64	85.6	8.33
NIA	63.8	17.02	97.4	1.89
SOF	100.0	0.00	86.2	6.93
TET	63.4	17.11	97.8	2.29
ZAM	76.7	10.48	95.5	3.89
MOZ	79.4	3.50	89.2	2.05

The results summarized in Table 4.15 show that the percentage of health teachers, who received advice from school directors, has decreased from 89.2% in 2007 to 79.4% in 2013. Maputo Cidade is the province with sharpest decrease of the percentage of pupils who had teachers receiving advice from school director from 89.7% in 2007 to 53.7% in 2013 , while

in Manica the corresponding figure has shown no change (100% in 2007, 100% in 2013). It would be desirable if the management courses that schools' directors attend were to emphasize this aspect of school director behaviour so that there are no directors who do not advise their teachers.

4.3.10 Views of health teachers on teaching, classrooms, professional support and their attitude towards HIV-AIDS.

Teachers were asked what they regarded as the best source of information on HIV/AIDS. The results are presented in Table 4.16. Both, in 2007 and 2013, TV and Radio were regarded as the best source of information on HIV/AIDS. Around 25% of pupils had teachers who regarded TV and radio as the main source of HIV information.

Table 4-16 Percentages and sampling errors for the best source of information for HIV/AIDS

Best source of information for HIV/AIDS	SACMEQ IV (2013)					
	Reading teacher		Mathematics teacher		Health teacher	
	%	SE	%	SE	%	SE
Radio	14.5	2.78	17.2	3.16	13.9	3.13
TV	11.9	2.51	12.1	2.49	12.1	2.78
Video	0.6	0.49	1.5	0.95	1.0	0.71
Internet	0.8	0.65	2.0	1.33	0.2	0.22
Computer	0.0	0.00	0.0	0.00	0.0	0.00
Cellphone	0.0	0.00	0.0	0.00	0.8	0.76
Poster	1.4	0.88	1.2	0.87	2.0	1.10
Books	6.0	1.85	10.8	2.48	10.3	2.63
Magazines	3.1	1.25	1.5	0.76	1.4	0.96
Drama	8.8	2.41	5.8	1.67	8.4	2.31
School	1.7	1.20	1.7	1.03	0.9	0.69
Cinema	0.7	0.72	0.0	0.00	0.5	0.50
Recreational Activities	1.8	1.19	1.1	0.88	3.3	1.75
Classroom Activities	1.4	0.98	3.6	1.42	1.5	1.09
Hospital	6.6	2.04	3.9	1.63	2.2	1.11
VCT	15.9	2.97	16.2	3.30	23.6	3.78
Teachers	0.3	0.26	0.5	0.37	0.6	0.42
Friends	2.0	1.17	1.7	1.05	0.5	0.46
Counsellors	0.6	0.34	1.0	0.89	0.9	0.59
Peer Educators	0.6	0.62	3.7	1.55	1.1	0.67
Doctors	6.4	1.86	3.0	1.20	3.6	1.36
Community health worker	2.9	1.25	1.0	0.72	2.6	1.34
Religious Person	0.9	0.59	1.2	0.65	0.9	0.56
Person living with HIV	5.5	1.94	6.6	1.87	5.8	1.86
Relatives	5.0	1.88	2.7	1.33	2.2	1.25

Best source of information for HIV/AIDS	SACMEQ III (2007)					
	Reading teacher		Mathematics teacher		Health teacher	
	%	SE	%	SE	%	SE
Radio	9.8	2.04	7.3	1.89	8.1	2.04
TV	16.9	2.62	19.9	2.46	21.1	2.70
Video	1.2	0.46	1.82	0.66	1.3	0.64
Internet	0.7	0.59	-	-	0.7	0.66
Computer	0.1	0.11	-	-	-	-
Poster/billboard	0.5	0.27	2.3	0.99	5.7	1.63
Books	7.4	1.76	5.1	1.42	4.9	1.56
Magazines/Newspapers	2.4	0.89	3.8	1.27	1.8	0.76
Drama/Play	7.1	1.54	8.1	1.68	7.3	1.56
Cinema	2.2	0.93	0.8	0.47	2.1	0.98
School Club	0.6	0.45	-	-	-	-
Recreation Activities	1.9	1.41	2.5	1.09	0.5	0.32

Pre-service teacher training	5.5	1.82	7.5	1.82	3.2	1.23
In-service teacher training	7.6	1.72	3.6	1.17	2.5	1.01
Hospital/Clinic	6.9	1.64	6.9	1.88	8.1	2.30
Teachers/School Head	0.9	0.80	1.7	1.02	0.9	0.55
Friends	1.2	0.73	1.6	0.74	4.0	1.50
Counsellors	5.4	1.44	3.9	1.39	3.8	1.34
Peer educator	2.8	0.96	3.0	0.99	4.9	1.57
Doctor	4.0	1.34	5.8	1.63	6.3	1.91
Community health worker	5.8	1.77	3.9	1.54	3.5	1.27
Religious person	3.1	1.33	2.1	0.99	2.7	1.29
Person living with HIV	2.8	1.04	4.5	1.47	3.8	1.29
Family/relatives	3.1	1.17	3.7	1.19	2.7	0.96

Health, reading and mathematics teachers were also asked about the attendance of in-service courses on HIV and AIDS. The results are presented in Table 4.17

Table 4-17 Percentages and sampling errors for attendance of in-service courses on HIV and AIDS

SACMEQ IV (2013)						
Teacher has attended HIV/AIDS courses						
Province	Reading teacher		Mathematics teacher		Health teacher	
	%	SE	%	SE	%	SE
CAB	70.8	15.64	63.8	14.73	73.7	14.83
GAZ	35.2	12.52	50.5	13.25	52.2	14.15
INH	83.4	11.57	42.6	13.52	44.8	14.82
MAC	60.8	11.68	59.6	14.98	55.9	15.15
MAN	56.9	12.57	50.2	12.61	43.2	12.93
MAP	72.9	10.56	71.4	12.54	59.1	15.16
NAM	58.5	10.66	67.7	9.74	57.5	10.72
NIA	35.0	14.65	39.1	14.49	34.0	15.84
SOF	61.6	12.75	73.4	12.51	82.9	12.25
TET	26.1	14.25	52.1	15.90	57.5	16.16
ZAM	49.4	11.66	46.8	12.84	40.6	12.07
MOZ	55.3	3.93	54.7	4.08	53.6	4.29

SACMEQ III (2007)						
Teacher has attended HIV/AIDS courses						
Province	Reading teacher		Mathematics teacher		Health teacher	
	%	SE	%	SE	%	SE
CAB	56.7	10.39	45.3	11.40	34.4	12.72
GAZ	51.1	9.86	29.4	8.14	20.8	8.58
INH	23.6	8.25	15.6	6.98	34.8	11.19
MAC	40.7	10.05	48.3	9.54	49.6	8.61

MAN	51.9	11.69	36.9	8.71	46.2	9.63
MAP	36.6	10.02	49.7	8.79	49.3	10.49
NAM	23.0	7.87	25.6	7.66	27.1	9.67
NIA	49.2	12.80	41.1	12.41	38.7	12.47
SOF	47.2	10.33	62.9	10.65	62.9	12.26
TET	44.2	12.02	36.0	10.81	54.3	11.69
ZAM	44.5	10.39	54.2	10.73	46.7	11.04
MOZ	41.0	3.18	40.8	3.06	42.3	3.36

Overall, the number of pupils who had teachers attending HIV sources has improved. In 2007, around 40% of pupils had teachers of reading, maths and health attending HIV courses, while in 2013 the number has increased to 55%. The province of Inhambane has shown one of the sharpest increase of pupils who had reading teachers attending HIV course (from 23.6% in 2007 to 83.4% in 2013).

Taking into consideration the spread of this disease in Mozambique and the importance of HIV/AIDS knowledge for prevention, the Ministry of Education should make an effort to increase the HIV courses attendance.

4.3.11 Attitudes and practices toward HIV

Teachers were asked other questions regarding HIV and AIDs. The results are presented in Table 4.18. The number of pupils who had teachers taking HIV test has increased between the two surveys. In 2007, around 50% of pupil had teachers who had taken HIV test, while in 2013 that percentage has increased to 80%. In all provinces at least one in every four teachers have had HIV test.

Table 4-18 - Percentages and sampling errors regarding HIV and AIDs questions

SACMEQ IV (2013)																			
Province	Reading teachers						Mathematics teachers						Health teachers						
	Take an HIV test if had to pay		Take an HIV test if was free of charge		Had an HIV test		Take an HIV test if had to pay		Take an HIV test if was free of charge		Had an HIV test		Take an HIV test if had to pay		Take an HIV test if was free of charge		Had an HIV test		
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	
CAB	91.4	6.39	93.9	6.06	58.5	15.72	85.2	10.67	100.0	0.00	64.2	9.00	68.7	0.00	100.0	0.00	35.6	7.00	
GAZ	100.0	0.00	100.0	0.00	84.7	10.26	91.7	8.23	96.1	4.07	100.0	0.00	100.0	0.00	100.0	0.00	100.0	0.00	
INH	89.6	9.99	100.0	0.00	82.1	10.03	87.9	8.49	100.0	0.00	92.9	7.04	100.0	0.00	100.0	0.00	92.1	7.85	
MAC	91.3	8.20	99.5	0.44	85.4	9.93	84.0	6.68	90.8	7.74	90.8	5.03	76.7	9.26	98.6	1.43	88.4	7.64	
MAN	91.4	6.17	100.0	0.00	91.3	6.10	85.0	10.60	95.5	4.50	85.6	8.22	94.3	5.84	94.8	5.17	84.7	8.99	
MAP	87.7	7.01	100.0	0.00	94.7	4.07	94.4	3.93	97.4	2.64	97.1	2.84	96.6	3.39	100.0	0.00	100.0	0.00	
NAM	77.8	8.36	93.2	4.32	69.7	10.11	83.9	7.72	96.7	3.30	68.2	4.10	83.0	8.55	93.2	4.82	81.3	8.90	
NIA	80.4	7.11	90.0	9.80	90.0	7.53	78.4	12.13	87.6	3.12	87.6	3.12	88.3	4.11	88.3	4.11	93.0	7.19	
SOF	96.0	3.17	100.0	0.00	86.7	9.92	75.5	11.65	100.0	0.00	90.2	9.57	72.8	1.00	100.0	0.00	83.8	4.00	
TET	59.7	5.14	84.7	7.10	85.6	10.17	86.0	9.86	93.8	6.39	100.0	0.00	100.0	0.00	100.0	0.00	100.0	0.00	
ZAM	77.3	9.94	100.0	0.00	79.6	9.91	87.9	6.93	100.0	0.00	84.2	8.78	69.8	8.00	100.0	0.00	77.2	9.80	
MOZ	84.8	2.74	97.0	1.19	82.6	3.06	85.6	2.75	96.9	1.20	86.4	2.83	86.0	2.80	97.6	1.15	86.2	2.83	

SACMEQ III (2007)																			
Province	Reading teachers						Mathematics teachers						Health teachers						
	Take an HIV test if had to pay		Take an HIV test if was free of charge		Had an HIV test		Take an HIV test if had to pay		Take an HIV test if was free of charge		Had an HIV test		Take an HIV test if had to pay		Take an HIV test if was free of charge		Had an HIV test		
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%
CAB	53.7	9.23	78.0	9.85	32.4	10.28	43.4	11.29	87.9	5.49	36.5	10.29	59.6	12.76	84.5	9.86	33.8	12.49	
GAZ	87.8	7.23	97.0	3.06	76.5	8.24	90.7	5.32	93.2	4.91	58.3	10.87	87.3	7.48	93.2	4.91	53.2	10.38	
INH	82.9	8.39	85.5	8.26	41.6	11.71	60.1	9.48	87.7	6.59	44.5	12.72	67.2	9.13	81.2	9.14	32.3	10.44	
MAC	71.5	9.39	90.1	4.64	57.6	7.49	72.4	9.21	88.8	3.49	51.9	7.23	72.4	9.21	90.8	3.42	51.8	7.22	
MAN	59.7	11.06	91.3	4.85	48.4	10.34	66.1	9.25	92.9	3.08	55.2	9.87	62.3	11.38	89.2	5.78	47.0	10.67	
MAP	53.2	9.15	75.4	8.07	38.4	9.18	71.9	10.22	89.4	4.81	47.1	9.92	75.2	9.63	90.8	4.52	40.6	9.86	
NAM	48.1	9.84	81.3	5.48	45.4	10.60	63.2	9.69	89.9	5.60	54.4	10.59	67.5	9.83	72.4	9.70	41.3	10.28	
NIA	56.5	11.91	72.5	11.05	37.5	12.53	51.6	11.14	81.7	7.40	20.8	9.78	67.3	10.62	86.7	6.99	55.4	12.49	
SOF	62.5	9.87	80.6	6.66	49.2	9.47	74.2	8.45	77.2	8.48	77.6	7.69	88.5	7.34	100	0	60.2	12.34	
TET	69.2	10.46	79.2	9.19	72.3	9.17	63.5	9.55	83.8	8.17	57.6	11.86	56.4	12.51	70.5	12.71	72.6	10.27	
ZAM	61.5	9.49	81.0	7.05	50.7	9.66	48.9	10.72	86.6	6.61	37.9	11.36	61.2	9.95	84.1	7.58	48.4	10.08	
MOZ	63.9	2.99	83.2	2.17	50.3	3.11	64.4	3.01	87.4	1.90	50.3	3.31	69.8	3.08	85.4	2.37	48.1	3.29	

4.4 Conclusion OF THE CHAPTER ABOUT health teachers and views of all teachers on HIV/AIDS

Indicators of health teachers' characteristics have improved slightly. The average pupil in Mozambique had a teacher of health who was 33 years old in 2013 against 31 in 2007. Overall 30.7% of grade 6 pupils had health teachers who were female in 2007 while in 2013 the number has increased to 40.2%. Teachers experience has improved from 7.7 in 2007 to 9 years in 2013. Overall only 40% % of pupils had health teachers who felt that their housing was in an acceptable condition against 7.7 in 2013. The number of pupils who head teachers taking HIV test has increased between the two surveys. In 2007, around 50% of pupils had teachers who have taken HIV test, while in 2014 that percentage increased to 80%. In all provinces at least one in every four teachers had HIV test.

4.5 Conclusion

The main findings presented and discussed in this chapter do far constitute useful baseline information on Reading and Mathematics teachers and their school and home environments. From SACMEQIII to SACMEQ IV the picture is mixed. There was progress in some of indicators, few indicators, while no improvement was observed in the others.

There was a slight or significant decline in number of indicators, namely: Gender balance for Mathematics teachers; an increase in teachers with only primary level academic qualification in the three subjects; the number of days spent in in-service training for all subjects; the frequency of testing in all subjects except health educations where there was a slight increase in the percentage of pupils who were tested once or more per week; frequency of parent and Mathematics teacher; and the frequency of advice from the school director for the three subjects. There was no change in the teaching experience of Reading teachers.

The rapid expansion of the school system as shown in chapter one and the high turnover of teachers in the system might explain the stagnation or decline of some indicators.

The data shows that there is a slight or significant improvement in the following indicators: Teachers' age; gender balance for Reading and Health education teachers; acceptable housing conditions; proportion of teachers with university degrees; teaching experience for Mathematics and Health Education teachers; Reading and Mathematics teachers with at least

3 years of teacher training; number of in-service courses attended; number of hours spent on lesson preparation for both Reading and Mathematics teachers; reduction of teaching load for both groups; frequency of meetings between Reading teachers and Student parents; the availability of resource centres; the use of resource centres by teachers; the attendance of HIV and AIDS in-service training course; and the percentage of teachers who were tested for HIV and AIDS.

5. Characteristics of school Directors and their Schools

5.1 Introduction

The literature on school improvement emphasizes a variety of ways in which principals and school leaders may affect school improvement. Some authors have identified the links between leaders and academic achievement as an important factor. The outcomes-based evaluation of principals has assumed both a direct (explicit) and indirect (implicit) linkage between principals and the levels of student achievement (Glasman and Heck, 2003).

In this chapter, the focus is on providing a description of school directors and the schools that Grade 6 pupils attended. This chapter provides background information on the school directors and the schools they manage. Such information is useful to facilitate a more accurate and meaningful interpretation of the achievement data to be presented later in the report. The information also allows planners to see how major variables related to school directors and schools have changed over time.

The major questions to be answered in this chapter are:

1. What were the personal characteristics of school directors?
2. What were the professional characteristics of school directors?
3. What were the views of school directors on school management issues, including school meals and borrowing of library books?

5.2 What were the personal characteristics of school directors, that is, age and gender?

It is generally acknowledged that the school director is the most important single individual who acts as driving force behind a school. It is sometimes argued that if a good director is appointed, then he or she attracts good staff and within a few years that can transform a weak school into a good one. Conversely, the appointment of a weak school director can have the opposite effect on school quality. A good school director can also have a positive influence on a host of other factors, both within the school and in its external environment, that affect overall school performance. What then were the characteristics of primary school directors in the year 2013, and how do they compare to those of 2007?

5.2.1 Age

The age distribution of the school directors, in years, at the national and provincial levels, is presented in Table 5.1. The mean age was 43.3 years in 2013, slightly higher than the 40.9 in 2007. It can be noted that mean age tended to go up in all provinces, except Maputo Province, Manica and Cabo Delgado, though not all these changes were statistically significant. In SACMEQ III, three out of eleven provinces, on average grade 6 pupils, had school directors with mean age below 40 years, whereas in SACMEQ IV only one province had a mean age below 40, with the oldest school directors in Maputo Cidade (50.4 years) and the youngest in Cabo Delgado (38.9 years). With the increase in the mean age, it would be expected that directors would have more experience, which could be useful in guiding younger teachers.

Table .5-1 - Means, percentages and sampling errors for school director age and gender

Province	SACMEQ IV				SACMEQ III			
	Age (years)		Gender (female)		Age (years)		Gender (female)	
	Mean	SE	%	SE	Mean	SE	%	SE
CAB	38.9	1.98	14.9	10.11	40.9	1.74	12.8	9.00
GAZ	45.4	1.68	28.4	11.57	39.6	1.77	17.7	9.86
INH	42.7	1.73	13.9	9.48	41.4	1.79	22.0	14.13
MAC	50.4	2.36	61.0	14.56	44.2	1.58	35.2	12.41
MAN	40.7	2.08	38.7	14.01	42.6	1.40	37.6	13.24
MAP	41.7	1.58	59.2	13.00	43.2	1.40	52.5	13.14
NAM	43.7	1.21	12.8	7.31	40.9	1.57	5.4	5.43
NIA	44.0	2.82	9.9	9.75	40.1	2.49	8.6	8.42
SOF	45.6	1.89	23.2	11.88	41.8	1.69	12.2	8.52
TET	42.1	2.46	14.3	9.87	37.6	2.17	15.7	10.68
ZAM	42.1	1.92	12.8	7.81	38.0	1.89	18.2	9.01
MOZ	43.3	0.59	25.3	3.32	40.9	0.55	22.4	3.35

5.2.2 Gender

Table 5.1 also shows the percentage of female school directors in the surveyed schools. From 2007 to 2013, there was a slightly improvement in gender gap, although not significant. In 2007, 22.4% of pupils had a female school director, while in 2013 the corresponding increased to 25.3%.

There is large variation across provinces. The percentage varied from 9.9% in Niassa, to 61.0% in Maputo Cidade. All provinces, apart from Zambézia, Tete and Inhambane, had an

increase in the percentage of pupils with female directors across the two surveys. Especially large increases were experienced in Sofala, Nampula, Maputo Cidade, Inhambane and Gaza Province.

Given that Chapter 4 has indicated that 42% of pupils had female reading teachers, it is difficult to understand such low figures for female school directors, as the government has been striving to promote gender balance, which includes, among other things, appointing female provincial education directors. Therefore, an investigation needs to be carried out to find out the reason for this low percentage.

Policy suggestion 5.1. The Ministry of Education, through the Directorate of Planning, should include the school director’s gender as an indicator to be monitored through the annual school census data, collected by the EMIS, and constantly monitor this to timely adopt specific policies for provinces that do not show improvement in this aspect.

5.3 What were the teaching experience and teacher training of school directors?

School directors with more experience as teachers should be able to run their schools in a better way than those with less experience, as would those who have received special management training. In Table 5.2 information in this regard is presented.

Table .5-2 - Means and sampling errors for teaching experience and training of school directors for the average pupil

Province	SACMEQ IV				SACMEQ III			
	Experience (years)		Teacher training (at least 3 years)		Experience (years)		Teacher training (years)	
	Mean	SE	%	SE	Mean	SE	Mean	SE
CAB	14.3	1.80	42.7	14.39	16.3	2.74	1.9	0.37
GAZ	21.1	1.93	43.2	12.99	17.2	2.16	2.4	0.27
INH	20.0	1.93	52.4	13.84	20.5	2.13	2.1	0.29
MAC	23.8	1.91	93.8	6.28	22.3	1.35	3.0	0.25
MAN	16.9	2.15	60.8	14.06	21.1	1.75	2.8	0.19
MAP	19.2	1.71	64.1	12.70	22.3	1.39	2.8	0.23
NAM	19.1	1.60	56.4	10.09	18.8	1.87	2.7	0.20
NIA	21.1	2.73	42.4	15.52	18.4	2.49	2.2	0.22
SOF	22.0	1.94	50.0	13.85	19.5	1.87	2.9	0.21
TET	19.0	2.64	45.9	14.02	16.5	2.47	1.7	0.36
ZAM	16.7	2.15	38.0	10.75	16.7	2.13	2.2	0.21
MOZ	19.3	0.64	53.4	3.90	19.1	0.63	2.5	0.08

No significant change was observed between 2007 and 2013. The average years of experience of school directors, as teachers have risen only slightly from 19.1 to 19.3 years from 2007 to 2013.

Across provinces the results ranges from 14.3 years, in Cabo Delgado, to 23.8 years in Maputo Cidade.

Regarding to training of school director, the results show that at least one out of two (53.4%) pupils were studying in a school where the director have declared that he or she was submitted in a special management training at least three years. Across the provinces, it ranges from 38% in Zambézia to 93.8% in Maputo Cidade. In at least six provinces, the number of pupils studying in schools whose director was submitted to special training in management at least three years does not exceed 50%. This means that there are still a significant number of school managers who have benefited just little from special training in management promoted by the Education sector and partners.

5.3.1 What were the average years of experience as school directors?

The means and standard errors for the years of experience as school directors are presented in figure 5.1.

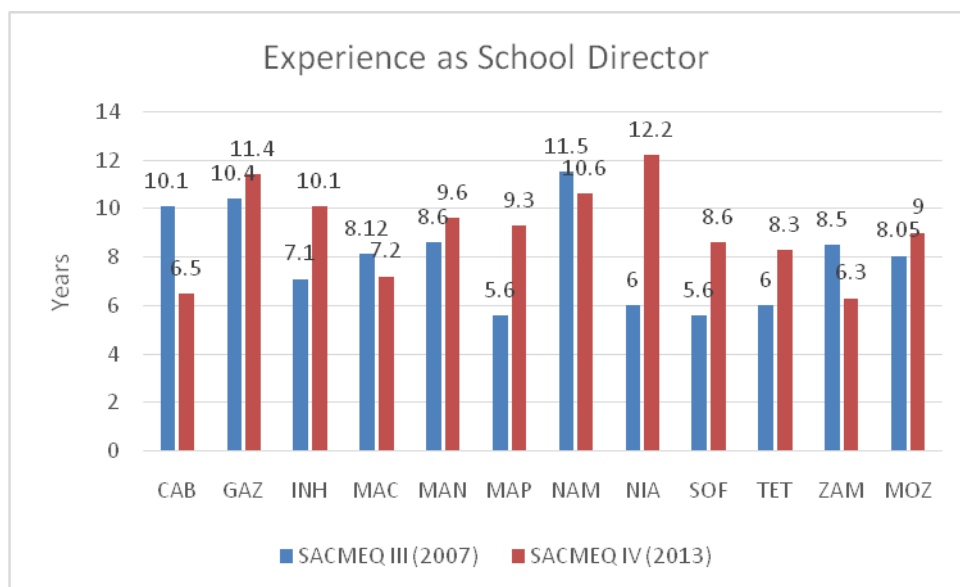


Figure 5.1 - Means and sampling errors for the experience as school directors of the average pupil, SACMEQ III and IV

The years of experience as school directors has increased slightly, but not significantly from 2007 to 2013. The average grade 6 pupil was in a school that had a school director with 9.0 years of experience in 2013, while the corresponding figure in 2007 was 8.05. The variation

across provinces ranges from 6.3 years in Zambézia to 12.2 years in Niassa. There seems to be a high turnover of directors in Zambézia (6.3) and Cabo Delgado (6.5). The Provincial Directorates of Education should look into the reasons why school directors are leaving the posts and adopt strategies for retention of good directors.

5.3.2 What percentage of school directors of the average pupil had attended management training and what was the duration of the course?

The percentage of pupils who had school directors who had attended specialized training is shown in Table 5.3.

Table 5.3 - Percentages, means and sampling errors for special training of school directors of the average pupil

Provinces	SACMEQ IV							
	Attended Management course		Days training on Management course		Attended health, safety, HIV/ AIDS course		Days training on health, safety, HIV/ AIDS course	
	%	SE	Mea n	SE	%	SE	Mean	SE
CAB	87.2	8.97	7.9	2.05	64.7	13.48	na	
GAZ	100.0	0.00	17.7	3.74	100.0	0.00	na	
INH	66.2	12.96	16.2	3.16	66.2	12.96	na	
MAC	100.0	0.00	26.8	3.02	100.0	0.00	na	
MAN	65.8	13.92	18.4	9.45	65.8	13.92	na	
MAP	95.3	4.77	11.2	1.93	95.0	5.07	na	
NAM	87.1	7.09	10.4	1.94	85.9	7.71	na	
NIA	74.7	13.31	9.7	1.65	74.7	13.31	na	
SOF	87.9	8.63	19.2	7.93	86.4	9.68	na	
TET	78.4	11.73	11.4	2.36	78.4	11.73	na	
ZAM	69.3	9.61	6.2	0.90	69.0	9.73	na	
MOZ	82.7	2.89	13.8	1.27	80.3	3.14		

Province s	SACMEQ III							
	Attended Management course		Days training on Management course		Attended health, safety, HIV/ AIDS course		Days training on health, safety, HIV/ AIDS course	
	%	SE	Mea n	SE	%	SE	Mean	SE
CAB	59.6	12.83	9.1	2.56	65.7	12.30	5.7	1.38
GAZ	85.3	8.49	13.5	3.09	53.5	13.16	34.9	22.46
INH	55.6	14.18	20.2	10.55	71.9	11.97	8.5	3.61
MAC	63.5	12.66	34.4	13.10	68.3	12.32	16.6	7.68
MAN	77.4	11.83	25.6	14.03	65.5	12.89	9.3	5.81
MAP	87.6	8.59	26.1	10.95	75.2	11.30	6.1	1.86

NAM	61.1	13.30	14.1	7.08	58.6	13.65	4.9	1.99
NIA	55.8	13.17	20.1	13.43	68.5	11.66	16.3	11.90
SOF	89.2	7.57	13.9	2.52	64.5	12.45	6.4	1.76
TET	59.6	13.00	7.2	2.79	90.5	7.51	6.9	1.08
ZAM	72.8	10.34	12.2	3.18	47.9	11.88	4.3	1.33
MOZ	70.9	3.58	17.9	2.56	65.0	3.82	10.3	2.32

There was an improvement from 2007 to 2013. At the national level, in 2013 the average Grade 6 pupil was in a school where 82.7% of school directors had attended management training, while in 2007 the corresponding number was 71%.

.All provinces showed an improvement, with the exception of Manica, where this proportion had declined from 77.4% to 65.8%, Sofala, where the proportion declined slightly from 89.2% to 87.9% and Zambézia, where this proportion decreased from 72.8% to 69.3% . Maputo Cidade, Cabo Delgado and Nampula were the provinces with the largest increases.

The results in Table 5.3 also indicate that the average grade 6 pupil attended a school where the head teacher had received 13.8 days (about 3 weeks) of specialized training in school management. The longest duration was an average of 26.8 days (more than 5 weeks) in Maputo Cidade and the shortest was only 6.2 days in Zambézia province. Compared to the year 2007, there has been a decline at the national level of about four days in the previous duration. In 2007 the national mean was 3.6 weeks, which declined in 2013 to about 2.8 weeks.

5.4 How much did school directors teach?

There is a view that a school director should always teach several hours each week in different grades because in this way he or she really gets to know what is going on in the school and does not have to rely solely on what teachers tell him or her. The average number of minutes of teaching by directors is presented in figure 5.2.

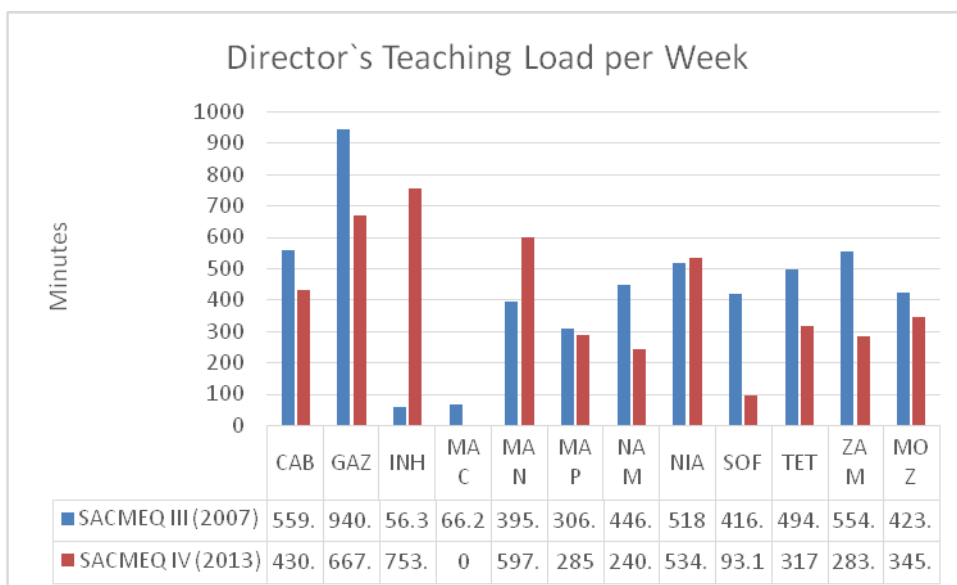


Table 5.2 - Means and sampling errors for minutes of teaching per week of school director of average pupils.

In 2013, the average pupil in grade 6 was in a school where the school director taught about 6 hours (345.5 minutes) per week, which is quite substantial and a slight decrease compared to a little more than 7 hours (423.8 minutes) in 2007. There was very wide variation across the provinces, ranging from less than one hour (0.0 minutes) per week in Maputo Cidade to almost 13 hours (753.4 minutes) per week in Inhambane. Considerable change took place in the averages teaching time of director of the average pupil within provinces, but the sampling error was quite large because of the small number of directors involved and many changes were not statistically significant.

Policy suggestion 5.2. The Directorate of Teacher Training should review the training provided by the various partners, harmonize the training and set standards.

Policy suggestion 5.3. The Ministry of Education should enforce the Gender Policy on Teacher and School Director recruitment.

5.5 What were school directors' views on (a) school days lost, (b) inspections, (d) community input, and (e) problems with learners and staff?

School directors were asked how many school days were lost in the last school year. The results presented in Figure 5.3 show that in Mozambique the average Grade 6 pupil had a school director who declared that in the previous year his school had lost 4 days. This

represents a decrease statistically significant, from 8 days in SACMEQ III. There was a slight variation across provinces, ranging from 1.5 days in Manica to 5.5 in Nampula, with Zambézia (5.2), Cabo Delgado (5.0) and Gaza (5.0) also recording high number of days lost. Taking into consideration teacher and pupil absenteeism and the fact that Mozambique has one of the shortest school years in the region (an average of 600² hours per year), though the average of school days showed a decrease in all provinces, the number of school days lost per year is still worrying. The district authorities should take steps to minimize more unplanned school interruptions.

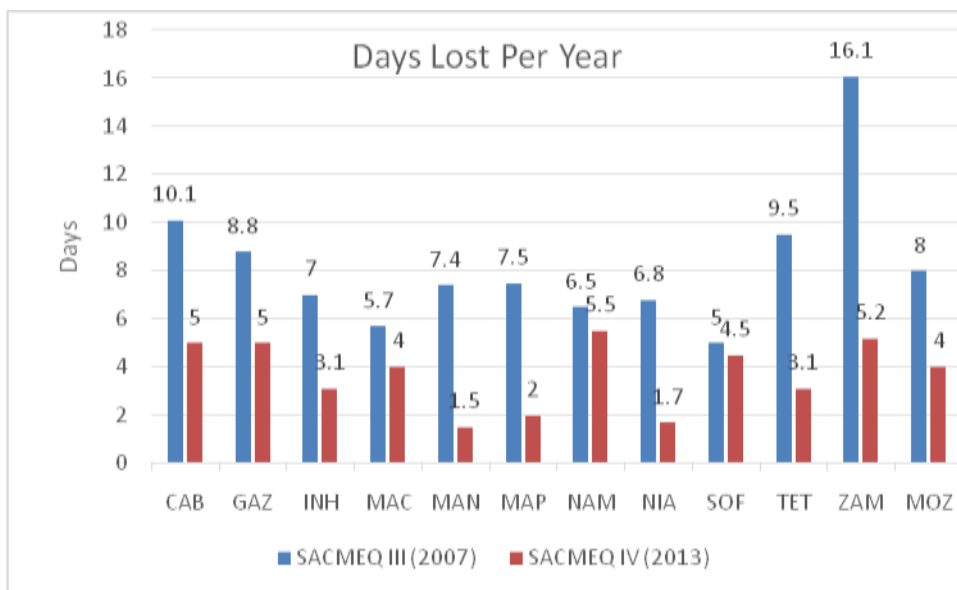


Figure 5.3 - Means and sampling errors for number of days lost per year as reported by school directors of the average pupil

Policy suggestion 5.4. The Ministry of Education, through the Directorate of Teacher Training, should review the contents of school directors’ training courses.

5.5.1 What was the frequency of school inspections?

In every education system, there is a need for periodic school inspections or supervision by officers at the district or provincial level. Such visits could serve a variety of purposes, depending on the needs of teachers, school directors or the inspectors themselves. School directors were, therefore, asked to indicate the number of school inspection visits which they had received over the past two years. The information is presented in Table Figure 5.4.

² (The Education Strategic Plan for the period 2006-2011 stated) that current curriculum for primary school should have been taught in about 760 to 950 hours per year, but those numbers are seldom achieved given most schools have two to three shifts (Ministério da Educação e Cultura, 2006:239).

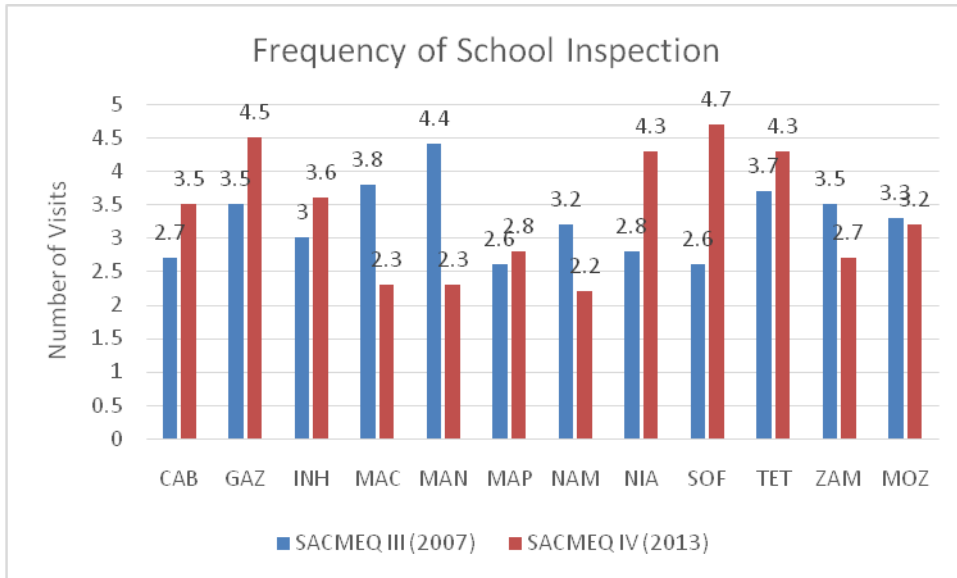


Figure 5-4 - Means and sampling errors of the frequency of school inspection as indicated by school directors of the average pupil.

There was no significant change between 2013 and 2007 in the number of inspections. The results summarized in figure 5.4 show that the average grade 6 pupil attended a school where the director indicated that they had received, on average, 3.2 inspection visits within the two years preceding the survey, while in 2007 the figure was 3.3.

The variation across provinces ranges between a low figure of 2.2 in Nampula to 4.7 in Sofala. Note that because the question was phrased differently, comparing the two surveys needs to consider that the period covered differed.

5.5.2 What was the community contribution to school activities?

As mentioned in Chapter 4, parents and the community have a role in supporting the school and impact positively on the improvement of learning. School directors were asked to indicate the activities in which the communities contributed most. Fourteen activities were listed. The results are presented in Table 5.4, in terms of percentage of pupils who were in schools with school directors who indicated that the given activity occurred in their schools.

Table .5-4 - Community contribution to school activities according to the school director of the average pupil

Type of contribution	SACMEQ			
	IV		SACMEQ III	
	%	SE	%	SE
Building of school facilities (such as classrooms, teacher houses, etc)	65.0	3.55	52.1	3.37
Maintenance of school facilities (such as classrooms, teacher houses, etc)	57.3	3.89	49.8	3.45
Construction or maintenance and repairs of furniture, equipment, etc	31.4	3.74	20.6	3.35
The purchase of textbooks	2.5	1.23	10.3	2.52
The purchase of stationery	13.0	2.51	5.3	1.98
The purchase of other school supplies, materials and/or equipment	17.4	2.85	8.7	2.41
Payment of examination fees	8.4	2.03	13.7	2.39
Payment of the salaries of additional teachers	3.4	1.54	1.6	0.83
Payment of an additional amount on top of the normal salary of teachers			1.9	1.13
Payment of the salaries of non-teaching staff	26.6	3.24	22.2	3.22
Payment of an additional amount on top of the normal salary of non-teaching staff			8.0	2.24
Extra-curricular activities including school trips	21.2	3.10	19.3	3.26
Assisting teachers in teaching and/ or pupil supervision without pay	35.2	3.78	28.0	3.68
Provision of school meals	3.0	1.22	4.5	1.73

In SACMEQ IV the top five community contributions to school activities were the same found in SACMEQ III.

From Table 5.4 it could be inferred that in 2013 the top five community contribution to school activities were, in order of frequency of occurrence, the following:

- (a) Building of school facilities (such as classrooms, teacher houses, etc.) (school directors of 65% of pupils mentioned this);
- (b) Maintenance of school facilities (such as classrooms, teacher houses, etc.) (57.3%);
- (c) Assisting teachers in teaching and/or pupil supervision without pay (35.2%);

- (d) Construction or maintenance and repairs of furniture, equipment, etc; and
- (e) Payment of the salaries of non-teaching staff (22.2%).

In 2007 the top five community contributions to school activities were the same found in 2013:

- (a) Building of school facilities (such as classrooms, teacher houses, etc) (52.1%);
- (b) Maintenance of school facilities (such as classrooms, teacher houses, etc.) (49.8%);
- (c) Assisting teachers in teaching and/ or pupil supervision without pay (28%);
- (d) Payment of the salaries of non-teaching staff (22.2%); and
- (e) Construction or maintenance and repairs of furniture, equipment, etc (20.6%).

It should be noted that all these top five community contributions to school activities have increased from 2007 to 2013. The increments range from 4.4 percentage points (in the item regard to Payment of the salaries of non-teaching staff) to 12.9 percentage points (in the item regard to Building of school facilities). Just two of them are statistically significant, namely the regarding to Building of school facilities (such as classrooms, teacher houses, etc) and Construction or maintenance and repairs of furniture, equipment, etc.

5.5.3 What were the perceived school community problems?

School directors were asked to what extent the lack of cooperation of the community was a problem at his/her school. The results are presented in Table 5.5.

Table 5-5 - School community problems as indicated by school directors of the average pupil

SACMEQ IV						
Province	School community problems					
	Not a problem		Minor problem		Major problem	
	%	SE	%	SE	%	SE
CAB	9.1	8.89	7.3	7.27	83.7	10.93
GAZ	13.9	9.37	18.8	10.23	67.3	12.40
INH	17.0	9.65	6.9	6.92	76.1	11.25
MAC	9.7	9.51	17.8	11.93	72.5	13.88
MAN	13.0	9.01	18.8	10.79	68.2	12.86
MAP	16.6	11.39	6.2	6.24	77.2	12.22
NAM	19.2	7.99	28.9	9.89	51.8	10.35
NIA	21.5	13.62	21.3	11.05	57.2	15.01
SOF	0.0	0.00	41.8	13.06	58.2	13.06
TET	5.2	5.27	23.7	11.18	71.1	11.93
ZAM	6.7	4.71	27.9	9.55	65.4	10.08
MOZ	11.8	2.54	22.1	3.29	66.1	3.77

SACMEQ III						
Province	School community problems					
	Not a problem		Minor problem		Major problem	
	%	SE	%	SE	%	SE
CAB	0.0	0.00	11.7	8.18	88.3	8.18
GAZ	0.0	0.00	13.6	9.27	86.4	9.27
INH	0.0	0.00	19.1	10.53	80.9	10.53
MAC	7.2	7.17	14.1	9.54	78.6	11.21
MAN	12.5	8.56	23.3	12.02	64.2	13.02
MAP	5.8	5.85	23.2	10.76	71.0	11.62
NAM	8.8	8.58	32.8	12.71	58.4	13.54
NIA	22.0	11.54	33.0	12.54	45.0	13.06
SOF	0.0	0.00	6.5	6.49	93.5	6.49
TET	13.2	9.02	35.1	13.09	51.7	13.38
ZAM	13.4	7.57	50.3	11.90	36.3	11.17
MOZ	7.2	2.03	25.1	3.47	67.7	3.58

From the data presented in Table 5.5, it can be seen that in 2013 the majority (66.1%) of pupils had school directors that declared that the lack of cooperation from the community was a major problem in their school. This result remains almost the same found in in 2007 where

the majority (67.7%) declared that the lack of cooperation of the community was a major problem.

Provinces where such lack of cooperation was a major problem were Cabo Delgado (83.7%), Maputo Province (77.2%) and Inhambane (76.1%). These results show that at national level and in most of the provinces with the exception of Sofala, the observed differences are not statistically significant. Therefore, more actions should be developed in the Education Sector to bring the school closer to the community.

5.5.4 What were the major pupil and teacher behavioural problems?

Questions were asked about many types of behavioural problems that were sometimes encountered in schools. School directors were asked to indicate their perception of the frequency of both pupils' and teachers selected behavioural problems. Seventeen behavioural problems for pupils and ten for teachers were listed. The results are presented in tables 5.6 and 5.7 for problems relating to pupils and teachers respectively, in terms of the percentage of pupils who were in schools with school directors who indicated that the given behavioural problems 'never' occurred in their schools.

Four out of five top behavioural problems were the same in both SACMEQ III and SACMEQ IV, with the top one remaining in the same position - *Sexual harassment of teachers*.

Table .5-6- Percentage and standard errors of pupils whose school directors indicated the specified pupil behavioural problems never occurred

Frequency of pupil behavioural problem	Indicating 'never' occurs			
	SACMEQ IV		SACMEQ III	
	%	SE	%	SE
Arriving late at school	2.1	1.05	0.3	0.25
Skipping classes	2.3	1.15	0.9	0.66
Dropping out of school	3.6	1.49	2.5	1.14
Classroom disturbance	46.3	3.92	57.3	3.88
Cheating	72.0	3.44	72.4	3.50
Use of abusive language	45.9	3.94	45.6	3.92
Vandalism	53.0	3.91	71.3	3.42
Theft	51.8	3.93	57.4	3.90
Intimidation of pupils	20.5	3.06	47.8	3.97
Intimidation of teachers/staff	70.5	3.49	84.1	2.91
Physical injury to staff	86.3	2.58	92.3	2.13
Sexual harassment of pupils	80.5	2.97	80.4	3.11
Sexual harassment of teachers	88.7	2.31	94.4	1.61
Drug abuse	84.5	2.81	89.2	2.33
Alcohol abuse	76.9	3.12	81.1	2.96

Fights	24.8	3.43	23.6	3.20
Health problems	2.9	1.37	4.0	1.42

From Table 5.6, it could be inferred that the significant top five pupil behavioural problems in the SACMEQ IV schools were, in order of frequency of occurrence, the following:

- (a) Arriving late at school(97.9%);
- (b) Skipping classes(97.7%);
- (c) Health problems (97.1%);
- (d) Dropping out of school (96.4%) and;
- (e) Intimidation of pupils (79.5%).

In SACMEQ III the top five pupil behavioural problems were:

- (a) Arriving late at school(99.7%);
- (b) Skipping classes (99.1%);
- (c) Dropping out of school (97.5%);
- (d) Health problems (96.0%); and
- (e) Fights (76.4%).

The top four are the same for both SACMEQ III and IV. Intimidation of pupils has jumped from 52,2% in 2007 to 79,5% in 2013. This is a worrying tendency. The Ministry of Education should commission a small study to determine the exact nature of the top five behavioural problems and to suggest steps that can be taken to minimize their occurrence in schools.

Policy suggestion 5.5. The Ministry of Education should commission a study to determine the exact nature of the following problems among pupils: arriving late at school; dropping out of school; skipping classes and health problems and suggest measures that should be taken to minimize them.

Similarly, school directors were also asked about behavioural problems associated with teachers. The results are presented in Table 5.7. All five top behavioural problems were the same in both SACMEQ III and SACMEQ IV, with the top two remaining the same though in opposing positions.

Table .5-7 - Percentage and standard errors of pupils whose school directors indicated the specified teacher behavioural problems never occurred

Frequency of teacher behavioural problem	Indicating 'never' occurs			
	SACMEQ IV		SACMEQ III	
	%	SE	%	SE
Arriving late at school	4.6	1.51	6.9	2.07
Absenteeism	22.1	3.13	28.8	3.39
Skipping classes	8.3	1.96	10.4	2.39
Intimidation or bullying of pupils	76.5	3.27	81.1	3.08
Sexual harassment of teachers	88.1	2.69	99.7	0.35
Sexual harassment of pupils	85.1	2.48	91.9	2.02
Use of abusive language	73.3	3.40	82.5	2.80
Drug abuse	90.3	2.25	97.8	1.16
Alcohol abuse	67.6	3.64	70.8	3.46
Health problems	7.5	2.04	7.1	2.09

From Table 5.7 it could be inferred that the significant top five teacher behavioural problems in the SACMEQ IV schools were, in order of frequency of occurrence, the following:

- (a) Arriving late at school (95.4%);
- (b) Health problems (92.5%);
- (c) Skipping classes (91.7%);
- (d) Absenteeism (77.9%); and
- (e) Alcohol abuse (32.4%).

In SACMEQ III the top five teacher behavioural problems were:

- (a) Arriving late at school (93.1%);
- (b) Health problems (92.9%);
- (c) Skipping classes (89.6%);
- (d) Absenteeism (71.2%); and
- (e) Alcohol abuse (29.2%).

It is important to note that skipping classes as a problem experienced by school directors has decreased to the extent that it is mentioned as a problem by school directors of 8.3% of pupils, down from 10.4% in SACMEQ III. Putting this together with absenteeism which has decreased too from 28.8% in SACMEQ III to 22.1% in SACMEQ IV, it seems that pupils attended more lessons across the two surveys, though the differences observed are not statistically significant.

Some of these problems can be tackled at “ZIP” (cluster of schools) level. Strict rules concerning arriving late at school and alcohol abuse should be applied in schools. The health problems and absenteeism could possibly be aggravated by the HIV/AIDS pandemic, but at present there are insufficient data available to confirm this.

Policy suggestion 5.6. The Ministry of Education should conduct a study in order to establish the nature and causes of the following behavioural problems associated with teachers: arriving late at school: health problems; absenteeism, skipping classes and alcohol abuse. This study should recommend ways of addressing them.

5.5.5 Is there a school feeding/nutrition programme for pupils?

School directors were asked whether there had been a school feeding programme for pupils in their school during the year. The results are presented in Figure 5.5.

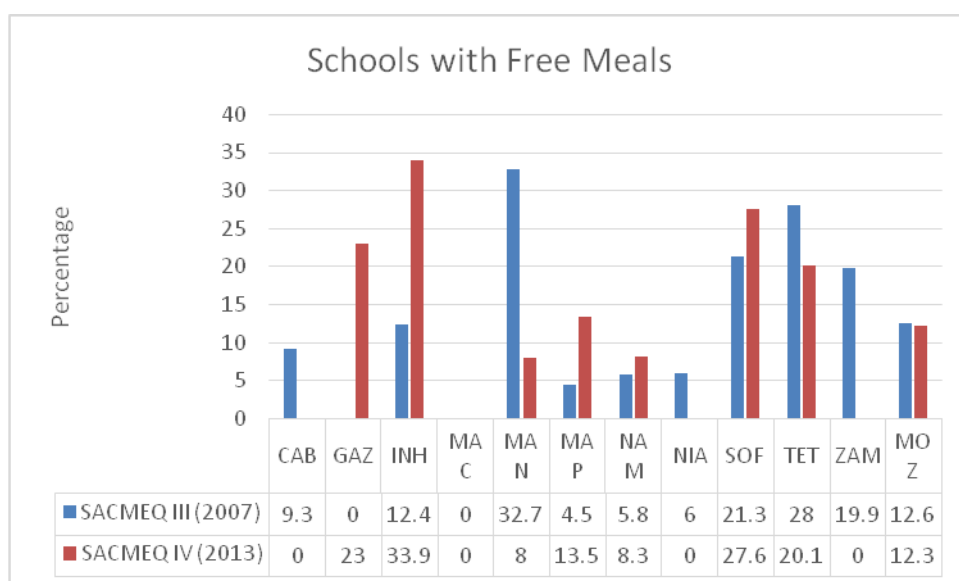


Figure .5-5 – Percentage and standard errors of pupils whose school directors indicated that there had been free school meals

Across the two surveys, the percentage of Grade 6 pupil with free school meals has not changed. Both in 2007 and 2013 less than 13% of grade 6 pupils were in schools that provided school meals.

The variation across provinces is substantial. For instance, in Zambezia the number of Grade 6 pupils studying in schools with no free meals has decreased from 19.9% in 2007 to 0.0% in 2013, whereas in Manica there was a substantial increment (from 8% in 2007 to 32.7% in

2013). Considering the prevalence of high levels of malnutrition in the country; articularly in the Central and Northern part, it would be desirable for the Directorate of Special Programmes of the Ministry of Education to design and implement a sustainable feeding scheme in schools.

5.5.6 Can pupils borrow books from the school library and take them home?

School directors were asked if pupils were allowed to borrow books and take them home from the school library. The results are shown in Table 5.8.

Table .5-8 - Percentage of pupils that can borrow books from school libraries

Borrowing of books from school library (SACMEQ IV)						
Province	No Library		No		Yes	
	%	SE	%	SE	%	SE
CAB	20.8	11.41	6.7	6.78	72.4	12.52
GAZ	81.2	10.23	12.8	8.83	6.0	6.06
INH	86.5	9.23	0.0	0.00	13.5	9.23
MAC	100.0	0.00	0.0	0.00	0.0	0.00
MAN	55.1	14.10	15.4	10.43	29.5	12.98
MAP	95.3	4.77	4.7	4.77	0.0	0.00
NAM	49.5	10.32	36.7	9.99	13.9	6.93
NIA	40.6	14.96	3.2	3.36	56.2	15.02
SOF	84.2	10.46	8.0	7.84	7.9	7.76
TET	86.2	9.41	6.4	6.48	7.3	7.29
ZAM	100.0	0.00	0.0	0.00	0.0	0.00
MOZ	75.8	2.92	10.8	2.36	13.4	2.61

Borrowing of books from school library (SACMEQ III)						
Province	No Library		No		Yes	
	%	SE	%	SE	%	SE
CAB	17.6	9.74	20.4	10.90	62.0	12.83
GAZ	100.0	0.00	0.0	0.00	0.0	0.00
INH	45.8	13.68	19.9	10.76	34.3	14.18
MAC	88.4	8.09	5.1	5.14	6.5	6.52
MAN	83.4	9.21	5.6	5.67	11.0	7.66
MAP	88.1	8.29	6.9	6.86	5.0	5.06
NAM	59.7	13.43	23.9	11.21	16.4	10.86
NIA	29.2	11.95	0.0	0.00	29.2	11.95
SOF	73.4	12.25	0.0	0.00	26.6	12.25
TET	86.1	9.45	0.0	0.00	13.9	9.45
ZAM	81.4	10.04	13.3	9.12	5.3	5.30
MOZ	71.8	3.31	9.4	2.41	18.8	2.85

From the data presented across the two surveys, it can be observed a slight, but not statistically significant decline from 18.8 to 13.4 in the percentage of pupils that were in schools with directors who stated that pupils could borrow books from their school libraries. This percentage remains extremely low, considering that (a) pupils do not have all the textbooks they need and (b) the low number of books at home, especially in rural areas. There was a large variation across provinces, ranging from 0.0% in Zambézia, Maputo Province and Maputo Cidade to 72.4% in Cabo Delgado. The small percentage of pupils that are allowed to take books home is related to the small percentage of schools that have school libraries.

5.6 Conclusion

The mean age of a school director, where a Mozambican Grade 6 pupil attended school, was 43.3 years, slightly higher than in SACMEQ III. This mean age has gone up in all, except in three provinces, despite the rapid expansion of the school network which has required many younger persons to be appointed to positions. The average grade 6 pupil was in a school with a director who had 19.3 years of experience as a teacher and 9.0 years of experience as a school director. The proportion of female school directors has increased from 22.4% to 25.3% from SACMEQ III to SACMEQ IV, however this figure is still very low.

The proportion of pupils that were in schools with school directors who declared that the lack of cooperation of community was a major problem remains about the same and high, though it has increased slightly. It may be worthwhile to look into the management training courses that directors attend to find out if they are not the source of the problem or if they could assist in reducing this problem.

6. Chapter 6-SHCOOL RESOURCES

6.1 Introduction

This chapter examines resources allocated to school aggregated into three broad areas, namely essential classroom resources, desirable physical resources and desirable human resources. School resources play an important role in pupil performance, as confirmed by Passos (2009) in Mozambique as well as in SACMEQ countries. Total school resources were correlated with pupils' performance in reading and in mathematics and in some countries appear as one of the predictors of pupil performance in reading and mathematics. The results from the SACMEQ IV provided a general trend in the provision of these resources in primary schools in Mozambique between 2007 and 2013.

6.2 Were there enough Essential classroom resources in primary schools attended by the average grade 6 pupils in Mozambique?

Table 12.1 (see annexes) shows school resources available for reading, mathematics and health teachers in Mozambique. It can be observed that from SACMEQ III to SACMEQ IV there was a significant improvement. The percentage of pupils in schools, where reading teachers were provided with teacher's guides, increased from 78.6% to 87.3% and for mathematics, it increased from 78.5% to 80.8%. The provision of computers has also increased from 6.7% to 34.3% of pupils in reading classes and from 6.3% to 31.3% for mathematics classes.

The variation between provinces is substantial. While, resources, such as teachers' guide, are evenly distributed across all the provinces, access to computers and internet is unevenly distributed. For example, in 2013, 62.1% of Grade 6 pupils were in schools with computers, in Niassa the corresponding figure is around 14%.

6.3 Was there enough classroom equipment in the classrooms?

Classroom items play an important role in promoting education quality. The availability of sufficient supplies of classroom resources can significantly influence pupils' achievement in mathematics and reading. Teachers were therefore asked to indicate whether they had each of the selected set of items in their classrooms. The set of items included a usable writing board,

chalk, a wall chart of any kind, a cupboard, one or more bookshelves, a classroom library or book corner, a teacher table and a teacher chair. Their responses are summarized in Table 6.1.

Table 6-1 Percentages and sampling errors for availability of classroom resources for the teachers of the average pupil

	SACMEQ IV (2013)						SACMEQ III (2007)					
	Reading teacher		Mathematics teacher		Health teacher		Reading teacher		Mathematics teacher		Health teacher	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
A usable writing board	90.0	2.5	87.4	2.90	89.7	2.7	80.5	2.4	85.4	2.09	85.0	2.3
Chalk	99.0	0.6	98.9	0.89	98.3	1.2	81.5	2.4	84.7	2.11	81.4	2.6
Eraser	95.3	1.5	94.9	1.98	94.6	1.8	81.4	2.2	83.7	2.04	81.7	2.5
A wall chart of any kind	54.0	3.8	63.6	3.86	59.4	4.1	36.7	3.2	38.5	3.27	40.2	3.4
A cupboard	26.3	3.5	24.3	3.49	25.0	3.7	28.6	3.0	23.7	2.83	25.3	2.9
One or more bookshelves	28.7	3.7	25.2	3.59	22.4	3.6	18.9	2.5	15.2	2.32	16.2	2.5
A classroom library or book corner	13.2	2.4	12.8	2.78	11.6	2.7	1.4	0.6	1.4	0.71	1.4	0.7
A teacher table	68.0	3.5	62.1	3.83	67.4	3.9	57.6	3.5	61.0	3.36	59.8	3.4
A teacher chair	82.8	2.8	80.2	3.25	85.3	2.8	62.2	3.2	66.1	3.13	65.6	3.2

The results in Table 6.1 show that the availability of many classroom resources for teachers increased between 2007 and 2013. For instance, in 2007, 1.4% of pupils had a reading and mathematics classroom with a library or book corner, while in 2013 the corresponding figure has risen to 13%. The availability of wall charts has also increased across the two surveys in reading teachers from 36.7% to 54%, and for mathematics teachers from 38.5% to 63.6%. Another resource which has been very scarce in the classrooms of Mozambican Grade 6 pupils are the bookshelves. The proportion of its occurrence raised 10 percentage points in both cases, from 18.8% to 28.7% for the case of the pupils of the reading teachers and from 15.2% to 25.2% for the mathematics teachers.

The results show that apart from chalk, writing board, eraser, teacher chair and teacher table, Grade 6 classrooms in Mozambique generally lacked other many important resources in 2007 as well as in 2013, though the situation improved from 2007 to 2013. This situation certainly requires some attention from the Ministry of Education, who should also address the issue of

basic classroom resources when implementing the policy of expanding access. Books in the classroom are very important, especially in rural areas where pupils do not have access to books at home. Once again, it is important to stress that expansion of access should be followed by the provision of classroom resources.

Policy suggestion 6.1. The Ministry of Education should define the minimum classroom resources to ensure that every classroom has basic resources, especially in rural areas where pupils have low access to books at home.

Table 6.2 shows the availability of classroom resources for the country and across provinces. An index was constructed where the number of items was combined. The minimum value of zero means that the school did not have any of the listed items, and the maximum value of 9 means that the school had all of the items.

Table 6-2 Means and sampling errors for the classroom resources index of the average pupil

Province	SACMEQ IV (2013)						SACMEQ III (2007)					
	Reading teacher		Mathematics teacher		Health teacher		Reading teacher		Mathematics teacher		Health teacher	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
CAB	5.8	0.50	4.9	0.26	5.8	0.61	3.9	0.50	3.5	0.50	3.7	0.55
GAZ	5.4	0.37	5.6	0.35	4.9	0.66	4.8	0.41	4.7	0.40	4.6	0.39
INH	5.9	0.42	5.5	0.28	5.2	0.48	3.6	0.35	3.8	0.39	3.2	0.35
MAC	5.7	0.27	5.4	0.32	5.6	0.32	3.7	0.45	3.9	0.46	3.9	0.45
MAN	5.3	0.40	5.0	0.38	4.9	0.43	4.1	0.40	4.1	0.38	3.9	0.46
MAP	5.0	0.55	5.2	0.61	5.4	0.49	3.4	0.57	3.9	0.41	4.1	0.45
NAM	5.4	0.31	5.4	0.38	5.4	0.41	3.3	0.35	3.4	0.33	3.5	0.48
NIA	5.9	0.50	5.2	0.51	5.9	0.47	3.7	0.50	3.7	0.52	4.2	0.45
SOF	6.1	0.51	6.2	0.50	6.6	0.46	3.3	0.55	3.6	0.47	3.4	0.46
TET	5.8	0.41	5.8	0.35	5.9	0.34	3.0	0.34	3.4	0.39	3.4	0.55
ZAM	5.5	0.35	5.5	0.38	5.3	0.29	3.6	0.46	3.5	0.39	3.6	0.38
MOZ	5.6	0.13	5.5	0.14	5.5	0.14	3.6	0.14	3.8	0.13	3.7	0.14

The table confirms that in terms of classroom resources there was a substantial increase from SACMEQ III to SACMEQ IV. In 2013, average pupil was in a classroom that had six out of the nine items listed, against the average of about four observed in 2007. There was little variation across provinces. The average ranges from 5 in Maputo Province to 6.1 in Sofala for reading teachers; for the mathematics teachers from 4.9 in Cabo Delgado to 6.2 in Sofala, and from 4.9 in Manica to 6.6 in Sofala for the health teachers. So, Sofala figures as the most equipped province regarding to issue under analysis.

There is a need to establish a short term and medium-term policy for improving the availability of classroom resources. For instance, items like wall charts should be a short-term

Policy suggestion 6.2. The Ministry of Education should make the effort to supply all classrooms in primary schools with essential resources, and the focus must be on wall charts, classroom libraries or book corners and the accompanying bookshelves, storage cupboards as well as teacher’s tables and chairs.

measure, while items like bookshelves could be considered a medium-term measure.

6.4 What percentage of pupils had their own textbooks for reading and mathematics?

Although it is possible for pupils to learn even when they have to share a textbook, it is desirable that every child should have a textbook. The data on pupils who had own textbooks are presented in Table 6.3.

Table 6-3 Percentages and sampling errors for pupils having own reading and mathematics textbooks for the average pupil

Province	SACMEQ IV (2013)				SACMEQ III (2007)			
	Own reading textbook		Own mathematics textbook		Own reading textbook		Own mathematics textbook	
	%	SE	%	SE	%	SE	%	SE
CAB	41.3	9.27	41.8	8.64	52.5	6.53	49.5	7.39
GAZ	30.1	4.55	38.7	5.18	59.2	8.56	58.6	8.82
INH	24.2	3.02	22.8	3.76	44.6	5.27	47.5	4.49
MAC	28.6	5.80	27.8	5.01	56.8	6.56	53.3	6.32
MAN	36.3	10.94	36.7	10.89	60.2	6.69	54.2	7.33
MAP	28.3	3.53	28.2	4.00	46.5	4.3	50.6	5.07
NAM	33.4	6.34	32.7	6.52	59.9	5.32	56.2	5.55
NIA	39.1	7.82	38.1	8.65	61.7	7.84	61.6	8.85
SOF	35.7	7.74	26.7	5.76	43.0	4.47	40.7	3.77
TET	22.5	6.83	29.5	7.21	58.3	8.49	58.1	8.81
ZAM	32.7	4.60	41.1	5.34	47.1	6.06	47.5	6.53
MOZ	31.6	2.02	33.0	2.02	52.8	1.94	51.8	2.01

The results summarized in Table 6.4 show that ownership of textbooks has not improved between 2007 and 2013. There was a statistically significant decline in the percentage of pupils having an own textbook, in both subjects and the situation is worrying. In 2013, around 32% of Grade 6 pupils had their own reading textbook and 33% had their own mathematics textbook, against, 52.8% in reading and 51.8% in mathematics in 2007. Across the provinces, in most of them, there was a sharp decline between the two surveys and regarding to that the changes were statistically significant.

The Ministry of Education’s policy on textbook delivery is based on the principle that each school lends to the pupil the textbooks for all the subjects and at the end of the school year the books are returned. There is need for further studies to understand the problem of the shortage of textbooks. However, one of the possible reasons for this shortage might be related to the fact that the rate of textbook replacement each year is low, especially textbooks that are damaged by pupils due to the lack of a proper system of textbook maintenance.

Policy suggestion 6.3. The Ministry of Education should take steps to ensure that every pupil has his or her own textbook for each subject, especially pupils from poor families. The Education authorities have to cut down on leakages in order to ensure that textbooks reach the schools. For the durability of the textbooks, there is a need to teach pupils how to take proper care of them.

6.5 To what extent was there a shortage of materials for the pupils?

Data regarding basic classroom materials, such as exercise books, notebooks, and pencils, as well as erasers, pens and rulers are presented in Table 6.4.

Table 6-4 Percentages and sampling errors for *shortages* of basic classroom materials for the average pupil: Exercise books, notebook, and pencil

SACMEQ IV (2013)								
NOT HAVE								
Provinces	Exercise books		Notebook		Pencil		Exercise Book, Pen_OR_Pencil, Ruler	
	%	SE	%	SE	%	SE	%	SE
CAB	3.9	1.94	58.5	6.06	4.7	2.97	71.5	6
GAZ	10.9	3.87	63.3	5.08	8.2	2.48	77.9	4.96
INH	11.6	4.83	76.1	4.95	5.2	1.52	77.6	4.53
MAC	2.1	1.08	75.8	6.2	1.8	0.79	87.7	1.74
MAN	2.2	1.4	41.9	12.66	3.5	1.89	94	1.51
MAP	5	1.96	52.4	6.23	4.2	1.48	87.1	3.26
NAM	4.6	1.49	36.7	4.3	4.9	1.12	90.1	1.78
NIA	5.9	2.36	46.6	8.57	12.2	5.19	85.9	4.23
SOF	12.2	4.47	45.8	9.01	3	1.75	91.3	1.93
TET	10.7	3.68	42.9	11.66	12.3	7.38	90.2	3.72
ZAM	6.5	4.53	65.4	5.34	9.8	2.64	75.5	5.25
MOZ	6.7	1.07	56.3	2.13	6.1	0.79	85	1.16

SACMEQ III (2007)			
Provinces	NOT HAVE		
	Exercise books	Notebook	Pencil

	%	SE	%	SE	%	SE
CAB	14.0	5.64	47.7	5.73	20.5	5.29
GAZ	1.7	0.74	66.9	5.12	6.9	2.32
INH	9.4	2.40	75.9	3.30	6.5	1.35
MAC	10.9	4.36	71.4	6.01	10.2	4.11
MAN	0.7	0.42	49.6	6.89	5.7	1.72
MAP	15.6	5.22	78.5	4.03	16.7	5.06
NAM	8.2	2.95	71.6	5.21	18.9	3.68
NIA	3.3	1.39	64.3	6.75	16.1	3.79
SOF	42.8	10.23	79.1	5.42	42.6	9.08
TET	8.8	2.04	70.9	5.31	10.7	2.12
ZAM	86.6	4.9	13.5	4.16	19.9	3.54
MOZ	23.1	1.53	60.9	1.61	16.4	1.38

It is important to note that the figures in Table 6.5 are the percentages of pupils who do not have the items mentioned. The results summarized in Table 6.5 show that, in general, there was an improvement from 2007 to 2013. In 2007, the proportion of Grade 6 pupils with lack of exercise books, notebook and pencil were 23.1%, 60.9% and 16.4% respectively, while in the 2013's survey these proportions declined substantially to 6.7%, 56.3% and 6.1% respectively. Across provinces, the trend was mildly similar to the results of national level, though, there was some worsening on the three items, where the most striking case was Zambézia which raised about 52 points percentage in regarding to lack of notebook.

It is important to alert the Ministry of Education to continue to provide such materials in classrooms. The support of parents should be enlisted in order to improve the provision of various learning materials to schools, but it should also be noted that this lack of basic materials might be a reflection of parent's economic situation. The deterioration noted in some cases may be related to more poor pupils now being in school as a result of the expansion policy.

6.6 Were there enough sitting and writing places for the pupils?

Pupils learn most effectively when they have a proper place (in the form of a chair, bench or stool) to sit on and a desk or table to write on. Information was therefore collected on the number of sitting places and writing places; the results are presented in Table 6.5.

Table .6-5 Percentages and sampling errors for pupils having sitting and writing places

	SACMEQ IV (2013)	SACMEQ III (2007)	
Provinces	Pupil Sitting And	Having siting	Have writing

	Writing Place ³		place		place	
	%	SE	%	SE	%	SE
CAB			72.3	12.34	72.3	12.3
	64.8	11.30				4
GAZ	67.0	6.32	83.4	9.31	83.4	9.31
INH			71.3	11.86	71.1	11.8
	35.0	10.28				2
MAC	71.1	11.41	90.2	9.42	90.2	9.42
MAN	51.8	9.13	99.6	0.44	99.6	0.44
MAP	57.3	10.67	94.4	5.68	94.4	5.68
NAM			72.1	10.25	70.7	10.6
	33.4	6.81				6
NIA			78.3	10.93	77.6	10.9
	49.5	10.59				3
SOF	60.7	6.58	100.0	0.00	100.0	0.00
TET	56.7	8.57	91.1	7.06	91.1	7.06
ZAM			67.8	10.77	67.8	10.7
	36.2	7.98				7
MOZ	49.8	2.77	82.7	2.85	82.5	2.87

The table indicates that in terms of sitting and writing places, the situation in Mozambique worsened significantly slightly from SACMEQ III to SACMEQ IV. In 2007, there were at least eight out of ten Grade 6 pupils who had a sitting and writing place, while 2013's survey shows that proportion declined to only five out of ten pupils. The variation across provinces was quite large. In SACMEQ IV, it ranges from 33.4% in Nampula to 71.1% in the province of Maputo Cidade. On average, 47% of pupils had no sitting and writing places in each province, which means that MINEDH should put more efforts in terms of providing sitting and writing places for Grade 6 pupils, especially when also considering the rapid expansion of pupil numbers due to improved access to schools. There is a need to address the imbalance regarding to availability of sitting and writing places at the Mozambican schools of the basic education and the Ministry should formulate a policy in such way that provinces with particular shortages of places to sit or write should obtain more resources to deal with this.

6.7 How well were the schools resourced?

In SACMEQ II and SACMEQ III, it was found that the amount of school resources was very different in the schools in the various countries and this was highly related to reading performance. Information is presented in Table 6.6 for four categories of general school facilities: school buildings, school grounds, general services, and equipment.

³ In 2007 the proportion of pupils who had a sitting place and the proportion of pupils who had a writing place were about the same, with some slightly lower values in the case of writing place. Thus, for the comparability to the results of 2013's survey, the data series for writing places will be used.

Table 6-6 Percentages and sampling errors for schools with general facilities

Facility	SACMEQ IV (2013)		SACMEQ III (2007)	
	%	SE	%	SE
<i>School buildings</i>				
School library	24.3	2.94	28.2	3.31
School hall	2.8	1.17	2.2	1.18
Staff room	49.8	3.65	39.3	3.66
School director's office	90.3	2.29	88.0	2.63
Store room	41.2	3.91	32.8	3.70
Cafeteria	22.5	2.69	28.1	3.23
Good School Buildings Condition	54.0	3.68		
School Fence	36.0	3.48		
<i>School grounds</i>				
Sports area/ playground	82.5	3.13	50.8	4.0
School garden	27.7	3.28	25.2	3.39
<i>General services</i>				
Piped water/ well or borehole	63.0	3.54	56.7	3.69
Electricity	55.4	3.59	46.9	3.47
Telephone	15.0	2.37	18.2	2.53
<i>Equipment</i>				
First-aid kit	19.0	2.72	22.3	3.30
Fax machine	0.8	0.74	1.1	0.79
Typewriter	62.6	3.66	80.3	2.89
Duplicator	21.9	3.22	38.7	3.76
Radio	28.3	3.48	9.4	2.06
Tape recorder	9.1	2.28	3.1	1.23
Overhead projector	0.6	0.56	3.6	1.42
Television set	23.1	3.11	10.9	2.12
Video-cassette recorder	3.7	1.42	2.2	1.12
Photocopier	13.4	2.57	3.7	1.33
Computer	42.3	3.44	12.6	2.12

In most schools there was a lack of general facilities. Although, there was improvement in some of the items, in others the indicators have deteriorated. For instance, in 2007 at least four out of ten pupils were in schools that had piped water and electricity, in 2013 the proportion raised to at least five out of ten pupils. In 2007, 28.2% of pupils were in schools which had a library, in the 2013's survey the proportion dropped down to about 24% but the change was not statistically significant.

It seems that the expansion of access to basic education took place at the expense of the provision of basic facilities. It is clear that, given the current economic development status of the country, it is difficult to provide schools with all of the general facilities described. However, it would be important to prioritise some basic items the Ministry of Education can supply. For instance, piped water (at least a borehole), electricity and a school library should be regarded as basic facilities that each school must have. Other facilities that should be regarded as essential, such as the first aid kit and school garden, also reflect very low levels of provision. This should be a matter of concern to the Ministry.

The quality of the infrastructure in rural areas is usually poorer than in urban areas, as confirmed by Chowdhury (1995), and the school equipment is especially poor or sometimes totally lacking in rural areas. UNESCO (2008) refers to the important effect that the conditions of a rural school and the availability and quality of school resources have on pupils' performance. Long distances to and from school and poor school facilities contribute to weaker performance by pupils and to high dropout and repetition rates. Some researchers such as Anderson (1991), Abagi and Odipo (1997) and Zhang (2006) confirmed the negative effects of the lack of or poor school resources on pupil performance in Mozambique. The quality of schooling is also an important determinant of participation and retention.

Policy suggestion 6.4. The Ministry of Education should develop a set of minimum standards in terms of facilities that each school should have and communicate this information to every school in order to facilitate prioritisation.

6.8 Conclusion

Across the two surveys, the results show a mixed picture. While improvement was observed in some facilities, there are school resources where no changes were observed. For instance, percentage of pupils in schools where reading teachers were provided with teacher's guides increased from 78.6% to 87.3%, on contrary, provision of school library has decreased from 28.2% in 2007 to about 24% in 2013.

Additionally, in the SACMEQ III, there were at least four out of ten pupils in schools that had piped water and electricity, while in the SACMEQ IV, the proportion raised to at least

five out of ten pupils, though the change is not statistically significant. The present survey showed that apart from the basic needs, such as chalk, writing board, eraser, teacher chair and teacher table, Grade 6 schools in Mozambique generally still lacked other many important resources in 2013.

Therefore, it is important that the Ministry of Education, when implementing the policy of expanding access to education, also addresses the issue of basic classroom resources, for example, books in classroom are very important, especially in rural areas where pupils come from homes with limited exposure to books. Moreover, the Ministry of Education has been expanding access to basic education but the provision of the basic facilities seems to be lagging behind. Given the current economic development status of the country, it has been difficult to provide schools with all of the general facilities described. Therefore, it is important to select some basic items that the Ministry of Education can prioritise. For instance, facilities such as piped water, electricity, and school library should be regarded as basic facilities that each school should have.

7. Reading and Mathematics results for Pupils and their teachers

7.1 Introduction

In this chapter, the achievement levels of pupils in reading and in mathematics as well as the achievement of their reading and mathematics teachers are presented. An attempt is also made to link the data on achievement to factors such as gender and socio-economic status. It is important to stress that the comparison of results from SACMEQ III to SACMEQ IV is the focus of analysis.

Achievement levels of pupils and their teachers are presented in three different ways. First, they are presented in the classical form of mean scores, with the score of 500 representing the SACMEQ mean. Second, they are presented as the proportion of pupils and teachers reaching the minimum and the desirable levels of mastery in reading and mathematics. Third, achievement levels are presented as the percentage of pupils and teachers reaching each of the eight skills levels of competence in reading and mathematics. These levels of mastery and levels of competence were determined by Mozambique's reading and mathematics specialists before the tests were taken. Details regarding the interpretation of these levels of mastery, as well as, the levels of competence referred to in this chapter have already been presented in Chapter 2.

The analysis is based on three major questions to be answered in this chapter:

1. What were the levels and variations in the achievement levels of Grade 6 pupils and their teachers in reading and in mathematics?
2. What were the reading and mathematics achievement levels of important sub-groups of Grade 6 pupil and their teachers?
3. What are the changes on achievement from SACMEQ III to SACMEQ IV?

7.2 What is the mean score of pupil in Reading and Mathematics Tests?

The findings suggest that Mozambican pupil performance has improved slightly in reading and mathematics, from 2007 to 2013.

Table 7-1 Means and sampling errors for the reading and mathematics test scores of pupils

Pupil performance								
Provinces	SACMEQ IV (2013)				SACMEQ III (2007)			
	Reading		Mathematics		Reading		Mathematics	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
Cabo Delgado	458.9	11.68	472.8	7.61	448.0	6.27	459.7	4.78
Gaza	517.1	10.12	568.5	18.62	487.1	9.93	503.9	13.25
Inhambane	493.6	11.52	496.4	6.09	498.4	9.76	505.7	5.61
Maputo Cidade	506.1	6.24	497.3	4.24	540.2	13.08	512.2	7.15
Manica	497.5	26.08	535.5	36.98	466.0	7.60	482.9	8.76
Maputo Province	525.5	8.10	524.2	7.60	510.8	7.87	508.8	5.40
Nampula	470.6	14.06	493.2	14.94	461.0	7.76	472.1	5.96
Niassa	438.9	7.02	452.9	3.58	440.7	3.96	444.7	2.66
Sofala	465.8	12.27	487.3	17.19	454.7	7.81	471.5	6.38
Tete	492.0	16.00	549.4	32.63	426.8	5.54	454.6	5.92
Zambézia	468.6	11.37	478.3	10.18	469.8	7.66	477.9	6.83
MOZAMBIQUE	484.9	4.43	505.0	5.79	476.2	2.83	483.8	2.29
SACMEQ					511.8	1.27	509.5	1.16

From the data presented in Table 7.1, from SACMEQ III to SACMEQ IV, there was an increase in average pupil achievement, in both subjects, especially in mathematics, where the improvement was statistically significant. In SACMEQ III, the reading and mathematics were 476.2 and 483.8 respectively, while in SACMEQ IV, the reading and mathematics scores were 484.9 and 505 respectively. It is important to underscore the increase of mean score in reading (8.7 score points) was not statistically significant, while in mathematics (21.2 score points) was statistically significant.

However, there was a large variation across provinces, especially in reading. Some Provinces in the south of the country (Gaza and Maputo Province) have shown significant improvement, while provinces located in the centre and north of the country no significant increase was observe, except Manica Province in Mathematics. The largest improvement in both reading and mathematics is observed in two provinces Gaza (reading 30 score points, 0.3 SD and mathematics 65 score points 0.65 SD) and Maputo Province (15 score points in Reading and Mathematics achievement). SES seems to be one of the factors associated with variance between provinces (see Chapter 9).

7.3 What were the overall percentages of pupils across the various levels of mastery in reading and in mathematics?

The consensus amongst SACMEQ members was to define a literate pupil as one who has reached Level 4 or more, of literacy competence, achieving basic reading. Figure 7 shows that the percentage of Grade 6 pupils that reached an acceptable level of reading skill, has improved between SACMEQ III and SACMEQ IV.

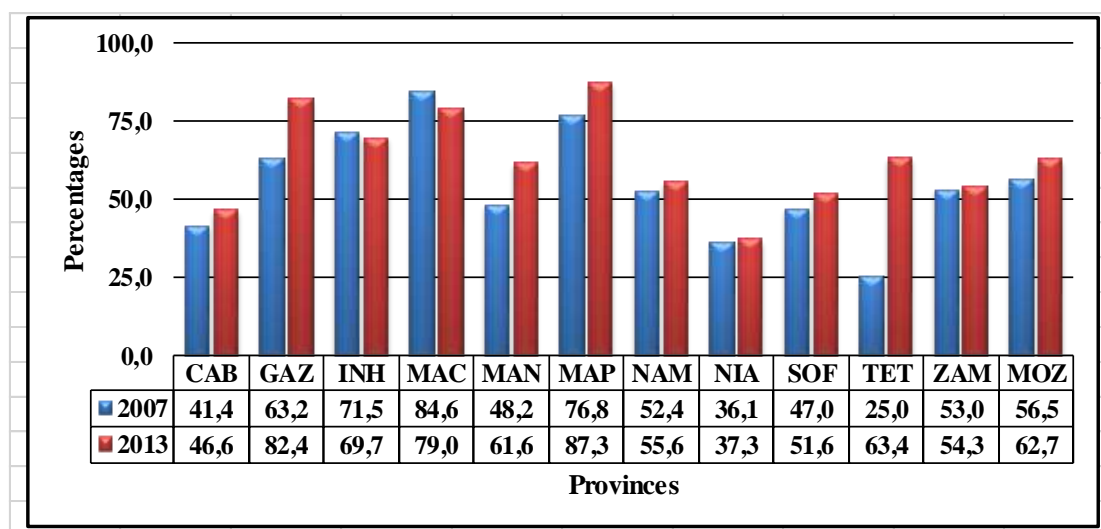


Figure 7-1 Percentage of pupils with acceptable (Level 4 or above) reading skills by region

In 2007, 56.5% of Grade 6 pupils reached the acceptable level of mastery in reading, 2013 the figure increases to 62.7%. However, the Ministry of Education in particular, planners should be worried that between a third pupils failed to reach acceptable levels.

There was considerable variation in the percentage of pupils reaching the acceptable level across provinces. Niassa and Cabo Delgado are the provinces presenting the lowest figures. In both provinces, more than half of pupils did not achieve the acceptable level. In contrast, Maputo Province had the highest percentage of pupils that reached the acceptable level, four out of five of grade 6 pupils in Maputo Province reached acceptable level.

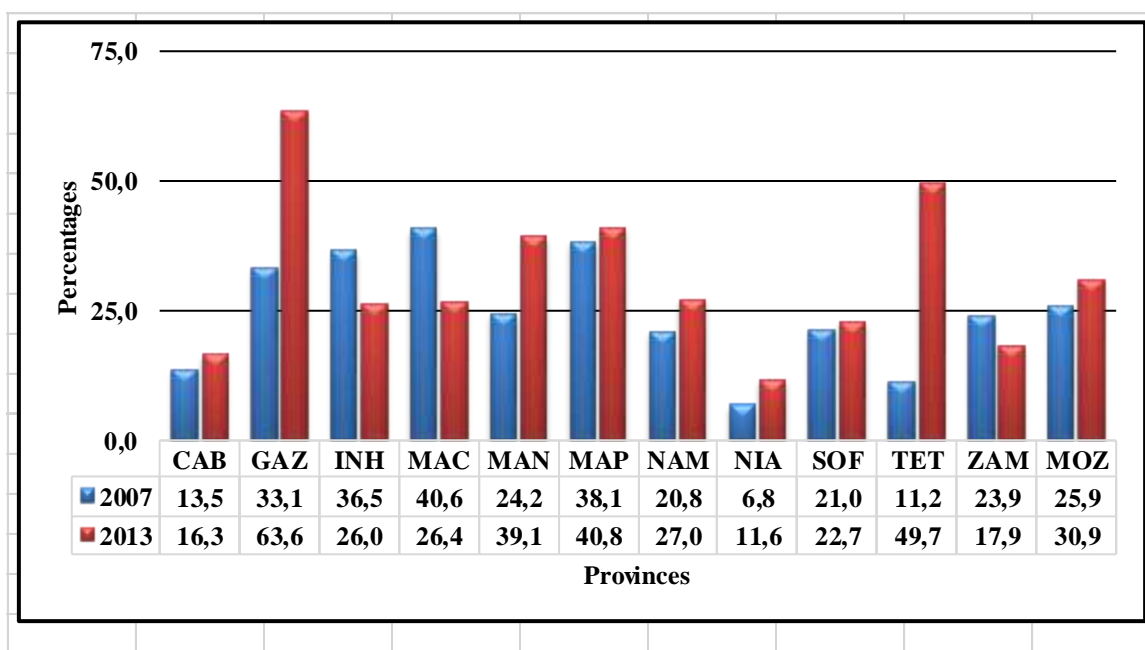


Figure 7-2 Percentage of pupils with acceptable mathematics skills by region

Figure 7.2 shows that percentage of Grade 6 pupils that reached the acceptable level in mathematics has increased from SACMEQ III and SACMEQ IV. In 2007, 25.9% of Grade 6 pupils reached the acceptable level of mastery in mathematics (Level 4), while in 2013 the percentage increased to 30.9%. Although, the figure shows an improvement, we still have long way to go. More than two thirds of pupils did not reach this level. The Ministry of Education and planners should be very concerned that more than two thirds of pupils reached acceptable levels.

There was considerable variation in the percentage of Grade 6 pupils, reaching the acceptable level across provinces. In Niassa fewer, around eleven percent (11.6%), pupils reached acceptable levels of mastery, while in Gaza the figure is close to two thirds. The highest improvement across provinces was observed in Gaza, where the number of pupils achieving acceptable level has doubled from 2007 to 2013.

The levels of competence for reading and mathematics were described in Chapter 2. Tables 7.2 and 7.3, respectively, show what pupils can do in each level in literacy and numeracy in the SACMEQ tests. Being at Level 3 means that pupils are ready to begin Level 4 but cannot yet do any kind of tasks embodied in Level 4. Level 4, reading for meaning, was considered the acceptable competency level in reading in the discussion above.

Table 7-2 skill levels for the SACMEQ reading tests

Level	Reading	SACMEQ IV		SACMEQ III	
		%	SE	%	SE
1	Pre-reading: Matches words and pictures involving concrete concepts and everyday objects. Follows short simple written instructions	6.7	0.88	6.7	0.56
2	Emergent reading: Matches words and pictures involving prepositions and abstract concepts; uses cuing systems (by sounding out, using simple sentence structure, and familiar words) to interpret phrases by reading on.	13.5	1.00	14.8	0.82
3	Basic reading: Interprets meaning (by matching words and phrases, completing a sentence, or matching adjacent words) in a short and simple text by reading on or reading back.	17.1	0.94	22.0	0.99
4	Reading for meaning: Reads on or reads back in order to link and interpret information located in various parts of the text.	26.4	1.34	25.0	1.02
5	Interpretive reading: reads on and reads back in order to combine and interpret information from various parts of the text in association with external information (based on recalled factual knowledge) that 'completes' and contextualizes meaning.	18.9	1.06	17.9	0.92
6	Inferential reading: Reads on and reads back through long texts (narrative, document, or expository) in order to combine information from various parts of the text so as to infer the writer's purpose.	11.1	1.09	10.7	0.88
7	Analytical reading: Locates information in longer texts (narrative, document, or expository) by reading on and reading backing order to combine information from various parts of the text so as to infer the writer's personal beliefs (value systems, prejudices, and/or biases).	5.1	0.91	2.7	0.51
8	Critical reading: Locates information in longer texts (narrative, document, and expository) by reading on and reading back in order to combine information from various parts of the text so as to infer and evaluate what the writer has assumed about the topic and the characteristics of the reader – such as age, knowledge, and personal beliefs (values systems, prejudices, and/or biases)	1.2	0.54	0.3	0.11

The percentage of pupils that cannot read in Grade 6 has not changed across the two surveys. For instance, 21.5% (in SACMEQ III) and 20.2% (in SACMEQ IV) failed to reach Level 3 of reading competence. In other words, this proportion of pupils only reached levels 1 and 2.

In both SACMEQ III and SACMEQ IV, most pupils (more than 50%) reached between Levels 3 and 5. Table 7.3 shows the competency levels for the SACMEQ mathematics tests.

Table 7-3 The skill levels for the SACMEQ mathematics tests

Level	Mathematics	SACMEQ IV		SACMEQ III	
		%	SE	%	SE
1	Pre-numeracy: Applies single step addition or subtraction operations. Recognises simple shapes. Matches numbers and pictures. Counts in whole numbers.	3.5	0.43	5.1	0.49
2	Emergent numeracy: Applies a two-step addition or subtraction operation involving carrying, checking (through very basic estimation), or conversion of pictures to numbers. Estimates the length of familiar objects. Recognises common two-dimensional shapes.	28.0	1.42	27.7	1.13
3	Basic numeracy: Translates verbal information presented in sentence, simple graph or table, using one arithmetic operation in several repeated steps. Translates graphic information into fractions. Interprets place value of whole numbers up to thousands. Interprets simple common everyday units of measurement.	37.6	1.52	41.1	0.95
4	Beginning numeracy: Translates verbal or graphic information into simple arithmetic problems. Uses multiple different arithmetic operations (in the correct order) on whole numbers, fractions and/or decimals.	15.7	0.92	20.9	1.00
5	Competent numeracy: Translates verbal, graphic, or tabular information into an arithmetic form in order to solve a given problem. Solves multiple-operation problems (using the correct order of arithmetic operations) involving everyday units of measurement and/or whole and mixed numbers. Converts basic measurement units from one level of measurement to another (for example, meters to centimetres).	7.7	1.14	3.9	0.49
6	Mathematically skilled: Solves multiple-operation problems (using the correct order of arithmetic operations) involving fractions, ratios, and decimals. Translates verbal and graphic representation information into symbolic, algebraic, or equation form in order to solve a given mathematical problem. Checks and estimates answers using external knowledge (not provided within the problem).	4.2	1.06	0.8	0.25
7	Problem solving: Extracts and converts (for example, with respect to measurement units) information from tables, charts, visual and symbolic presentations in order to identify, and then solve multi-step problems.	2.7	1.08	0.3	0.26
8	Abstract Problem Solving: Identifies the nature of an unstated mathematical problem embedded within verbal or graphic information, and then translate this into symbolic, algebraic or equation form in order to solve the problem.	0.6	0.36	0.0	0.00

Although, progress can be observed in the upper level of scale, no improvement was observed in the lower level. Taking Level 3 (basic numeracy) as the minimum numerate level, overall in Mozambique around 30% of Grade 6 pupils in SACMEQ III and SACMEQ IV failed to reach the basic numeracy level. They only reached competencies associated with levels 1 and 2. Most pupils, constituting more than 50% of the total, were located at levels 3 and 4 in both SACMEQ III, and SACMEQ IV. However, there was an increase of pupil reaching level 5 and 6 from SACMEQ III to SACMEQ IV (From 4.7% in 2007 to 11.9 % in 2013)

The mean and the percentage of pupils reaching each of the eight reading competence levels in SACMEQ III and in SACMEQ IV across provinces are presented in Figure 7.6. There were notable variations across the provinces. In SACMEQ III, Cabo Delgado (30%) and Niassa (36%) had the highest percentage of pupils in levels 1 and 2, against the overall average of 20%, while in SACMEQ III the highest percentage of pupils in levels 1 and 2 were in Tete (44.6%), Niassa (36.6%), Cabo Delgado (30%), Manica (28.6%) and Sofala (29.0%), against the overall average of 21.5%.

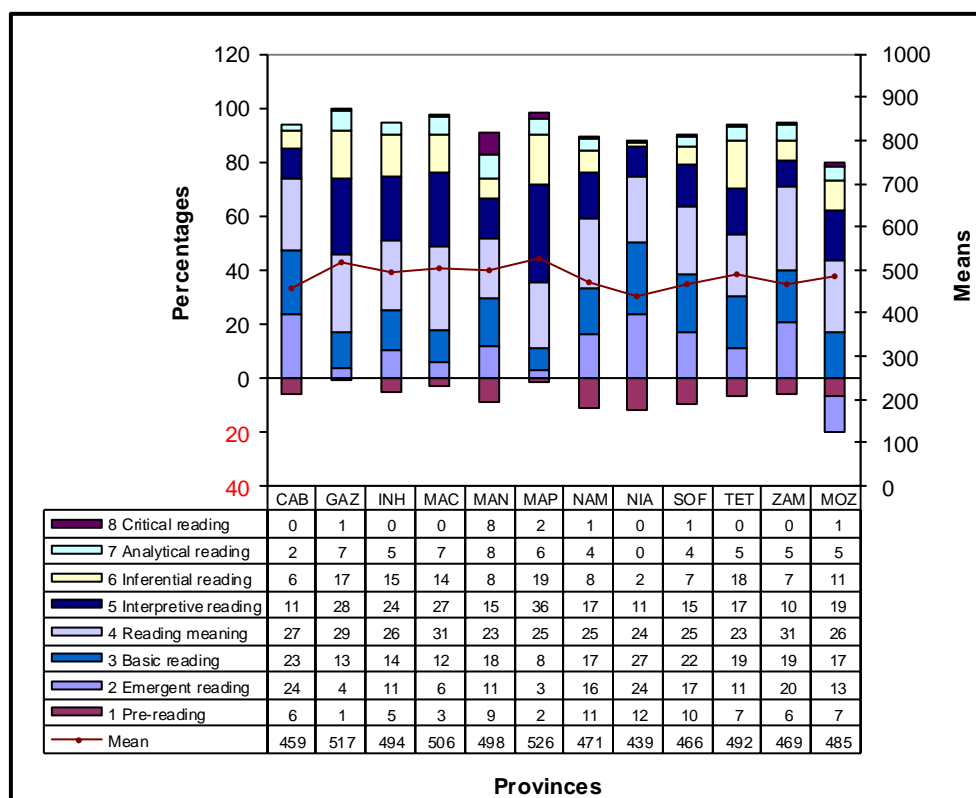
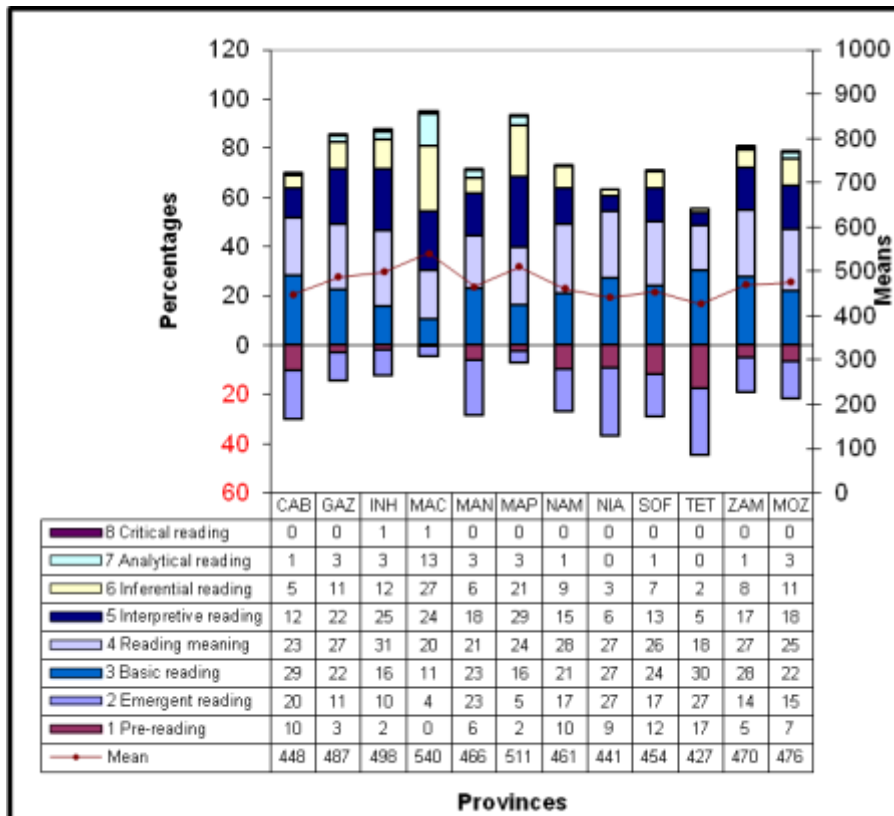


Figure 7-3 reading level of competencies by province SACMEQ IV

SACMEQ IV



SACMEQ III

Figure .7-4 - Percentage of pupils attained reading levels of Mozambican pupils in SACMEQIII

The mean score and the percentages of pupils reaching each of the eight mathematics competence levels in SACMEQ III and in SACMEQ IV across provinces are presented in Figure 7.5. Taking Level 3 as the numerate level, it can again be seen that overall in Mozambique from SACMEQ III to SACMEQ IV the proportion of pupils that did not reach Level 3 in Grade 6 has not changed (32% in 2007 and 31% in 2013). In other words, this is the percentage of pupils who only reached levels 1 and 2. The majority of pupils in SACMEQ IV (73.8%), as well as in SACMEQ III (62.3%), performed at levels 3 and 4, meaning that the percentage of pupils that reached level 5 or more had declined. In SACMEQ IV (11.4% and 1.7%) and in SACMEQ III (3.9% and 0.8%) of pupils reached, respectively, levels 5 and 6. Hardly any pupils reached Levels 7 or 8.

There were notable variations across provinces. In SACMEQ IV, Niassa (32.6%) and Cabo Delgado (30.0%) had the highest percentage of pupils achieving levels 1 and 2 against the

overall average of 13.0%, while in SACMEQ III the highest percentage of pupils in levels 1 and 2 were in Niassa (53.7%), Tete (48.4%), Cabo Delgado (46.6%), Manica (35.7%) and Sofala (37.8%). Interestingly, 3.1% of pupils from Gaza province achieved level 7 in SACMEQ III.

SACMEQ

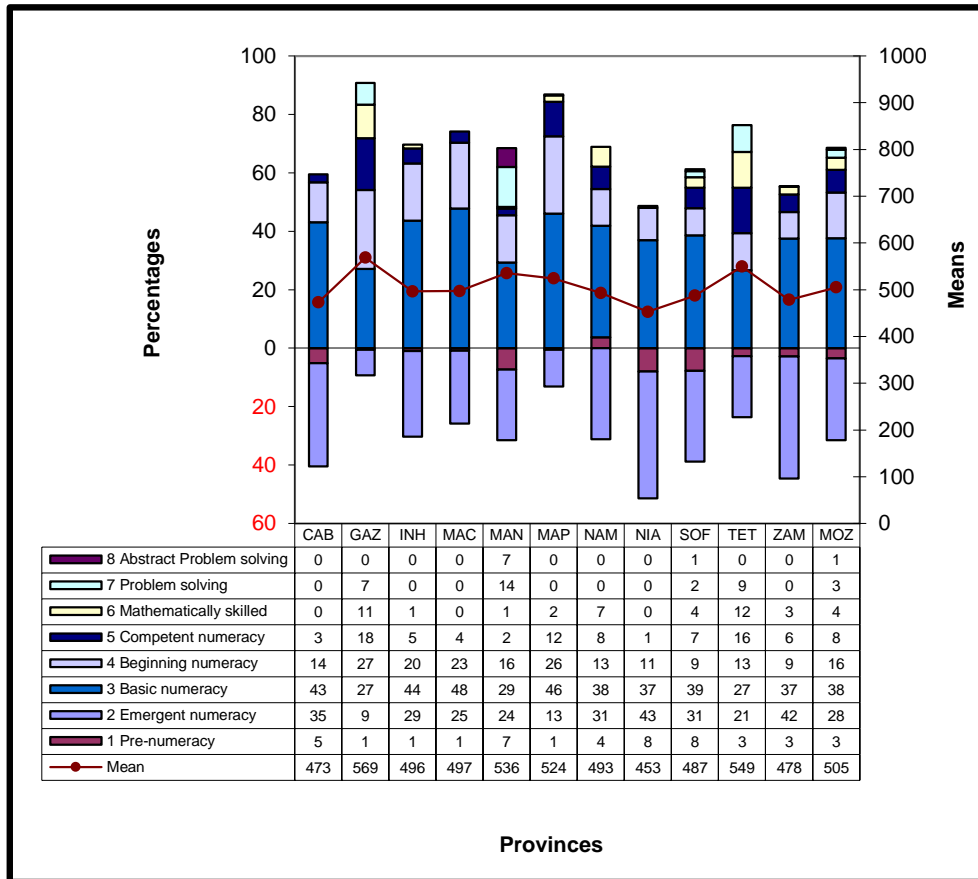
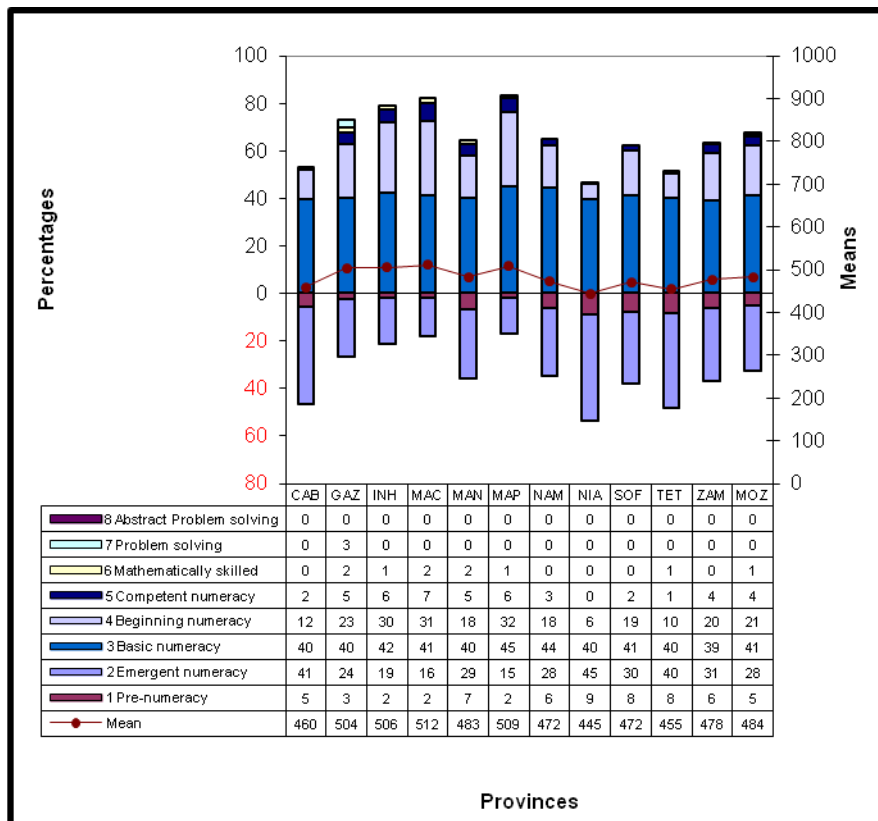


Figure 7-5 - Percentage of pupils attained mathematics levels of Mozambican pupils in SACMEQIV



SACMEQ III

Figure 7-6- Percentage of pupils' mean scores and attained mathematics levels of Mozambican pupils in SACMEQ III

Research (data from SACMEQ IV and SACMEQ III) has shown that there is a strong correlation between Reading and performance in Mathematics, which means that low reading performance needs attention if pupils are to perform and achieve well (Lauchande, 2014). In addition, most importantly for all pupils, “it is demonstrated by many researchers that a solid foundation in mathematics and language is necessary for primary school children to navigate the information in this technological age. Students with a strong grasp in mathematics have an advantage in academics as well as in the job market” (Aggarwal, 2000, p.14).

Policy Suggestion 7.1. The Ministry of Education should speed up the implementation of the National Reading Plan (Plano Nacional de Acção de Leitura e Escrita) and develop a national plan for numeracy)

7.4 What were the mean scores for Teachers in reading, and in mathematics in Mozambique?

Literature on education emphasizes the association between teacher subject knowledge and pupil achievement as confirmed by Grossman (1995), who stated that “subject matter is vital for good teaching and teacher performance”, “as qualitative research suggests that teachers’ knowledge of the content they teach affects both what teachers teach and how they teach it” (Grossman, 1995, p.6118). Therefore, tests were administrated to teachers to assess their subject knowledge. Table 7.4 summarizes the results of the tests.

Table 7-4 Means and sampling errors for the reading and mathematics test scores of teachers

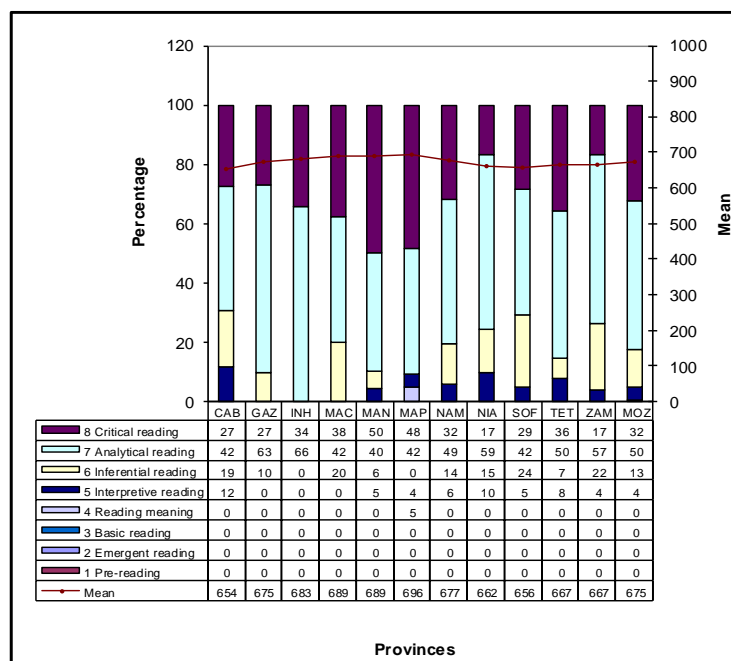
Province	Teachers performance							
	SACMEQ IV (2013)				SACMEQ III (2007)			
	Reading		Mathematics		Reading		Mathematics	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
CAB	654.4	19.37	689.1	24.73	687.2	12.26	723.5	17.60
GAZ	674.6	11.69	739.4	20.55	730.8	18.23	766.6	16.08
INH	683.2	10.14	748.8	23.24	721.6	13.43	761.9	13.78
MAC	688.5	14.54	747.4	34.23	725.9	15.10	772.1	19.35
MAN	688.8	13.64	760.2	24.89	709.4	11.40	753.9	22.35
MAP	695.6	21.05	737.0	25.70	739.6	12.59	743.9	12.62
NAM	676.9	14.02	715.8	17.23	696.0	11.11	737.2	21.92
NIA	662.4	20.41	705.7	22.79	670.8	10.36	688.5	18.13
SOF	656.0	17.59	704.9	15.97	727.1	12.41	735.0	17.61
TET	667.4	17.36	694.4	19.07	730.3	16.54	730.8	14.25
ZAM	667.3	10.87	701.5	20.32	725.5	12.69	750.2	19.54
MOZ	674.9	4.75	721.8	6.77	717.9	4.22	745.6	5.75

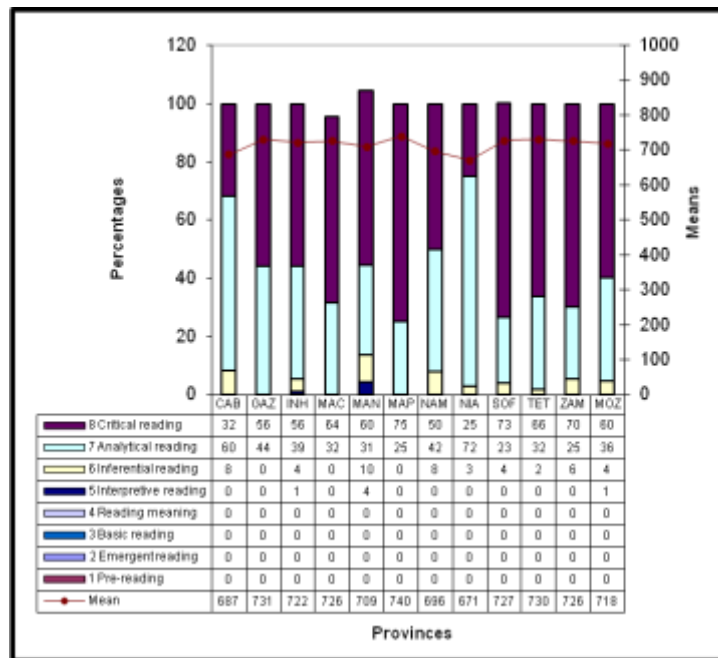
In both subjects, Reading and Mathematics, the teacher subject knowledge has decreased significantly, across the two surveys. In SACMEQ III the average teacher score for reading was 717.9 and in SACMEQ IV decreased to 614.9. A similar pattern of results could be seen in mathematics (745.6 in SACMEQ III and 674.9 in SACMEQ IV). Looking at teacher performance across provinces, it can be observed that in all provinces that there was a decreased in their performance in Reading as well as in mathematics. There is a need to understand the reason behind such decrease in teachers’ subject knowledge.

7.5 What were the overall percentages of teachers across the various levels of mastery in reading and in mathematics?

Figure 7.7 shows the mean and the percentages of teachers reaching each of the eight reading competence levels in SACMEQ III and in SACMEQ IV. From SACMEQ III to SACMEQ IV, there was a decline in the percentage of pupil who had teachers performing at highest level of competency. While in SACMEQ III, 59.5% of pupils had teachers that achieved level 8, in SACMEQ IV that figure had deteriorated significantly to 32 %. Additionally, in 2007 96% of the pupil had teachers performing between level 7 and 8, while in 2013 only 82% performed at the same level. However, it is important to stress that both in SACMEQ III and SACMEQ IV there was no teacher performing below level 5.

Looking the figures across provinces, the data suggest that in all provinces there was a significant decrease in the percentage of pupil who had teachers performing at high level.

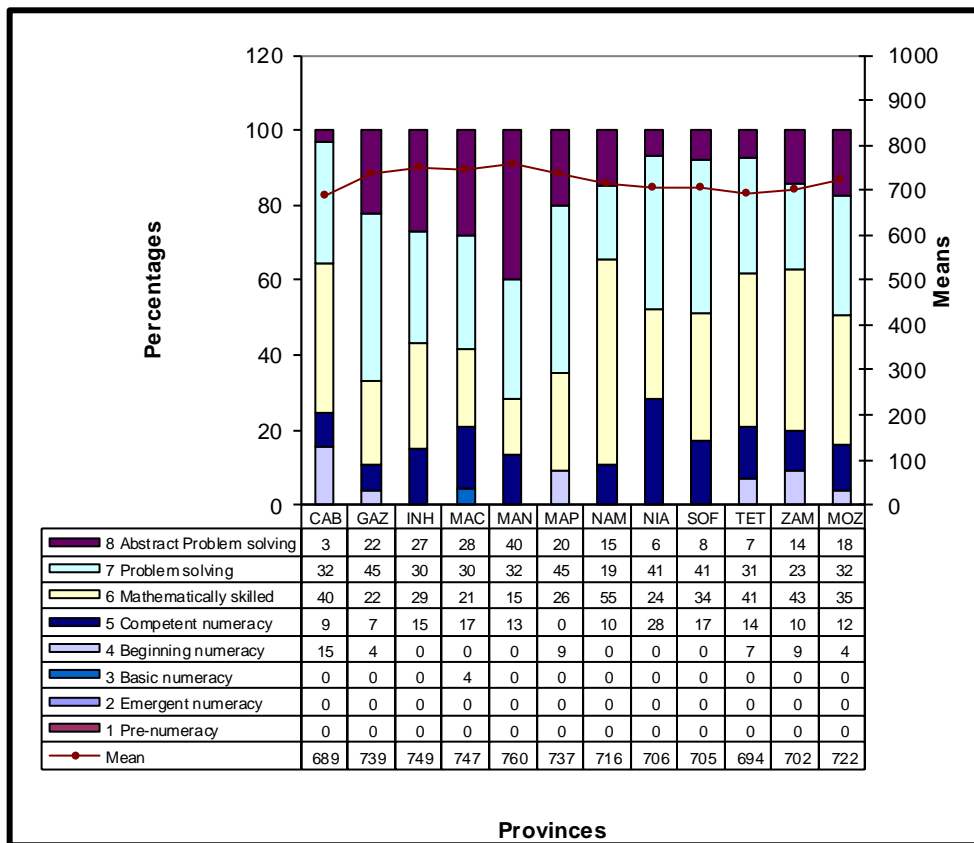




SACMEQ III

Figure 7-7 Teachers' mean scores and attained reading levels of Mozambican teachers in SACMEQ III and in SACMEQ IV.

Figure 7.8 shows the performance of Grade 6 teachers in mathematics. Like the performance of reading teachers, mathematics teachers also decreased; the percentage of pupils whose teachers had attained level 8 declined from 22% to 18%. Looking at Figure 7.8, which shows teachers' performance across provinces in mathematics, it can be observed that in all provinces, except the percentage of pupils that had teachers that reached level 8, declined between SACMEQ III and SACMEQ IV. Taking into consideration that teachers' performance influence pupil performance, it is important to improve teachers' mathematics subject knowledge in order to improve pupil performance.



SACMEQ IV

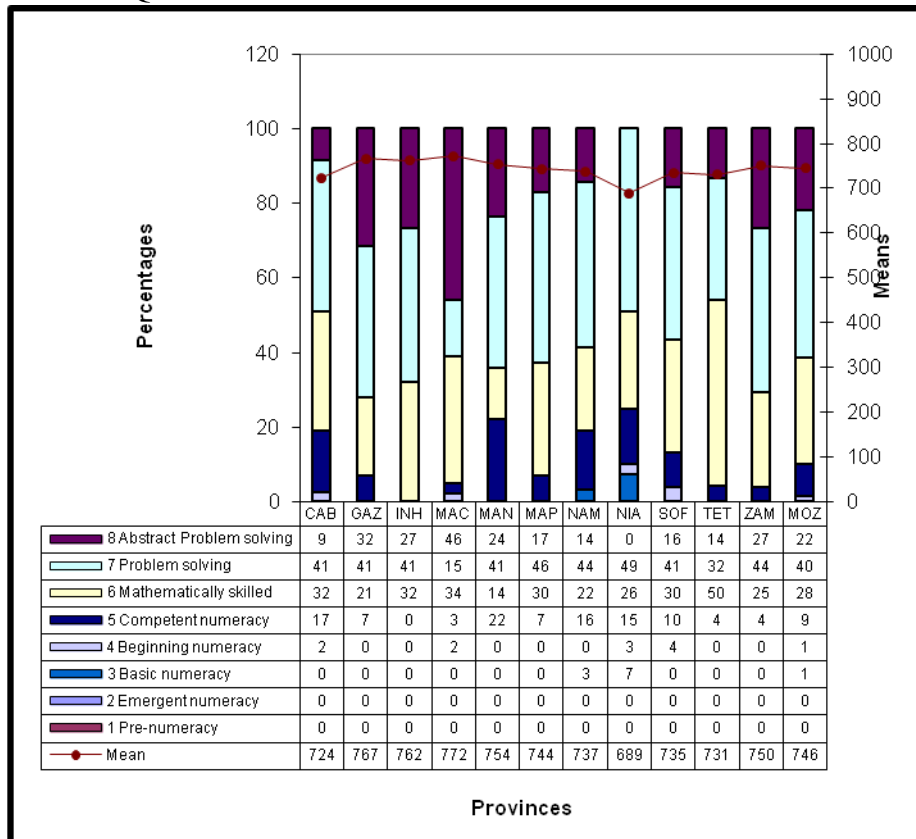


Figure 7-8 - Teachers' mean scores and attained mathematics levels

From the results above, it seems that teacher subject knowledge may not explain the low performance of the pupils, though quality of professional training may be one of the reasons behind the drop in student performance. Taking into consideration that the pool of pupils has increased from 2000 to 2007, teachers need to be well trained in order to cater for students from a wider range of backgrounds.

Policy Suggestion 7.2. The Ministry of Education should improve the subject knowledge component in teacher training courses, especially in mathematics, to overcome knowledge gaps among teachers in this subject.

7.6 Pupil performance across regions and subgroups

Understanding gaps on achievement across gender, school location and socio-economic status (SES) is a way to identify factors associated with pupil achievement. The following section presents pupils' performance across subgroups in reading and in mathematics, for SACMEQ III and SACMEQ IV. Table 7.5 summarizes pupil performance across gender, and SES⁴.

Table 7-5 Means for the reading and mathematics test scores of pupils by subgroups

Sub-groups	SACMEQ IV (2013)				SACMEQ III (2007)			
	Reading		Mathematics		Reading		Mathematics	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Pupil gender</i>								
Boys	487.8	4.89	508.1	6.00	478.4	2.85	488.2	2.36
Girls	485.7	4.68	504.8	6.07	473.2	3.48	478.6	3.22
<i>Socioeconomic level</i>								
Low SES (Bottom 25%)	477.7	8.81	508.3	10.00	455.0	3.65	469.5	3.94
High SES (Top 25%)	525.5	5.02	521.7	5.75	506.3	4.79	501.6	3.21
MOZAMBIQUE	484.9	4.43	505.0	5.79	476.0	2.82	483.8	2.29
SACMEQ					511.8	1.27	509.5	1.16

Between SACMEQ III and SACMEQ IV, the gender gap favouring boys did not change significantly in reading and mathematics but there was a narrowing of the gap from 5.2 to 2.1 score points in reading and from 9.6 to 3.3 in mathematics.

⁴ Data from school location (rural versus urban) was not included due to the inconsistencies.

Regarding SES, the gap in performance between low and high SES has not increased significantly across the two surveys, while in Mathematics has decreased significantly. The score point difference in reading achievement was around 51.3 score points in SACMEQ III and 48.8 in SACMEQ IV. In mathematics the difference has decreased from 32.1 score points in SACMEQ III to 13.4 in SACMEQ IV.

7.7 Conclusion

From SACMEQ III to SACMEQ IV, there was an increase in average pupil achievement, in both subjects, especially in mathematics where the improvement was statistically significant. In SACMEQ III, the Reading and Mathematics were 476.2 and 483.8 respectively, while in SACMEQ IV, the reading and mathematics scores were 484.9 and 505 respectively.

Some Provinces in the south of the country (Gaza and Maputo Province) have shown significant improvement, while provinces located in the centre and north of the country no significant increase was observe, except Manica in Mathematics. The largest improvement in both reading and mathematics was observed in two provinces, Gaza (reading 30 score points and mathematics 65 score points) and Maputo province (15 score points)

Overall in Mozambique, the percentage of pupils that cannot read in Grade 6 has not changed across the two surveys. For instance, 21.5% in SACMEQ III and 20.2% in SACMEQ IV failed to reach Level 3 of reading competence. In other words, this proportion of pupils only reached levels 1 and 2. In both SACMEQ III, and SACMEQ IV most pupils (more than 50%) reached between Levels 3 and 5.

In both subjects, reading and mathematics, the teacher subject knowledge has decreased significantly across the two surveys. In SACMEQ III, the average teacher score for reading was 717.9 and in SACMEQ IV decreased to 614.9. A similar pattern of results could be seen in mathematics (745.6 in SACMEQ III and 674.9 in SACMEQ IV). There is need to understand the reason behind such decrease in teachers' subject knowledge.

8. Chapter 8. Knowledge of Grade 6 pupils and their teachers in HIV and AIDS knowledge

8.1 Introduction

The HIV and AIDS pandemic presents a major challenge for social and economic development in sub-Saharan Africa. The joint United Nations Programme on HIV-AIDS (UNAIDS) has estimated that in this region there are more than 20 million people living with HIV and that around 10 percent of them are below the age of 15 (SACMEQ Policy Series, 2010).

According to UNAIDS (2016), Mozambique had 83 000 new HIV infections and 62 000 AIDS-related deaths. There were 1 800 000 people living with HIV in 2016, among whom 54% were accessing antiretroviral therapy. Among pregnant women living with HIV, 80% were accessing treatment or prophylaxis to prevent transmission of HIV to their children. An estimated 13 000 children were newly infected with HIV due to mother-to-child transmission. This is a matter of concern and will have damaging impacts on education goals, gender balance and education quality.

The SACMEQ IV study included an HIV and AIDS knowledge test. The aim of this chapter is to present the results related to HIV and AIDS knowledge and attitudes towards HIV-AIDS infected pupils, teachers and school heads.

The HIV and AIDS knowledge test is based on official curricula, teaching guides and materials. It was focused specifically on the official curriculum frameworks for HIV-AIDS that had been adopted by SACMEQ Ministries of Education. The test items addressed 43 curriculum topics concerned with “basic knowledge required for protecting and promotion of health”. These topics covered five main dimensions: definitions and terminology, transmission mechanisms, avoidance behaviour, diagnosis and treatment, and myths and misconceptions. The same test was administered to grade 6 pupils and their teachers in schools in all provinces, in 2013.

The analysis is based on three major questions:

1. What are the overall mean scores of pupils and their teachers in HIV and AIDS knowledge in Grade 6 of primary school in Mozambique?

2. What are the HIV and AIDS knowledge levels of important sub-groups of Grade 6 pupils and their teachers?
3. What are the attitudes of pupils, teachers and school heads about HIV and AIDS?

The performance of pupils and teachers was summarized in the form of three scores:

- a) Transformed Scores: Scaled HIV and AIDS knowledge test scores that were transformed to an overall SACMEQ mean of 500 and standard deviation of 100;
- b) Minimal Knowledge Scores: Dichotomous scores that indicated whether or not respondents had mastered at least 50% of the officially-designated curriculum that was assessed by the HIV and AIDS knowledge test;
- c) Desirable Knowledge Scores: Dichotomous scores that indicated whether or not respondents had mastered at least 75% of the officially-designated curriculum that was assessed by the HIV and AIDS knowledge test.

What are the overall mean scores of pupils and their teachers in HIV and AIDS knowledge in Grade 6 of primary school in Mozambique?

The scores on the HIV and AIDS knowledge test are presented in the table below for Grade 6 pupils and their teachers.

Table 8-1 Means and sampling errors for the HIV and AIDS knowledge test scores of pupils and teachers in Grade 6 of primary school

HIV and AIDS Knowledge Scores (SACMEQ IV)								
Provinces	Pupil		Reading teachers		Mathematics teachers		Health teachers	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
CAB	409.2	14.78	739.2	34.91	711.1	22.23	709.7	36.86
GAZ	459.5	15.62	739.8	24.25	720.2	13.79	724.8	32.31
INH	451.5	11.33	779.4	19.73	738.2	22.48	703.8	25.76
MAC	467.9	33.65	713.9	53.04	728.6	22.52	792.7	40.49
MAN	485.3	15.44	751.9	11.24	762.9	24.49	731.9	25.26
MAP	449.7	8.79	748.4	23.89	723.9	25.85	765.5	17.55
NAM	436.3	12.68	664.3	35.87	678.8	28.87	724.3	16.05
NIA	421.6	11.73	702.9	20.37	733.0	25.27	706.3	28.49
SOF	405.6	12.74	723.8	26.24	714.7	28.46	747.4	36.00
TET	468.3	17.72	736.1	31.34	704.9	22.21	734.2	21.88
ZAM	432.9	14.84	705.6	20.42	706.7	17.60	719.3	13.86
MOZ	444.9	5.21	725.0	8.82	717.2	7.57	732.8	7.84

HIV and AIDS Knowledge Scores								
Provinces	Pupil		Reading teachers		Mathematics teachers		Health teachers	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
CAB	452.2	10.17	704.2	19.43	705.3	17.82	744.9	24.67
GAZ	503.2	11.62	744.0	25.55	743.5	23.61	754.0	26.19
INH	522.2	16.40	725.0	13.55	746.7	13.74	782.5	23.33
MAC	579.6	33.76	754.7	17.19	738.2	19.45	734.5	19.16
MAN	507.2	11.77	796.4	22.95	753.1	24.02	767.3	26.35
MAP	536.9	21.19	754.9	17.31	742.9	17.02	764.1	20.55
NAM	509.3	23.26	708.2	22.11	732.1	16.32	700.9	21.30
NIA	473.0	8.81	734.5	25.40	706.5	22.34	713.8	20.40
SOF	487.4	7.99	789.9	23.15	755.3	18.04	797.4	19.87
TET	448.3	9.02	736.4	16.18	762.3	32.09	766.3	18.13
ZAM	506.4	10.23	721.4	21.38	734.8	18.71	757.3	18.84
MOZ	507.0	5.81	741.1	6.54	739.7	6.17	754.0	6.76

The results of Table 8.1 above, show that from 2007 to 2013 pupils' knowledge of HIV has declined significantly. In SACMEQ III, pupils' score was 507, while in SACMEQ IV the correspondent score was 445. It is important to underscore the decrease of mean score was

62 score points, around 0.62 SD. Across all provinces there was a deterioration in pupil's score. For instance, Maputo Cidade has shown one of the highest decline from 2007 to 2013 (almost around 112 score points). The average performance of pupils across the provinces ranged from a high of 485.3 in Manica to a low of 405.6 in Sofala.

Teachers' score distribution is similar to the pattern of the pupils', although with much less score drop across the two surveys. Across the subjects, the teachers' score decline ranges from 16 in reading teachers to 22 score in mathematics teachers. It is important to understand the reasons behind such huge decrease. The pupils' score decrease could be associated with teachers score decline.

Table 8-2 - Percentage and sampling error of Grade 6 pupil reaching minimum and desirable levels of knowledge about HIV and AIDS

SACMEQ IV				
Provinces	Pupils			
	Reached Minimal level		Reached Desirable level	
	%	SE	%	SE
CAB	11.1	4.84	0.8	0.59
GAZ	20.5	7.03	0.9	0.45
INH	14.8	4.67	2.6	1.98
MAC	25.3	9.89	18.2	9.21
MAN	25.6	6.40	6.5	5.28
MAP	14.1	1.83	0.8	0.59
NAM	15.6	4.78	1.1	0.94
NIA	9.8	2.47	0.0	0.00
SOF	11.1	3.60	1.7	1.43
TET	22.7	7.70	8.5	4.77
ZAM	14.6	3.69	1.5	0.98
MOZ	17.1	1.76	3.8	1.05

SACMEQ III				
Provinces	Pupils			
	Reached Minimal level		Reached Desirable level	
	%	SE	%	SE
CAB	22.4	3.78	1.8	1.03
GAZ	38.7	6.52	3.7	1.77
INH	46.1	6.44	9.3	4.83
MAC	58.6	7.06	23.8	10.36
MAN	40.8	5.51	7.6	2.11
MAP	50.0	5.58	11.1	5.60

NAM	42.0	6.10	11.9	6.13
NIA	27.1	4.42	1.0	0.57
SOF	36.8	3.20	3.6	1.17
TET	20.0	3.64	2.0	1.05
ZAM	42.4	5.32	4.4	1.25
MOZ	40.4	1.81	8.0	1.52

It can be seen in Table 8.2 that in SACMEQ IV the proportion of Grade 6 pupils who reached the minimum level of knowledge and who also reached a desirable level represent in both cases just under half of the proportion observed in the 2007's survey. That is, in SACMEQ IV survey just 17.1% of Mozambican grade 6 pupils had basic knowledge on HIV and AIDS, and only 3.8% reached the desirable level of knowledge. This result represents in both levels assessed, statistically significant decrease.

Across the provinces, Manica has the highest (25.6%) percentage of pupils that reached the minimal knowledge level, while Niassa had the least (9.8%). On the other hand, Niassa Province had the lowest proportion of pupils that reached the desirable knowledge level (0.0%), while once again as in 2007's survey, the highest was Maputo Cidade (23.8%). It is important for the curriculum specialists to develop strategies so that larger percentages of Grade 6 pupils reach the minimum level of mastery in HIV and AIDS knowledge.

The percentages and sampling errors of Grade 6 teachers that reached the minimal and desirable knowledge levels are given in Table 8.3. In this research, once again as in the 2007's survey, the results suggest that almost all of the teachers are above both pupil cut-off points. And again, the findings also show that the leading teachers in terms of reaching the desirable level were health teachers (81%) while the weakest were reading teachers (73.7%).

Table 8-3 - Percentage and sampling error of Grade 6 teachers reaching minimum and desirable levels of knowledge about HIV and AIDS

SACMEQ IV												
Provinc es	Reading teacher				Mathematics teacher				Health teacher			
	Reached Minimal level		Reached Desirable level		Reached Minimal level		Reached Desirable level		Reached Minimal level		Reached Desirable level	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	100.0	0.00	73.5	13.74	100.0	0.00	82.7	11.74	100.0	0.00	43.0	17.61
GAZ	100.0	0.00	83.6	11.04	100.0	0.00	80.3	11.39	91.7	8.35	74.9	12.50
INH	100.0	0.00	86.3	9.34	95.5	4.40	89.3	7.36	95.0	4.90	64.8	13.19
MAC	74.2	3.13	69.8	13.46	100.0	0.00	75.1	10.40	100.0	0.00	75.5	10.17
MAN	100.0	0.00	92.1	4.58	96.8	3.26	92.4	5.42	100.0	0.00	92.4	5.36
MAP	100.0	0.00	80.4	9.26	100.0	0.00	78.6	10.05	100.0	0.00	87.2	9.04
NAM	89.5	7.62	51.8	11.63	88.8	7.87	66.5	11.43	100.0	0.00	82.3	8.46
NIA	100.0	0.00	72.8	11.49	100.0	0.00	76.0	13.30	100.0	0.00	82.7	12.30
SOF	100.0	0.00	72.0	12.98	100.0	0.00	80.7	13.85	93.0	7.33	93.0	7.33
TET	100.0	0.00	74.8	12.26	100.0	0.00	71.3	13.40	100.0	0.00	88.6	11.06
ZAM	100.0	0.00	64.7	12.39	100.0	0.00	80.9	10.47	100.0	0.00	85.8	7.49
MOZ	96.5	1.52	73.7	3.46	97.6	1.26	78.7	3.44	98,3	0,97	81,0	3,13

SACMEQ III												
Provinc es	Reading teacher				Mathematics teacher				Health teacher			
	Reached Minimal level		Reached Desirable level		Reached Minimal level		Reached Desirable level		Reached Minimal level		Reached Desirable level	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	100	0	65.9	10.5	100	8.06	80.5	9.73	100	0	90.7	7.01

9												
GAZ	100	0	77.0	9.57	100	0	86.3	6.93	100	0	86.2	7.72
INH	100	0	83.0	8.39	100	0	93.3	4.09	100	0	93.6	4.46
MAC	100	0	88.3	5.15	100	0	74.7	8.55	100	0	71.4	8.68
MAN	100	0	90.8	5.31	96.8	3.22	86.6	7.32	96.7	3.34	90.6	6.80
MAP	98.2	1.84	85.6	5.59	100	0	79.1	6.47	100	0	82.5	6.31
			74.6	10.1		0	86.1	7.80		0	68.3	11.5
NAM	93.6	6.40		5	100				100			4
			72.5	11.6		0	68.7	12.8		0	70.4	12.3
NIA	100	0		3	100			5	100			6
SOF	100	0	86.9	6.12	100	0	87.2	6.08	100	0	92.0	5.95
		0	85.7			0	78.4	11.2		0	100	0
TET	100			8.12	100			2	100			
ZAM	100	0	76.5	9.34	100	0	81.9	9.09	100	0	84.4	8.70
MOZ	99.0	0.81	80.8	2.64	99.8	0.25	82.9	2.53	99.8	0.24	84.1	2.55

Further analysis suggests that for both teachers, at least seven out of ten, reached desirable level of knowledge in HIV and AIDS subject. Across provinces, once more as in the SACMEQ IV, Manica had the highest percentage of reading teachers that reached the desirable level of knowledge, while the weakest province was Nampula (92.1% and 51.8%, respectively). Regarding Mathematics teachers, also Manica (92.4%) had the highest percentage of teachers that had reached the desirable level, while Nampula (66.5%) had the lowest. Amongst health teachers, Sofala (93%) had the highest proportion of teachers that attained the desirable level, and the lowest proportion was observed in Cabo Delgado (43%). Interventions need to be put in place to increase the proportion of teachers attaining the desirable level of knowledge on HIV and AIDS.

Policy suggestion 8.1: The Ministry of Education should take further steps to identify the competencies that might be lacking in the school syllabus for HIV and AIDS knowledge, in the teacher training curriculum and in teachers' teaching practices.

Policy suggestion 8.2: The Ministry of Education needs to follow up on the implementation or usage of the HIV and AIDS kits at school (Basic package).

8.2 What is the HIV and AIDS knowledge levels of important sub-groups of Grade 6 pupils and their teachers?

It is also useful to examine the scores for different sub-groups of Grade 6 pupils and their teachers. The differences between boys and girls, between high and low socio-economic

groups, and between pupils in schools in rural and urban areas are shown below in tables 8.4 and 8.5.

Table 8-4 - Mean performance on HIV and AIDS knowledge for Grade 6 pupils across gender and provinces

SACMEQ IV												
Province	Mean scores				Reached Minimal level				Reached Desirable level			
	Boys		Girls		Boys		Girls		Boys		Girls	
	Mean	SE	Mean	SE	%	SE	%	SE	%	SE	%	SE
CAB	413.2	16.33	403.5	17.04	13.3	6.27	7.9	4.58	1.4	0.93	0.0	0.0
GAZ	460.9	19.49	459.8	13.92	22.4	9.35	4	5.90	2.0	1.02	0.0	0.0
INH	449.6	11.54	454.1	13.49	12.3	4.51	4	5.27	1.9	1.51	3.2	2.48
MAC	480.7	34.73	458.7	35.51	25.1	11.17	26.3	10.17	18.8	10.64	18.1	8.70
MAN	492.5	19.06	479.3	14.15	27.0	7.98	6	5.60	6.8	5.94	6.5	4.86
MAP	461.9	8.87	441.4	11.39	18.9	2.99	9	2.82	0.7	0.74	0.9	0.92
NAM	455.4	14.15	419.6	11.81	21.6	6.07	3	3.72	1.8	1.37	0.5	0.52
NIA	430.0	9.70	417.7	14.56	9.1	2.31	8	4.21	0.0	0.00	0.0	0.00
SOF	414.3	13.30	400.7	15.86	8.3	3.47	6	4.96	1.7	1.81	1.9	1.37
TET	474.3	20.09	461.3	20.27	23.5	8.66	6	8.70	6	5.85	6.0	3.84
ZAM	430.6	15.98	438.5	17.48	14.2	4.25	8	4.11	1.3	1.07	2.0	1.11
MOZ	450.9	5.84	441.3	5.51	18.1	2.10	7	1.75	4.1	1.20	3.6	2.0

SACMEQ III												
Province	Mean scores				Reached Minimal level		Reached Minimal level		Reached Desirable level		Reached Desirable level	
	Boys		Girls		Boys		Girls		Boys		Girls	
	Mean	SE	Mean	SE	%	SE	%	SE	%	SE	%	SE
CAB	460.0	13.66	441.9	9.43	24.1	5.07	20.1	3.44	2.6	1.54	0.8	0.79

GAZ	512. 1	11.4 8	494. 8	12.6 6	44. 3	7.2 7	33. 4	6.5 8	3.7	1.66	3.7	2.3 3
INH	530. 3	15.1 3	514. 5	19.4 1	47. 4	6.1 3	44. 8	7.5 1	9.9	4.52	8.6	5.3 8
MAC	584. 8	34.2 0	575. 2	33.9 4	59. 6	6.7 9	57. 8	7.5 7	23. 5	11.1 4	24. 1	9.8 5
MAN	524. 2	12.1 3	484. 9	16.0 3	45. 6	6.0 3	34. 5	7.4 9	10. 1	2.83	4.3	1.9 6
MAP	540. 0	18.1 2	534. 0	24.6 6	54. 8	5.4 0	45. 4	6.4 4	9.2	4.67	12. 9	6.7 9
NAM	515. 3	24.7 0	499. 7	24.4 4	43. 6	6.7 0	39. 4	6.6 9	12. 7	6.16	10. 7	6.6 1
NIA	488. 4	10.8 6	457. 1	8.59	32. 2	5.5 8	21. 9	4.2 4	0.7	0.73	1.3	0.9 6
SOF	505. 6	9.02	462. 1	13.6 2	43. 9	4.2 1	26. 9	4.9 9	4.5	1.78	2.2	1.2 1
TET	462. 2	12.2 7	432. 2	12.5 6	24. 2	4.8 4	15. 2	4.9 1	2.8	1.84	1.0	1.0 5
ZAM	511. 6	11.3 8	498. 3	14.0 1	44. 1	6.3 4	39. 8	5.3 8	4.6	1.37	3.9	1.9 0
MOZ	514. 5	5.81	498. 1	6.83	43. 3	1.9 9	37. 0	2.0 9	8.0 8	1.47	7.8	1.7 2

As much as in the 2007's survey, in the 2013 the performance of boys (450.9) in the HIV and AIDS knowledge test was slightly higher than that of girls (441.3) though this difference was not statistically significant. It is important to notice that overall in both cases, the averages of boys and girls showed statistically significant decreases. Thus, attention should be given to both boys and girls' performance in HIV and AIDS knowledge. Boys' knowledge levels ranged from the highest in Manica (with a mean score of 492.5, and with 27% and 6.8% of pupils reaching the minimal and desirable knowledge levels, respectively) to the lowest in Cabo Delgado (with mean score of 413.2, and with 13.3% and 1.4% of pupils reaching minimal and desirable knowledge levels, respectively). Girls' knowledge levels ranged from the highest also in Manica (with a mean score of 479.3, and with 24.6*% and 6.5% of pupils reaching the minimal and desirable knowledge levels, respectively) to the lowest in Sofala (with mean score of 400.7, and with 15.6% and 1.9% of pupils reaching minimal and desirable knowledge levels, respectively).

Table 8.5 presents the results of pupils' performance in the HIV and AIDS knowledge test across socio-economic status (SES) and school location subgroups.

Table .8-5 - Means and sampling errors for the HIV and AIDS knowledge test scores of Grade 6 pupils across socio-economic status levels and school location.

Provinces	SACMEQ IV				SACMEQ III			
	Socio-economic status				Socio-economic status			
	Low SES		High SES		Low SES		High SES	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE
CAB	411.2	19.90	414.4	24.65	434.4	12.10	484.2	7.20
GAZ	440.1	14.39	471.0	18.11	508.9	19.31	535.5	15.14
INH	445.7	11.25	472.3	14.50	515.6	23.52	538.0	21.35
MAC	549.3	46.48	456.5	37.96	557.3	39.45	577.5	32.12
MAN	477.2	18.14	500.1	17.90	475.0	19.20	542.3	18.14
MAP	442.4	16.76	463.4	8.55	569.3	48.78	545.7	15.94
NAM	446.1	18.36	440.5	12.30	494.9	30.04	542.4	36.64
NIA	437.0	13.05	452.8	10.11	466.1	11.16	484.3	16.04
SOF	386.8	20.30	438.6	19.96	485.2	11.11	494.4	13.55
TET	496.0	30.34	458.7	30.05	458.2	13.55	440.8	27.96
ZAM	441.5	13.32	445.3	21.82	499.6	15.97	528.4	14.73
MOZ	449.6	7.30	461.8	6.13	486.8	7.23	537.2	9.37

Overall, the results indicate that once more as in the 2007's survey, pupils from high socio-economic groups performed better than those from low socio-economic groups, although the difference is not statistically significant. In the SACMEQ IV, the high SES group of Grade 6 pupils performed only about 12 score points higher than the low SES group; in the SACMEQ III the observed difference between the two groups was around 50 score points. This result can be explained by the fact that pupils from high socio-economic groups are likely to have more source information such as reading materials, magazines, television sets and internet, where they can absorb knowledge about HIV and AIDS. Especially, it is worrying to realize from the presented results that regarding to socio-economic status, in both groups the observed averages have decreased substantially from 2007 to 2013 and differences are statistically significant.

Policy suggestion 8.3: The Ministry of Education should investigate how to bridge the gaps in pupils' knowledge levels associated with SES .

Teacher performance across subgroups

(b) Differences in teachers knowledge levels by gender

Are there gender differences among Grade 6 teachers in knowledge about HIV and AIDS?

Tables 8.6 to 8.8 present the findings.

Table 8-6 - Mean performance on the HIV and AIDS knowledge of Grade 6 Reading teachers by gender.

SACMAEQ IV												
Provinc es	Mean scores				Reached Minimal level				Reached Desirable level			
	Male		Female		Male		Female		Male		Female	
	Mea n	SE	Mea n	SE	%	SE	%	SE	%	SE	%	SE
CAB	739.	34.9	754.	70.4	100.		100.	0.0	73.	13.7		26.7
	2	1	9	5	0	0.00	0	0	5	4	73.1	3
GAZ	751.	27.0	753.	26.9	100.		100.	0.0	90.			11.9
	6	4	6	5	0	0.00	0	0	1	9.87	87.9	9
INH	768.	20.1	764.	31.9	100.		100.	0.0	84.	10.4		16.0
	2	5	4	3	0	0.00	0	0	7	6	76.1	4
MAC	685.	51.4	857.	41.6		14.7	100.	0.0	65.	14.1	100.	
	9	6	0	3	70.5	5	0	0	5	8	0	0.00
MAN	745.	13.6	752.	12.2	100.		100.	0.0	91.			
	5	4	3	6	0	0.00	0	0	0	5.42	92.2	5.44
MAP	734.	23.1	758.	27.4	100.		100.	0.0	79.	11.2		10.3
	7	2	0	7	0	0.00	0	0	8	4	82.4	0
NAM	671.	41.4	662.	18.1			100.	0.0	58.	13.1		14.8
	6	1	5	1	87.8	8.78	0	0	7	7	55.4	8
NIA	703.	20.3	682.	33.5	100.		100.	0.0	73.	11.5		20.5
	6	8	4	2	0	0.00	0	0	2	0	52.0	1
SOF	740.	25.0	720.	35.9	100.		100.	0.0	80.	11.1		16.7
	1	6	9	7	0	0.00	0	0	3	7	67.3	4
TET	738.	40.9	754.	36.1	100.		100.	0.0	66.	15.8		11.8
	1	5	8	7	0	0.00	0	0	4	6	83.9	9
ZAM	704.	20.7	702.	19.1	100.		100.	0.0	64.	12.5		12.2
	7	6	1	7	0	0.00	0	0	1	8	76.7	1
MOZ	722.		734.				100.	0.0	74.			
	9	9.43	8	9.06	96.0	1.71	0	0	3	3.74	77.3	4.16

SACMEQ III												
Province s	Mean scores				Reached Minimal level				Reached Desirable level			
	Male		Female		Male		Female		Male		Female	
	Mea n	SE	Mea n	SE	%	SE	%	SE	%	SE	%	SE
CAB	694.	19.4	736.	56.7		7.99	10	0	67.	13.1	61.	20.0
	8	8	7	3	100		0		3	0	3	4
GAZ	732.	29.4	773.	40.1		9.66	10	0	73.	12.8	87.	11.9
	7	6	6	8	100		0		9	6	4	
INH	717.	13.6	735.	20.2		5.83	10	0	85.	8.26	79.	13.8
	3	0	1	0	100		0		9		1	5
MAC	770.	24.5	745.	23.2		1.61	10	0	86.	8.82	89.	5.50
	0	5	9	9	100		0		5		4	

MAN	813. 6	24.5 8	777. 6	35.9 2	100	7.77 0	10 0	0 0	100 0	0 0	80. 7	11.0 5
MAP	753. 2	21.8 5	757. 4	24.3 8	97. 0	3.04 0	10 0	0 0	88. 5	6.30 5	81. 4	10.5 6
NAM	720. 5	28.8 9	691. 7	28.5 8	88. 8	10.7 2	10 0	0 0	82. 3	11.9 1	64. 3	17.0 7
NIA	719. 1	26.6 6	774. 4	46.2 6	100	1.38 0	10 0	0 0	67. 6	14.2 0	85. 1	15.2 0
SOF	757. 4	31.6 0	827. 7	29.6 3	100	0 0	10 0	0 0	75. 6	10.6 5	100 0	0
TET	735. 4	20.2 8	739. 8	12.7 5	100	8.19 0	10 0	0 0	81. 7	10.1 0	100 0	0
ZAM	744. 0	23.7 4	667. 5	27.0 5	100	3.93 0	10 0	0 0	86. 8	8.33 8	51. 9	17.7 4
MOZ	739. 4	7.95 8	743. 8	10.5 5	98. 4	1.31 0	10 0	0 0	81. 7	3.24 3	79. 3	4.28 4.28

An analysis of the results presented in Table 8.6 and those in Table 8.7 indicates once again as much as in the SACMEQ III that the mean score of female reading teachers and female mathematics teachers was slightly higher than that of their male counterparts, but not statistically significantly different. Likewise, there were no significant differences between the percentages of female and male teachers reaching desirable knowledge levels amongst either reading or mathematics teachers.

Table .8-7 - Mean performance on the HIV and AIDS knowledge of Grade 6 Mathematics teachers by gender

SACMEQ IV												
Provinc es	Mean scores				Reached Minimal level				Reached Desirable level			
	Male		Female		Male		Female		Male		Female	
	Mea n	SE	Mea n	SE	%	SE	%	SE	%	SE	%	SE
CAB	711. 1	22.2 3	728. 7	43.2 9	100. 0	0.0 0	100. 0	0.00 0.00	82. 7	11.7 4	100. 0	0.00 0.00
GAZ	730. 4	14.5 3	726. 6	15.0 8	100. 0	0.0 0	100. 0	0.00 0.00	90. 1	9.87 9.87	83.3 83.3	4 4
INH	738. 3	23.7 4	721. 5	33.5 8	95.0 2	0 0	100. 0	0.00 0.00	88. 0	8.22 8.22	88.0 88.0	8 8
MAC	720. 7	24.1 0	733. 0	43.6 6	100. 0	0.0 0	100. 0	0.00 0.00	72. 0	11.3 0	62.9 62.9	8 8
MAN	769. 4	26.8 5	761. 3	28.1 6	96.5 1	3.6 1	96.3 96.3	3.79 3.79	95. 3	3.79 3.79	91.1 91.1	6.29 6.29
MAP	714. 8	23.5 4	740. 4	32.6 7	100. 0	0.0 0	100. 0	0.00 0.00	73. 6	11.1 2	88.1 88.1	2 2
NAM	687. 9	27.2 0	636. 6	45.2 8	89.8 1	7.2 1	84.3 84.3	0 0	70. 3	11.4 3	58.0 58.0	6 6

NIA	733.0	25.27	726.3	30.39	100.0	0.00	100.0	76.0	13.30	18.15		
SOF	709.3	34.57	749.3	18.76	100.0	0.00	100.0	76.1	16.88	100.00		
TET	705.8	29.96	708.5	23.53	100.0	0.00	100.0	72.6	15.20	15.29		
ZAM	704.8	18.63	714.2	23.68	100.0	0.00	100.0	79.7	11.09	12.89		
MOZ	718.1	7.93	721.5	9.72	97.6	4	97.9	1.68	3	3.59	81.9	4.01

SACMEQ III												
Province	Mean scores				Reached Minimal level				Reached Desirable level			
	Male		Female		Male		Female		Male		Female	
	Mean	SE	Mean	SE	%	SE	%	SE	%	SE	%	SE
CAB	700.3	20.54	731.4	23.04	100	0	100	0	79.8	11.12	84.0	17.14
GAZ	737.8	16.38	749.2	42.89	100	0	100	0	98.5	1.61	74.2	11.41
INH	746.6	14.20	746.7	35.63	100	0	100	0	96.1	3.87	86.9	10.50
MAC	741.0	27.59	733.7	19.93	100	0	100	0	73.0	11.99	77.5	11.25
MAN	769.6	15.64	678.4	92.96	82.3	14.0	91.0	14.2	91.0	5.81	66.6	26.79
MAP	756.9	24.46	724.3	21.64	100	0	100	0	77.6	9.87	81.1	9.17
NAM	743.1	17.51	678.3	16.73	100	0	100	0	88.4	8.64	74.7	14.10
NIA	678.9	22.08	776.2	29.51	100	0	100	0	59.3	15.77	92.4	8.18
SOF	740.8	16.63	776.6	31.78	100	0	100	0	78.5	10.53	100	0
TET	726.0	19.86	852.5	75.31	100	0	100	0	69.7	14.32	100	0
ZAM	735.3	21.20	731.4	20.49	100	0	100	0	79.3	10.22	100	0
MOZ	737.6	6.52	744.8	13.5	10	0	99.1	0.8	82.3	3.17	84.3	3.75

It can be seen in the Table 8.8 that in the SACMEQ IV the mean score of female health teachers was slightly higher than that of male teachers in around 8 score points, but the difference, however, was not statistically significant

Table 8-8 - Mean performance on the HIV and AIDS knowledge of Grade 6 Health teachers by gender

		SACMEQ IV											
		Mean scores				Reached Minimal level				Reached Desirable level			
		Male		Female		Male		Female		Male		Female	
Provinc	es	Mea	SE	Mea	SE	%	SE	%	SE	%	SE	%	SE
	CAB	709.	36.8	718.	63.9	100.	0.0	100.	0.0	17.6	31.3		
		7	6	3	9	0	0	0	0	43.0	1	37.1	6
	GAZ	731.	36.7	707.	15.2		9.7	100.	0.0	12.0	17.4		
		8	9	0	8	90.3	1	0	0	80.8	7	70.8	4
	INH	702.	28.7	712.	35.9		5.5	100.	0.0	14.6	17.4		
		4	3	2	1	94.4	7	0	0	60.1	2	74.1	7
	MAC	723.	27.7	744.	42.8	100.	0.0	100.	0.0	11.1	18.2		
		1	8	4	8	0	0	0	0	71.8	2	70.0	6
	MAN	774.	19.2	767.	17.9	100.	0.0	100.	0.0				
		7	1	7	5	0	0	0	0	95.3	3.74	94.9	5.19
	MAP	766.	42.2	812.	45.1	100.	0.0	100.	0.0	12.1			
		4	0	8	0	0	0	0	0	81.9	2	91.1	8.95
	NAM	731.	16.1	707.	19.7	100.	0.0	100.	0.0				
		5	9	2	7	0	0	0	0	84.9	8.44	79.4	1
	NIA	709.	29.8	683.	33.4	100.	0.0	100.	0.0	12.9	18.3		
		0	7	5	8	0	0	0	0	81.6	2	80.7	8
	SOF	744.	39.3	796.	35.7		8.3	100.	0.0	100.			
		8	0	1	0	92.1	1	0	0	92.1	8.31	0	0.00
	TET	736.	27.2	727.	26.2	100.	0.0	100.	0.0	100.	15.2		
		7	8	3	5	0	0	0	0	0	0.00	84.1	3
	ZAM	719.	13.8	718.	16.9	100.	0.0	100.	0.0				
		3	6	5	7	0	0	0	0	85.8	7.49	92.1	6.18
	MOZ	731.		738.			1.1	100.	0.0				
		3	8.08	8	9.49	98.1	1	0	0	81.3	3.19	83.7	3.76

		SACMEQ III											
		Mean scores				Reached Minimal level				Reached Desirable level			
		Male		Female		Male		Female		Male		Female	
Province	s	Mea	SE	Mea	SE	%	SE	%	SE	%	SE	%	SE
	CAB		32.3		25.5	10	0		0	90.	10.5		
		742.0	5	752.5	7	0		100		9	8.96	2	7
	GAZ		22.2		51.0	10	0		0	89.	11.0		
		732.4	3	783.2	3	0		100		6	6	5	4
	INH		30.9		32.4	10	0		0	95.	10.4		
		789.7	6	769.2	4	0		100		8	4.17	6	8

		24.6		23.5	10	0		0	69.	11.7	75.	13.2
MAC	736.1	2	731.4	3	0		100		2	0	3	2
MAN	803.1	3	653.1	9	0		0	86.	12.	95.	73.	23.3
		33.0		25.2	10	0		0	77.	11.4	87.	
MAP	761.8	1	766.6	1	0		100		8	9	6	6.55
		21.4		40.5	10	0		0	76.	12.1	27.	19.5
NAM	719.3	3	607.9	5	0		100		4	7	5	7
		21.8		39.1	10	0		0	73.	13.9	63.	23.1
NIA	701.3	8	738.1	2	0		100		8	5	8	4
		22.2		30.3	10	0		0	94.		89.	
SOF	805.5	1	790.4	4	0		100		4	5.82	9	9.89
		19.7		28.0	10	0		0		0		0
TET	772.6	9	723.6	4	0		100		100		100	
		17.8		55.0	10	0		0	82.	9.49		0
ZAM	755.8	0	771.1	5	0		100		7		100	
				13.8	10		99.	0.7	85.		81.	
MOZ	756.0	7.62	749.6	6	0	0	2	9	4	3.17	3	4.49

The percentage of female teachers reaching the minimum and desirable knowledge levels was higher than that of male teachers in at least 1.9 percentage points in both cases. On one hand, it was alarming to find that overall the mean score of the health teachers, both male and female, decreased from 2007 to 2013, although in the case of the female teachers, the difference was not statistically significant. It is also worrying to find that in the province of Cabo Delgado under 45% of Grade 6 pupils had health teachers that reached desirable level of knowledge on HIV and AIDS both male and female. This calls for specific interventions that would help those teachers improve their knowledge on HIV and AIDS.

Policy suggestion: 8.4. The Ministry of Education in coordination with the Ministry of Health and NGO's should increment activities related to sex education prevention against HIV and Aids in Schools and Communities.

8.3 What are the attitudes of pupils, teachers and school heads about HIV and AIDS?

This study sought to discover the attitudes of pupil, their teachers as well as their school heads towards HIV and AIDS with regard to stigmatization and discrimination of persons living with HIV-AIDS.

- a) Fear of casual contact with a pupil infected with HIV (stigma)

On this aspect pupils and their teachers were asked whether an HIV infected pupil should be allowed to continue to attend school. Three options NO, NOT SURE and YES, were provided for the pupils and teachers to respond. "NO" meant that respondents felt that infected pupils should not continue with school, "NOT SURE" meant that the respondents were indifferent and "YES" meant that respondents felt that infected pupils should continue attending school. Findings of this analysis are presented in Table 8.9 below.

Table .8-9 - Percentages of pupils and teachers expressing fear of casual contact with a pupil infected with HIV

SACMEQ IV												
Provinces	Pupils						Teachers					
	No		Not Sure		Yes		No		Not Sure		Yes	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	26.0	5.15	12.8	3.31	61.2	5.74	0.0	0.00	0.0	0.00	100.0	0.00
GAZ	27.9	4.79	12.8	2.42	59.2	5.53	0.0	0.00	0.0	0.00	100.0	0.00
INH	31.8	3.49	13.7	2.65	54.5	3.49	0.0	0.00	0.0	0.00	100.0	0.00
MAC	22.3	6.48	8.0	2.96	69.7	7.88	0.0	0.00	0.0	0.00	100.0	0.00
MAN	22.3	2.30	25.8	2.37	51.9	3.95	0.0	0.00	0.0	0.00	100.0	0.00
MAP	21.5	3.55	30.2	5.03	48.3	5.48	0.0	0.00	0.0	0.00	100.0	0.00
NAM	31.4	4.41	16.7	2.94	52.0	4.65	0.0	0.00	0.0	0.00	100.0	0.00
NIA	34.0	4.13	17.3	2.56	48.7	4.53	0.0	0.00	0.0	0.00	100.0	0.00
SOF	38.8	6.01	11.1	3.60	50.1	4.54	0.0	0.00	0.0	0.00	100.0	0.00
TET	20.5	4.91	11.0	4.66	68.6	7.49	0.0	0.00	0.0	0.00	100.0	0.00
ZAM	25.5	4.12	14.6	2.91	59.9	5.31	0.0	0.00	0.0	0.00	100.0	0.00
MOZ	27.7	1.45	16.0	1.04	56.3	1.68	0.0	0.00	0.0	0.00	100.0	0.00

SACMEQ III												
Provinces	Pupils						Teachers					
	No		Not Sure		Yes		No		Not Sure		Yes	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	30.0	4.79	19.6	2.91	50.4	4.51	0.0	0.00	7.4	5.09	92.6	5.09
GAZ	28.8	4.24	29.6	3.65	41.6	4.43	1.3	1.30	0.0	0.00	98.7	1.30
INH	28.5	5.12	41.0	3.11	30.5	3.80	0.0	0.00	0.0	0.00	100.0	0.00
MAC	13.7	2.08	41.5	4.47	44.7	5.51	0.0	0.00	4.9	3.34	95.1	3.34
MAN	20.9	3.23	33.1	4.55	46.0	6.06	0.0	0.00	0.0	0.00	100.0	0.00
MAP	20.7	4.27	30.1	5.63	49.2	6.27	0.5	0.47	0.0	0.00	99.5	0.47
NAM	27.1	3.45	28.3	3.31	44.7	4.91	0.0	0.00	0.00	0.00	100.0	0.00
NIA	25.5	5.22	14.8	2.58	59.7	7.40	0.0	0.00	0.0	0.00	100.0	0.00
SOF	28.1	3.14	19.8	3.83	52.2	4.84	0.0	0.00	0.0	0.00	100.0	0.00
TET	34.9	4.97	20.2	3.62	44.9	4.79	0.0	0.00	0.0	0.00	100.0	0.00
ZAM	22.9	4.08	19.4	2.67	57.7	5.26	0.0	0.00	4.8	4.86	95.2	4.86
MOZ	25.2	1.24	27.5	1.20	47.3	1.62	0.2	0.13	1.7	0.85	98.2	0.86

The results presented in the table show that the proportion of Mozambican grade 6 pupils that thought that infected pupils should continue to attend school increased statistically significantly 9 percentage points from 47.3% in the SACMEQ III to 56.3% in the SACMEQ IV. This could indicate we still have existence of some stigma among the pupils within the schools towards infected pupils. In contrast, all the participant teachers thought that infected pupils should continue to attend school, a very important positive attitude towards pupils infected with HIV, which suggests an absence of stigma.

School heads were also asked to indicate how much they were willing to allow a pupil who has become infected with HIV to continue attending school and teachers infected with HIV to continue teaching. The findings are presented in Table 8.10.

Table 8-10 - Percentages of school heads expressing fear of casual contact with a pupil and teachers infected with HIV

SACMEQ IV								
Provinces	School heads allowing HIV pupil to attend school				School heads allowing HIV teacher to teach			
	Not Sure		Yes		Not Sure		Yes	
	%	SE	%	SE	%	SE	%	SE
CAB	0.0	0.00	100.0	0.00	0.0	0.00	100.0	0.00
GAZ	0.0	0.00	100.0	0.00	7.5	7.37	92.5	7.37
INH	0.0	0.00	100.0	0.00	0.0	0.00	100.0	0.00
MAC	0.0	0.00	100.0	0.00	0.0	0.00	100.0	0.00
MAN	0.0	0.00	100.0	0.00	0.0	0.00	100.0	0.00
MAP	0.0	0.00	100.0	0.00	0.0	0.00	100.0	0.00
NAM	0.0	0.00	100.0	0.00	0.0	0.00	95.1	4.85
NIA	10.4	10.13	80.7	12.62	15.5	11.07	84.5	11.07
SOF	0.0	0.00	100.0	0.00	0.0	0.00	100.0	0.00
TET	0.0	0.00	100.0	0.00	0.0	0.00	100.0	0.00
ZAM	0.0	0.00	100.0	0.00	0.0	0.00	100.0	0.00
MOZ	0.4	0.44	99.2	0.55	1.2	0.73	97.9	1.12

SACMEQ III								
Provinces	School heads allowing HIV pupil to attend school				School heads allowing HIV teacher to teach			
	Not Sure		Yes		Not Sure		Yes	
	%	SE	%	SE	%	SE	%	SE
CAB	13.9	9.85	86.1	9.85	13.9	9.85	86.1	9.85
GAZ	0.0	0.00	100	0.00	0.0	0.00	100	0.00
INH	0.0	0.00	100	0.00	0.0	0.00	100	0.00
MAC	0.0	0.00	100	0.00	0.0	0.00	100	0.00

MAN	0.0	0.00	100	0.00	0.0	0.00	100	0.00
MAP	0.0	0.00	100	0.00	0.0	0.00	100	0.00
NAM	0.0	0.00	100	0.00	0.0	0.00	100	0.00
NIA	0.0	0.00	100	0.00	0.0	0.00	100	0.00
SOF	0.0	0.00	100	0.00	5.7	5.78	94.3	5.78
TET	0.0	0.00	100	0.00	4.2	4.30	95.8	4.30
ZAM	0.0	0.00	100	0.00	0.0	0.00	100	0.00
MOZ	1.0	0.69	99.0	0.69	1.8	0.94	98.2	0.94

The results reveal that just like in the 2007's survey, in SACMEQ IV most school heads, about 100%, believe that infected pupils as well as teachers should continue to attend school. This positive attitude towards pupils and teachers infected with HIV indicates an absence of stigma towards infected persons amongst most school heads. However, it is worrisome to realize that over 10% of school heads in Niassa said they were not sure if a pupil infected should continue attending school and if an infected teacher should continue teaching, as such negative attitudes could influence school activities and further aggravate stigma against infected pupils and teachers.

b) Discrimination against persons living with HIV or AIDS

Pupils were asked whether they could be willing to have casual contact with an HIV infected friend and take care of a relative who is ailing from AIDS. The results presented in Table 8.11 below show a large degree of discrimination against HIV infected persons among Grade 6 pupils.

Table 8-11 Percentages of pupils refusing contact with a person living with HIV or AIDS (Discrimination)

SACMEQ IV												
Provinces	Pupil Behaviour with a Friend infected by HIV						Pupils willing to care for relative ill with AIDS					
	Avoid/shun him		Not sure		Positive attitude		No		Not sure		Yes	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	18.7	4.25	19.4	4.06	61.9	6.45	20.4	4.56	21.7	2.79	57.9	5.28
GAZ	18.4	2.84	29.2	4.72	52.4	5.17	25.5	4.24	17.6	2.84	56.8	4.94
INH	16.9	3.68	20.8	2.69	62.3	5.09	19.1	3.02	15.9	3.48	65.0	5.69
MAC	10.4	2.73	12.8	2.57	76.9	4.20	18.7	4.47	12.7	3.69	68.7	7.63
MAN	9.8	2.81	41.6	3.66	48.6	3.03	17.2	2.42	30.0	2.06	52.8	3.10
MAP	13.8	3.33	36.9	3.98	49.2	3.84	21.2	2.98	22.8	2.47	56.0	3.97
NAM	25.0	4.06	15.0	2.40	60.0	4.83	23.9	4.09	15.6	2.12	60.5	4.93
NIA	16.2	2.97	14.2	2.53	69.6	3.55	20.6	3.72	19.9	3.41	59.4	3.52
SOF	16.5	3.02	16.0	3.93	67.5	5.50	29.6	3.28	9.5	2.78	60.9	3.34
TET	12.4	3.24	14.5	4.16	73.1	7.00	23.1	4.67	9.7	2.79	67.2	5.56
ZAM	24.7	3.92	21.4	4.68	53.9	4.95	18.0	3.57	17.9	3.20	64.1	4.73
MOZ	17.9	1.19	21.9	1.22	60.2	1.63	21.7	1.23	17.3	0.92	61.0	1.58

SACMEQ III												
Provinces	Pupil Behaviour with a Friend infected by HIV						Pupils willing to care for relative ill with AIDS					
	Avoid/shun him		Not sure		Positive attitude		No		Not sure		Yes	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	20.3	3.91	25.2	3.20	54.4	3.20	29.4	3.61	15.9	3.19	54.7	4.08
GAZ	17.1	2.89	37.9	4.02	45.0	4.11	20.2	4.02	25.2	3.92	54.6	6.48
INH	22.6	3.42	25.2	2.71	52.3	3.58	16.8	2.45	25.6	2.83	57.6	2.98
MAC	13.2	2.30	33.9	4.15	52.9	4.51	12.1	2.45	28.7	3.77	59.2	4.45
MAN	21.2	3.24	28.8	3.84	50.1	3.77	18.6	2.83	21.3	2.94	60.1	3.60
MAP	13.9	2.28	32.1	3.96	54.0	4.46	19.8	3.62	24.8	2.96	55.3	4.90
NAM	34.1	5.79	17.2	3.26	48.7	5.66	25.4	4.40	25.9	3.90	48.6	4.91
NIA	16.7	3.74	15.6	2.91	67.7	4.52	22.7	4.57	14.7	3.23	62.6	6.58
SOF	14.2	1.77	21.8	2.91	64.0	3.48	25.4	4.11	19.9	2.72	54.7	4.29
TET	12.7	2.82	21.8	4.97	65.4	6.13	36.8	8.02	12.7	2.68	50.6	7.43
ZAM	26.6	5.32	18.7	3.32	54.7	4.59	18.5	2.64	19.2	2.99	62.3	3.57
MOZ	20.4	1.29	25.1	1.12	54.5	1.44	21.8	1.21	22.0	1.03	56.2	1.47

The results show that, from 2007 to 2013, Grade 6 pupils have improved slightly their attitudes toward a person who is infected by HIV. The proportion of the pupils which expressed a positive attitude towards a friend infected with HIV raised, although not significantly (from 54.5% in 2007 to 60.2% in 2013). Furthermore, the proportion of pupils

that showed a positive attitude towards a relative infected by HIV has also increased around 5 percentage points from 56.2% in the 2007's survey to 61% in the 2013's.

Across provinces, the highest proportion can be seen in Maputo Cidade concerning both cases, with 76.9% for positive attitude towards a friend and 68.7% for positive attitude towards a relative infected by HIV. The lowest proportion were found in Manica, with corresponding percentage being 48.6% and 52.8% respectively. Therefore, in general, there was no a strongly marked tendency for discrimination against a person living with HIV or AIDS.

c) Risk perception about HIV and AIDS

Teachers' and school heads' self-assessment of their own risk of contracting HIV was another aspect analysed. The results are presented below in Table 8.12.

Table 8-12 - Percentages of pupils whose teachers and school heads had different risk assessments about their own risk of contracting HIV

SACMEQ IV												
Own HIV Risk Assessment												
Province	Teachers						School heads					
	No/Low Risk		Medium Risk		High/Very High Risk		No/Low Risk		Medium Risk		High/Very High Risk	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	42.9	14.74	5.7	5.85	51.4	14.63	20.5	13.03	5.6	5.69	73.9	13.46
GAZ	34.6	11.96	17.5	9.60	48.0	12.12	26.3	11.64	9.7	6.85	64.0	12.45
INH	56.0	12.94	3.7	3.67	40.2	13.39	43.7	13.56	17.9	11.82	38.5	13.36
MAC	52.0	13.63	20.7	8.94	27.3	10.73	47.4	14.17	26.1	11.98	26.6	12.23
MAN	40.3	12.27	22.2	9.08	37.5	11.93	63.4	12.98	0.0	0.00	36.6	12.98
MAP	51.1	12.90	16.1	8.79	32.8	12.11	65.7	14.69	8.1	8.13	26.2	13.72
NAM	32.5	9.04	10.7	6.24	56.7	9.52	38.0	9.99	15.4	8.25	46.6	10.24
NIA	51.3	14.90	9.5	9.35	39.1	14.15	36.5	14.91	9.8	9.63	53.7	15.26
SOF	42.2	12.82	17.0	9.92	40.8	12.38	33.8	12.75	7.9	7.76	58.3	13.29
TET	52.2	14.1	11.8	8.3	36.3	13.8	28.2	12.8	6.7	6.71	64.6	13.4

	0	1	1	5	9	5	5	2			8	4
ZAM	38.0	10.74	27.1	9.34	34.9	10.31	51.2	10.89	14.8	7.54	34.0	10.53
MOZ	42.9	3.79	15.7	2.66	41.4	3.67	42.3	3.91	11.8	2.64	45.9	3.88

SACMEQ III												
Own HIV Risk Assessment												
Province	Teachers						School heads					
	No/Low Risk		Medium Risk		High/Very High Risk		No/Low Risk		Medium Risk		High/Very High Risk	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	38.2	9.67	14.5	8.20	47.3	10.35	15.5	8.86	6.8	6.80	77.7	10.58
GAZ	20.2	8.69	14.4	7.01	65.3	8.73	38.7	12.93	0.0	0.00	61.3	12.93
INH	56.4	10.11	13.6	6.29	30.1	10.66	40.7	14.35	2.6	2.73	56.7	14.22
MAC	65.2	9.30	10.8	4.10	24.0	8.63	61.4	13.11	15.4	9.06	23.2	12.01
MAN	38.1	10.96	6.1	3.61	55.8	11.95	37.5	12.69	15.4	10.49	47.1	13.12
MAP	34.3	8.85	6.7	6.69	59.0	9.60	50.8	13.19	11.0	7.67	38.2	12.85
NAM	56.6	9.36	6.2	4.37	37.2	9.35	14.8	9.89	10.7	7.79	74.5	11.74
NIA	34.0	12.05	1.1	1.12	64.9	11.94	53.6	13.15	8.1	7.91	38.3	12.57
SOF	47.7	12.44	11.2	7.21	41.2	10.38	33.3	12.13	0.0	0.00	66.7	12.13
TET	44.0	10.20	11.0	7.59	45.0	11.07	16.5	9.81	16.9	11.17	66.6	13.04
ZAM	73.4	8.67	11.2	6.48	15.4	6.98	48.4	11.93	23.4	10.63	28.1	9.93
MOZ	48.8	3.12	10.0	1.91	41.2	2.98	38.2	3.84	8.8	2.56	51.1	3.82

The results show that at the national level, in general, the situation remains the same from the SACMEQ III to SACMEQ IV. The level of awareness of the risk of contracting HIV is almost the same for both teachers and school managers, since the changes between the two surveys are not statistically significant. For instance, in 2007, proportions of pupils who had had teachers that perceived themselves to be at no risk was 48.8%, while in 2013 the corresponding figure was around 42.9%. Similar to the teachers, the percentage of pupils who had head teachers with perception of no/low risk was 38.2% in 2017 and 42.3% in 2013.

In view of these results, there is a need for interventions to make head teachers sensitive on how to handle HIV positive pupils and teachers as well as dispelling fears of contracting HIV from the school community.

8.4 Conclusion

From 2007 to 2013, pupils' knowledge of HIV has declined significantly. In SACMEQ III pupils' score was 507, while in SACMEQ IV the correspondent score was 445. It is important to underscore the decrease of mean score was 62 score points, around 0.62 SD. Teachers' score distribution is similar to the pattern of pupil one, although, the decline was not so sharp as observed in pupil's score. Across all subjects, the HIV teachers' score decline ranges from 16 in reading teachers to 22 score points in mathematics teachers. It is important to understand the reasons behind such huge decrease. The pupils' score decrease could be associated with teachers score decline.

Attitudes toward infected persons were in general positive, especially for the teachers and school heads although overall positive awareness increased amongst them. There is a need for some attention aimed at changing much more the attitudes of pupils. In a certain way, these results imply that education or knowledge alone is not enough for changing behaviour. Much work still remains to be done in terms of attitude building towards HIV infected people in order to address the problem of stigmatization and discrimination. There is a need for specific interventions that should focus on attitude transformation. It also appears that it is time to launch a comprehensive review of all HIV-AIDS prevention education programmes in Mozambican schools.

9. Chapter 9. Factors associated with Grade 6 Pupils' Achievement. Multilevel Analysis⁵

9.1 Introduction

This chapter presents multilevel analyses of the data. These analyses were carried out in order to identify the major pupil-level and school-level factors influencing achievement in reading and mathematics among Grade 6 pupils in Mozambique, whilst at the same time controlling for the effect of other factors.

Improving quality of education has been the major challenge facing the education system in Mozambique. Quality and equity are two indicators lagging behind. Understanding what factors are influencing school effectiveness is a way forward to identify the most important predictors of quality of education in the Mozambican context. The specific question this section addresses is: Which are the main factors at school and pupil levels explaining pupil achievement in each of the assessment tests in SAMEQ III and SACMEQ IV?

This section presents multilevel analyses of the data, also called Hierarchical Linear Model (HLM). These analyses were carried out in order to identify the major pupil-level and school-level factors influencing achievement in reading and mathematics among Grade 6 pupils in Mozambique in SACMEQ IV as compared to SACMEQ III. The computer package used for the multilevel analyses in this study is Mixed Models, a routine that can be found in statistical packages, such as SPSS 18.

HLM is a type of regression analysis for multilevel data, where the dependent variable is at the lowest level. This study deals with data at school and pupil level, that is, pupils nested within schools. Three kinds of arguments can be put forward for the choice of multilevel analysis instead of an OLS regression of disaggregated data: (i) standard errors and tests based on OLS regression are questionable because the assumption of independent residuals is invalid; (ii) there is a need to disentangle variability at the various levels, in this study to compare the variation between and within schools; (iii) with learners nested within classes, and classes nested within schools, these grouping effects imply that learners are no longer independent and their responses are correlated, and hence there is a loss of independence

among observations. This loss of independence constitutes a serious violation of a key assumption underlying a large body of parametric statistical procedures, but it is properly accounted for through the use of HLM.

The section will start with description of all variables at school level and pupil level included in the questionnaire. In the first step of the analysis, a null model of HLM was ran in order to obtain the amounts of variance available to be explained at each level of the hierarchy (Bryk and Raudenbush, 2002). The null model was the simplest model because it contained only the dependent variable (for this study, pupil reading or mathematics score) and no predictor variables were specified at any level. The second step was to build up the pupil-level model or the so-called “unconditional” model at Level-1. This involved adding pupil-level predictors only to the model. The objective of this step was to examine which pupil-level variables had statistically significant ($p < 0.05$ level) effects on the outcome variables. In the next step school variables were added to the model. Finally a comparative analysis of the results is presented, highlighting the significant variables that are common in SACMEQ III and SACMEQ IV.

9.2 Estimation of school effects

The results of the empty model, which has no explanatory variables, are presented in Table 9.1. It provides the basic partition of the variability in the data between the two levels.

Table 9-1 -Estimation of the variance components in the empty model

		SACMEQ IV				SACMEQ III			
Variables		Reading Estimate	SE	Mathematic Estimate	SE	Reading Estimate	SE	Mathematic Estimate	SE
Grand mean		484.8	4.24	502.1	5.09	473.6	3.35	481.7	2.7
Variance Component s	Pupil Level	3498.7	83.7	3020.5	72.8	3786.6	91.8	3995.4	97.2
	School Level	3313.1	356.8	4899.0	513.6	1759.6	208.9	1149.8	147.0
	Intra-class correlation	0.486		0.619		0.317		0.223	

The data shows that the intra-class correlation has increased significantly from SACMEQ III to SACMEQ IV, both in reading performance (0.317 to 0.486) as well as in mathematics

performance (0.223 to 0.619). The increase in the intraclass correlation is statistically significant. The comparability of the sample over time is questionable.

The target population of this study were Grade 6 learners attending the registered mainstream government or nongovernment schools in 2007 and 2013 in Mozambique. Taking into consideration that the study compared the results of SACMEQ III and IV, it was of paramount importance that the two samples were comparable. However, the comparability assumption could be put in question due to the sharp increase in the number of pupil and schools from 2000 to 2013.

The number of Grade 6 pupils has increased by 51% from 2007 to 2013 (from 275,034 in 2007; to 416337 in 2013, see Table 9.2). Consequently, the number of schools have been also increasing, however, at higher rate, when compared with pupils' increasing rate, (around 300% one point in time to the next; from 1610 in 2007, to 5086 in 2013).

The figures suggest that target population change over time, therefore there is a likelihood of change in the learner composition intake between 2000 and 2007. Additionally, this high rate of increase in number of schools is an approach to reducing the direct costs of schooling by building new schools closer to the homes of potential students. One can argue that pupil from poor and affluent neighbourhoods are likely to go to different type of schools. Therefore, the between school variation is likely to the increase.

Table 9-2 Sampling framework SACMEQ III and SACMEQ IV

	Number of Schools	Number of Pupil
2007 SACMEQ III	1610	275034
2013 SACMEQ IV	5086	416337

Source: Ministry of education 2014

Although, the sample comparability is questionable, an exploration of multilevel analysis is worth to understand the factors associated with achievement. The next section shows the set of variables that are statistically significantly associated with the pupils' achievement in

reading and in mathematics as well as the comparison to the ones that association with the achievement was statistically significant in the previous survey.

9.3 Hypothesised models

In the multilevel analyses reported in this chapter, two separate two-level models were hypothesised and examined: one for factors influencing achievement in reading and the other for factors influencing achievement in mathematics. The hierarchical structures of these models were pupils at level 1 and schools at level 2. In other words, pupils were nested within schools. Table 9.3 summarises all the variables that were used in each level and their significance in each one of the models.

Table .9-3 -Variables tested on each level of the hierarchy

Level	Variable of interest	Variable(s) Tested in HLM	SACMEQ IV		SACMEQ III	
			Read	Math	Read	Math
Pupil	Age in months	PAGE_1	✓	✓	✓	
	Pupil sex	R_PSEX_1	✓	✓	✓	✓
	Speaking Portuguese	ZPENGLISH_1	✓	✓	✓	✓
	Home background	zpses_1	✓	✓	✓	✓
	Books at home	ZPBOOKSHM_1	✓			✓
	Meals per day	ZPMEAL_1	✓	✓	✓	
	Grade repetition	ZPREPEAT_1	✓	✓	✓	
	Read/calculate	ZPREAD_1, ZPCALC_1 ^a	✓			
	Extra tuition	ZPEXTPAY_1				✓
	Homework corrected	ZPHMWKRC	✓	✓	✓	
	Own textbook	ZPTEXTR_1, ZPTEXTM_1 ^a	✓	✓		
	Days absent	ZPABSENT_1	✓			✓
	No material	HPMAT_1				
	Working place	HPLACE_1				
	School	Average pupils' age	ZPAGEMON_2 ^a	✓		✓
Proportion of girls		ZPSEX_2				
Average speaking Portuguese		ZPENGL_2	✓			
Average home background		ZPSES_2	✓			
Average books at home		ZPBOOK_2				
Average meals per day		ZPREGM_2	✓	✓		
Average grade repetition		ZPREPE_2	✓	✓		✓
Average read/calculate		ZPREAD_2, ZPCALC_2 ^a	✓			
Average extra tuition		ZPEXTA_2		✓		
Average homework		ZPHWK6_2, ZPHWK8_2 ^a	✓	✓		
Average own textbook	ZPTEXT_2 ZPTXT2_2 ^a	✓				

Average days absent	PABSEN_2	✓	
Average no material	HPMAT_2		
Average working place	HPLACE_2		
Class size	xclsize, yclsize ^a	✓	✓
Teacher sex	ZXSEX, ZYSEX ^a		✓
Teacher age	ZXAGE, ZYAGE ^a	✓	
Teacher training	ZXQPROF, ZYQPROF ^a		
In-service training effective	ZXINSERVE, ZYINSERVE ^a	✓	
Teacher classroom resources	ZXCLRES9, ZYCLRES9 ^a		
Teacher teaching hours	ZXHRTEAC, ZYHRTEAC ^a		✓
Meeting parents	ZXMEET, ZYMEET ^a		
Inspector visits	ZXINSTOT, ZYINSTOT ^a		
Teacher possession	ZXRESTOT, ZYRESTOT ^a	✓	
Teacher lighting source	ZXLIGHT, ZYLIGHT ^a		

Level	Variable of interest	Variable(s) Tested in HLM	SACMEQ II		SACMEQ III	
			Read	Math	Read	Math
	School head gender	ZSSEX	✓	✓		
	School head age	ZSAGELVL	✓			
	School head training	ZSQTT				
	School head teaching hours	ZSTCHMIN				
	School location (rural/urban)	ZSLOC				
	Pupils-teacher ratio	ZSPTRATI				✓
	Teachers tertiary education	ZSTCHACA			✓	✓
	School size	BIGSHIFT				
	Pupil-toilet ratio	ZSTRATIO				
	Total School resources	zsrto22				
	Pupils' behaviour	HPUBB				
	Teachers' behaviour	HSTBB				

Community contribution	HSCOMM		
Teacher score	zraloct, zmaloct ^a	✓	✓
Borrowing books	ZPBORROW		
Frequencies of tests	ZXTEST, ZYTEST ^a		✓

a = Variable listed first is for testing in the reading models while the second variable is for testing in the mathematics models. .

✓ = Indicates that the variable has a significant ($p < 0.05$) influence on achievement test in reading or in mathematics

The results show that as well as in the SACMEQ III, in the SACMEQ IV, both at the learner level and at the school level there are more variables associated with reading achievement than the achievement in mathematics. Therefore, at the pupil-level model, the significant variables in SACMEQ IV are almost the same in reading as well as in mathematics achievement, except books at home, read/calculate for enjoyment and days absent. When school-level variables are included, it is interesting to mention that the most important variables reflect more characteristics of the school itself than those of teachers, especially in regarding to relationship with the achievement in reading. It suggests that school features variables really need to be addressed.

9.4 Estimation of the main effects at pupil and school-level

As it was referred at the previous paragraph both at the learner level and at the school level, there are more variables associated with reading achievement than the achievement in mathematics, that is why we have proposed data modelling by hierarchical regression to find the two level factors associated with student reading performance. The final two-level hierarchical models for reading is presented in table 9.3, for SAMEQ III and SACMEQ IV. Only the factors that had a significant ($p < 0.05$) direct effect on pupil achievement are displayed with their respective regression coefficients. A variable was considered to be significant at 5% level of significance if its coefficient, taken in absolute terms, was more than twice its standard error (SE). The table also shows, in the last row, the proportion of variation explained by the variables included in each model. The level-one explained that variance is defined as the proportional reduction in the mean squared prediction error and the level two explained that proportion of variance is defined as the proportional reduction in

mean squared error for the prediction of Y_j randomly drawn level two unit (Bosker, 1999). It is worth also to mention that weighting (with PWEIGHT2) was undertaken in the analysis of the HLM to make sure that the design of this study (two stage sample) was taken into consideration in the computation of the standard errors.

Table .9-4 Estimates for two-level models-Reading

	Variable name	Variable included	SACMEQ IV				SACMEQ III							
			Null model		Pupil level		Pupil/School level		Null Model		Pupil level		Pupil/School level	
	<i>Fixed Effects</i>		Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coef	SE		
	Intercept		484.9	4.32	487.7	7.48	416.9	34.0	473.6	3.35	467.8	12.3	691.7	147.7
					7								1	
Pupil	Age in months	PAGE			-0.2	0.03	-0.2	0.03			-.17	.04		
	Pupil sex	R_PSEX			-11.1	0.98	-11.1	0.98			12.6	2.0	14.5	3.7
	Speaking Portuguese	ZPENGLISH			12.3	1.79	12.1	1.79			-25.7	4.1	-27.1	7.5
	Home background	Zpses			3.4	0.23	3.4	0.23			3.9	.48	4.2	.93
	Books at home	ZPBOOKSHM			0.3	0.04	0.3	0.03						
	Meals per day	ZMEAL			2.7	0.26	2.7	0.26			1.8	.71	2.9	1.3
	Grade repetition	ZPREPEAT			-22.4	1.14	-22.3	1.14			7.7	2.1	9.0	3.8
	Read/calculate	ZPREAD			2.29	0.41	2.3	0.41						
	Extra tuition	ZPEXTPAY1									-2.8	3.2		
	Homework	ZPHMWKRC			7.42	0.50	7.3	0.50			-5.9	2.3		

	corrected						
	Days absent	PABSENT	-0.58	0.17	-0.58	0.17	-1.67 .55
	Own text book	ZPTEXTR	-3.31	1.13	-3.3	1.13	
School	Average speaking portuguese	ZPENGLISH_2					
	Average meal per day	ZMEAL_2		2.2	3.37		
	Average pupils' age	ZPAGEMON_2					-1.09 .49
	Average grade repetition	ZPREPEAT_2		-23.4	25.1		
	Teaching hours	ZXHRTEAC					-.90 .46
	Pupil Teacher ratio	ZSPTRATI					.81 .29
	Teacher tertiary education	ZSTCHACA					636.6 209.5
	Average own textbook	ZPTEXTR_2		-1.88	17.1		
	Average homework corrected	ZPHMWKC_2			26.7	7.17	
	Random Effects						

Variance component	Residual /pupil	3473.99	27.9	2591	32.0	2591.	32.0	3786.6	91.8	3586.5	87.5	3738.	160
	Intercept /school			.9		8						4	
		3491.8	363.	2848	318.6	2552.	289.6	1759.6	208.9	1244.8	157.1	879	213.1
			5	.6		4							
Proportion of variation Explained by the variables	Pupil		25.4		25.4%				13%		17%		
	School		18.4		26.9				27%		45%		
			%		%								
			%		%								

9.4.1 Pupil-level factors or variables

The results show that level one variables figure as more important as predictors of reading achievement in SACMEQ IV than in the SACMEQ III. In SACMEQ IV, the explained pupil level variance is bigger than that of school at the pupil level, and it differ from this last in just 1.5 percentage points. One can argue that it is a turnaround of the results found in the SACMEQ III.

In summary, other factors being equal, the significant variables that have effects on achievement in reading for SACMEQ III are Age in months, Pupil sex, Speaking Portuguese outside school, Home background, Books at home, Meals per day, Days absent and Homework corrected. These nine variables together with Home background and Own textbook account for 25.4% of the pupil-level variance and 18.4% of school the level variance for reading achievement. In SACMEQ IV, the significant variables follow almost the same pattern of that of SACMEQ III, especially at the set of variables regard to pupil level.

9.4.2 School-level factors

When school-level factors were added to the model, the amount of explained school variation in reading increased dramatically in SACMEQ III, from 27% to 45%. In the SACMEQ IV, it has increased slightly just 8.5 percentage points, from 18.4% to 26.9%. But while the significant variables in SACMEQ III were Average pupils' age, Teaching hours, Pupil/Teacher ratio and Teacher tertiary education, in the SACMEQ IV, there is a single variable for which the association with pupils' achievement in reading is statistically significant (Average homework corrected). At this level, results suggest that pupils who present themselves with corrected homework are an important predictor of the achievement in reading.

Although they are not portrayed in the hierarchical regression above presented in the table 9.3, the issues of high teaching load (reduced number of shifts), small classes, and teacher academic qualifications are issues that the Ministry of Education should look carefully into within the policy of improving the quality of education.

This pattern of the results are consistent with findings of Lee, Ross and Zuze (2005). For instance, using multilevel analysis and the Hierarchical Linear Model they showed the importance of factors such as resources, teacher quality, shifts and enrolment size in explaining variation between schools. Generally, schools with access to physical resources in urban areas with higher quality teachers are likely to have higher achievement. Physical resources include libraries, administrative offices, playgrounds, electricity, running water and equipment. Shifts and enrolment size seem to have a negative impact on pupil achievement.. Similar to the number of shifts is the enrolment size, which is negatively related to school achievement.

Policy suggestion 9.1. The Ministry of Education should continue to promote a general policy of advocacy about the importance of the main predictors of pupils' performance, at different levels of the Ministry of Education, as well as involving parents more.

9.5 Conclusion

This chapter discussed the main factors influencing pupil achievements, and the main points found are:

- The data show that the intra-class correlation has increased significantly from SACMEQ III to SACMEQ IV, both in reading performance (0.317 to 0.486) as well as in mathematics performance (0.223 to 0.619).
- There was an increase in school variation across the two surveys, there was also increase in pupil variation in where the amount of school variation in reading has increased by 88.3% from 2007 to 2013, but the pupil variation has reduced 7.6% in the same period. A similar pattern can be seen in mathematics, since the school variance at least quadrupled in referred period and the pupil variance has reduced about 24%.
- The level one variables figure as more important as predictors of reading achievement in SACMEQ IV than in the SACMEQ III.
- When school-level variables are included in the reading model, the amount of explained school variation in reading increased dramatically in SACMEQ III, from

27% to 45%, and in the SACMEQ IV, it has increased slightly just 8.5 percentage points, from 18.4% to 26.9%.

- While the significant variables at the school-level in SACMEQ III were Average pupils' age, Teaching hours, Pupil/Teacher ratio and Teacher tertiary education, in the SACMEQ IV there is only one variable associated with pupils' achievement in reading that is statistically significant (Average homework corrected); what suggests that pupils who present themselves with corrected homework are an important predictor of the achievement in reading.

10. Chapter 10 Agenda for Action

10.1 Introduction

This chapter aims to summarize and review all the research-based policy suggestions that have been made throughout this report. The preceding chapters presented the analysis of the data emanating from a national survey carried out in a sample of 196 primary schools in Mozambique in the year 2013. The analyses provided detailed information on characteristics of Grade 6 pupils, their teachers and head teachers; the conditions of physical infrastructure and the learning environment of primary schools; equity in human and material resource distribution among provinces, and among schools within provinces; the learning achievement levels of pupils and their teachers; and major variables affecting pupil learning achievement in Grade 6.

All the research-based policy suggestions that have been made throughout the report have been reviewed and categorised into five main groups and then linked with time frames and costs. About time frames, “short” implies that the policy recommendation can be implemented within 6 months to one year; “medium” means it can be implemented within one to two years; and “long” means it can be implemented in three to five years. “Low” costs are those that can be accommodated within the existing budget, and may simply require the redeployment of existing financial, human and physical resources or using them more efficiently; “moderate” costs are those that require a few additional funds to the Ministry; and “high” costs require major capital expenditure on physical infrastructure or human resources.

It was also attempted to identify the office within the Ministry that would be in charge for leading the debate and taking action on each suggestion. There had been some changes in the structure of the Ministry of education as described in Chapter One so that the necessary adjustments to identify the departments as per current structure were made. The purpose was to present each policy suggestion to the relevant individual or section of the Ministry and then provoke discussion concerning the validity of the suggestion, modify the suggestion if necessary, and then integrate the revised

suggestions into the Ministry's work plans. The policy suggestions were made taking into consideration the social, economic and political realities in the country. Most of the suggestions were focused on "national" implementation because Mozambique's system of planning is still mostly centralized, and the Ministry's work plans therefore operate at national level.

The feasibility of the policy suggestions will, to a certain extent, also hinge on the availability of resources and will, therefore, require a well-considered prioritization schedule. Altogether, 25 policy suggestions were made from Chapters 3 to 9. All these suggestions were classified into the five main groups described below. The policy suggestions were then listed in Table 10.1.

The policy suggestions that emerged from this analysis fall into five main groups as follows:

six suggestions (3.1, 3.2, 3.3, 3.4, 8.4 and 9.1) that required a variety of **Group 1: Consultation with staff, community, and experts.** This group contained consultations and discussion with a range of stakeholders to ensure, for example, that the textbooks are distributed timely and in enough quantities and to ensure that the ZIPs (Cluster of schools) are working effectively.

Group 2: Reviews of existing planning and policy procedure. This group contained ten suggestions (4.2, 5.2, 5.3, 5.4, 5.5, 6.1, 7.1, 8.1, 8.2 and 8.5) and these focused on the need to revisit and reform existing regulations and practices, implement the existing regulations and formulate new policies. For example, it involves re-examination of homework guidelines, changes in recruitment arrangements to achieve gender balance, introducing new topics in teacher training courses, reviewing the role of school inspectors and defining development policies for school directors.

Group 3: Data Collection for planning purposes. This group contained four suggestions (4.1, 5.1, 6.4, and 6.5) and these identified information gaps that could only be addressed with suitable supplementary data collection. For example, there was the need to find out why the pupil/teacher ratio within a province was so uneven.

Group 4: Education Policy research projects. This group contained two suggestions (5.6 and 8.3) that identified specific educational policy research projects. For example, carrying out a study that focuses on the impact of HIV and AIDS at school level

Group 5: Investment in infrastructure, human and material resources. This group contained four suggestions (4.3, 4.4, 6.2 and 6.3) which dealt with large scale provincial and national undertakings addressing educational inputs, process characteristics that would require substantial funding and a great deal of time to implement.

Table10-1 A summary of the policy suggestions in relation to relevant actors and related time frame and cost of implementation

POLICY SUGGESTIONS	RESPONSIBLE	TIME	COST
Group 1: Consultation with staff, community, and experts			
Policy suggestion 3.1. The Ministry of Education should disseminate the National Gender Policy for Education Sector	Directorate for Transversal Issues	Medium	Low
Policy suggestion 3.2 The Ministry of Education should commission a study to identify the impact and constraints in the implementation of the Gender Policy particularly in the Central and Northern Provinces	Directorate of Transversal Issues	Medium	Medium
Policy suggestion 3.3. The Directorate for Primary Education should develop activities in the Clusters of Schools (ZIPs) for advocacy of formative evaluation in the classroom and use of assessment results for improvement of classroom instruction.	National Directorate for Primary Education	Medium	Low
Policy suggestion 3.4. The Ministry of Education should continue to promote general policy of advocacy about the importance of the homework and the correction of such homework in the schools and with the parents.	National Directorate for Primary Education	Medium	Low
Policy suggestion: 8.4. The Provincial Directorate of Education should involve the school community in preparing and developing educational activities,	National Directorate for Primary Education	Medium	Low

POLICY SUGGESTIONS	RESPONSIBLE	TIME	COST
particularly as regards the dissemination of information on sex education and prevention methods against HIV and AIDS.			
Policy suggestion 9.1. The Ministry of Education should continue to promote general policy of advocacy about the importance of the main predictor on pupil's performance at different levels of Ministry and parent's involvement.	National Directorate for Primary Education	Medium	Low
Group 2: Reviews of existing planning and policy procedures			
Policy suggestion 4.2. It is suggested that the Ministry of Education commissions a small study to examine the feedback practices in the classrooms of those pupils who are given tests less frequently than two or three times per month. The recommendations on the ideal number of tests that a teacher should give to pupils must be thereafter be implemented.	National Directorate for Primary Education	Medium	Low
Policy suggestion 5.2. The National Institute for Educational Development (INDE) should review the training provided by the various partners, harmonize the training and set standards.	National Institute for Educational Development	Long	High
Policy suggestion 5.3. The Teacher Training Directorate should define the policy for school directors' development and the Provincial Directorate of Education should ensure the implementation of this policy.	Directorate of Teacher Training	Medium	Low
Policy suggestion 5.4. The Ministry of Education through the Directorate of Teacher Training should review the contents of school directors' training courses.	Directorate of Teacher Training	Medium	Medium
Policy suggestion 5.5. The Ministry of Education (Inspectorate) should commission a small study to determine the exact nature of the following problems among pupils: arriving late at school; dropping out of school; classroom disturbance; skipping classes and	Inspectorate	Medium	Medium

POLICY SUGGESTIONS	RESPONSIBLE	TIME	COST
health problems, and suggest measures that should be taken to minimize them			
Policy suggestion 6.1. The Ministry of Education through should define the minimum classroom resources to ensure that every classroom has basic resources, especially in rural areas where the pupil has reduced access to books at home.	Directorate for Quality Assurance and Management	Short	High
Policy Suggestion 7.1. The MINED should carry out a programme at National, Provincial, District and School level aimed at improving pupils performance in reading and in mathematics. (programa Nacional de Leitura e Escrita?)	National Directorate for Primary Education	Medium	Medium
Policy Suggestion 7.2. The Ministry of Education (INDE) should increment subject knowledge component in the teacher training courses especially in mathematics in order to suppress the teachers' gaps in this subject.	National Institute for Educational Development	Long	Medium
Policy suggestion: 8.1. The Ministry of Education should make further investigations to identify the competencies that might be lacking in the school syllabus for HIV and AIDS knowledge, in teacher training curriculum and in the teachers' teaching practices.	National Directorate for Primary Education	Medium	Medium
Policy suggestion: 8.2. The Ministry of Education needs to follow up on the implementation or usage of the HIV and AIDS kits at school.	Directorate for Nutrition and School Health	Medium	Medium
Policy suggestion: 8.5. Ministry of Education should work out a strategy on attitude change on HIV and AIDS	Directorate for Nutrition and School Health	Medium	Medium
Group 3: Data collection for planning purposes			
Policy suggestion 4.1. The Ministry of Education should conduct the study to find out why in the some provinces there was regression on gender balance.	National Institute for Educational Development	Medium	Medium

POLICY SUGGESTIONS	RESPONSIBLE	TIME	COST
Policy suggestion 5.1. The Ministry of Education, through the Directorate of Planning should include the school director gender as an indicator to be monitored through the annual school census data collected by the EMIS and constantly monitor this to timely adoption of specific policies for provinces that do not show improvement in this aspect.	Directorate of Planning	Short	Low
Policy suggestion 6.4. The Ministry of Education should develop a set of minimum standards in terms of facilities that each school should have and communicate this information to every school in order to facilitate prioritization.	Directorate of Quality Assurance and Management	Short	Low
Policy suggestion 6.5. The Ministry of Education, through the Directorate of Planning should include the school director gender as an indicator to be monitored through the annual school census data collected by the EMIS and constantly monitor this to timely adoption of specific policies for provinces that do not show improvement in this aspect.	Directorate of Planning	Short	Low
Policy suggestion 6.6. The Ministry of Education (INDE) should conduct the study to find out why in the some province there was regression on gender balance.	National Institute for Educational Development	Medium	Medium
Group 4: Educational policy research programm			
Policy suggestion 5.6. The Ministry of Education (Inspectorate) should conduct a study in order to establish the nature and causes of the following behavioural problems associated with teachers: arriving late for school; health problems; absenteeism, skipping classes and alcohol abuse. This study should recommend ways of addressing them.	Inspectorate	Medium	Medium
Policy suggestion: 8.3. The Ministry of Education should investigate how to bridge the gaps in pupils knowledge levels associated with SES	National Directorate for Primary Education	Medium	Low

POLICY SUGGESTIONS	RESPONSIBLE	TIME	COST
Group 5: Investment in infrastructure, human and material resources.			
Policy suggestion 4.3. The Ministry of Education through the National Directorate Construction should maintain and invest in opening more resource centre.	National Directorate Construction	Long	High
Policy suggestion 4.4. Taking into consideration that HIV and AIDS is a new subject/contents for teachers the Ministry of Education should provide brochures for all teachers.	Directorate for Nutrition and School Health	Long	High
Policy suggestion 6.2. The Ministry of Education should make the effort to supply all classrooms in primary schools with essential resources, and the focus must be on wall charts, classroom libraries or book corners and the accompanying bookshelves, storage cupboards as well as teachers' tables and chairs.	National Directorate for Primary Education	Short	High
Policy suggestion 6.3. The Ministry of Education through the Directorate of Planning (DIPLAC) should take steps to ensure that every pupil has his or her own textbook for each subject especially for poor family of rural areas. MINED has to reduce the leakage in order to ensure that the textbooks reach schools. For the durability of the textbooks there is a need to teach pupils how to take proper care of them.	Directorate of Planning	Long	High

10.2 Implementing the policy suggestions

The challenge of implementing all the policy suggestions should not be overlooked. It is recognized that it might be difficult for the Ministry of Education to implement all the policy suggestions simultaneously, while some of the policy suggestions might already be part of the Ministry's pre-existing action plan. However, it will be important for the Ministry to put together a clear plan for the implementation of the policy suggestions so that maximum benefits can be derived from the investment in this research.

The implementation of a policy suggestions plan should be according to priorities defined by a set of criteria. These criteria should not only consider cost and/or time frame, but should also examine a broader range of issues such as the seriousness of certain problems observed or highlighted in this study and consequently the urgency of decisive action, the nature and magnitude of benefits that are likely to accrue from the implementation of suggested actions, and the linkage between certain policy suggestions and the education system's fundamental goals.

The implementation plan should be based on a strategy that considers facilitating and constraining factors within Mozambique's context, and the linkages that exist between the policy suggestions made and other developments both within and outside the education sector. The Ministry needs to consider that the implementation of some of the policy suggestions will require inputs from a variety of stakeholders. These stakeholders could be other departments within the Ministry itself, other government ministries, other national or international institutions or agencies, the private sector, parents, donors, and others. The inputs from all of these will require good co-ordination. (The coordination of all these activities fall within the sphere of the Directorate of Planning).

10.3 Conclusion

The policy agenda and the additional comments made on the policy suggestions have been presented in the full knowledge that Mozambique's Ministry of Education operates within a given context. The Ministry also has its own priorities, as set out in the Government's 5 Year Plan and the Education Sector Strategic Plan. The policy actions that it adopts for implementation have to be related to other national development plans, goals and targets, the nation's financial, human and material resources and rules governing their allocation and utilisation, as well as the socio-cultural values that shape decisions. A good understanding of the complex relationships among the broad range of home and school-related variables that affect the quality of the education offered is a must if "good" decisions are to be made.

With the HIV and AIDS epidemic becoming a growing threat to the gains made in education, there could be a shift of government focus, with more resources being

devoted to this area. Similarly, there could be other emerging issues such as the growing importance of information and communication technologies, decentralization and globalization that may attract government attention or necessitate a shift in focus. In order to sustain the gains made by the sector, while at the same time addressing the outstanding challenges, will require extreme care in the choice of actions. It is in this regard that the decision makers will find this study useful.

11. References

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12. Annexes

Table 12-1 Means and sampling errors for the general quality of pupils' homes

Provinces	SACMEQ IV (2013)		SACMEQ III (2007)	
	Mean	SE	Mean	SE
CAB	7.7	0.43	6.7	0.50
GAZ	9.9	0.34	8.8	0.43
INH	9.0	0.37	8.2	0.31
MAC	12.5	0.13	12.1	0.14
MAN	8.8	0.47	8.3	0.47
MAP	12.1	0.23	10.9	0.42
NAM	8.3	0.44	7.7	0.52
NIA	7.7	0.49	6.4	0.44
SOF	9.0	0.49	8.9	0.62
TET	8.7	0.50	6.6	0.37
ZAM	8.0	0.52	6.9	0.36
MOZ	9.2	0.14	8.5	0.14

Table 12-2 Home assistance with school related work (SACMEQ III and SACMEQ IV)

Provinces	SACMEQ IV (2013)		SACMEQ III (2007)	
	Home assistance/ help 'most of the time' with school work		Home assistance/ help 'most of the time' with school work	
	%	SE	%	SE
CAB	26.1	4.68	29.7	3.53
GAZ	21.1	4.13	32.1	6.84
INH	26.9	3.87	39.9	5.57
MAC	43.2	3.65	44.3	3.33
MAN	33.1	8.21	46.7	9.79
MAP	31.3	2.99	43.6	5.14
NAM	21.3	3.06	29.1	5.18
NIA	17.9	4.72	41.4	7.87
SOF	29.7	5.02	32.0	4.71
TET	24.0	5.81	23.1	5.01
ZAM	19.9	3.20	33.4	5.53
MOZ	26.0	1.34	35.6	1.78

Table .12-3 - Means and sampling errors for the experience as school directors of the average pupil, SACMEQ III and IV

Provinces	Experience as school head
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	SACMEQ IV		SACMEQ III	
	Mean	SE	Mean	SE
CAB	6.5	1.27	10.1	2.37
GAZ	11.4	1.82	10.4	1.70
INH	10.1	1.60	7.1	1.57
MAC	7.2	0.96	8.12	1.48
MAN	9.6	1.41	8.6	1.94
MAP	9.3	1.51	5.6	1.18
NAM	10.6	1.84	11.5	2.30
NIA	12.2	3.05	6.0	1.47
SOF	8.6	1.48	5.6	1.00
TET	8.3	2.37	6.0	1.31
ZAM	6.3	1.05	8.5	1.96
MOZ	9.0	0.54	8.05	0.55

Table .12-4 - Means and sampling errors for minutes of teaching per week of school director of average pupil.

Provinces	SACMEQ IV		SACMEQ III	
	Mean	SE	Mean	SE
CAB	430.2	86.10	559.3	105.70
GAZ	667.6	107.14	940.6	86.54
INH	753.4	116.86	56.3	33.30
MAC	0.0	0.00	66.2	53.05
MAN	597.5	124.72	395.1	84.60
MAP	285.0	36.81	306.9	58.81
NAM	240.3	49.23	446.1	105.12
NIA	534.3	144.88	518.0	93.76
SOF	93.1	41.96	416.1	100.37
TET	317.0	76.32	494.1	162.45
ZAM	283.9	50.38	554.3	97.84
MOZ	345.5	22.86	423.8	29.21

Table .12-5 - Means and sampling errors for number of days lost per year as reported by school directors of the average pupil

Provinces	SACMEQ IV		SACMEQ III	
	Mean	SE	Mean	SE
CAB	5.0	1.31	10.1	1.18
GAZ	5.0	0.88	8.8	1.57
INH	3.1	0.79	7.0	1.27
MAC	4.0	1.27	5.7	1.56
MAN	1.5	0.90	7.4	1.90
MAP	2.0	0.98	7.5	2.27
NAM	5.5	1.08	6.5	0.99
NIA	1.7	0.81	6.8	0.95
SOF	4.5	0.81	5.0	1.06
TET	3.1	0.98	9.5	1.96
ZAM	5.2	1.22	16.1	6.53
MOZ	4.0	0.35	8.0	0.70

Table 12-6 - Means and sampling errors of the frequency of school inspection as indicated by school directors of the average pupil

Provinces	SACMEQ IV		SACMEQ III	
	Mean	SE	Mean	SE
CAB	3.5	1.01	2.7	0.46
GAZ	4.5	0.61	3.5	0.85
INH	3.6	0.48	3.0	0.47
MAC	2.3	0.43	3.8	0.82
MAN	2.3	0.56	4.4	0.70
MAP	2.8	0.51	2.6	0.74
NAM	2.2	0.32	3.2	0.58
NIA	4.3	1.10	2.8	0.36
SOF	4.7	1.09	2.6	0.36
TET	4.3	0.81	3.7	0.75
ZAM	2.7	0.50	3.5	0.91
MOZ	3.2	0.20	3.3	0.22

Table .12-7 – Percentage and standard errors of pupils whose school directors indicated that there had been free school meals

Provinces	SACMEQ IV		SACMEQ III	
	%	SE	%	SE
CAB	0.0	0.00	9.3	9.04
GAZ	23.0	10.70	0.0	0.00
INH	33.9	12.25	12.4	8.84
MAC	0.0	0.00	0.00	0.00
MAN	8.0	7.89	32.7	12.58
MAP	13.5	9.50	4.5	4.55
NAM	8.3	4.90	5.8	5.75
NIA	0.0	0.00	6.0	6.07
SOF	27.6	12.17	21.3	11.19
TET	20.1	11.94	28.0	12.40
ZAM	0.0	0.00	19.9	9.41
MOZ	12.3	2.48	12.6	2.58

Table 12-8 Percentages and sampling errors for the resources that reading, mathematics and health teachers of the average teacher have access to in school

SACMEQ IV (2013)												
Reading teachers												
Prov	T. guide Port		HIV Broch		Radio		TV		Computers		Internet	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	100.0	0.00	74.6	13.33	13.8	10.45	5.4	5.31	8.8	6.11	5.4	5.31
GAZ	79.5	10.96	45.4	13.03	32.4	12.79	21.8	11.47	43.5	14.10	21.1	11.18
INH	95.4	4.49	77.1	12.23	15.7	8.97	7.2	7.24	40.1	14.16	7.2	7.24

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MAC	83.3	11.46	43.0	14.48	10.4	7.74	60.7	13.05	62.1	13.18	14.4	9.08
MAN	82.1	10.20	81.7	8.62	36.1	13.24	24.8	12.94	21.3	11.43	4.0	3.93
MAP	90.6	5.42	50.6	11.95	14.0	10.92	26.1	11.48	54.2	13.56	11.6	9.37
NAM	88.9	7.00	51.2	10.59	20.1	8.21	18.8	8.99	36.5	10.94	20.4	7.86
NIA	71.9	14.19	44.7	14.92	8.8	6.46	4.6	4.73	14.3	8.43	0.0	0.00
SOF	88.2	8.55	69.0	12.88	57.1	13.52	22.9	10.81	63.0	12.64	12.9	7.65
TET	100.0	0.00	30.3	16.57	21.9	15.22	6.4	6.69	18.1	12.91	0.0	0.00
ZAM	82.4	8.25	42.6	11.37	22.7	9.50	10.4	7.11	9.6	6.11	5.4	5.33
MOZ	87.3	2.60	55.1	3.85	24.9	3.51	18.9	3.08	34.3	3.65	10.5	2.33

SACMEQ IV (2013)**Mathematics teachers**

Prov	T. guide Math		HIV Broch		Radio		TV		Computers		Internet	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	91.1	8.88	62.4	14.86	12.4	10.21	9.9	9.71	15.0	10.30	0.0	0.00
GAZ		13.7										
	62.9	8	55.6	12.80	13.3	8.31	24.7	12.69	42.4	12.60	8.3	8.23
INH	89.1	7.74	61.4	12.94	20.8	10.10	0.0	0.00	28.0	12.16	13.3	9.02
MA												
C	92.6	7.35	33.7	10.76	18.7	12.18	67.8	11.61	54.0	15.55	21.9	12.32
MA		10.0										
N	85.1	9	74.8	13.01	59.6	11.14	14.1	7.75	30.6	11.89	14.7	8.56
MAP		10.7										
	84.3	1	33.8	14.21	24.4	14.06	21.9	11.08	56.8	13.47	11.7	6.66
NA												
M	69.8	9.90	64.4	10.41	16.6	7.67	11.4	6.68	19.4	9.21	13.4	7.94
NIA	86.7	9.60	53.8	15.61	18.3	10.27	5.5	5.77	20.2	13.75	4.0	3.94
SOF		11.7										
	78.7	7	83.0	10.07	46.0	14.81	26.8	12.37	54.0	14.34	4.7	4.80
TET	100.											
	0	0.00	52.8	15.80	29.7	15.20	10.0	9.94	18.8	12.67	0.0	0.00
ZAM		10.8										
	72.8	8	57.0	11.50	26.3	10.23	15.4	8.41	13.6	7.67	0.0	0.00
MOZ	80.8	3.26	58.8	3.89	26.8	3.58	18.0	2.91	31.3	3.74	8.7	2.22

SACMEQ IV (2013)**Health teachers**

Prov	T. guide LSk		HIV Broch		Radio		TV		Computers		Internet	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	100.0	0.00	57.4	18.24	3.4	3.71	12.3	12.07	23.7	14.26	12.3	12.07
GAZ	62.8	13.98	36.5	13.58	0.0	0.00	15.1	10.39	45.4	14.20	1.5	1.54
INH	88.0	8.55	46.5	14.17	26.0	12.06	7.2	7.20	47.3	14.28	14.7	9.98
MAC	91.0	6.84	30.2	10.81	16.2	10.86	62.5	13.77	64.7	14.49	20.3	11.09
MAN	80.0	11.62	56.9	13.78	55.0	11.53	18.8	10.21	33.3	13.11	19.4	11.33
MAP	95.5	4.55	53.3	13.65	16.6	9.98	27.5	12.67	49.5	14.28	10.0	7.49
NAM	78.1	8.60	44.6	11.09	21.6	9.15	14.2	7.98	39.6	11.02	15.6	8.44
NIA	70.9	15.70	34.3	15.30	11.1	10.90	11.1	10.90	15.7	11.51	0.0	0.00
SOF	80.5	13.89	72.9	17.58	39.8	18.68	32.7	17.12	69.1	16.87	7.7	8.01
TET	94.7	5.63	42.1	16.84	17.6	12.05	0.0	0.00	10.2	10.27	0.0	0.00
ZAM	82.3	9.00	17.7	8.80	16.9	8.49	12.2	8.29	18.5	8.79	0.0	0.00
MOZ	83.3	3.06	42.5	4.12	21.3	3.32	19.1	3.19	38.3	4.07	9.8	2.52

Legend – T = Teacher; Broch = Brochures; Port. = Portuguese; Math = Math; LSk = Life Skills

SACMEQ III (2007)												
Reading teachers												
Prov	T. guide		HIV Broch		Radio		TV		Computers		Internet	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	84.9	7.39	57.4	9.65	0.0	0.00	9.9	7.14	0.0	0.00	0.0	0.00
GAZ	74.7	9.95	73.8	8.95	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
INH	73.5	7.85	59.1	10.33	0.0	0.00	9.44	6.68	0.0	0.00	0.0	0.00
MAC	87.3	4.58	51.5	8.43	0.0	0.00	38.1	11.58	50.8	10.71	6.5	6.52
MAN	87.0	7.67	74.4	10.65	9.9	7.11	14.7	8.03	6.4	6.43	0.0	0.00
MAP	77.3	8.32	46.5	10.96	0.0	0.00	2.0	2.07	9.5	5.51	0.0	0.00
NAM	66.6	8.88	45.4	10.73	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
NIA	76.1	10.99	62.6	11.34	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
SOF	74.7	8.07	40.2	9.95	5.4	5.41	0.0	0.00	4.8	4.85	0.0	0.00
TET	86.3	5.99	47.2	11.47	10.9	7.42	5.2	5.12	0.0	0.00	0.0	0.00
ZAM	81.7	6.49	56.2	9.42	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
MOZ	78.6	2.43	54.7	3.19	2.1	0.92	6.9	1.51	6.7	1.32	0.6	0.62

SACMEQ III (2007)												
Mathematics teachers												
Prov	T. guide		HIV Broch		Radio		TV		Computers		Internet	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	78.1	8.65	48.5	9.88	0.0	0.00	11.8	8.35	0.0	0.00	0.0	0.00
GAZ	86.9	6.77	46.4	9.35	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
INH	68.2	9.83	68.2	8.34	0.0	0.00	9.8	7.53	0.0	0.00	0.0	0.00
MAC	81.9	6.42	48.4	10.40	0.0	0.00	39.2	11.78	40.9	11.38	6.5	6.52
MAN	92.2	3.06	64.6	9.80	10.8	6.90	12.9	7.22	3.7	3.68	0.0	0.00
MAP	81.7	7.57	57.9	10.22	1.9	1.87	2.7	2.76	5.8	3.70	0.0	0.00
NAM	70.2	8.07	28.1	9.15	1.3	1.27	0.0	0.00	0.0	0.00	0.0	0.00
NIA	79.6	7.49	69.7	9.74	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
SOF	87.6	7.19	81.1	7.78	5.4	5.41	0.0	0.00	8.0	5.78	0.0	0.00
TET	74.9	11.07	52.1	11.47	7.1	6.27	7.8	7.67	0.0	0.00	0.0	0.00
ZAM	71.6	8.82	64.7	9.57	0.0	0.00	0.0	0	5.31	5.29	0.0	0.00
MOZ	78.5	2.55	56.3	3.07	2.2	0.89	7.3	1.63	6.3	1.48	0.6	0.62

SACMEQ III (2007)												
Health teachers												
Prov	T. guide		HIV Broch		Radio		TV		Computers		Internet	
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
CAB	75.6	11.20	58.9	11.50	0.0	0.00	12.7	8.90	0.0	0.00	0.0	0.00
GAZ	87.7	6.79	55.7	10.08	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00
INH	62.8	11.26	57.8	9.37	0.0	0.00	12.4	8.68	0.0	0.00	0.0	0.00
MAC	82.2	6.40	50.2	10.21	0.0	0.00	39.2	11.78	39.1	11.45	6.5	6.52
MAN	86.6	5.69	59.5	10.55	10.8	6.90	12.9	7.22	3.7	3.68	0.0	0.00
MAP	90.4	4.58	54.9	10.8	1.9	1.87	2.27	2.30	5.2	3.14	0.0	0.00
NAM	80.2	7.76	37.6	10.54	4.5	4.59	0.0	0.00	0.0	0.00	0.0	0.00
NIA	75.8	10.65	64.3	10.83	0.0	0.00	0.0	0.00	0.0	0.00	0.0	0.00

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SOF	96.6	3.39	59.5	11.99	53.5	5.41	0.0	0.00	9.9	6.99	0.0	0.00
TET	79.1	9.24	60.0	12.20	13.8	9.35	7.8	7.67	0.0	0.00	0.0	0.00
ZAM	58.6	11.50	46.3	11.48	0.0	0.00	0.0	0.00	5.31	5.29	0.0	0.00
MOZ	78.7	2.79	53.1	3.44	3.1	1.18	7.5	1.67	6.3	1.52	0.63	0.63

Legend – T = Teacher; Broch = Brochures; Port. = Portuguese; Math = Math; LSk = Life Skills