The SACMEQ IV project in

BOTSWANA

A study of the conditions of schooling and the quality of education

SACMEQ

Southern and Eastern Africa Consortium for Monitoring Educational Quality


MoBE

SACMEQ IV PROJECT IN BOTSWANA:

A STUDY OF THE CONDITIONS OF SCHOOLING AND QUALITY OF EDUCATION

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FOREWORD

Hon. Thato Kwerepe
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Botswana is a member of Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) and has participated in all the studies since inception of SACMEQ. The consortium is a network of 16 Ministries of Education from Southern and Eastern Africa who decided to work together in monitoring the conditions of schooling and progress made in achieving the education related targets set within the framework of the global Education for All (EFA) Campaign (Muscat Agreement, 2014) and UN Sustainable Development Goals, especially Goal 4). This is the fourth study (SACMEQ IV) and was conducted between 2012 and 2015. There has been general concern about the quality of education offered in many schools and that the skills and critical knowledge learners are provided with does not contribute to their development. Participation in international and national assessment studies has revealed low achievement levels and perceptions about the quality of our education. It is for this background that there be need for examining the conditions of our education system for the quality of education we offer to our learners and implementing research agendas determined by our stakeholders.

I therefore take the oath to present the SACMEQ IV findings and recommendations to all our stakeholders as evidence for promoting interventions and programmes for quality education in Botswana.

Wishing you a pleasurable read!

ACKNOWLEDGEMENT

The Ministry of Basic Education wishes to thank the SACMEQ Team, all the regional officers, school heads, teachers and pupils for the efforts exerted toward the SACMEQ 1V study. This includes participation in all stages of the study: participation in the preparation of study materials, data collection exercise, data inputting, analysis, interpretation and report writing.

The Ministry also wishes to appreciate the guidance from SACMEQ Coordinating Centre in the conduct of study and reporting. This is a valuable contribution indeed.

SOUTHREN & EASTERN AFRICA CONSOTIUM FOR MONITORING EDUCATION QUALITY

SACMEQ

A NETWORK OF 16 MINISTRIES OF EDUCATION

INTRODUCTION

Southern and Eastern Africa Consortium for Monitoring Educational Quality **(SACMEQ)** is a network of sixteen Ministries of Education in Southern and Eastern Africa, its membership consists of Angola, Botswana, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania (Mainland), Zanzibar, Uganda, Zambia and Zimbabwe. The overall objective of SACMEQ is to improve the quality of education in member countries by; building technical capacity of education planners and researchers for improved educational planning and informed decision making by policy makers, employing scientific methods for monitoring and evaluation of conditions of schooling and translating the general policy concerns identified by ministers of education at the General Assembly into specific research questions.

SACMEQ was first established in Zimbabwe in 1989 with the support of the Director of UNESCO's International Institute of Educational Planning (IIEP). It was later adopted by other African countries particularly from the SADC region and Eastern Africa. In 1995 the SACMEQ Consortium was officially launched and given continuing long-term support through the assistance of the Government of the Netherlands. During the ninth session of the SACMEQ governing body (SACMEQ Assembly of Ministers) that was held on 3rd November 2013, the Assembly made a decision to relocate the SACMEQ Coordinating Centre (SCC) to one of the SACMEQ member states. The Assembly also decided that SCC should start operating from a new location as of January 2015 hence its relocation to University of Botswana, Gaborone, Botswana.

SACMEQ coverage in Botswana

	SCHOOL	TEACHERS	PUPILS
SACMEQ I	Botswana participated as observers		
SACMEQ II	170	420	3322
SACMEQ III	160	386	3896
SACMEQ IV	188	435	4562

The **SACMEQ I** was conducted between 1995 and 1999 covered educational inputs to primary schools, benchmark and standards for education provision, equity in the allocation of educational resources, and the reading and literacy performance of Grade 6 learners. However, Botswana did not participate in SACMEQ I.

The **SACMEQ II** was implemented in 2000 with a sample of 170 Botswana primary schools. SACMEQ II included an extensive assessment of the performance levels of learners and their teachers in the areas of literacy and mathematics.

The **SACMEQ III** was conducted between 2006 and 2011, which followed the general research directions of the first two SACMEQ studies by focusing on an examination of the conditions of schooling and the quality of education in primary schools. It also covered an additional research component on HIV/AIDS knowledge. There were 160 Botswana primary schools participating in SACMEQ III.

The **SACMEQ IV** was conducted between 2012 and 2015 and it covered 188 Botswana primary schools. SACMEQ IV focused on an examination of the conditions of schooling, the quality of education and HIV/AIDS knowledge levels in primary schools.

SACMEQ coverage in Botswana.

structure of the report

This report presents the research results and policy suggestions that emerged from the SACMEQ IV research study. The report will provide information on eight thematic areas and these are;

1. The setting of the study
2. The conduct of the study
3. Pupils' characteristics and their learning environments
4. Characteristics of teachers and their classroom
5. Characteristics of school heads and their schools
6. School resources
7. Achievement levels (Reading and Mathematics)
8. Health Knowledge for teachers and pupils
9. Conclusions & Agenda for action

CHAPTER 1

SETTING THE SCENES

1.1 Introduction

This chapter provides background information about Botswana and the country's education system.

1.2 Background information on Botswana

Botswana is a landlocked country located in the Southern part of Africa, with a landscape defined by the Kalahari Desert to the south and the Okavango Delta to the north. It has a total surface area of 582 000 square kilometres. It shares its borders with Namibia to the west, South Africa to the south, Zimbabwe and Zambia to the north. Botswana affiliates to regional and international bodies such as the Commonwealth, the African Union (AU) and the Southern African Development Community (SADC). It houses the headquarters of the Southern African Development Community and SACMEQ Coordinating Centre (SCC).

Botswana was a British Protectorate from 1885, the then Bechuanaland Protectorate until 1966 when it gained its independence. Botswana is a democratic country, with elections held every 5 years. The population of Botswana has grown over years since independence. According to the Population and Housing Census 2011 Analytical Report, the country population was 1, 680, 863 in 2001 and 2 2024, 904 in 2011. This indicates a population growth rate of 1.9 from 2001 census.

Botswana is a multi-cultural country, with different languages and dialects. Most popularly spoken languages are Setswana and English, and the two are also regarded as official languages. For administrative purposes, the country is divided into Central government and Local government. The Local government, which is meant to further its democratic values, is further divided into districts councils, town councils and City Councils with the view to bring services closer to the people. The Districts are; Central, North-West, Ghanzi, Kgalagadi, Kweneng, South, Kgatleng, North-East, South-East and Chobe. The town councils are Jwaneng, Lobatse, Sowa and Selibe-Phikwe and city councils are Gaborone and Francistown (Government portal, 2011). The local government among other things is responsible for provision of infrastructure and material support for primary education. The Central government is responsible for development, implementation, monitoring and review of policies and programs.

1.3 Background information on the education system of Botswana

Education started before the arrival of the missionaries, it was predominantly informal learning. The London Missionary Society (LMS) came to Botswana and provided formal education in the 19th Century. The missionaries spread Christianity and education concurrently to Batswana. In the later years the London Missionary Society started other schools among other tribes, providing education equivalent to primary education. By the time the country gained independence, there were 251 primary schools and 9 secondary schools offering formal education, with two primary teacher training colleges, one trade school and no university (SACMEQ II, 2005). At that stage there was no education policy to guide the implementation of education programmes and the general supervision of schools. Botswana's first educational policy, Education for Kagisano (Social Harmony) which was anchored on four national principles of democracy, development, self-reliance and unity, provided policy framework for the development of education in the Country from 1977 to 1993. In the early 1990s, it was realized that the country's socio-economic situation had changed significantly resulting in a review of policies and strategies for Botswana's educational development. As a result, the 1994 Government Paper No. 2 known as "The Revised National Education Policy" was developed to provide direction for Botswana's educational system.

1.4 The organization of the education system

Botswana education system has different levels of

education including pre-primary, primary, junior secondary, senior secondary, post-secondary non-tertiary and tertiary levels. Education is provided through different players such as government; private sector, NGO's, Faith Based organisation and Community Based Organisations.

(a) Pre-primary

Pre-primary is mainly provided by the private sector, individuals, communities, NGO's and to some extent local authorities (district/town/city councils). In 2014, the Ministry of Basic Education through Department of Basic Education introduced pre-primary programme in government schools. This programme runs for one year after which the learner enters the first year of primary education.

(b) Primary education

Primary education in Botswana is a 7 year programme, making up the majority of the ten years of basic education. Primary education is divided into two sub-levels, lower-primary (standard 1 to 4) and upper-primary (standard 5 to 7). The official entry age into primary school is six years for public schools and five years for private schools (Government Paper No. 2, 1994). At the end of standard 4 pupils sit for a national examination known as the Standard 4 Attainment Test. After seven years of primary school, pupils sit for the Primary School Leaving Examination (PSLE). PSLE results provide feedback on learner achievement on knowledge and skills gathered through primary education programme but the examination is not high-stake.

(c) Junior and senior secondary education

After the seven years of primary education, pupils go through three years of junior secondary school to complete their ten-year basic education. All children in Botswana who are of school-going age go through ten years of basic education. A Junior Certificate Examination (JCE) is taken at the end of 3, which is used to determine transition into senior secondary school. Students who do not transit to senior secondary school can enrol in Vocational and Technical Education for skills programmes. The completion of senior secondary school leads into tertiary education or vocational oriented institutions of high learning. Government is the main provider of secondary education programme; the private sector contributes but a small percentage to this level.

(d) Tertiary Education

Tertiary education is provided by both government and private institutions. Most tertiary level students are funded by government through provision of loans, grants or partial grants, depending on the perceived priority of the field of study. Programmes range from certificates to degree including Doctoral degree with enrolments higher at lower levels. Institutions of high learning include among others Universities, Colleges, Vocational and Technical Institutions which are public and private owned. Students may be sent outside the country to study for courses which are not available in the country and are of high priority in addressing the country's economy.

1.5 The administration of the education system

The Ministry of Education and Skills Development is responsible for the general administration of the education system of the country. This the ministry achieves through decentralising its functions to regional offices, whose main responsibility is to effectively coordinate the ministry's functions at local level. There are ten regional offices across the country and these are aligned to the district/town or city councils.

Other than the regional offices, there are departments whose main focus is development of policies and monitoring of their implementation. For quality assurance, the ministry has created autonomous bodies such as National Human Resource Council, Botswana Examinations Council and Botswana Qualifications Authority.

- Botswana Examinations Council (BEC) is responsible for the conduct of national examinations for both primary and secondary.
- Human Resource Development Council (HRDC) is responsible for providing policy on all matters of national resource development.
- Botswana Qualifications Authority (BQA) coordinates the registration and accreditation of institutions and courses/programmes.

1.6 Financing of education

The education ministry receives its funding mainly from the government. The ministry receives a large proportion of the national budget for both recurrent and development purposes. In the financial year 2016/17 education ministry, then called Ministry of Education and Skills Development was allocated an annual budget of approximately 7.4% of the total national development budget, while the recurrent expenditure on education was at 28.8 percent of total recurrent expenditure. The private sector through adopt a school initiative contribute significantly to financing of education in Botswana. This initiative calls for the private sector to support education

in any way possible.

The role of parents in financing the education is greatly experienced in the private schools where parent pay for services such as school fees, transport fees and meals for individual learners. In public school parents may be asked to contribute as little as five dollars to assist the school with small undertaking as the Parent Teachers Association activities. These contributions are decided by parents through the Parent Teacher Associations and therefore differ from one school to the other.
To support private institutions in their role to educate the nation, the Ministry of Basic Education provides grants to some non-governmental organizations. These grants mainly benefit the NGO's particularly those providing education and skills to learners with disabilities.

1.7 National policy on education and educational progress

Since independence Botswana has under taken two major education policy reviews. The first policy review was in 1976, which led to the development of Education for Kagisano in 1977. Through this policy, there was expansion of basic education to ten years; construction of more schools including primary, secondary and tertiary institutions; increased provision of resources including human, material and finance.

The second policy review was in 1993, which led to the Revised National Policy on Education Government Paper No.2 of 1994 (RNPE). The policy has served as the main document providing direction on provision of education to Botswana citizens. Revised National Policy on Education emphasised provision of universal access.

1.8 Government's response to policy concerns

Since the introduction of RNPE, the Ministry has undertaken various projects, programmes, and initiatives aimed at addressing its recommendations including Early Childhood Care and Education (ECCE); Access, Equity, Quality, Teacher development and Resource provision.

Early Childhood Care and Education: The provision of Early Childhood Care and Education (ECCE) has been the dominance of private sector right from kindergarten to reception classes. This programme was therefore enjoyed by the few who could afford to pay required fees. Early Childhood Care and Education has been reported critical in improving educational quality and outcomes. In 2014, government introduced pre-primary programme in government primary schools. This programme is rolled out in phases. In the first year of the programme, 120 public primary schools registered pupils for pre-primary class. It is expected that by 2018 all government schools will have pre-primary programme running alongside primary education.

Access: To improve access in primary education, government continues to provide free primary education to all citizens who are at school going age. This is achieved through construction of more schools across the country including multi-grade classes in small settlements and far to reach areas; integration of special education needs in the mainstream; provision for children with disabilities both in mainstream and specialised schools; out-of-school education programme for children who may not be able to attend regular schools.

Equity: Botswana continues to make strides in ensuring equitable education to its citizenry. To this end, the country encourages all children regardless of gender or socio-economic status to go to school. This is made possible by building more schools, introduction of gender policies and programmes, and infusion of gender issues in the school curriculum in primary schools countrywide.
Quality: Botswana like other countries in the region has experienced low academic outcomes. This is one area that concerns the country and government has introduced a number of initiatives aimed at improving the quality of learning and learning outcomes. These include such as introduction of ECCE in primary schools, upgrading teacher qualification, introduction of teaching council and use of Information and Communications Technology (ICT) in education.

Resource provision: The need for adequate resources in education cannot be over emphasised. Government as the main sponsor of education provides for basic provisions such as physical facilities, teaching and learning materials, quailed teachers, feeding programme, etc. These resources are necessary to facilitate implementation of curriculum in order to achieve the desired academic outputs. Government also established quality assurance bodies such as Human Resource Development Councils (HRDC) aimed at providing policy advice on all matters of national human resource development; Botswana Examinations Council (BEC), responsible for the national examination for primary and secondary education levels and Botswana Qualifications Authority (BQA) which coordinates the registration and accreditation of institutions and courses/programmes.

Teacher development: In response to this, government upgraded Primary Teachers Training Colleges (PTTC's) from certificate training into Colleges of Education offering diploma programmes. In addition, serving teachers holding primary teacher's certificates were upgraded to diploma through distance education

programme offered by University of Botswana and selected Colleges of Education.

Skills Development: Botswana education system encourages both knowledge and skills acquisition. From primary level, pupils are introduced to practical subjects such as Agriculture, CAPA at primary level. At secondary level practical subjects increase in number to allow students the choice of subjects they prefer. These include subjects as carpentry, cookery, arts and design, fashion designing etc. Vocational and Technical educations are provided for at post-secondary level for learners who do not make it into universities or colleges. This programme aims at preparing learners for the labour market. Learners who are academically inclined are admitted into universities and colleges to pursue professional qualifications.

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 is able to 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. SACMEQ IV research project also includes HIV and AIDS knowledge test (HAKT) for Grade 6 pupils and their teachers.

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 fourteen 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 and 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 project are outlined and these include a description of the sample used, data collection, cleaning and analysis.

2.2 The Study Population

(a) Desired Target Population

The desired target population definition for SACMEQ IV Project was exactly the same (except for the year) as was employed for the SACMEQ II and III Projects. This consistency was maintained in order to be able 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 SACMEQ IV Project is as follows:

"All learners at Standard 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 for ensuring valid data in large-scale studies is that no more than 5 percent 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. "Small" mainstream 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		
Schools	Pupils	Schools	Pupils	Schools	Pupils	(%)
802	45556	676	43414	126	2142	4.7

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

2.3 Data collection

In this report "Data Collection" includes preparations before the field work, the actual field work 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 was 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 (Kiswahili, 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

Officials in the respective Ministries of Education informed the sampled schools through the Regional offices during mid-2013. The National Research Teams were responsible for distributing the data collection schedules, intensifying and monitoring communication to schools and among data collectors.

(c) Printing and Distribution of Data Collection Instruments

Data collection instruments included a) School Head Booklets, b) School Information Booklets, c) Teacher Booklets, d) Pupil Booklets e) Pupil Name Forms and f) 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.

When all instruments were printed, the NRTs conducted a "hand check" of all materials so as to verify that 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 that 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

On the first day of training the NRT presented a "simulated" data collection exercise in which they acted as a data collector and the trainees took the roles of learners, teachers, and School Heads. The second day involved an intensive study of the Manual for Data Collectors. This document sets out, in sequential order, all of the actions to be taken by the data collector from the time of receiving packages of data collection instruments from the Ministry of Education to the time when the data collector had completed the data collection and was preparing all materials for return. The third day involved a second "simulated" data collection whereby the trainees supervised a full-fledged data collection

in several schools that were not involved in the main data collection. 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.

2.4 Main Data Collection

"Main Data Collection" in this report refers to the actual field work. Three data collectors were assigned three sampled schools to carry out the data collection exercise. Special effort was made to ensure that 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 sample schools, in all countries, and 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 in the period September to December 2013.

Two days of data collection were required for each sampled 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 Pupil Questionnaire, the HAKT and the Reading test. On the second day they were given the Mathematics test. Part of the Pupil Questionnaire required learners to get confirmation of the accuracy of the information from their parents; therefore, the questionnaires were taken home by the pupils and returned the following day.

In addition to completing a questionnaire, one teacher who taught the majority of the sampled learners for each of Reading, Mathematics and Life skills\Health also completed the relevant tests.

The data collectors were provided with a 40-point checklist in order 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 (Pupil, 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) at the Ministry of Education as soon as all data collection was completed.

2.5 Pilot Exercise

Team leaders and data collectors participated in a pilot exercise to practice and familiarize themselves with the data collection exercise. The team leaders were divided into four teams. Four primary schools were used in the pilot exercise namely; Mogoditshane, Leserane, Solomon Dihutso and Pule Memorial. Schools which participated in the trial test were those not sampled to participate in the main study sample. It was expected that the pilot exercise would give the teams a feel of the SACMEQ data collection to prepare them for the main study data collection.

2.6 Sampling and Sample Characteristics

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 Standard 6 learners at the time of data collection was greater than 25. Where the number of Standard 6 learners was 25 or less than 25 in a school, all the Standard 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 2.2: Planned and Achieved Samples for SACMEQ IV

Schools		Learners	
Planned	Achieved	Planned	Achieved
188	188	4700	4562

2.7 Response rates, design effects, effective sample sizes

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 SACMEQ IV project have been presented in Table 2.3.

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 HAKT.

Table 2.3: Response Rates, Design Effects, Effective

Response Rate (%)		Design Effect			Effective Sample Size		
Schools	Pupils	Reading	Maths	HAKT	Reading	Maths	HAKT
100	97	8.83	8.41	7.84	423	444	476

Sample Sizes for SACMEQ IV

The following observations can be made from Table 2.3:

Response rate in surveys refers to the percentage of the total sample units that were planned who actually participate 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%. The Botswana Survey for both schools and learners who participated in SACMEQ IV was above 90%.

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.

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. Generally, the "Effective Sample Size" will be smaller than the given actual multi-stage sample.

The sample designs used in SACMEQ IV Project were selected so as 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 percent confidence limits for sample means of plus or minus one tenth of a learner standard deviation unit). Given that the number of pupils who participated in SACMEQ 1V study exceeded the minimum of 400 (Reading: 423, Mathematics 444: and HAKT 476), this guarantees accuracy of the sample in Botswana.

2.8 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 Basic 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. Temporary assistants, mainly those who participated in the data collection exercise were deployed to capture the data. The data capturers were given training on Data Management System (DME) using the data that was collected during the trial testing. This was intended

to give the data capturers opportunity to experience working with the DME system.

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.

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.

2.9 Merging and weighting

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 SACMEQ IV Project. The first sampling weight (pweight1) was the inverse of the probability of selecting a learner into the sample. These "raising factors" were equal to the number of learners in the defined target population that were "represented by a single learner" in the sample. The second sampling weight (pweight2) was obtained by multiplying the raising factors by a constant so that the sum of the sampling weights was equal to the achieved sample size. A detailed account of weighting procedures can be found in Ross et al (2004).

2.10 Analyzing the data

The data analyses for SACMEQ IV Project were very clearly defined because they were 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 "socioeconomic level" was constructed by combining re-coded variables related to learners' homes, and the number of possessions in learners' homes. Second, the Coordinating Centre used SPSS tools to populate Dummy Tables with appropriate estimates and corresponding sampling errors.

2.11 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.

2.12 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.

CHAPTER 3

CHARACTERISTICS OF PUPILS

3.1 Introduction

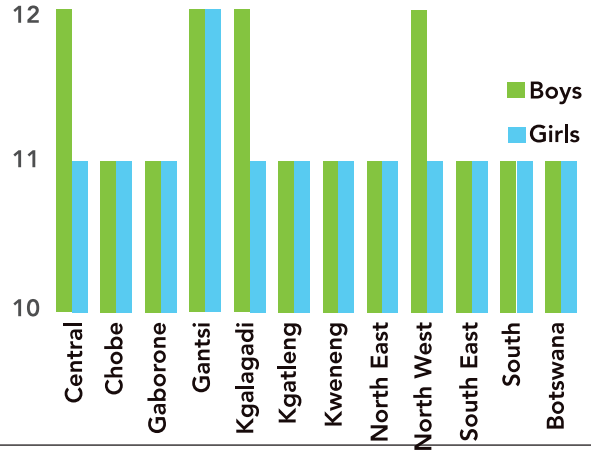
This chapter covers variables which are believed to have an impact on the teaching and learning of pupils. The variables are classified as pupil personal characteristics, home characteristics of pupils and their learning environments. Pupil personal characteristics include pupil age and gender. Pupil learning environments include such variables as repetition, extra tuition and access to learning materials. Home related variables are those factors at home which impact on the learning of pupils. Such variables include pupil's access to electricity, access to reading materials, distance pupils walk to school etc.

3.2 Pupils Personal Characteristics

Pupil age distribution

Figure 3.1 illustrate the age distribution of standard 6 pupils in Botswana primary schools in 2013. The Revised National Policy on Education (1994) recommends entry age of 6 years in public primary schools and 5 years in private primary schools. It also recommends that flexibility should be exercised on the maximum entry age so as to allow children in remote areas the opportunity to have access to primary education. Education is seen as a basic fundamental human right as well as a major contributor to economic growth and social progress.

Figure 3.1 Age distribution for standard 6 pupils by region (years)



According to Figure 3.1 standard 6 pupils in 2013 had reached the desired mean age of 11 years (both boys and girls), however pupils from Gantsi region had a higher mean age of 12 years for both boys and girls. Central, Kgalagadi and North West regions had a higher mean age of 12 years for boys only, the mean age for girls from these regions was 11 years. The variance in the mean age of pupils at standard 6 may be a result of different factors including late start of primary education, repetition, dropout and re-admission as is allowed by Botswana education system. Generally, there has been a positive progress towards achieving the desired age at the end of primary education in Botswana as evidenced by the trends on national average of 13 years in 2000, 12 years in 2007 and 11 years in 2013.

Pupil gender distribution

The concept of 'gender equality in education' follows the UNESCO (2003) interpretation which refers to the notion of boys and girls experiencing the same advantages or disadvantages in attending school, receiving teaching methods, curricula, and academic orientation, and producing equal learning achievement and subsequent life opportunities. Figure 3.2 shows distribution of standard 6 girls in 2013.

Figure 3.2 Distribution for standard 6 girls (%)

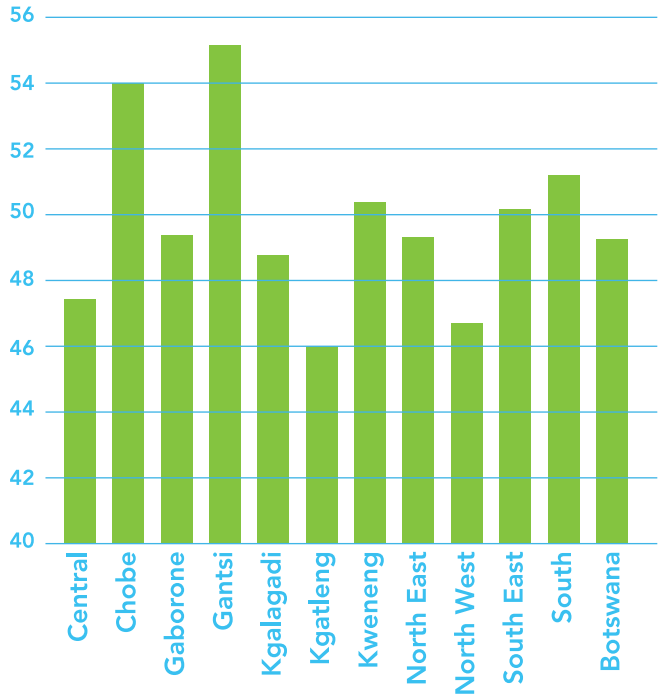


Figure 3.3 Distribution of pupils with access to electricity at their homes (%)

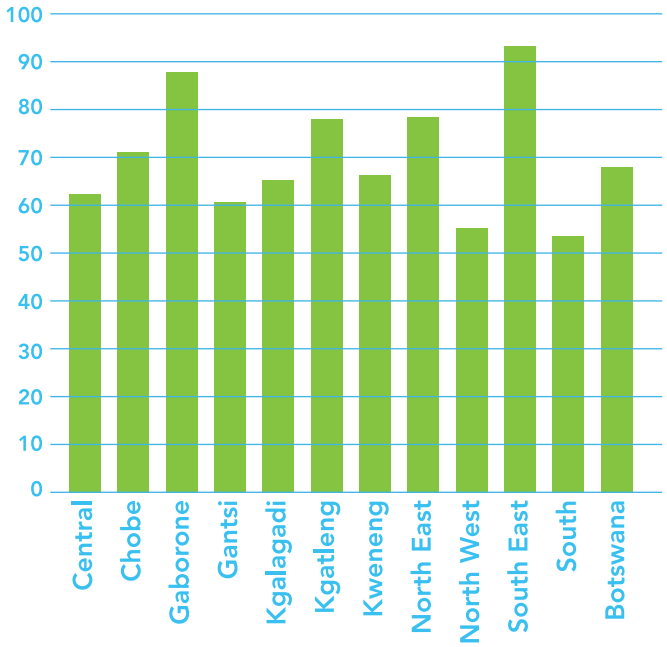


Figure 3.2 indicates that on national average, approximately half (49%) of standard 6 pupils in 2013 were girls, with the least region registering 46%. The results show a higher proportion of girls in Gantsi and Chobe regions. Regions which registered the same proportion (50%) of girls and boys included Kweneng, and South East. SACMEQ III (2007) study also showed that there were approximately the same proportion of boys (49.8%) and girls (50.2%) in standard 6. This is an indication that Botswana has reached universal access to primary education, thus eliminating gender disparities in basic education.

3.3 Home characteristics of pupils

This section shows the breakdown of standard 6 pupils by their home characteristics including source of lighting at pupils' homes, number of books found at pupil's homes, and use of English by pupils outside school.

source of lighting at pupils' homes

According to the Revised National Population Policy of 2010, Botswana government is committed to improving the livelihood of its people by increasing the number of homes with access to electricity by 2020. This shows the country's commitment to achieving Sustainable Development Goal 7 of ensuring universal access to affordable, reliable and modern energy services for all by 2030. Figure 3.4 provides information on the proportion of pupils with access to electricity at home.

Figure 3.4 indicates a national average of 68% of standard 6 pupils that had access to electricity at their homes. South East and Gaborone regions registered highest proportion of pupils who had access to electricity at home. Regions that registered high proportions of pupils who had access to electricity at home were North East and Kgatleng. Regions that registered least on the proportion of pupils that had access to electricity at home were South and North West. There has been an increase of 17.9% on the proportion of standard 6 pupils who had access to electricity at home between 2007 and 2013. This shows positive efforts in ensuring that homes have good source of lighting which can assist learners study while at home. Government should therefore continue to increase access to electricity in all districts in order to improve the livelihoods of Batswana.

number of books at home

Books and other reading materials are necessary tools which can help children develop their reading skills; encourage research and foster independent learning. This does not only refer to textbooks used in lessons but includes other books which pupils can access at home, libraries etc. Figure 3.4 illustrates the number of books an average pupil had at home

Figure 3.4 Average number of books in pupils' homes

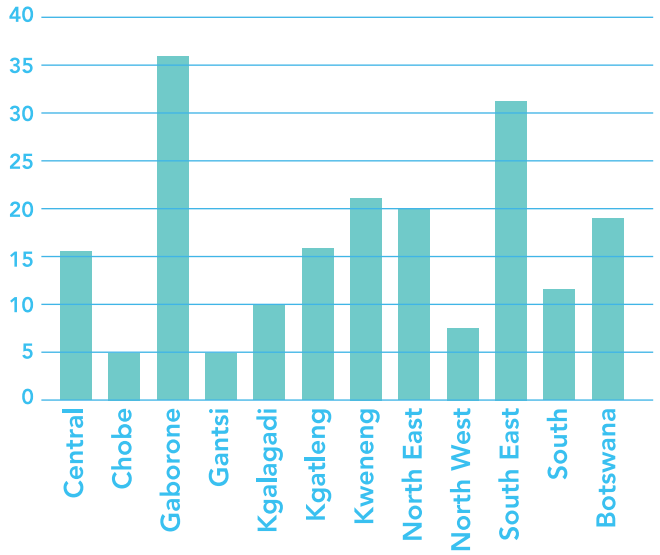


Figure 3.4 show that in 2013 an average standard 6 pupil had 19 books at home. Gaborone region registered highest on the average number of books pupils had at home. This was followed by Kweneng, North East, Central and Kgatleng regions. Chobe and Gantsi regions were least on the average number of books pupils had at home. It is assumed that where there is existence of reading materials at home such as books, pupils can use these to access information and increase their reading and numeracy skills. None existence or low existence of these materials implies dependency on prescribed school textbooks by pupils.

speaking of English outside school

Pupils in Botswana primary schools take English Language as a subject; English language is also used as a medium of instruction for all other subjects except Setswana at standard 6. For some pupils, English is a second language, for others this is a third language. For pupils to develop proper knowledge and skills in the use of the language, the use of the language by pupils should be encouraged even outside the school parameters. Table 3.2 shows the proportion of standard 6 pupils who spoke English outside school.

Table 3.1 Proportion of pupils speaking English outside school

REGION	NEVER	SOMETIMES	MOST OF THE TIME	ALL THE TIME
Central	21.9	69.2	7.0	2.0
Chobe	18.1	72.1	7.0	2.7
Gaborone	6.2	68.5	18	7.3
Gantsi	39	58	2.7	0.4
Kgalagadi	32.5	63.7	3.0	0.9
Kgatleng	13.3	73.8	10	2.9
Kweneng	21.2	65.4	9.7	3.7
North East	13.1	76.3	8.5	2.1
North West	24.5	65.9	7.0	2.7
South East	9.73	61.2	18.1	10.3
South	22.2	70.7	4.8	2.3
Botswana	**19.1**	**68**	**9.3**	**3.6**

When pupils were asked how often they speak English outside school, 19.1% of the pupils reported that they never speak spoke English outside school. The highest (39%) proportion of pupils who never spoke English outside school was recorded in Gantsi region, followed by Kgalagadi (32.5%) and North West (24.5%) regions. South East region was highest on the proportion of pupils who reported that they spoke English outside school (sometimes, most of the time and all the time). Speaking English outside school can held pupils build confidence in the use of the language and thus help them improve their chances in future life.

3.4 Pupils and their learning environment

Botswana has domesticated UNICEF Rights-based, Child Friendly School Framework of 2012, which advocates for schools that are non-discriminatory and provides free and compulsory, affordable, accessible education that responds to the diversity of pupils by meeting the differing circumstances and needs of children. Botswana provides accessible, equitable, free but not compulsory education to all children of school going age. This sub-section shows the extent to which pupils repeated a standard, had access to school library, distance they travelled to school and if they had access to extra lessons.

Repetition rate

Botswana has adopted a policy on assessed progression which allows for up to 12.5 % repetition in each class at primary education. The policy further states that in any event a pupil should repeat no more than three standards. Table 3.4 indicates pupils' responses on how many times they had repeated a standard.

Table 3.2 Percentage of standard 6 pupils who had repeated a standard

REGION	REPEATED ONCE	REPEATED TWICE	REPEATED THREE TIMES OR MORE	NEVER REPEATED
Central	28.1	5.3	1.5	65.2
Chobe	38.1	9.3	0.4	52.2
Gaborone	21.3	3.9	0.8	74.0
Gantsi	31.0	4.0	4.2	60.8
Kgalagadi	35.1	2.7	0.4	61.8
Kgatleng	29.4	4.1	0.4	66.2
Kweneng	28.4	6.8	1.2	63.6
North East	33.5	4.0	0.8	61.7
North West	29.4	4.7	3.2	62.7
South East	25.1	4.0	0.9	70.0
South	22.2	70.7	4.8	64.7
Botswana	27.9	5.2	1.4	65.5

When asked how many times they had repeated a standard, majority (65.5%) of standard 6 pupils reported that they had never repeated a standard. Pupils who reported that they had repeated once were 4 times those who had repeated twice or more. Chobe and Gantsi regions registered high on the proportion of pupils who had repeated a standard once, recording 38.1% and 35.1% respectively. The least (21.3%) proportion of pupils who had repeated a standard once was recorded in Gaborone region. Although the proportion of pupils who had repeated a standard varied amongst regions, it should be noted that in all the regions majority of the pupils had repeated only once. Between SACMEQ III and SACMEQ IV, there has been an increase (1.8%) in the proportion of pupils who had repeated a standard once and twice.

Access to the school library

Pupils who have access to school library could use library books to supplement prescribed learning materials. Libraries are established in schools to help enrich the curriculum, library books therefore can help pupils increase their knowledge on various subjects. Pupils can borrow these books and take them home to further their studies or use them as reference material. The Revised National Policy on Education recommends provision of library and library books at primary school level. Table 3.3 shows the proportion of standard 6 pupils who had access to school library.

Table 3.3 Pupils allowed to borrow library books by region (%)

REGION	NO SCHOOL LIBRARY	NOT ALLOWED TO BORROW BOOKS	ALLOWED BORROW BOOKS	DO NOT KNOW
Central	40.9	21.4	34.7	3.0
Chobe	0	41.5	58.5	0
Gaborone	42.5	0	57.5	0
Gantsi	66.3	10.2	23.5	0
Kgalagadi	44.3	0	55.7	0
Kgatleng	84.8	7.4	7.8	0
Kweneng	32.1	13.8	53.6	0.5
North East	4.96	25.4	67.8	1.9
North West	30.5	29.2	40.4	0
South East	63.5	0	36.5	0
South	47.1	11.7	35.5	5.6
BOTSWANA	42	14.9	41.3	1.9

Table 3.3 shows that nationally 58% of standard 6 pupils had school library. North East region was highest on the proportion of pupils who were allowed to borrow library books, followed by Chobe, Gaborone and Kgalagadi regions. Least on the proportion of pupils allowed to borrow library books was Kgatleng region recording 7.8%. In all the regions, the proportion of pupils allowed to borrow library books was higher than those who were not allowed to borrow the books. Government should intensify efforts to ensure that all primary schools are provided with school libraries and library books.

How often pupils' homework is corrected by the teacher

Correction of pupils' homework by their teachers gives pupils the opportunity to reflect on their performance and receive precise guidance on how to improve on their future assignments. This also helps teachers identify areas that require remediation to support pupils learning process. Table 3.4 shows standard 6 pupils' responses on how often teacher corrected their homework.

Table 3.4 How often pupils' homework was corrected by their teachers (%)

REGION	NO HOMEWORK	NEVER CORRECTED	SOMETIMES CORRECTED	MOSTLY CORRECTED	ALWAYS CORRECTED
Central	2.9	5.0	33.7	26.1	32.4
Chobe	1.9	3.2	25.8	23.1	46.1
Gaborone	1.1	3.6	38.9	19.4	37.1
Gantsi	2.6	2.0	43.8	32.4	19.2
Kgalagadi	0.4	2.7	37.1	10.4	49.4
Kgatleng	1.7	3.3	38.1	19.3	37.5
Kweneng	3.6	3.0	30.1	29.2	34.3
North East	2.6	3.7	35.8	20.3	37.6
North West	6.4	4.4	27.6	27.3	34.4
South East	2.2	2.8	33.6	28.4	33.0
South	2.1	2.4	38.6	26.0	30.9
BOTSWANA	2.8	3.7	34.3	25.3	33.8

Table 3.4 shows that 93.5 % of standard 6 pupils had their homework corrected by their teachers. The proportion of pupils who had their homework sometimes and those whose homework was always corrected by their teachers was reported the same. Kgalagadi region registered highest (49.4%) on the proportion of pupils who

reported that their homework was always corrected by teachers, followed by Chobe region with 46.1%. Gantsi, Gaborone and South regions reported highest on the proportion of pupils whose homework was sometimes corrected by the teacher. The proportion of pupils who had their teachers always correcting their homework was low in all regions. This was the same with the proportion of pupils who had their homework mostly corrected by their teachers. Teachers should be encouraged to always correct pupil's homework and give feedback which can help pupils improve their academic performance.

Extra lessons outside school hours

The Revised National Policy on Education (1994) places emphasis on remedial teaching at primary school level. It recommends that each school should be provided with at least one trained teacher at senior teacher level whose primary responsibility will be remedial teaching.

Each pupil is different in terms of learning ability, academic standards, classroom learning and academic performance and each has his/her own learning abilities. Remedial instruction can help struggling learners step up their basic skills and catch up with their peers. Figure 3.5 shows pupils' responses on extra lesson they received outside school hours.

Figure 3.5 Standard 6 pupils receiving extra lessons outside school hours (%)

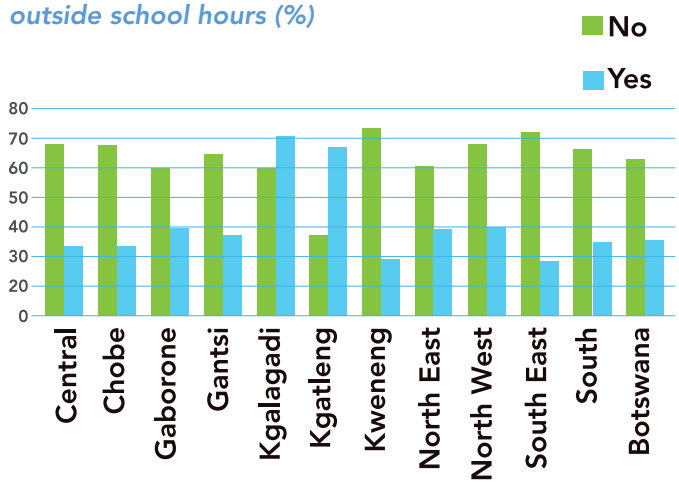


Figure 3.5 shows that majority (65.5%) of standard 6 pupils reported that they did not receive extra lesson outside school hours. The highest proportion of pupils who had not received extra lessons outside school hours were recorded in Kweneng and South East regions. In all the regions, pupils reported that they had received extra lessons outside school hours. The proportion of pupils who had received extra lessons outside school hours was highest (65.4%) in Kgatleng region. The figure further shows that the proportion of pupils who received extra lessons outside school hours varied among regions. It is important for the Ministry of Basic Education to strengthen the remedial programme in primary schools as enshrined in the Education and Training Sector Strategic Plan (ETSSP).

Table 3.5 Percentage of pupils by distance they travel to school

REGION	0 - 0.5 km	0.5 - 1 km	1 - 2 km	2 - 3 km	3 - 4 km	4 - 5 km	>5 km
Central	36.8	21.8	18.5	8.0	4.1	3.4	7.4
Chobe	35.9	23.9	19.7	6.3	2.8	4.2	7.0
Gaborone	28.7	11.0	12.6	9.0	7.9	7.2	23.6
Gantsi	57.9	22.6	8.2	6.7	1.5	0.5	2.6
Kgalagadi	42.4	22.0	15.3	9.7	5.1	3.4	2.1
Kgatleng	29.5	22.9	21.1	10.5	2.7	4.5	8.7
Kweneng	24.5	18.9	19.9	9.2	6.7	5.9	14.8
North East	38.6	21.3	20.3	6.2	3.1	2.3	8.2
North West	39.3	18.6	17.5	11.5	3.7	3.4	6.0
South East	25.1	16.7	16.7	7.6	4.4	8.7	20.7
South	28.8	20.9	19.2	10.4	5.6	5.9	9.2
BOTSWANA	33.8	19.9	17.8	8.9	4.6	4.6	10.3

According to Table 3.5 a majority (33.8%) of standard 6 pupils travelled between 0 and 0.5 km to school. About 20% of the pupils travelled between 0.5km and 1km to school. The third high scoring category was that of pupils who travelled between 1km and 2km to school. The proportion of pupils who travelled more than 5km was high in Gaborone (23.6%), South East (20.7%) and Kweneng (14.8%) regions. It is worth noting that these regions are in and around the Gaborone city. The distance travelled by pupils to school from these regions may not be a result of schools being far from communities, but rather the parents 'choice looking at what is convenient for them.

3.9 Conclusion

The chapter shows that in 2013, most standard 6 pupils reached the desired age of 11years. Though this is the case, there were regions such as Central, Gantsi, Kgalagadi and North West where pupils were 1 year above the desired age. In all the regions where pupils were above the desired age, boys were in the majority except for Gantsi region. The country has achieved gender parity at primary schools as shown by enrolments for girls which stood at 49%. Other noteworthy improvements were on the proportion of pupils who had access to good source of lighting (electricity) at home and pupils having access to school library.

CHAPTER 4

CHARACTERISTICS OF TEACHERS

4.1 Introduction

This chapter presents the characteristics and experiences of standard 6 teachers in Botswana in 2013. The teachers 'views about teaching, professional support and their job satisfaction are some of the key variables that would be discussed. These variables have a notable impact on teacher performance and pupil achievement. The key areas for this study that have been addressed under this chapter are:

1. Personal characteristics of standard 6 teachers
2. Professional characteristics of standard 6 teachers in terms of academic, professional and in-service training.
3. Standard 6 teachers' allocation of their time among teaching responsibilities such as lessons preparation and marking of pupil's work.
4. Standard 6 teachers' views on: a) teacher development b) teaching loads, and c) involvement of parents in pupils' learning.
5. Professional support given to standard 6 teachers.

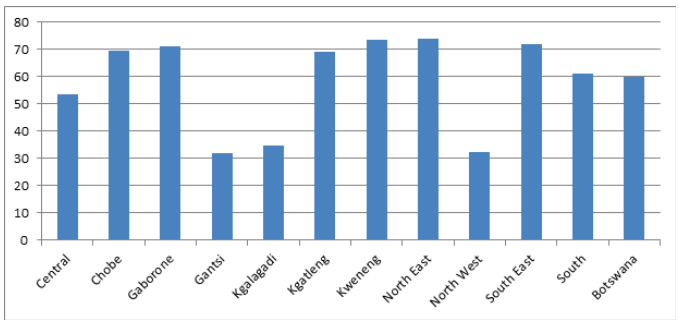
4.2 Personal characteristics of teachers

The analyses of the age and gender of standard 6 teachers are summarised in this sub-section. In Botswana public primary schools, a teacher is responsible to teach all subjects to a class assigned to him/her; only in the private schools is specialisation exercised to a certain degree.

Gender distribution of Standard 6 teachers

The teaching fraternity in Botswana has for many years been dominated by female teachers at primary school level. Admission into teacher training institutions is based on merit, not gender. The dominance of female teachers at primary schools in Botswana may be attributed to choice of career rather than gender. Figure 4.1 shows the percentage distribution of standard 6 pupils taught by female teachers.

Figure 4.1 Distribution of standard 6 pupils taught by female teachers



According to Figure 4.1, a national average shows that majority (60%) of standard 6 pupils were taught by female teachers. High proportion of pupils taught by female teachers were reported in North East, Kweneng, South East and Gaborone regions recording 74.1%, 73.7%, 71.8% and 71.1% respectively. Gantsi, North West and Kgalagadi regions recorded less than 40 percent on the proportion of pupils taught by female teachers. Generally, there was an imbalance of teacher distribution by gender in the country, the same trend that has been observed in the past.

Age distribution of standard 6 teachers

Placement and transfer of teachers in Botswana is guided by the need or vacant positions. All teachers regardless of age, gender or marital status are eligible to serve where their services are required. The Revised National Policy on Education (1994) indicates that teachers like other public officers should be afforded an equal opportunity, taking into account the needs of the service, to serve in all parts of the country on a fair rotational basis. Figure 4.2 shows mean age distribution of standard 6 teachers in their respective regions.

Figure 4.2 Mean age (years) of standard 6 teachers

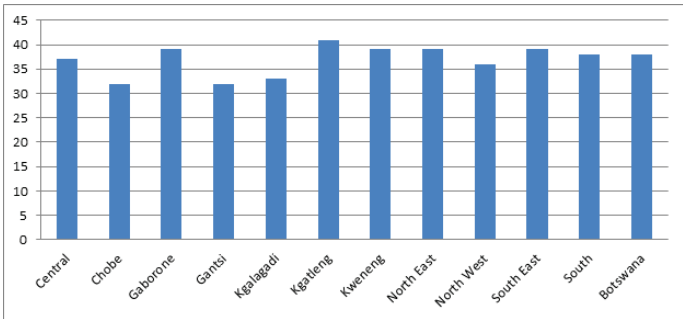


Figure 4.2 shows that an average standard 6 pupil was taught by a teacher of 38 years. Kgatleng region registered highest (41) on the mean age of teachers. In most regions (5) the mean age of teachers was between 38 and 39 years, which is an indication that majority of standard 6 teachers were young. Chobe, Gantsi and Kgalagadi regions were least in the mean age (32 and 33 years) of teachers. The overall analysis shows that regions in the remote areas of the country such as Chobe, Gantsi, Kgalagadi and North West had younger teachers compared to other regions. There is therefore need for the ministry to consider a balance on the age of teachers during placement, promotions and transfer of teachers.

4.3 Teacher professional characteristics

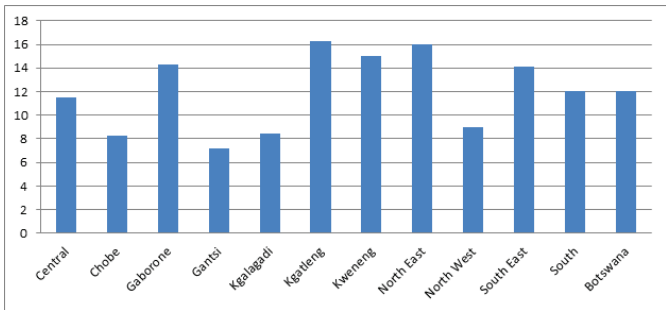
The professional characteristics of teachers that are discussed under this sub-section include the teaching experience, in-service training, and views of teachers on the effectiveness of the in-service training. The Revised National Policy on Education recommends in-service training for all teachers at various levels to ensure continued professional and academic development.

Teaching Experience

Teachers were asked to indicate the numbers of years they had been teaching. Experience in a job including teaching is highly regarded as a tool for productivity. It is expected that the more the teachers gain experience on the profession the better they become.

Figure 4.3 Mean teaching experience (years) of standard 6 teachers

Figure 4.3 shows that an average standard 6 pupil



was taught by a teacher who had 12 years of teaching experience. Gaborone, Kgatleng, Kweneng, North East and South East regions had highly experienced teachers than other regions. The least region on the number of teaching experience teachers had was Gantsi region which recorded 7 years. There was a substantial difference between the regions which recorded highest (16) and least (7) on the number of years of teaching experience. Regions which recorded least on teaching experience were from remote areas e.g Chobe, Kgalagadi and Gantsi. The current scenario calls for an investigation to determine ways of attracting experienced teachers to remote areas.

In-service training for teachers

Research has shown that in-service training for any profession is critical in helping the workers to remain relevant in their jobs. The Revised National Policy on Education recommends in-service training for teachers to further their academic and professional development. This could be achieved through full time education and training programmes, correspondence study or short course and workshops. Figure 4.4 shows the proportion of pupils whose teachers attended in-service training and their teachers' views on effectiveness of the in-service trainings.

Figure 4.4 Proportion of pupils by in-service training received by their teachers

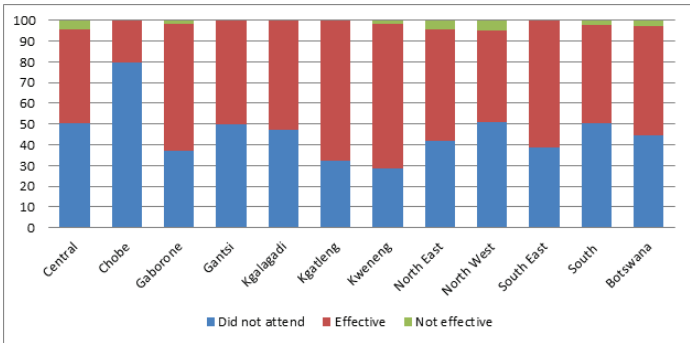


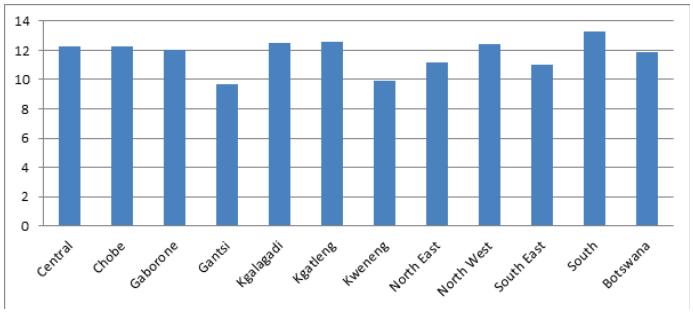
Figure 4.4 shows that in-service training was conducted in all the regions. About 44.3 % of standard 6 pupils nationally were taught by teachers who had not attended in-service training in a period of 3 years. Chobe region had the highest proportion of pupils who were taught by teachers who had not attended in-service training. The proportion of pupils taught by teachers who had attended in-service training was high in Kweneng, Kgatleng, Gaborone and South East regions. Almost half (52.6%) of standard 6 pupils were taught by teachers who viewed in-service training as effective.

Hours used for marking and lesson preparations

Regulations governing teachers prior to 2008 Public Service Act, required teachers to place their whole time

at the disposal of the school. Since 2008, teachers like other public officers are expected to work 8 hours a day. Figure 4.5 shows average hours per week spent by standard 6 teachers doing school marking and doing lesson preparations outside the 8-hour schedule.

Figure 4.5 Hours used for marking and lesson preparation outside school hours



According to Figure 4.5, standard 6 pupils were taught by teachers who dedicated some time outside the normal school hours to do school related activities such as marking and lesson preparation. On average pupils were taught by teachers who spent 12 hours in a week outside scheduled working hours marking pupils' work and preparing for lessons. Gantsi, Kweneng, North East and South East regions recorded below the national average on hours teachers spent outside school hours marking and doing lesson preparations. The fact that teachers devote their time outside work schedule to do school work shows their commitment and dedication to their work. This may also be an indication that the current setting does not give teachers enough time to carry out their daily teaching duties.

4.4 Parent involvement in their children's' learning

Parent involvement in school activities is seen to be effective in providing close contact with communities and ensuring that parents take interest in and contribute to the education of their children. Parents signing pupils' homework is an indication of parents participating in their children's' learning. Figure 4.6 shows the proportion of pupils whose parents signed their homework.

Figure 4.6 Percentage of pupils whose parents sign their homework

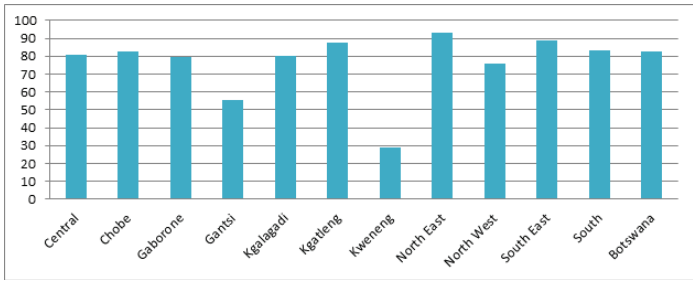


Figure 4.6 shows that majority of standard 6 pupils (82.9 %) were from families whose parents signed their homework. The highest proportion of the pupils whose parents signed their homework was recorded in North East, South East and Kgatleng regions. Kweneng region was least on the proportion of pupils whose parents signed their homework followed by Gantsi region. The general observation is that parents were involved in their children's education.

4.4 conclusion

The chapter revealed that primary schools teaching continue to be dominated by female teachers. It is also observed that most teachers aged between 35 and 41 except for Chobe, Gantsi and Kgalagadi regions where teachers were younger and less experienced compared to those in other regions. About half of the teachers received in-service training in a period of years and they perceived the programme to be effective. Parents' participation in children's education was also observed across the regions.

CHAPTER 5

CHARACTERISTICS OF SCHOOL HEADS

5.1 Introduction

This chapter will provide information about school heads as well as their views on school organisation, infrastructure, and challenges experienced with both pupils and teachers. Information will be provided on age and gender of school heads, professional development, years of experience and their views on behavioural problems experienced at school.

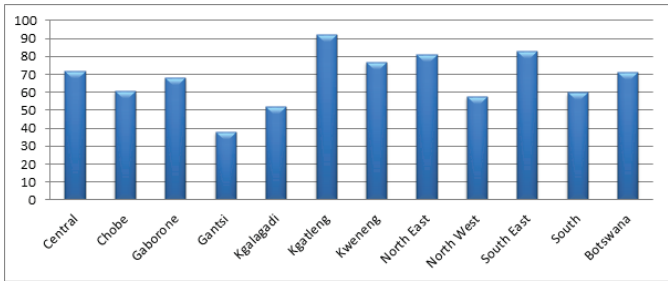
5.2 Personal characteristics of school heads

This sub-section provides information on the age and gender of school heads. The analysis on the gender distribution of school heads provides information on how male and female teachers' progress to senior positions in their teaching career. Gender equality in teacher management and gender equity in teacher progression are both important considerations for the Government. Information provided here will also help monitor women's participation in leadership and decision-making as advanced in the Sustainable Development Goals (SDG 5).

Gender distribution for school heads

As outline in chapter 4, teachers are employed on merit and not gender. The same applies to promotions of teachers to office of responsibility such as school headship. Figure 5.1 shows the proportion of standard 6 pupils who attended schools led by female school heads.

Figure 5.1 Distribution of pupils who attended schools led by female school heads (%)



According to Figure 5.1, majority (71.3 %) of standard 6 pupils attended schools led by female school heads. Kgatleng was highest on the proportion of pupils who attended schools that were led by female school heads. Regions recording high on the proportion of pupils in schools led by female school heads were North East, South East and Kweneng. Gantsi region was least on the proportion of pupils in schools led by female school heads, followed by Kgalagadi and North West regions. The percentage of pupils attending schools led by female school heads increased from 64.3% to 71.3% between 2007 and 2013 in Botswana primary schools. The dominance of female school heads observed could be attributed to the dominance of female school teachers in Botswana primary schools as seen in Figure 4.4. This also is an indication of women's participation in areas of leadership and decision making.

Age distribution of school heads

Figure 5.2 shows the mean age distribution of school heads in schools attended by standard 6 pupils in 2013.

Figure 5.2: Mean age distribution of school heads by region (years)

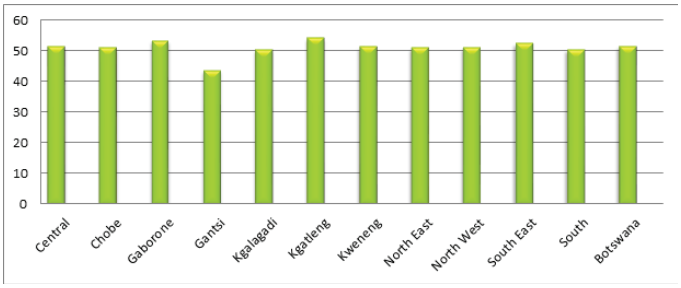


Figure 5.2 shows that an average standard 6 pupil was attending school led by a school head of 51 years. Kgatleng region registered highest on the mean age of school heads (54 years), followed by Gaborone (53 years) and South East (52 years) regions. For most regions (6), the mean age of school heads was the same as the national mean age. Only Gantsi region registered the mean age of school heads lower than 50 years.

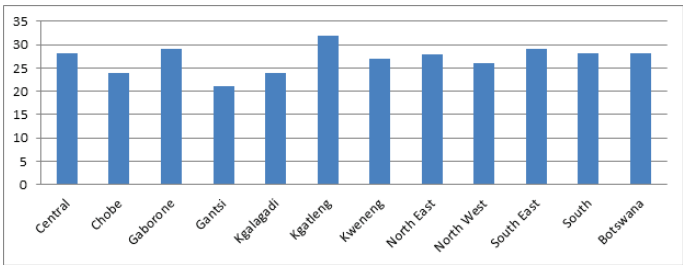
5.3 Professional characteristics of school heads

This sub-section will provide information on professional qualification of school heads, their experiences in teaching, and their views on the general school conditions on the day to day running of the school. The academic and professional qualifications of school heads are key factors for the effective management of schools.

Years of experience of school heads

Figure 5.3 summarises the years of teaching experience for school heads in schools attended by standard 6 pupils. Teaching experience (years) of school heads include the number of years served as school head.

Figure 5.3: Mean years of experience of School heads



According to Figure 5.3 standard 6 pupils were in schools led by school heads that had an average teaching experience of 28 years. Kgatleng region was highest (32 years) on school heads teaching experience, followed by Gaborone and South East regions each recording 29 years of experience. Gantsi region was least on teaching experience for school heads, followed by Kgalagadi and Chobe regions. Generally, this means that school heads had enough experience on teaching matters which should help them lead schools effectively. This considerable experience of school heads is expected to provide schools with appropriate instructional leadership, teacher mentorship, development as well as building necessary school relations.

Training received by school heads

It is desirable for any school head to have undergone some form of pre-service and in-service training. The education policy in Botswana recommends in-service training for teachers to improve their academic and professional development. Figure 5.4 summaries information on in-service training received by school heads for standard 6 pupils

Figure 5.4 In-service training received by School Heads

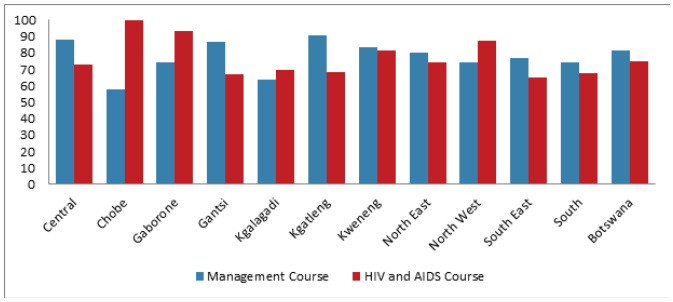


Figure 5.4 shows that standard 6 pupils were in school led by school heads who had received in-service training in management (81%) and HIV/AIDS (75 %). The proportion of pupils in schools led by school heads who received management training was high in Kgatleng, Central, Gantsi, Kweneng and North East regions. Chobe and Kgalagadi regions were least on the proportion of pupils attending schools led by school heads who had received management training.

The analysis further indicates that all pupils in Chobe region attended schools led by school heads who had received training on HIV/AIDS. Between 2007 and 2013, there has been an increase in the proportion of pupils attending schools led by school heads who had received training on management (12%) and HIV/AIDS (5%). This shows the ministry's commitment in developing school leadership and equipping them with the necessary skills to face emerging issues in education.

5.4 viewpoints of school heads on school operations

School are managed by school heads who have to deal with a number of managerial activities to include amongst others monitoring teaching and learning processes, pupil welfare and behavioral issues, staff conduct and professional development as well as the general school administrative duties.

pupil and teacher behavioural problems in schools

Four behavioural problems that have direct relationship to teaching and learning has been identified and discussed. These include late arrival, absenteeism, skipping class and school dropout. Figure 5.5 and Figure5.6 show the response of school heads when asked about the frequency their schools had to deal with pupil and teacher behavioural problems.

Figure 5.5 Pupil behavioural problems in schools

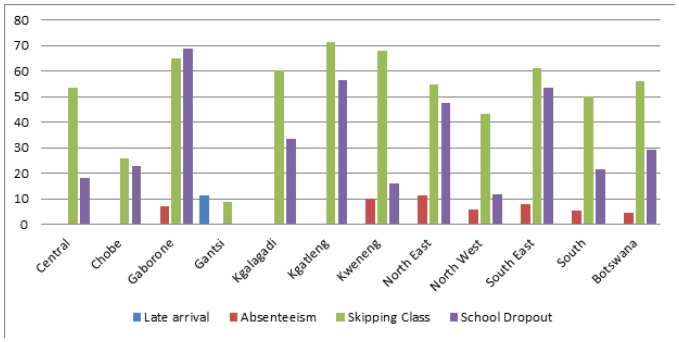
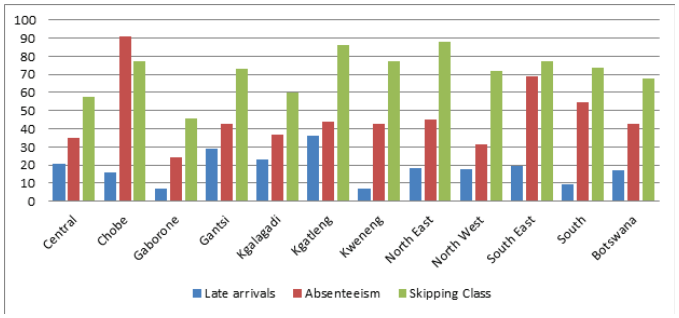


Figure 5.5 shows that nationally skipping class was most common pupil behavioural problems experienced by schools. Kgatleng region was highest on the proportion of pupils whose school heads reported that their schools experienced pupils skipping classes, followed by Kweneng and Gaborone regions. School dropout was the second commonly reported pupil behavioural problem to have been experienced by schools. This was highly reported in Gaborone (68.9%), followed by Kgatleng (56.6%) and South East (53.3%) regions. The national average on the proportion of pupils whose school heads reported pupil absenteeism was as low as 4.5%. Gantsi was the only region in which school heads reported schools having experienced late arrival to school by pupils.

Figure 5.6 School heads experiences on teacher behavioural problems



According to Figure 5.6 standard 6 pupils attended schools led by school heads who reported that their schools had experienced teacher behavioural problems such as late arrival, skipping of class and absenteeism. Skipping of classes by teachers was reported highest (67.9%) amongst teacher behavioral problems experienced by schools, followed by teacher absenteeism (42.6%). Skipping of class was highest reported in North East and Kgatleng regions. Chobe region was highest on the proportion of pupils who school heads reported teacher absenteeism followed by South East region. Late arrival was the least reported teacher behavioral problem to have been experienced by school heads.

5.5 conclusion

It has been observed that most schools were led by female school heads, a trend that has been observed in the past. Compared to other regions, Gantsi had more male school heads, which were younger and had less experience. It has been observed that skipping of classes by pupils and teachers were cited as the most frequently experienced problem by schools. This is a problem that needs to be investigated to determine the extent to which it is affecting schools, factors leading to it and provide solutions.

CHAPTER 6

SCHOOL RESOURCES

6.1 Introduction

Ministry of Basic Education (MoBE) has the mandate to provide education at lower levels to the nation. To perform this role, MoBE collaborates with other ministries which form part of the education sector. The Ministry of Basic Education collaborates with Ministry of Local Government and Rural Development (MLGRD) on primary education. The MLGRD is primarily responsible for provision of infrastructure, teaching and learning materials, food rations and the upkeep of the school while the MoBE is responsible for the management of schools, provision and development of human resource especially teachers.

This chapter will focus on resource distribution in primary school within the 11 SACMEQ regions across the country. These regions are aligned to the District Administrative Authorities, which are the lower levels of Ministry of Local Government and Rural Development. It is these administrative authorities which provide resources to schools within their administrative boundaries.

6.2 Provision of school resources by region

The Revised National Policy on Education suggests that the standard school physical facilities and equipment should include classrooms, administrative block with office space for school head, deputy school head, staff room, library, resource center, sports field, toilet facilities, computer, reprographic equipment, telephone, library books etc. The Government of Botswana has also committed to provide textbooks and stationery for teaching and learning in primary schools. This sub-section shows availability of resources in primary schools and pupils' access to the resources.

Access to basic learning materials

Exercise book, pen, ruler and pupil own textbook are the basic learning materials necessary to support quality learning. Figure 6.1 shows the proportion of standard 6 pupils with access to learning materials.

Figure 6.1 Proportion of pupil with access to learning materials

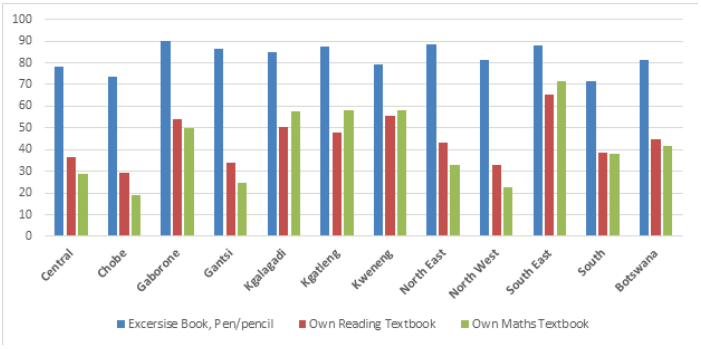


Figure 6.1 shows a national average of 81.1 % of standard 6 pupils who had basic stationery (an exercise book, pen or pencil and a ruler). Own pupil textbook provision was reported at 44.7% and 41.6 % for reading and mathematics respectively. The proportion of pupils who had basic stationery was highest in Gaborone region which recorded 90 %. Regions recording high on the proportion of pupils who had own reading textbooks included South East (65.4%), Kweneng (55.7%) and Gaborone (53.9%). Chobe, North West and Gantsi regions were least on the proportion of pupils who had own reading textbooks, recording 19.0%, 32.9% and 33.8% respectively.

The proportion of pupils who had own pupil mathematics text books was high (71.6%) in South East region, followed by Kweneng and Kgatleng regions. Regions recording least on the proportion of pupils who had own mathematics textbooks were Chobe, Noth West and Gantsi. In order for effective learning to take place, all pupils should be provided with basic learning materials. However, the country has experienced continuous decline on the proportion of pupils who had own textbooks (reading and mathematics) since 2000. Ministry of Basic Education should therefore respond to the need of pupils by ensuring procurement and distribution of learning materials to all primary school pupils.

Access to teaching materials

Access to teaching materials allows for ease of teaching and learning by both teachers and pupils. Table 6.1 indicates the proportion of standard 6 pupils whose teachers had teaching materials such as teacher's guides and dictionaries.

Table 6.1 Proportion of pupils whose teachers had teaching materials (%)

Regions	English Teacher's Guide	English Dictionary	Mathematics Teacher's Guide	Teacher Table and Chair
Central	16.7	78.1	75.6	84.9
Chobe	0.0	79.0	42.6	91.7
Gaborone	10.7	85.4	84.1	93.0
Gantsi	0.0	71.6	72.4	100.0
Kgalagadi	15.3	100.0	74.2	100.0
Kgatleng	27.6	100.0	66.0	97.5
Kweneng	12.9	78.7	65.1	93.7
North East	28.0	78.6	59.0	88.9
North West	31.7	77.3	88.6	86.7
South East	31.0	95.5	69.6	92.4
South	27.3	80.9	76.2	91.2
Botswana	**20.4**	**82.3**	**73.6**	**89.7**

Table 6.1 shows that a high (89.7%) proportion of standard 6 pupils taught by teachers who had tables and chairs. The proportion of pupils taught by teachers who had tables and chairs was least (84.9%) reported in the central region. North West and Gaborone regions registered highest (88.6% and 84.1% respectively) on the proportion of pupils taught by teachers who had mathematics teachers 'guide. Regions recording least on the proportion of pupils taught by teachers who had mathematics teacher's guide were Chobe and North East. The proportion of pupils taught by teachers' who had English teachers guide was as low as 20.4% nationally. Just like it was observed on pupil textbooks, provision of teaching materials also showed a decline since 2000. In order to address the insufficiencies observed in teacher resource provision, the Ministry of Basic Education should ensure procurement and equitable distribution of teaching materials.

Figure 6.2 Essential resource distribution (%)

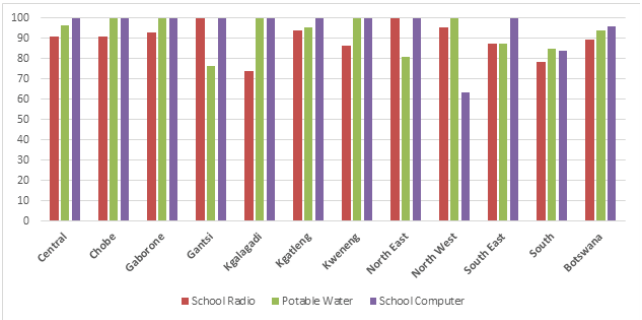


Figure 6.2 shows that standard 6 pupils attended schools where essential resources such as potable water (94%), school radio (89%) and school computers (96%) were available. Regions recording adequate (100%) provision of potable water were Chobe, Gaborone, Kgalagadi, Kweneng and North West. Gantsi was the least (76%) region on the proportion of pupils in schools which had potable water. All regions except North West and South recorded adequate supply of school computers. Gantsi and North East regions were in adequate supply of school radios. Even though the general observation was that essential resources were provided, there were variations amongst regions. Ministry of Basic Education through adopt a school initiative should continue to support schools with basic resources at primary level.

Desirable resources

According to the Revised National Policy on Education, primary schools should have adequate physical facilities and equipment/supplies. Desirable school resources have been classified into school supplies and school facilities. School supplies include; telephone, fax, computer and photocopier whilst school facilities include; hall, staffroom and school head office. Figure 6.3 shows the distribution of school facilities (school head office, school staffroom and school hall), electricity and supplies by region.

Figure 6.3 Desirable resource distribution (%)

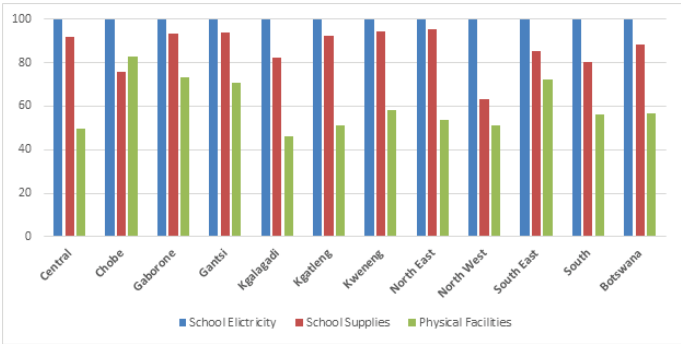


Figure 6.3 show that all standard 6 pupils attended schools which had electricity. In all regions except Chobe and North West, at least 80 % of pupils were in schools which had the necessary school supplies. The proportion of pupils who attended schools which had desirable physical facilities (school head office, school staffroom and school hall) was low in all regions. The region which recorded highest (82.7%) on the proportion of pupils attending schools that had physical facilities was Chobe. The general observation is that there was an imbalance in the distribution of school supplies and physical facilities. Provision of adequate physical facilities such as work space for teachers and school heads is critical to enable school processes. Therefore, there is need for the ministry to ensure that all primary schools have adequate facilities and supplies to support teaching and learning.

Desirable human resource

Table 6.2 shows the proportion of pupils who attended schools with desirable human resource. The identified human resource has been categorized as school head with a management course, teacher who has attended a

pre-service training for 2 or more years and teacher with special training on HIV/AIDS issues.

Table 6.2 Desirable human resource distribution (%)

Regions	School Head with Management Course	School Head with training on HIV/AIDS	Teacher With ≥ 2yrs Pre-service Training	Teacher with training on HIV/AIDS
Central	87.9	72.7	93.9	55.6
Chobe	57.7	100.0	50.9	83.1
Gaborone	74.0	93.3	95.0	66.3
Gantsi	86.9	67.2	87.2	43.6
Kgalagadi	63.5	69.5	70.1	57.5
Kgatleng	90.7	68.0	89.8	44.0
Kweneng	83.3	81.1	90.0	59.0
North East	80.4	74.3	88.6	51.2
North West	74.1	87.7	92.4	61.1
South East	76.5	65.2	92.7	47.2
South	73.9	67.6	84.4	45.3
Botswana	**81.1**	**75.0**	**90.7**	**54.4**

According to Table 6.2, majority (81.1 %) of standard 6 pupils were in schools which were led by school heads who had training in school management and teachers who had 2 or more years of pre-service training (90.7 %). The proportion of pupils who attended schools led by school heads that had training in management was high in Kgatleng, Gantsi, Kweneng and North East regions. In all regions except Chobe and Kgalagadi, the proportion of pupils taught by teachers who had 2 or more years of pre-service training was above 80%. The proportion of pupils taught by teachers who had special training on HIV/AIDS was highest (83.1%) recorded in Chobe region. Generally, the proportion of pupils led by school heads who had training on HIV/AIDS was higher than that of pupils taught by teachers who received the same training.

6.3 conclusion

The supply of teaching and learning materials was observed to be critically low especially pupil own textbooks and teacher's guides; this need urgent attention from the ministry. Improvements were noted on supply of potable water, electrification of schools, and school computerization. Schools generally had desirable human resource as recommended by the Revised National Policy on Education.

CHAPTER 7

READING AND MATHEMATICS ACHIEVEMENT LEVELS OF PUPILS AND THEIR TEACHERS

7.1 Introduction

This chapter presents an assessment of pupils' and teachers 'achievement in both reading and mathematics. Literacy and numeracy are fundamental learning skills for all levels of education including tertiary. Achievement levels of pupils in literacy and numeracy at the end of primary school are critical indicators on how pupils will perform in the next level of education (junior secondary level). They also measure pupils' readiness to learn reading and mathematics at a higher and more complex level. Achievement levels of pupils and teachers in reading and mathematics are discussed as mean achievement scores and as competency levels.

7.2 Pupil mean achievement scores for reading

This section discusses mean achievement scores of pupils in reading. Pupil achievement in reading is disaggregated in the following sub groups; pupil gender, school location and socio economic levels necessary for monitoring equity amongst the sub groups. Figure 7.1 shows pupils mean achievement scores in reading.

Figure 7.1 Pupil mean reading scores

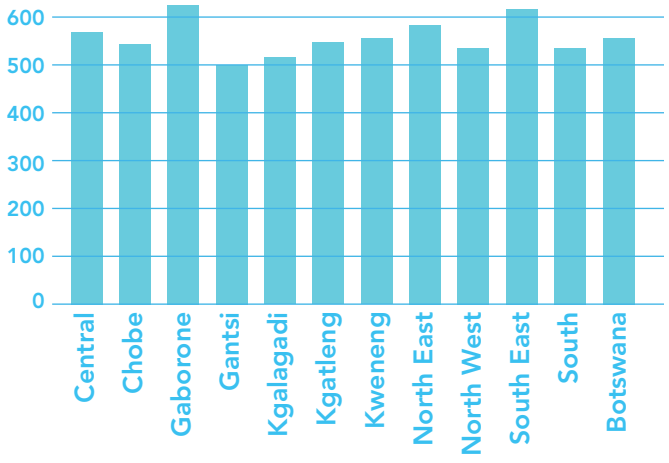


Figure 7.1 shows the national mean reading score of 567.1 for standard 6 pupils. This means that the country's mean reading score was 67.1 points above the SACMEQ benchmark. All the regions except Gantsi recorded mean reading score above 500 points. The difference between highest scoring region (South East) and lowest scoring region (Gantsi) was 124.2 points. There was a slight increase of 32.5 points in pupil mean reading scores between SACMEQ III (2007) and SACMEQ IV (2013).

Pupils mean reading scores by subgroups

Table 7.1 indicates pupil mean reading scores disaggregated by gender, school location and socio-economic status.

Table 7.1 Pupil mean reading scores by different sub-groups

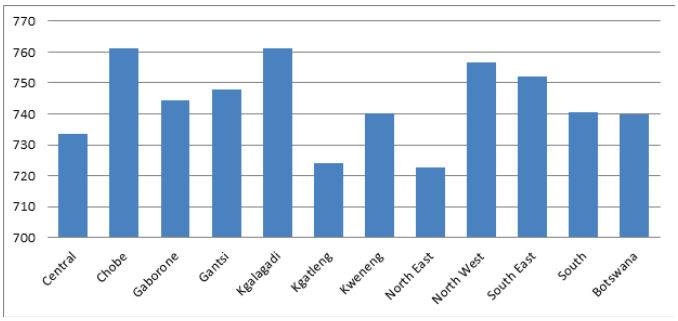
Sub group		2000	2007	2013	Change (2007-2013)	Difference from SACMEQ Target
Pupil gender	Boys	507.2	519.7	550.6	30.9	50.6
	Girls	534.4	549.4	584.8	35.4	84.8
School location	Rural	502.4	508.1	530.1	22.0	30.1
	Urban	539.1	559.5	594.1	34.6	94.1
Socio-economic level	Low SES	490.8	474.4	538.6	64.2	38.6
	High SES	573.	583.6	601.7	18.1	101.7
Botswana		521.1	534.6	567.1	32.5	67.1

Table 7.1 shows that the national mean reading score for standard 6 pupils in 2013 was 567.1, showing an increase of 32.5 points from SACMEQ III score (534.6). Pupil mean reading scores showed an increase in all the sub-groups, with pupils from low socio-economic status (Low SES) showing the highest increase between 2007 and 2013. Since 2000, all the sub-groups performed above the SACMEQ benchmark of 500 points, except for Low SES. Pupils from high socio-economic status (High SES) recorded the highest mean score in reading. The results showed the same trends as in the past where girls had better mean reading scores than boys. Pupils from schools in urban locations and those from high socio-economics status did better than their counterparts.

7.3 Teacher mean achievement scores for reading

This section presents mean achievement scores of teachers in reading.

Figure 7.2 Teacher mean reading scores



According to Figure 7.2, standard 6 pupils were taught by teachers who had a national mean reading score of 739.9 points. Teacher mean reading scores in all the regions were above the SACMEQ benchmark of 500 points. Mean reading score for teachers was highest (761.1) in both Chobe and Kgalagadi regions, followed by North West and South East regions. North East and Kgatleng regions were least on teacher mean reading scores recording means 722.6 and 724.1 respectively. The results indicate that between 2007 and 2013, there was a decrease of 29.1 points on teacher mean reading scores.

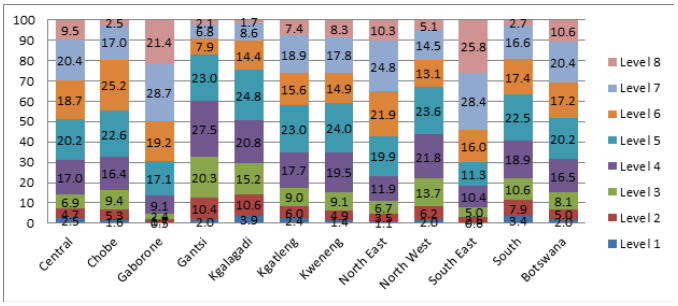
7.4 Pupils reaching various reading competency levels

Pupils were assessed on reading to determine their competency levels at standard 6. Eight levels of reading skills were pre-reading, emergent reading, basic reading, for meaning interpretive reading, inferential reading, analytic reading and critical reading in ascending order. The competency levels for reading are further explained in the appendix section.

Pupil reading competency levels

This section focuses on pupil reading competency levels. Competency levels have been grouped into elementary reading skills (level 1 to level 3) and acceptable reading skills (levels 4 to 8). Figure 7.3 shows the proportion of pupils reaching various reading competency levels in different regions.

Figure 7.3 Pupil reaching various reading competency levels



According to Figure 7.3, majority (84.9 %) of standard 6 pupils reached acceptable reading competency levels (4-8). The highest proportion of pupil's levels of competence in reading were registered at level 5 (20.2%), level 6 (17.2%) and level 7 (20.4%). Though this is a noteworthy achievement, there still existed a notable proportion (15.1%) of pupils at standard 6 who were still at level 1, 2 and 3 (elementary). Gantsi region had the highest proportion of pupils reaching levels 1-3 in reading, followed by Kgalagadi, North West and South regions. Gaborone, South East and North East regions registered high on the proportion of pupils reaching acceptable reading levels. A high proportion of pupils reaching critical reading competency level (level 8) was

registered in South East and Gaborone regions. Pupils reaching acceptable reading skills (levels 4-8) declined at levels 4 and 5, and showed improvement at levels 6, 7 and 8 between SACMEQ III (2007) and SACMEQ IV (2013). The Education and Training Sector Strategic Plan (2015-2020) has prioritised remediation and repetition of a standard at primary schools, as an initiative to help pupils to acquire reading skills at the right levels, it is believed this will help improve pupil reading competency levels.

Pupil reading competency levels by sub-groups

In this sub-section, pupils reading competency levels are discussed by gender, location and socio-economic status. Table 7.3 show proportion of pupils reaching acceptable reading competency levels by sub-groups.

Table 7.2 Pupils reaching acceptable` reading competency levels by sub-groups

Region	Pupils reaching Acceptable Reading levels (%)					
	Boys	Girls	Rural schools	Urban schools	Low SES	High SES
	%	%	%	%	%	%
Central	77.9	94.6	80.5	91.7	83.6	90.7
Chobe	75.2	90.7	80.5	86.7	78.5	91.3
Gaborone	93.7	97.2	x	95.4	94.2	96.4
Gantsi	59.2	74.0	59.2	82.0	65.1	76.5
Kgalagadi	61.4	79.7	70.3	70.8	69.5	73.0
Kgatleng	74.1	92.6	80.3	83.1	77.1	85.2
Kweneng	80.3	89.3	85.4	84.2	82.0	90.4
North East	85.3	92.1	87.4	89.0	85.5	91.4
North West	73.0	83.7	70.9	91.6	77.4	86.7
South East	88.0	95.7	94.4	91.5	87.3	94.3
South	67.7	88.2	75.8	83.4	74.9	85.0
Botswana	**78.6**	**91.6**	**78.5**	**89.6**	**81.2**	**90.5**

According to Table 7.2, the national proportion of girls reaching acceptable reading competency level (level 4-8) amongst standard 6 pupils was higher (91.6%) than that of boys. The highest proportion of girls reaching acceptable reading competency level was recorded in Gaborone region followed by South East, Central and Kgatleng regions. Regions reporting high on boys reaching acceptable competency level were Gaborone, South East and North East regions recording 93.7 %, 88.0 % and 85.3 % respectively. Gantsi region was least on the proportion of both boys and girls reaching acceptable competency reading levels.

Table 7.2 also shows that pupils who reached acceptable reading competency levels were high in schools located in urban areas than those in rural areas. The proportion of pupils reaching acceptable reading competency level in schools located in rural areas was high in South East, North East and Kweneng regions. It is worth noting that these regions are in districts which have major villages and are also closer to cities and towns.

As shown in Table 7.2, standard 6 pupils from high socio-economic status performed better than those from low socio-economic status. Gaborone region recorded a highest of 94.2% of pupils from low socio economics status reaching acceptable reading competency level followed by South East region, North East region and Central regions. Generally, it was observed that there were disparities on the proportion of pupils who reached acceptable reading competency levels for different sub-groups.

7.5 Teachers reaching various Reading competency levels

This sub section presents reading competency levels of teachers. The same reading test that was administered to pupils was also given to teachers. It is therefore expected that all teachers should reach critical reading competency level (Level 8). Figure 7.4 shows the proportion of pupils taught by teachers reaching various reading competency levels.

Figure 7.4 Teachers reaching various reading competency levels (%)

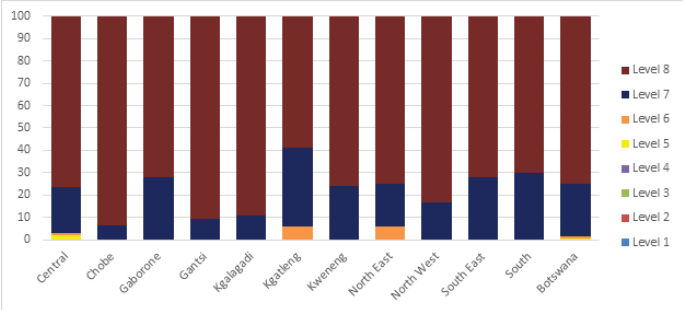


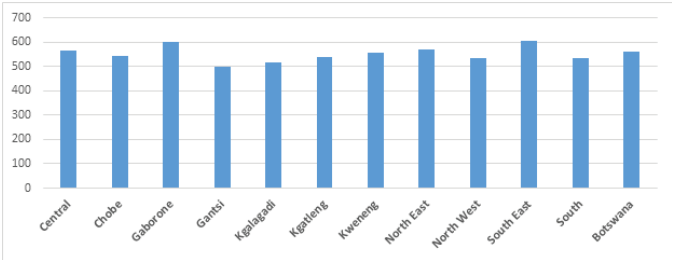
Figure 7.4 shows that a high (75.1%) proportion of standard 6 pupils were taught by teachers who had reached critical reading competency level (level 8). The proportion of pupils taught by teachers who reached critical reading competency level were highest (93.4%) in Chobe region, followed by Gantsi and Kgalagadi regions recording 90.4% and 89.4% respectively. In all the regions pupils were taught by teachers who had reached reading competency level 6 and above except for Central region which recorded pupils taught by teachers who reached competency level 5. Teacher reading competency levels has remained the same between SACMEQ III and SACMEQ IV studies where all teachers reached acceptable reading skills with some traces of teachers at reading competency level 5.

7.6 Pupil mean achievement scores for mathematics

The analysis shows mean achievement scores of standard 6 pupils in mathematics. Pupil achievement in mathematics is disaggregated by gender, school location and socio economic status. Analysis by sub-

groups is necessary for monitoring equity amongst the sub groups. Figure 7.5 shows pupils mean achievement scores in mathematics.

Figure7. 5 Pupil mean mathematics scores



The results show that nationally standard 6 pupils had mean mathematics score of 562.9 points. South East and Gaborone regions recorded highest (604.3 and 600.3 respectively) in mean mathematics scores. Pupil mean mathematics scores in all the regions was above the SACMEQ benchmark of 500 points except Gantsi region which recorded mean mathematics score of 499.8. There has been an increase of 41.9 in mean mathematics score between SACMEQ III and SACMEQ IV.

Pupil mean mathematics scores by sub-groups

Table 7.3 shows pupil mean mathematics score by gender, school location and socio-economic status.

Table 7.3 Pupil mean mathematics scores by sub-groups

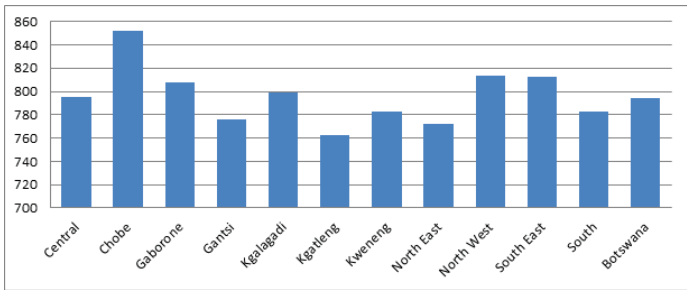
Sub groups		2000	2007	2013	Change (2007-2013)	Difference SACMEQ Target
Pupil gender	Boys	508.2	517.5	556.5	39	56.5
	Girls	517.4	523.6	569.6	46	69.6
School location	Rural	500.5	501.1	534.8	33.7	34.8
	Urban	524.8	538.8	583.3	44.5	83.3
Socio-economic level	Low SES	490.8	479.0	543.6	64.9	43.6
	High SES	549.6	553.1	587.8	34.7	87.8
Botswana		512.9	520.5	562.9	42.4	62.9

Table 7.3 shows that the national mean mathematics score for standard 6 pupils was 562.9, showing an increase of 42.4 points from SACMEQ III score (520.5). Pupils mean mathematics scores showed an increase in all the sub-groups, with pupils from low socio-economic status (Low SES) showing the highest increase between 2007 and 2013. Since 2000, all the sub-groups performed above the SACMEQ benchmark of 500 points, except for Low SES. Pupils from high socio-economic status (High SES) recorded the highest mean score in mathematics. The results showed the same trends as in the past where girls had better mean mathematics scores than boys. Pupils from schools in urban locations and those from high socio-economics status did better than their counterparts.

7.7 Teacher achievement scores for mathematics

Figure 7.6 shows teacher achievement scores for mathematics by region.

Figure 7.6 Teacher mean mathematics scores



According to Figure 7.6 standard 6 pupils were taught by teachers who had a national mean mathematics score of 793.9 points. The highest teacher mean mathematics score (852.5) was recorded in Chobe region. Kgatleng region was least on teacher mean mathematics score, followed by North East and Gantsi regions. All the regions recorded teacher mean mathematics score above the SACMEQ benchmark of 500, with the least scoring region recording 262.3 point above. Teacher mean mathematics score improved by 13.9 points from SACMEQ III study.

7.8 Pupil reaching various mathematics competency levels

This sub-section gives a summary of the proportion of pupils who had reached various mathematics competency levels. The results are shown by regions and sub-groups gender, school location and socio-economic status. Figure 7.7 shows the proportion of pupils reaching various mathematics competency levels by regions and Table 7.4 further shows the proportion of pupils reaching various mathematics competency levels by different sub-groups.

Figure 7.7 Pupils reaching various mathematics competency levels

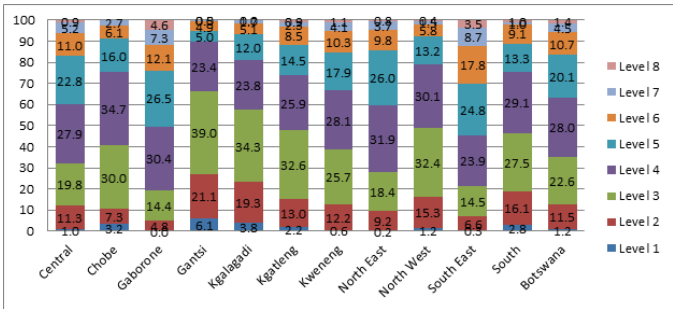


Figure 7.7 shows that majority of standard 6 pupils (64.7%) reached acceptable mathematics competency levels (4-8). The highest proportion of pupils reaching acceptable levels of competency in mathematics clustered in levels 4 and 5. The proportion of pupils reaching acceptable mathematics competency level was high in the Gaborone, South East and North East regions. Pupils with problem solving skills (level 7and 8) were registered in all regions, however pupils in Chobe, Gantsi and Kgalagadi regions only reached up to level 7 (concrete problem solving skill). It was observed that in all the regions there were pupils who had not reached acceptable mathematics competency levels (ranging from 19.2% to 66.2%) This lack of acceptable mathematics skills was highly reflected in Gantsi, Kgalagadi, Kgatleng, North West and South regions.

Table 7.4 Pupils reaching acceptable mathematics competency levels by sub-groups

Region	Pupils reaching acceptable mathematics levels (%)					
	Boys	Girls	Rural schools	Urban schools	Low SES	High SES
Central	62.9	73.4	57.7	78.9	63.3	79.4
Chobe	57	61.6	60.7	58.1	55.2	72.5
Gaborone	78.1	83.6	x	80.1	77.4	82.6
Gantsi	40.2	28.6	20.1	58.1	28.1	51.3
Kgalagadi	41.3	43.8	40.2	62.5	39.5	50.3
Kgatleng	47.1	58.3	48	53.1	48.7	55.4
Kweneng	59	64.1	58.5	63.1	53.9	73.1
North East	70.1	74.3	66.9	73.4	68.7	76.9
North West	46.3	56.6	40.8	70.9	49.5	62.4
South East	73.6	83.7	77.7	78.8	70.5	80.8
South	47.6	59.2	48.4	65.7	48	66.1
Botswana	**60.7**	**69**	**52.8**	**73.4**	**57.7**	**75**

Table 7.4 shows that the proportion of standard 6 girls who had reached acceptable mathematics competency level was 9 % higher than that of boys. South East and Gaborone regions were highest on the proportion of girls reaching acceptable mathematics competency level recording 83.7% and 83.6% respectively. The proportion of boys reaching acceptable mathematics competency level was highest (78.1%) recorded in Gaborone region followed by South East and North East regions. The proportion of girls who reached acceptable mathematics competency levels was also highest recorded in Gaborone and South East regions. Gantsi region recorded lowest in both boys and girls reaching acceptable mathematics competency levels. The proportion of girls who reached acceptable mathematics competency level was higher than that of boys in all regions except Gantsi.

Table 7.4 also shows that the proportion of standard 6 pupils from schools located in urban areas was 20.6% higher than that of pupils from schools in rural areas. South East region recorded high in the proportion of pupils from schools in rural areas reaching acceptable mathematics competency level, followed by North East and Chobe regions. The least region on the proportion of pupils who had reached acceptable mathematics competency level was Gantsi with 20.1%.

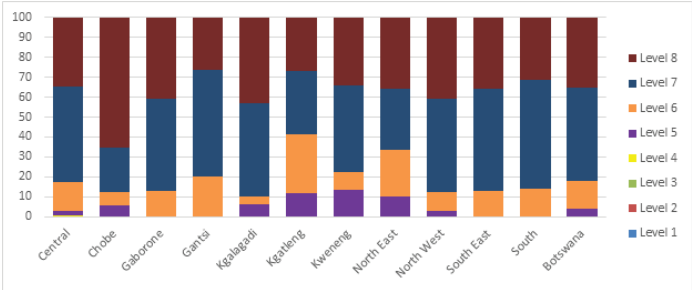
A high proportion of pupils from high socio-economic status reached acceptable mathematics competency levels than those from low socio-economic status. Gaborone and South East regions recorded highest on the proportion of pupils from high socio-economics status reaching acceptable mathematics competency level and the same was observed with pupils from low socio-economic status. Least on the proportion of pupils from low socio-economic status reaching acceptable mathematics competency level was Gantsi region.

7.9 Teachers reaching various mathematics competency levels

Teacher reaching various mathematics competency levels are presented in Figure 7.8.

Figure 7.8 shows that standard 6 pupils were taught by teachers who had reached acceptable mathematics competency level (level 4-8). The proportion of pupils taught by teachers who had problem solving skills (reaching competency levels 7 and 8) was high in Kgalagadi, Chobe and North West regions. This shows that teacher in these regions had the required mathematics knowledge to teach the subject. The proportion of pupils taught by teachers who had reached mathematics competency level 7 increased from 41.5% to 46.4% between 2007 and 2013 while for competency level 8 increased from 34.9% to 35.4%.

Figure 7.8 Teachers reaching various mathematics competency levels



7.6 conclusion

Information presented in this chapter indicates that there has been an improvement in pupil reading and mathematics competencies between SACMEQ III (2007) and SACMEQ IV (2013). However, not all regions performed the same. In reading and mathematics, regions in and around cities and towns performed much better than those in the remote areas. Pupil reading scores had steadily increased over the years; from SACMEQ II (2000), SACMEQ III (2007) and SACMEQ IV (2013).

Girls' performance in reading and mathematics scores were higher than that of boys. The results also show that majority of the pupils reached acceptable reading level. A general observation is that since SACMEQ II (2000), proportion of pupils reaching elementary mathematics skills have been declining while those reaching acceptable skills have shown some improvement over the same period.

The analysis further indicates all teachers reached acceptable reading and mathematics competency levels, however it is worrisome to realise that there are teachers who reached as low as level 5. This observation was also made in 2007 (SACMEQ III) study. There is therefore need for further analysis to find out factors which lead to this scenario.

CHAPTER 8

PUPIL AND TEACHER HIV/AIDS KNOWLEDGE LEVEL

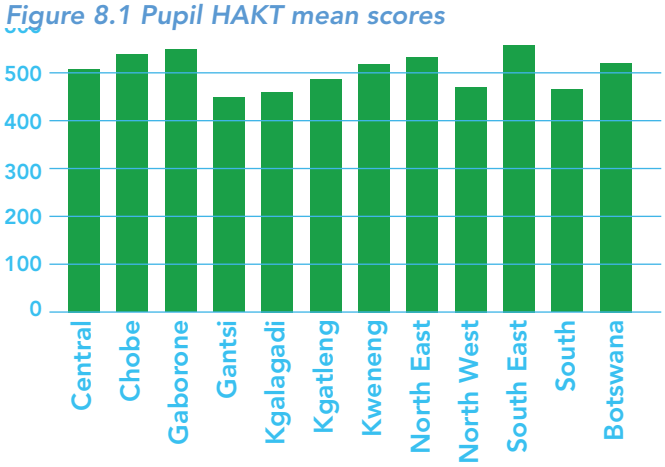
8.1 Introduction

This chapter presents the findings on the HIV/AIDS Knowledge Test (HAKT) results. The test was taken by pupils and teachers where data was collected. The scope of test covered definitions and terminologies, transmission mechanisms, avoidance behaviour, diagnosis and treatment, myths and misconceptions. The performance of pupils and teachers on HAKT was assessed by applying two complementary scoring procedures; mean scores and knowledge level (minimum and desired levels). A pupil or teacher who had mastered at least 50% of the assessed curriculum content was regarded to have reached "minimum knowledge" and one who had mastered 75% or more to have reached "desirable knowledge" level.

8.2 Pupils' knowledge on HIV/AIDS

The Botswana government through the National Development Plan 10 guarantees mainstreaming of HIV/ADS Life Skills education at all levels of the education system from training of teachers and teaching of students to management of the workplace. The 2011-2016 Education Strategic Framework for HIV/AIDS places great emphases on addressing the challenges of HIV/AIDS across the education sector and to shape strategic and sustainable responses to the impact of the epidemic on the education system. Botswana as a member of the United Nations has committed to ensuring achievement of Sustainable Development Goal 3, target 4 of ending the epidemic by 2030. Figure 8.1 shows pupil HIV/AIDS knowledge mean scores.

Figure 8.1 Pupil HAKT mean scores



According to Figure 8.1, the national HAKT mean score for standard 6 pupils was 508 points. Pupils HAKT mean score was high in South East and Gaborone regions recording 561 and 550 respectively. Chobe, Kweneng, North East recorded above the SACMEQ benchmark of 500. Though this is a good sign on pupil HAKT performance, regions such as Kgatleng, North West, South, Gantsi and Kgalagadi performed below the SACMEQ benchmark. This is an indication that there were pupils in some parts of the country who have limited knowledge on HIV/AIDS issues.

Pupils reaching minimum and desirable HIV/AIDS knowledge levels

This sub-section presents a summary on the proportion of pupils who had reached minimum and desirable HIV/AIDS knowledge levels, gender and location. Figure 8.2 shows the proportion of pupils reaching minimum and desirable HIV/AIDS knowledge levels.

Figure 8.2 Proportion of pupils reaching minimum and desirable knowledge levels

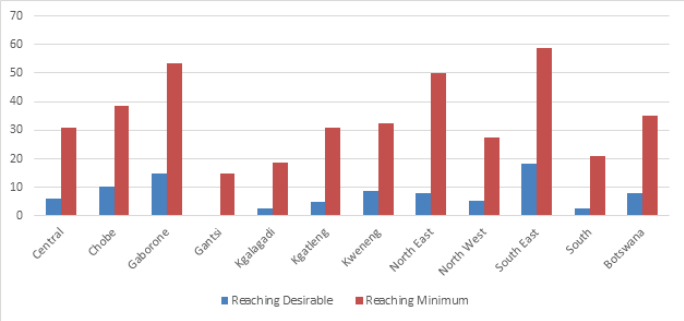


Figure 8.2 show that only 35.2% of standard 6 pupils in Botswana reached minimum level on HIV/AIDS knowledge. A small proportion of 7.9% of the pupils reached desirable HIV/AIDS knowledge level. South East region was highest on the proportion of pupils reaching minimum HIV/AIDS knowledge levels recording 58.8%. The proportions of pupils who reached minimum and desirable HIV/AIDS knowledge levels were low. This is an indication that primary leaving pupils are not adequately equipped with the necessary life skills needed to sustain them as to go into the adolescent stage. Only a small increase (3.3%) has been realised on the proportion of pupils reaching minimum HIV/AIDS knowledge level between 2007 and 2013. There is therefore need for concerted efforts from the ministry and its partners to enhance pupil knowledge about HIV/AIDS issues

Figure 8.3 Percentage of pupils who had reached desirable level on HIV/AIDS knowledge By gender

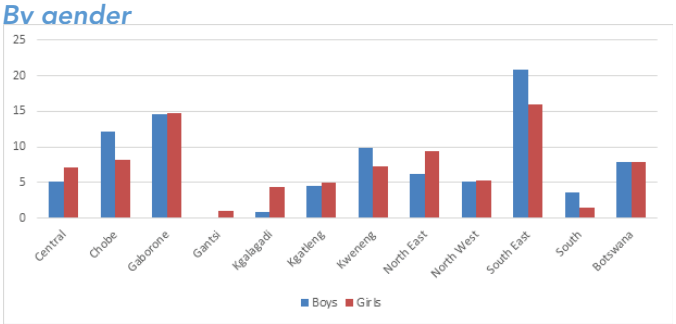
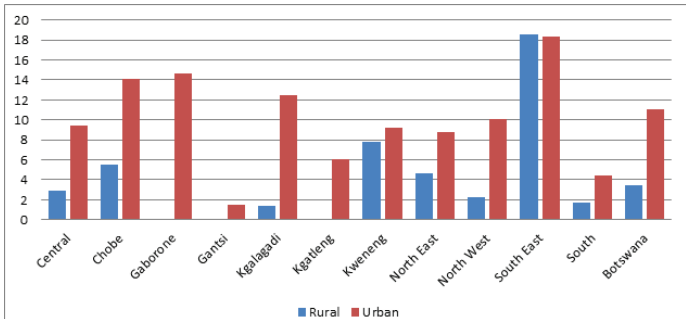


Figure 8.3 show that approximately the same number of standard 6 boys (7.9 %) and girls (7.8%) had reached desirable HIV/AIDS knowledge. The proportion of boys and girls who had reached the desirable HIV/AIDS knowledge was lower than 10% in most regions (8). South East region, Chobe and Kweneng were the only regions in which the proportion of boys who reached desirable HIV/AIDS knowledge showed differential advantage. The general observation is that majority of the pupils had not acquired the necessary life skills on HIV/AIDS which poses a challenge on the country achieving Sustainable Development Goal 3 of ensuring healthy lives and promoting well-being for all at all ages by 2030.

Figure 8.4 Percentage distributions of pupils who reached desirable HIV/AIDS Knowledge by school location

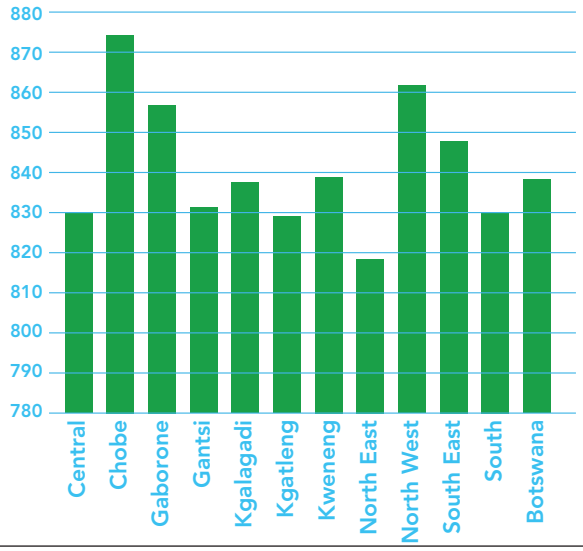


According to Figure 8.4 the proportion of standard 6 pupils who attended schools located in urban areas and had reached desirable HIV/AIDS knowledge level was higher than those who attended schools located in rural areas. South East region registered highest (18.4%) on the proportion of pupils who reached desirable HIV/AIDS knowledge level from schools in urban locations, followed by Gaborone (14.7%) and Chobe (14.1%) regions. The highest (18.6%) proportion of pupils who reached desirable HIV/AIDS knowledge level in schools located in rural areas was recorded in South East region. The analysis shows that majority of pupils in schools located in both urban and rural areas did not have the right life skills.

8.3 Teachers knowledge on HIV/AIDS

This sub-section shows teachers performance on HIV/AIDS Knowledge Test. The performance is summarised into mean scores and teachers who reached minimum and desirable HIV/AIDS knowledge levels. Just like it was the case with pupils, a teacher who had mastered at least 50% of the assessed curriculum content was regarded to have reached "minimum knowledge" and one who had mastered 75% or more to have reached "desirable knowledge" level.

Figure 8.5 Teachers Mean scores



According to Figure 8.5, standard 6 pupils were taught by teachers who had attained a mean score of 838 on HIV/AIDS knowledge test. Chobe and North West regions registered highest on teacher mean scores of 874 and 862 respectively. North East region recorded least (817) on teacher mean score for HIV/AIDS. Between 2007 and 2013 teacher mean scores for HIV/AIDS increased by 49 points.

Table 8.1 Teachers reaching minimum and desirable HIV-AIDS Knowledge by school location

Region	Transformed Scores		Reaching Desirable Level	
	Male Mean	Female Mean	Male %	Female %
Central	835.0	824.0	100.0	96.1
Chobe	917.2	830.4	100.0	100.0
Gaborone	851.4	862.7	100.0	100.0
Gantsi	852.0	810.1	100.0	100.0
Kgalagadi	851.4	824.2	100.0	100.0
Kgatleng	817.7	840.6	100.0	100.0
Kweneng	857.3	821.6	100.0	97.6
North East	817.7	815.9	100.0	100.0
North West	870.3	854.5	100.0	100.0
South East	827.3	869.3	100.0	100.0
South	842.1	817.5	100.0	100.0
Botswana	**842.4**	**834.1**	**100**	**98.4**

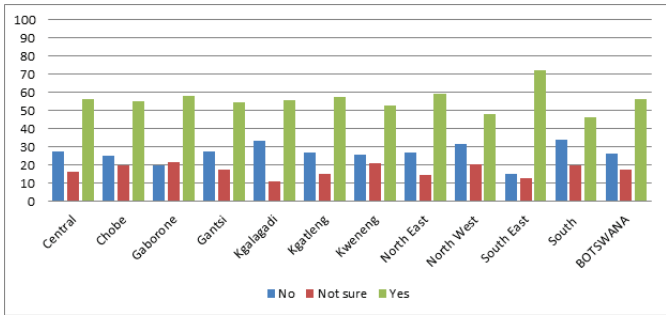
According to Table 8.1, standard 6 pupils were taught by male teachers who had HAKT mean score of 842.4 and female teachers who had HAKT mean score of 834.1 points. HAKT mean score for male teachers was highest (917.2) in Chobe region followed by North West and Kweneng regions which registered mean scores of 870.3 and 857.3 respectively. South East and Gaborone regions recorded high on HAKT mean scores for female teachers. Teacher mean score on HAKT was above 800 for both male and female teachers, showing a mean difference of more than 300 points above the SACMEQ benchmark.

The results also indicate that all pupils were taught by teachers who had reached minimum HIV/AIDS knowledge level. The proportion of pupils taught by male teachers who had reached desirable HIV/AIDS knowledge level was 100% and that of pupils taught by female teachers who had reached the same level was 98.4%. Central and Kweneng were the only regions in which the proportion of pupils taught by female teachers did not reach 100%. This is an indication that teachers have the right HIV/AIDS skills which when transferred to pupils could assist improve their livelihood.

8.4 Pupils attitudes towards HIV/AIDS

Attitudes of pupils, teachers and school heads towards persons infected with HIV were assessed and the results are summarised in this sub-section. Respondents were asked if a pupil who is infected with HIV should be allowed to continue attending school. The pupils 'responses on stigma were assessed using their expression of fear for casual contact with a person infected with HIV. Pupils 'behaviour towards a friend infected with HIV (e.g shun or avoid him/her) was used to determine if discrimination existed toward people who were infected with the disease.

Figure 8.6 Pupils' responses on whether their peers infected with HIV should continue to attend school (%)



The results show that majority (56.3%) of standard 6 pupils agreed that a pupil infected with HIV should be allowed to continue to attend school. South East region recorded highest (72.4%) on the proportion of pupils who agreed that a pupil infected with HIV should continue schooling. In most regions more than 50% of the pupils agreed to HIV infected pupils to continue schooling, only North West and South regions recorded lower than 50% on this subject. Pupils who did not agree to pupils infected with HIV to continue schooling are likely to stigmatise their peers who are infected. With 26.4% of pupils indicating that pupils infected with HIV should not continue schooling and 17.3% undecided, it can be concluded that pupils living with HIV were faced with challenges of stigma at school.

Figure 8.7 Distribution of pupils showing how they would behave towards a friend infected with HIV (%)

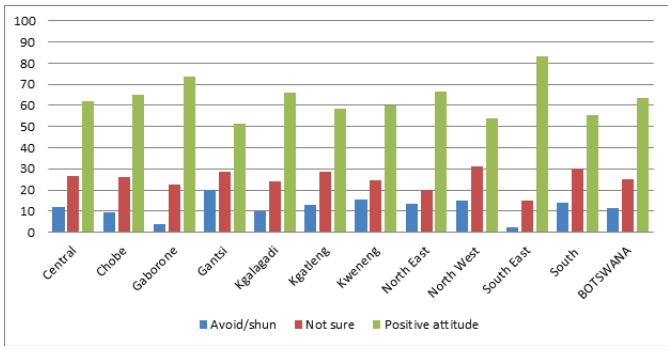


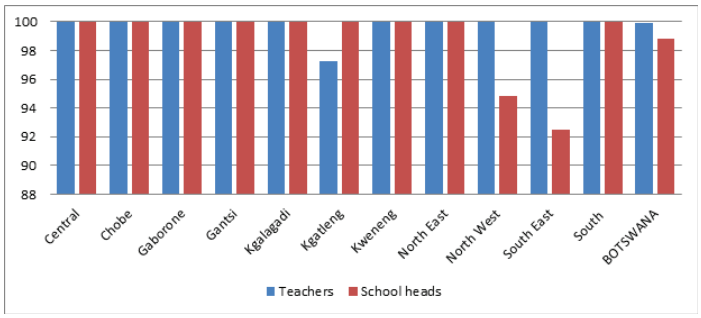
Figure 8.7 shows that majority (63.7%) of standard 6 pupils said that they would show positive attitude towards a friend infected with HIV. South East region recorded highest (83.0%) on the proportion of pupils who would show positive attitudes towards an HIV infected friend, followed by Gaborone which recorded

73.7%. The proportion of pupils who indicated that they would show positive attitudes towards an HIV infected friend was generally impressive except for Gantsi, North West, South and Kweneng regions. The proportion of pupils who indicated that they would avoid or shun an HIV infected friend shows possibility of discrimination for pupils living with HIV in schools.

8.5 Teacher attitudes towards HIV/AIDS

Teachers and school heads were also asked to indicate whether teachers infected with HIV should be allowed to continue teaching. Their responses are summarised in Figure 8.8.

Figure 8.8 Distribution of pupils whose teachers and school heads agreed that a teacher infected with HIV should continue teaching (%)



According to Figure 8.8, majority (99.9%) of standard 6 pupils were taught by teachers who agreed that teachers infected with HIV should be allowed to continue teaching. Kgatleng region was the only region which registered less than 100% on the proportion of pupils taught by teachers who agreed to a teacher infected with HIV to continue teaching. The results also show that pupils were attending schools led by school heads who agreed to teachers infected with HIV to continue teaching. Only North West and South East regions registered less than 100% on the proportion of pupils who attended schools led by school heads who agreed to teachers living with HIV to continue teaching. This shows that teachers living with HIV may experience some degree of stigmatisation from their colleagues or supervisors in the workplace.

8.6 conclusion

The information gathered in this chapter shows that HIV/AIDS knowledge amongst primary school pupils was low. A small percentage (35.2%) of standard 6 pupils had mastered half of the assessed curriculum content on HIV/AIDS issues. On the contrary teachers 'knowledge levels on HIV was very high even though some traces of low knowledge were observed in some regions. It is believed that where teacher knowledge is high, pupils 'knowledge will also be high. The case of Botswana is worrisome and needs further investigations to determine factors leading to a high knowledge gap between teachers and pupils.

CHAPTER 9

CONCLUSIONS AND AGENDA FOR ACTION

9.1 Introduction

Botswana has over the years invested significantly in education of its citizens, providing 10 year of basic education. This called for the provision of basic education infrastructure, adequate qualified teaching staff, adequate school equipment and supplies. To do this the government has committed to:

- **Ensuring access to basic education by all:** building schools around the country including remote settlement, reducing the distance pupils walk to school by introducing such initiatives as multi-grade classes/ schools and boarding facilities.

- **Improving quality and relevance of education:** improving pre-service and in-service of teachers, phasing out the use of unqualified teachers and upgrading primary school teachers to at least diploma level, reducing teacher/student rations and providing adequate furniture and teaching and learning materials.

- **Ensuring equity:** encourage enrolment by all gender, provision of special schools to children with disability and inclusion of children with special needs in the mainstream class.

9.2 Summary of findings

The average pupil age at standard 6 was 1 year higher than the desirable age. This could be a result of pupils repeating standards as the education policy stipulates that pupils should repeat no more than 3 standards. Remedial programme as recommended in the ETSSP programme was implemented, though differently amongst regions. There were approximately the same number of boys and girls in standard 6, which shows there was gender parity in primary schools. Improvements were observed on access to electricity by pupils at place of stay, supply of potable water, school computerization and electrification. Pupil behavioural problems continue to be a challenge as shown by the school heads reporting that they had experienced pupil behavioural problems such as skipping class, school dropout and absenteeism.

School infrastructure and facilities though reasonably distributed across the regions, conditions of such needed attention. There has been a backdrop on the conditions of classrooms, most of them in need of repair, insufficient pupil learning inputs such as textbooks, learning materials and school library. Pupils had access to library books, though more effort is needed to ensure that all pupils access library books.

Schools generally had desirable human resource as recommended by the Revised National Policy on Education. In-service training on the other hand is low in all regions with Chobe region reporting no in-service training in the last three years. There was a high percentage of school heads who reported that they had sometimes experienced teacher behavioural problems including skipping class, intimidation of pupils, use of abusive language, drug abuse and alcohol abuse or possession. The behavioural problems cited above need to be addressed as they can counteract the efforts of government in providing child friendly schools.

On a general note, pupil achievement on reading and mathematics has consistently improved, showing pupils reaching moderate to high levels of competency in both reading and mathematics. Proportion of pupils reaching elementary skills in both mathematics and reading, continue to decline while those reaching acceptable skills have shown some improvement. On the side of teachers, reading score has declined significantly. There was a slight increase on teacher mathematics scores, with majority of the teachers reaching high levels of competency on mathematics. There is urgent need to investigate causes of unsatisfactory teacher performance in reading and develop a strategy to mitigate that.

9.3 Agenda for Action

	Recommendations	Action Ministry/Department	Time
1.	Ministry of Basic Education should ensure availability of funds for pupil textbooks; teacher guides, timely procurement and distribution of textbooks for all subjects to schools.	Department of Basic Education and Regional Operations – Ministry of Basic Education	Short term
2.	Ministry of Basic Education through its structures should ensure that all pupils have access to libraries/library books as supplementary materials to teaching and learning.	Department of Basic Education and Regional Operations – Ministry of Basic Education	Short Term
3.	Inspectorate should intensify school inspections to ensure that all schools comply with homework policy, a tool necessary to support pupil learning	Department of Basic Education and Regional Operations – Ministry of Basic Education	Short term
4.	Department of Basic Education should expedite the implementation of remedial programme at primary schools as suggested by the Revised National Policy on Education of 1994 and the 2020 Education and Training Sector Strategy.	Department of Basic Education	Medium term
5.	Department of Special Support Services should consider developing an intensive programme to equip schools with skills necessary to deal with diverse pupil behaviour problems	Department of Special Support Services – Ministry of Basic Education	Short term
6.	Department of Curriculum Development and Evaluation should consider developing materials and tools that can enhance literacy and numeracy from lower levels	Department of Curriculum Development and Evaluation	Medium term
7.	Ministry of Basic Education through its support structures should strengthen psychosocial support systems in schools as a means to behavioural change.	Regional Directors – Ministry of Basic Education	Short term

APPENDIX 1

Reading Competency level descriptors

Competency level	Description
1.Pre-reading	Matches words and pictures involving concrete concepts and everyday objects and follows simple written instructions
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 forward.
3.Basic reading	Interprets meaning (by matching words and phrases completing a sentence, matching adjacent words) in a short simple text by reading forwards or backwards
4.Reading for meaning	Reads forwards and backwards in order to link and interpret information located in various parts of the text.
5.Interpretative reading	Reads forwards and backwards 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 contextualises meaning
6.Inferential reading	Reads forwards and backwards through longer texts 9narrative, document or expository) text in order to combine information from various parts of the text so as to infer writer's purpose
7.Analytical reading	Locates information in longer (narrative, document or expository) texts by reading forwards and backwards in order to combine information from various parts of the text so as to infer writer's personal beliefs (values systems, prejudices, and/or biases)
8.Critical reading	Locates information in longer (narrative, document or expository) texts by reading forwards and backwards in order to combine information from various parts of the text so as to infer and evaluate what the writer has assumed about both the topic, characteristics of the reader – such as age, knowledge, and personal beliefs (value system, prejudices, and/or biases)..

APPENDIX 2

Mathematics Competency level descriptors

Competency level	Description
1.Pre-numeracy	Applies single step addition or subtraction operations. Recognises simple shapes. Matches numbers and pictures. Counts in whole numbers.
2.Emergent numeracy	Applies a two-step addition or subtraction operation involving carrying out, checking (through very basic estimation), or conversion of pictures to numbers. Estimates the length of familiar objects. Recognises common two-dimensional shapes.
3.Basic numeracy	Translates verbal information (presented in a sentence, simple graph or table using one arithmetic operation) in several repeated steps. Translates graphical information into fractions. Interprets place value of whole numbers up to thousands. Interprets simple common everyday units of measurement.
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
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 measurements and/or whole and mixed numbers. Converts basic measurement units from one level of measurement to another (for example metres to centimetres)
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, and equation form in order to solve a given mathematical problem. Checks and estimates answers using external knowledge (not provided within the problem).
7.Concrete problem solving	Extracts and converts (for example, with respect to measurement units) information from tables, charts, visual and symbolic presentation in order to identify, and then solve multi-step problems
8.Abstract problem solving	Identifies the nature of an un-stated mathematical problem embedded within verbal or graphic information, and then translates this into algebraic or equation form in order to solve the problem

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