RESEARCH REPORT

BOTSWANA
EXAMINATIONS
COUNCIL

PROGRESS IN INTERNATIONAL READING LITERACY STUDY

(prePIRLS) 2011 - STANDARD 4

prePIRLS 2011

PROGRESS IN READING LITERACY STUDY 2011

October 2014

BOTSWANA
EXAMINATIONS
COUNCIL

Editor: Dr Kemmonye Monaka

Printed by: A-One Security

Core Team

Mrs. Chawangwa Mudongo	BEC, National Research Coordinator, PIRLS 2011
Dr. Trust Mbako Masole	BEC, Data Manager, PIRLS 2011
Mr. Kgalemang Ntsabane	BEC, English Subject Officer

Cover Design: Otsile R Tapson

Publisher: Botswana Examinations Council

Botswana Examinations Council
Private Bag 0070
Gaborone
Botswana
Tel: +267 3650700
Fax: +267 3185011

ISBN: 978-99968-452-3-9

Table of Contents

Table of Tables

Table of Figures

FOREWORD

Reading is conceivably the most important skill that a child needs to develop. It is important to cultivate the skill in pupils at an early age of learning. Reading is crucial for success in school, and pupils need good reading comprehension to understand and learn materials" being taught as it is the foundation for learning across all subjects. The Revised National Policy on Education of 1994 advocates for the cultivation of a reading culture in our learners.

Progress in International Reading Literacy Study (PIRLS) 2011 was the first study in which Botswana participated, and it provided baseline data on the relative performance of Botswana internationally. PIRLS is an international assessment of reading at Standard 4 it conducted every five years by the International Association for the Evaluation of Educational Achievement (IEA) since 2001. PIRLS 2011 coincided with Trends in International Mathematics and Science Study (TIMSS) 2011, and this allowed for the assessment of Mathematics, Science and Reading on the same pupils, a situation which enabled a new study that explored the relationship between reading ability and achievement in Mathematics and Science.

The fourth year of schooling is taken as a transition whereby pupils have learned how to read and are then reading to learn. However, due to various contextual factors, there are countries where pupils at that level would still be developing fundamental reading skills. Recognising these challenges, IEA was flexible in offering PIRLS at levels beyond Standard 4 and in providing prePIRLS, which is a prerequisite to success in PIRLS for Standard 4 pupils. Botswana participated for the first time in PIRLS 2011 at Standard 6 and prePIRLS at Standard 4. Botswana participation in international studies was motivated by the national aspiration for a standard of education that is internationally competitive. In the quest to be internationally competitive and achieve desired quality of education policy makers, planners and teachers make use of research evidence as a basis for decision making. National and international surveys, school-based assessments, national examinations are all different sources of information for monitoring and evaluating the quality of educational outcomes. As international comparative studies, PIRLS and prePIRLS generate information on curriculum implementation, contexts of learning and successful pedagogical practice across all participating countries.

The PIRLS and prePIRLS 2011 reports present a wealth of information on the coverage/scope of materials in the reading curriculum, the contexts of learning and the country"s global competitiveness in reading achievement. The reports present sound

research data that inform education strategy, curriculum and assessment, curriculum delivery, teacher development, supervision and educational management at school level, stakeholder involvement (i.e. parental involvement in the learning experiences of their pupils), and allow for interaction with a myriad of comparative data from other education systems.

The PIRLS and prePIRLS 2011 National Reports provide motivation for all actors, partners and stakeholders in education and training to act. The only way to change the outcomes of our education system is to change what and how we educate. Planners, policy makers, teachers, parents, and learners need to effect changes that will improve the experiences of all learners and provide them with an opportunity to develop their potential and to contribute meaningfully to their own development and that of their country. Readers are invited to read the current report with an action oriented focus.

Prof Brian Mokopakgosi

Executive Secretary
Botswana Examinations Council

ACKNOWLEDGEMENTS

Our gratitude for the successful completion of the PIRLS 2011 study goes mainly to the Botswana Examinations Council (BEC) for supporting and financing the National Research Coordinator and some members of the project team in all National Research Coordinators (NRCs) meetings and training workshops hosted in the various countries that participated in the study. Various offices of the International Association for the Evaluation of Educational Achievement (IEA) such as The International Study Centre in Boston, Statistics Canada, the Secretariat in Amsterdam and the Data Processing and Research Centre in Hamburg tirelessly assisted us in addressing procedural issues as they arose.

In the main and pilot survey, a lot of resources were needed to collect data from pupils, teachers and school heads within the country. We therefore wish to express great appreciation to the various schools and to the Ministry of Education and Skills Development for the highest level of cooperation in availing staff and teachers readily, even at very short notice. Further, we thank the various schools for contributing their organisational skills in providing School Coordinators in each school, who handled all matters connected with the project.

Practicing as well as retired teachers participated in the administration of the instruments of data collection. A number of them also coded the pilot as well as the main survey responses.
A great deal of acknowledgement also goes to the BEC staff for the various roles they each played in the project.

We are also grateful to Mr J. Makakaba, Mr P. Mpho, Mr G. A Bagwasi, Dr.K. Hulela, Mrs G Phirinyane and Mr B. J. Moteti who served as National Quality Control Monitors. Many thanks to Mr Mogasha and Mr D. Khame also, who served as the External Quality Control Monitors during the final data collection. The production of this report would not have been possible without data capturers, who spent sleepless nights capturing data within a reasonable period of time. In particular, our appreciation goes to the following Research Assistants: Tebogo Maposa, Sethunya Ruda, Thato Gaboitsiwe, Lechani Mabutho, One Moreo, Bonang Keagakwa, Bonang Bome, Boipuso Mosalakgotla, Masego Sethibe, and Tuelo Rasenai. We would also like to thank Thato Gaboitsiwe and Maureen Kemoabe for tirelessly type-setting this report.

We extend our greatest gratitude to every single member of the Core and Project Team which was responsible for the execution of the project up to the production of the current report.

Project Team

Dr. Monamodi Kesamang	BEC, Member
Dr. Moreetsi Thobega	BEC, Member
Mr. Mmoloki Gabalebatse	BEC, Member
Mr. A Makgotwa	BEC, Member
Mr. Onalenna Keatimilwe	BEC, Member
Mr. Moribola Pharithi	BEC, Member
Mr. Tatlhego Bolaane	BEC, Member
Mrs. Kagiso Maule-Sethora	BEC, Member
Dr. Oemetse Mogapi	BEC, Member
Dr. Kgosi Motshabi	BEC, Member
Mr. Tshepiso Masukusuku	BEC, Member
Mr. Boipuso Mosalakgotla	BEC, Member

EXECUTIVE SUMMARY

Purpose of PIRLS

The Progress in International Reading Literacy Study (PIRLS) 2011 cycle was the first PIRLS in which Botswana participated. PIRLS is an international comparative assessment of achievement in reading at Standard 4 that has been conducted every five years by the International Association for the Evaluation of Educational Achievement (IEA) since 2001. In 2011, 49 countries participated in PIRLS and prePIRLS. PIRLS focused on two purposes of reading; namely reading for literary experience and reading to acquire and use information. The target population tested in most countries was Standard 4. PIRLS 2011 was flexible in that a new assessment known as prePIRLS was introduced for Standard 4 learners who performed below the IEA minimum threshold while PIRLS was allowed to be administered to Standard 6 learners. This gave Botswana the opportunity to participate at the two levels in order to evaluate the learners‟ levels of reading. Four countries assessed their pupils at Standard 6 and three countries participated in prePIRLS.

Why Botswana Participated in PIRLS 2011

Botswana has been participating in Trends in International Mathematics and Science Study (TIMSS) since 2003 and has been performing below the international average. It was observed that most of the items which pupils responded to were blank, and it was hypothesised that English had a bearing on pupils‟ performance. This lead to Botswana participating in PIRLS 2011 in order to gauge its reading levels internationally. The other major objectives of PIRLS were:

(a) To identify factors that impact on teaching and learning of reading
(b) To detect trends in learning achievement
(c) To provide a rich source of information for policy makers and other stakeholders

These objectives are in line with BEC‟s strategic theme of being globally competitive and with Botswana‟s Vision 2016 pillar of being an educated and informed nation.

How the Study was conducted

The PIRLS 2011 Assessment Framework was a blueprint for IEA"s 2011 assessment of reading literacy, and was a product of a collaborative process involving many individuals and groups; namely the PIRLS Reading Development Group (RDG) and the National Research Coordinators (NRCs) of the more than 50 participating countries.

40 schools were sampled for piloting the data collection instruments while 149 schools were sampled for final data collection. A school coordinator was appointed by each sampled school and these coordinators were trained in PIRLS procedures. A class was selected from each of the sampled schools. The names of the pupils in the sampled classes were obtained and captured into a database.

Reading test booklets and questionnaires for pupils, teachers, school heads and parents were administered. It is essential for an international study like PIRLS that procedures be highly standardised. Botswana trained officials in the Ministry of Education and Skills Development and selected teachers for the administration of both the pilot and final data collection instruments. Data coders were trained in the procedure used by PIRLS for scoring the work of learners. Botswana coders were mostly (active and retired) teachers from primary schools.

A great deal of effort was made on the capturing of data, which was manual. The captured data were passed on to Data Processing and Research Centre (DPC) for verification, scoring and scaling. After this, countries were then able to carry out their data analysis and write reports. IEA has now developed International Database Analyser, which Botswana used in analysing its own data. The achievement results are reported on a PIRLS scale ranging from 0 to 1 000, with the international average being 500. However, in Botswana, most learner literacy performance ranged from 400 to 606.

Major Findings

Performance of Botswana Pupils

The three countries which participated in prePIRLS were Colombia, South Africa and Botswana. They scored 576, 461 and 463 respectively. It can be seen that, of these three countries, only Colombia performed above the international average of 500. Performance by purposes of reading varied, with the pupils performing better in acquiring information purpose, which had a mean score of 466, whilst performance in literary experience purpose,

with a mean score of 459, had the lowest score. Girls performed better than boys in overall and in purposes of reading.

Factors associated with performance were explored and the results were as follows:

Pupils' Background Variables

Factors which affected pupils" performance positively were found to be high home possessions, high support for pupils" learning, and the availability of more books at home. Factors which impacted pupils" performance negatively were old age and bullying.

Teachers' Background Variables

Majority of pupils, 80%, were taught by female teachers. About 69% were taught by teachers who fell within the age group 30-49 years. Teachers with years of experience between 1-10 years taught 43% of the pupils, and those with diplomas taught 80% of the pupils. Pupils taught by teachers aged between 30-49 years with 11-20 years" experience perform better than those taught by teachers with other attributes. Furthermore, the higher the teachers" level of education the better the performance of pupils in reading.

Pupils" performance was not affected by the levels of teacher job satisfaction; however, performance was affected negatively by low understanding of school curricular goals, low success in implementation of the curriculum and low expectation of pupils" achievement. Other factors which positively affected performance were adequate instructional materials, including computers, safe school environment, high parental involvement and support for learning.

School Background Variables

The majority of the pupils in the sample (50%) were from villages, followed by those from remote rural areas (25%). The performance of the pupils varied with the locality of the school, with pupils from urban and sub-urban areas performing better than pupils from other localities. Attributes which are usually necessary for pupils to do well in school were investigated on. Such attributes include (a) teachers" job satisfaction, (b) teachers" degree of understanding and implementing the schools" curriculum, (c) parental support and involvement in school activities, (d) expectation of teachers on pupils" achievements, (e) pupils" regard for school property and (f) pupils high desire to do well in school and others. These were scored as high, medium or low. The majority of the pupils (at least 76%) were from schools where school heads indicated *medium and low teacher* job satisfaction,

teacher understanding of the curricula and teachers‟ degree of success in implementing the school curriculum.

Parental Background Variables

Non-formal pre-school activities performed at home were positively associated with performance. About 46% of the pupils were enrolled by their parents in pre-schools, and such pupils performed significantly better than those who did not attend pre-school. Majority (95%) of Botswana pupils who started school at 7 years of age or younger, as per policy requirement, performed better than those who started at an older age. A small proportion of pupils (28%) had parents who spoke English at homes with/to them before beginning school and that enhanced the pupils‟ performance as they outperformed those whose parents did not. Pupils who either spent some time doing their homework and/or were helped by parents performed better than those who spent less time and were not helped.

About 40% of the parents had attained junior secondary education. Pupils whose parents had reached higher levels of education performed better than those whose parents had lower levels of education. Even though a high proportion of parents had only attained low levels of education themselves, they still had high expectations of their own children reaching higher levels of education Children whose parents had high expectation of them reaching higher levels of education performed better than those whose parents did not have high expectation of them reaching higher levels of education.

CHAPTER ONE
INTRODUCTION

Progress in International Reading Literacy Study

This chapter covers the aims, objectives and the conceptual framework of the study. Reading is conceivably the most important skill that a child can develop. It is important to cultivate the skill in pupils at an early age of learning. Reading is crucial for success in school and pupils need good reading comprehension to understand and learn materials" being taught as it is the foundation for learning across all subjects. It is therefore very important for schools to have good human and material resources to develop and enhance good reading skills in the learners.

Progress in International Reading Literacy Study (PIRLS) is coordinated by the International Association for the Evaluation of Educational Achievement (IEA). PIRLS is an international comparative study of the reading literacy of young learners. PIRLS studies the reading achievements and reading behaviours and attitudes of Standard 4 pupils worldwide.

For PIRLS 2011, Reading Literacy was defined as the ability to understand and use written language forms required by society and/or valued by the individual. Young readers can construct meaning from a variety of texts. They read to learn, to participate in communities of readers in school and everyday life, and for enjoyment (Mullis, Martin, Kennedy,Trong, and Sainsbury, 2009)

The Aims and objectives of PIRLS

The purpose of PIRLS is to investigate pupils reading literacy and factors associated with it"s attainment. Botswana participated in PIRLS for the first time in the 2011 cycle. In that year, PIRLS coincided with Trends in International Mathematics and Science Study (TIMSS), and this provided an opportunity to investigate the effect of English on the learners" performance in Mathematics, and Science.

The following constituted the major objectives of the PIRLS 2011 programme:

1. To assess the level of reading in English at Standard 4
2. To identify factors that impact on teaching and learning of reading in English
3. To detect trends in learning achievement of English if Botswana continues to participates in coming cycles
4. To make a comparison between participating countries internationally
5. To provide a rich source of information for policy makers and other stakeholders

All these objectives are in line with BEC"s strategic theme of being globally competitive.

Flexibility of PIRLS in 2011

The fourth year of schooling is taken as a transition whereby pupils have learned how to read and are now reading to learn. However, due to various contextual factors, there are countries where most pupils are still developing fundamental reading skills. Recognising these challenges IEA extended PIRLS to meet the needs of such countries by offering PIRLS at grade levels beyond Standard 4 and by developing a less difficult reading assessment designed to be a stepping stone to PIRLS. The newly developed bridging assessment to PIRLS is called prePIRLS and is intended to measure the reading comprehension skills of pupils who are still in the process of learning how to read. Exactly the same skills at PIRLS are measured at prePIRLS. Due to having performed below the minimum threshold required by the IEA during the PIRLS pilot study in March 2010, Botswana participated for the first time in 2011, doing PIRLS at Standard 6 and prePIRLS at Standard 4.

Conceptual Framework for the Study

PIRLS 2011 focused on the following three aspects of reading literacy.

- Purposes of reading
- Processes of comprehension, and
- Reading behaviours and attitudes

The first two form the basis for a written test in reading comprehension. The learners" background questionnaire addresses the third aspect.

Purposes of reading

This is covered by the two types of reading that account for most of the reading young learners engage in, both in and out of school—that is, reading for literary experience as well as reading to acquire and use information. In the PIRLS assessment, narrative fiction is used to assess learners" ability to read for literary experience, while a variety of informational texts are used to assess learners ability to acquire and use information while reading. The PIRLS assessment contains an equal number of texts for assessing each purpose.

Processes of comprehension

This refers to ways in which readers construct meaning from the text. Four types of processes of comprehension are assessed in PIRLS and they include:

- focusing on and retrieving explicitly stated information
- making straightforward inferences
- interpreting and integrating ideas and information
- examining or evaluating content, language, and textual elements

The four processes are assessed across all the two purposes of reading. Table 1.1 shows the framework of purposes of reading and processes of comprehension as assessed in PIRLS and prePIRLS

Reading behaviours and attitudes

The learners" background questionnaire addressed the behaviour and attitudes of the pupils.

Table 1. 1: *Percentage of the PIRLS and prePIRLS reading assessment devoted to reading purposes and processes*

		PIRLS %	prePIRLS %
Purpose of Reading	Literary Experience	50	50
	Acquire and use information	50	50
Processes of comprehension	Focus on and retrieve explicitly stated information	20	50
	Make straightforward inferences	30	25
	Interpret and integrate ideas and information	30	25
	Examine or evaluate content, language, and textual elements.	20	

For analysis and reporting purposes, the Focus on and Retrieval of Explicitly Stated Information process were combined into the Straightforward Inferences Process, whereas Interpreting, Integrating Ideas, Examining and Evaluating content were combined into the Interpreting Process.

In PIRLS 2011, the purposes of reading and processes of comprehension were assessed based on 10 passages; 5 for the literary purpose and 5 for the informational purpose. The lengths of the passages ranged from approximately 800 to 1000 words. The prePIRLS passages were similar to the PIRLS passages but shorter, with approximately 400 words and had 6 passages; 3 literary and 3 informational. The passages in both PIRLS and prePIRLS were accompanied by colourful illustrations to help engage pupils" interest. The tasks covered under each process of comprehension are described in Table 1.2.

Table 1. 2: *Description of tasks addressing processes of comprehension:*

Process	**Tasks to include**
Focus on and retrieve explicitly stated information ted information	• identifying information that is relevant to the specific goal of reading • looking for specific ideas • searching for definitions of words or phrases • identifying the setting of a story (e.g., time, place) • finding the topic sentence or main idea (when explicitly stated).
Make straightforward inferences	• inferring that one event caused another event • concluding what is the main point made by a series of arguments • identifying generalisations made in the text • describing the relationship between two characters.
Interpret and integrate ideas and information	• discerning the overall message or theme of a text • considering an alternative to actions of characters • comparing and contrasting text information inferring a story's mood or tone • interpreting a real-world application of text information
Examine and evaluate content, language, and textual elements	• evaluating the likelihood that the events described could really happen • describing how the author devised a surprise ending • judging the completeness or clarity of information in the text • determining an author's perspective on the central topic

Source: *Mullis et al, 2009 pp. 24-29*

CHAPTER TWO
THE PROCESS OF THE STUDY

PIRLS Working Structures in Botswana

Chapter Two covers the research design, analysis and how data was interpreted.
PIRLS requires the involvement of a large number of people. Teachers, Examination officers, English Subject Officers from the Ministry of Education and Skills Development (MoESD) departments were involved in the study. Professionals drawn from various departments in the ministry worked with the Project Team which had the mandate of scrutinising the PIRLS 2011 draft assessment frameworks and developing/finalising data collection instruments for administration.

The developed data collection instruments had to be administered. This made it necessary to identify and train staff for the administration of the instruments. During administration, it was necessary to check that the manual was adhered to. This was done by quality controllers, who were recruited and briefed thoroughly on their role. IEA engaged International Quality Control Monitors while Botswana engaged National Quality Control Monitors. The responses of the pupils on the tests were coded by teachers who were appropriately trained. The curriculum questionnaire was also completed.

The Project Team led by the PIRLS National Research Coordinator (NRC) carried out day-to-day operations of the project. The National Research Coordinator was the link with the IEA structures. The participating schools appointed a School Coordinator to handle most of the study activities at the school level, and were trained on their project roles. All communications on the project were subsequently brought to the attention of the School Coordinator.

Population and Sampling

Botswana"s target populations for prePIRLS and PIRLS were Standard 4 and Standard 6 respectively. These were pupils who had 4 and 6 years of schooling respectively. Botswana, South Africa and Colombia participated in prePIRLS, the study of which was being done for the very first time. Botswana, Morocco, Honduras and Kuwait participated in PIRLS at Standard 6 while the rest of the world used Standard 4 pupils. This was because the pilot

results indicated that Standard 4 pupils were scoring too low and this introduced a lot of measurement error in the international and respective country results. IEA duly advised these countries to use pupils from a higher grade. The names of all primary schools and private English medium schools in the country were obtained from the Department of Educational Planning and Research Services (DEPRS) of the Ministry of Education and Skills Development. A form was designed and sent to all these schools to indicate the district and inspectoral region of the school, whether the school was in an urban or rural location, ownership of the school, the total number of pupils each school had for Standard 4 and Standard 6 and the number of classes (streams) in each standard.

The sampling frame was sent to Statistics Canada, which is the institution responsible for handling sampling for IEA. PIRLS study excluded special needs pupils from the sample. . Also excluded were private study groups because of no-age limit in their enrolment. The sampling was multi-stage, stratified cluster, with the probability of being sampled proportional to the school size. Statistics Canada used software designed for this purpose and sampled 40 schools for piloting and 149 schools for the main data collection. The number of pupils in the main data collection was about 4000 for each study. A class was randomly selected in each school sampled for pilot, and main survey.

The School Coordinator was then requested to list the pupils in each class that was selected. The names of these pupils were entered into the database, assigning each pupil a unique ID using the software supplied by Statistics Canada.

prePIRLS 2011 Assessment Design

The prePIRLS assessment design uses a matrix sampling technique, whereby the passages and accompanying items are divided into groups or blocks, and pupils‟ booklets are made up from these blocks according to a systematic arrangement as shown in Table 2.1. Literary passages are labelled L1 to L3 while informational passages are labelled I1 to I3.

Table 2. 1: ***prePIRLS 2011 pupils' booklet design***

Booklet	Part 1	Part 2
1	L1	L2
2	L2	L3
3	L3	I1
4	I1	I2
5	I2	I3
6	I3	L1
7	L1	I1
8	I2	L2
9	I3	L3

Source: Mullis et al, 2009.

Assessment

Assessment instruments included Standard 4-level stories and informational texts collected from several countries. Pupils were asked to engage in reading skills and strategies, including retrieving and focusing on specific ideas, making simple and more complex inferences, and examining and evaluating text features. The passages were followed by open-ended and multiple-choice format questions about the text.

Using different booklets allows prePIRLS to report results from many assessment items than can fit in one booklet, without making the assessment longer. To provide good coverage of each skill domain, the test items developed were blocked. However, testing time was kept to 1 hour and 20 minutes for each pupil by clustering items in blocks and randomly rotating the blocks of items throughout the 9 pupil test booklets. As a result, no pupil received all items but each item was answered by a representative sample of pupils.

Questionnaires

Background questionnaires were administered to collect information about pupils' home and school experiences in learning to read. The pupils‟ questionnaire addressed pupils' attitudes towards reading and their reading habits. In addition, questionnaires were given to pupils' teachers and school heads to gather information about pupils' school experiences in developing reading literacy. A parent questionnaire known as the Learning to Read Survey was also administered.

Data collection schedule

Countries in the Southern Hemisphere of which Botswana is part conducted the assessment in October and November, 2010.

Data Analysis

The PIRLS achievement results were summarised using Item Response Theory (IRT) scaling and reported on 0 to 1000 achievement scales. The international scale average has been set at 500. The country-by-country distributions of achievement scores provide information about how achievement compares among countries and whether scores are improving or declining as the country participates in different cycles. The analysis is limited to descriptive statistics such as the mean, standard deviation and percentages. The level of significance is determined on mean differences among selected categories, but it must be noted that any significant test employed is used for comparing levels of the same category but not to test the level of association between an attribute and pupils" performance. The significance level was set at ± 1.96. In this report, a significant mean difference is indicated by an asterisk (*), under the column for Diff. The regression analysis was also performed for selected variables.

Data Interpretation

(a) Means, standard error and significant differences

The results are mostly presented in tables indicating percentages and means of pupils in various groups; the standard errors of these percentages and means. Where subgroups are compared, mean differences and the standard error of the mean differences are reported. Standard errors indicate the extent of the accuracy of an estimation of the mean or mean difference. An example is presented in Table 2.2 for performance in English.

Table 2. 2: *Pupils' Performances by number of books in the home*

	n	%	Mean (SE)	SD	Diff
None or very few (0-10 books)	1630	40.08	455.26 (3.06)	74.14	1,2:-23.62(-4.90)*
1 shelf (11-25 books)	1183	28.08	478.88 (3.73)	82.79	1,3:-34.23(-4.08)*
1 book case(26-100 books)	641	15.42	489.49 (7.82)	94.00	1,4:1.71(.22)
At least 2 book cases (At least 101 books)	679	16.41	453.55 (7.07)	91.64	2,3:-10.61(-1.22)
					2,4:25.33(3.17)*
					3,4:35.94(3.41)*

**Statistically significant at 5% level*

The n is the number of pupils in each category and the percentage they constitute.

The English mean of 455.26 with a standard error of 3.06 means that the mean could be between 452.20 and 458.32. Mean differences (**Diff)** is used throughout this report for checking whether subgroup differences are significant. In the example above, interest centres on finding out if there are significant differences in the performance of pupils who come from homes with different number of books. Is the difference in the English performance of pupils from homes with *0-10 books* and pupils from homes with *11-25 books* statistically significant? This question is answered by looking under the column of **Diff** for English. The first row in this column starts with „1, 2". This means that the mean difference being considered is for the means of rows one and two. For English, row one mean is 455.26 and row two mean is 478.88. The difference between the two means is -23.62. A significant mean difference (Diff) is indicated by an asterisks (*).

(b) Regression Analysis

In some instances, it is required to fit a complex model in order to estimate the effect of one or more variables on performance. The analysis of prePIRLS data is complex in nature because there are inter relationship between the pupils" achievements and exogenous factors, including pupils" background variables. In most cases, estimating the mean performance of pupils without taking into account this unique relationship between variables may result in misleading outcomes. The regression model which aims to relate the dependent variable and independent variable(s) was used. The essence of regression analysis is to predict the effect of one factor on the dependent variable in the presence of other factors which may have different effect on the same variable. Technically, interpretation of the effect of one variable on the dependent variable, in the presence of other factors is referred to as estimating the effect of one factor on the outcome when other factors are kept constant or controlling for other factors. This is the terminology used in analysis of prePIRLS data. The flexibility of regression analysis, allows for the use of different variables of varying measurement scales, e.g. ratio scale, ordinal, nominal or interval as independent variables. But the dependent variables need to be continuous in nature for example pupils" achievements scores. In order to aid the readers to understand the regression analysis outcome in this report, a simple example on regression analysis is interpreted below:

Table 2. 3 *Regression for background variables*

Variables	Coefficients	Standard Error (SE)	t-Value
Constant	497.44	10.96	45.37
Age	-24.96	2.08	-11.99*
Sex			
Male	-5.05	3.72	-1.36
Home Possession			
Low	-49.64	7.1	-6.99*
Medium	-29.51	5.01	-5.89*
Number of Books at Home			
0--10 Books	-17.07	8.85	-1.93
11--25 Books	-11.54	8.29	-1.39
26--100 Books	-5.09	8.88	-0.57

*statistically significant at 5% level

Table 2.3 shows four variables in the model, namely; *Age, Sex, Home possession* and *Number of books*. All variables except *Age* are categorical in nature. *Age* is continuous and it has been centred on the mean age of the group so that the intercept of the model translates to the overall mean score of the pupil. The coefficient for *Age* is -24.96. This value suggests that a pupil who is one year older than the mean *Age* of the pupil being studied will score on average 24.96 points lower than a pupil at the mean *Age*.

Sex has two categories; "*Male"* and "*Female".* The *"Female"* category is used as reference point for reference with the *male* category. For instance the coefficient - 5.05 means that "Male" pupils scored 5 points lower than the *"Female"* pupils, when taking into account the effect of other variables in the model.

Home possession has 3 levels, *"High",* "*Medium*" and *"Low*". The category *"High" is a* reference for reference with other categories of this variable. For example the coefficient of -49.64 for "*Low"* means a pupil who came from household with home possession regarded as "*Low"* scored 49.64 points lower than the pupil who came from household with home possession regarded as "High". For "Medium" household the difference is -29.51.

For the variable Number of books at home, the reference level is *"100 or more books at home",* so all level are contrasted to this level. The difference between pupils with *"0-10 books at home" and "100 or more books at home"* is -17.07, suggesting that pupils who have *"0-10 books at home"* will score 17.07 points lower on average compared to those with *"100*

or more books at home". For "11-25 books at home" the difference is -11.54 and it is -5.09 for pupils with*"26-100 books at home".*

The Constant term in the model represents the mean performance of pupils who have characteristics similar to reference level in each variable. For instance, 497.44 means that a "*Female"* whose age is around the mean "*Age"* of the pupils studied, came from household with home possessions regarded as "*High",* had "*100 or more books at home*" will score an average 497.44 points. The t-value indicates statistically significance at 5% level for a two-tailed test. The t-value of -11.99* indicates that older pupils achieve significantly lower than the younger ones and this is not due chance occurrence.

Indices

Questionnaires were made up of themes under which there were many items. The items were grouped together to form one or more construct. An index was therefore obtained by calculating the mean response for an individual for that construct. Negatively worded items were reversed before analysis to align with the rest. Naming the construct was a mammoth task because the name given must be representative of the underlying construct. In order for better appreciation by the readers, an example on how an index was constructed is given below. An Index of "frequency of parents support" is constructed from the following questions asked to pupils;

(1) My parents ask me what I am learning in school
(2) I talk about my schoolwork with my parents
(3) My parents make sure that I set aside time for my homework
(4) My parents check if I do my homework

The pupils had to indicate how often these things happen to them at home by responding *"Every day or Almost Every Day", "Once or twice a week", "Once or twice a month" and "Never or almost Never"* for each question. Responses were coded 1, 2, 3 & 4 respectively. The index is constructed by first computing the mean response of pupil and the categorising the mean into four categories "*Every day or Almost Every Day", "Once or twice week", "Once or twice a month" and "Never or almost Never*". The frequency distribution of mean response is displayed in Table 2.4. B y so doing that only one variable with 4 responses is created. Forming categories of the Index is done by recoding the mean into 4 levels. Determining the threshold of the levels is arbitrary, for the "frequency of parents support" the cut points for "*Every day or Almost Every Day"* was 1.25, for "*Once or twice week*" was 2.25, for "*Once or*

twice a month" was 3.25 and for "*Never or almost Never*" was 4. The index was then used to indicate the levels of frequency of parental support and then related to performance.

Table 2. 4: *Frequency of parental support*

Mean Response	Frequency	%
1.00	1539	37.0
1.25	853	20.5
1.33	7	.2
1.50	418	10.1
1.67	9	.2
1.75	401	9.7
2.00	278	6.7
2.25	164	3.9
2.33	8	.2
2.50	203	4.9
2.67	4	.1
2.75	84	2.0
3.00	65	1.6
3.25	48	1.2
3.50	26	.6
3.75	16	.4
4.00	32	.8
Total	4155	100.0

CHAPTER THREE
PUPILS PERFORMANCE IN READING

Chapter 3 presents the achievement results of participating countries. The results also cover pupils" performance in purposes of reading and processes of comprehension. In PIRLS 2011, 49 countries participated in PIRLS and prePIRLS. Of these, 45 countries assessed pupils at Standard 4; four countries assessed pupils at Standard 6. Three countries participated in prePIRLS. In Botswana, the total number of pupils who participated in prePIRLS was 4393. The performance of Botswana pupils compared to those from other participating countries is shown in Figure 3.1, sourced from the PIRLS 2011 International report.

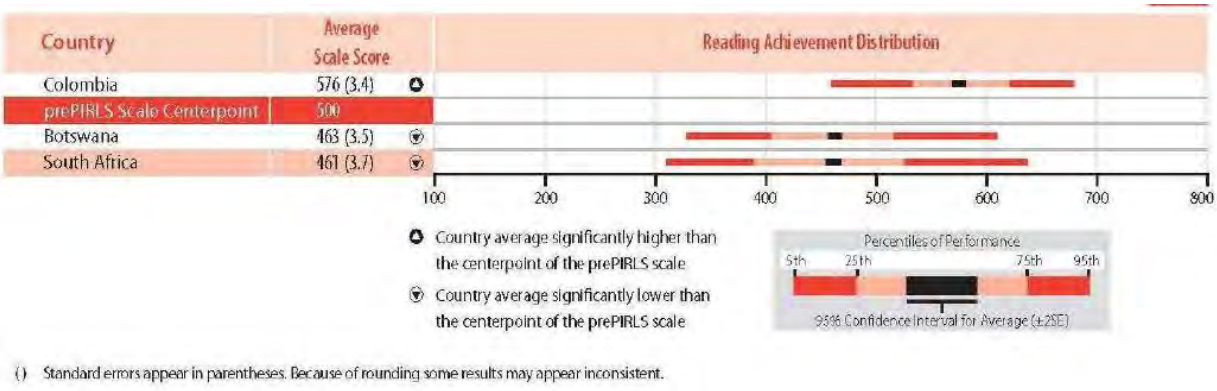

Figure 3. 1: prePIRLS Distribution of reading achievement

Source: Mullis, Martin, Foy, Drucker, 2012

Of the three countries which participated in prePIRLS, namely Colombia, South Africa and Botswana, only Colombia performed above the international average of 500. The same information can be represented graphically as shown in Figure 3.2.

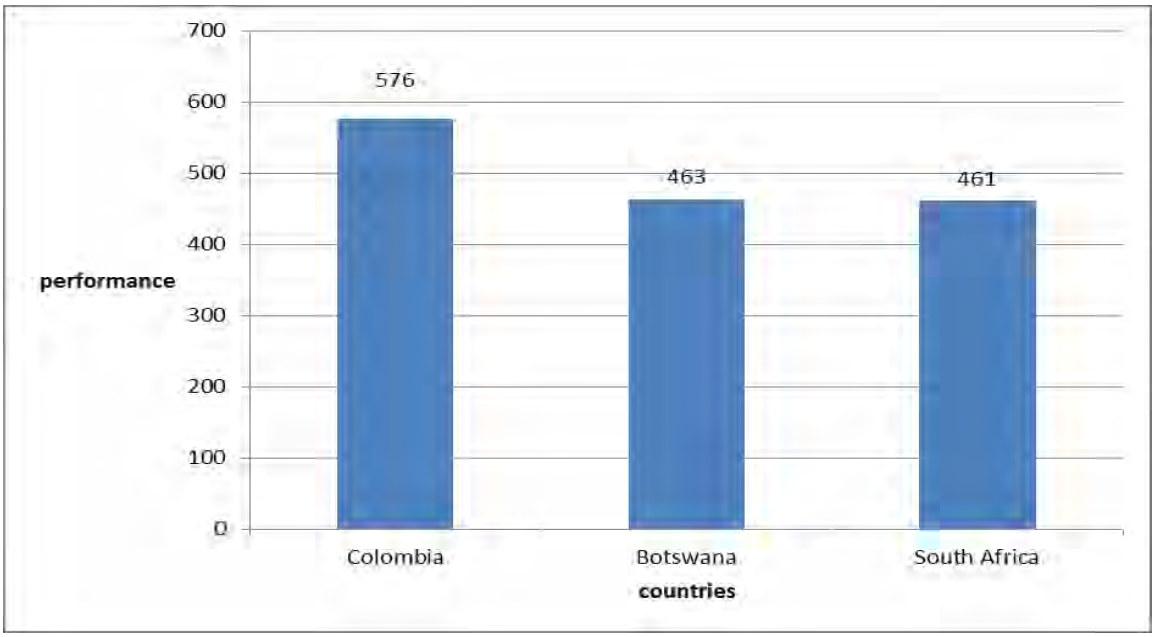

Figure 3. 2: prePIRLS overall reading performance

prePIRLS Countries Performance by Sex

The performances of the countries were further categorised by sex as shown in Figure 3.3.

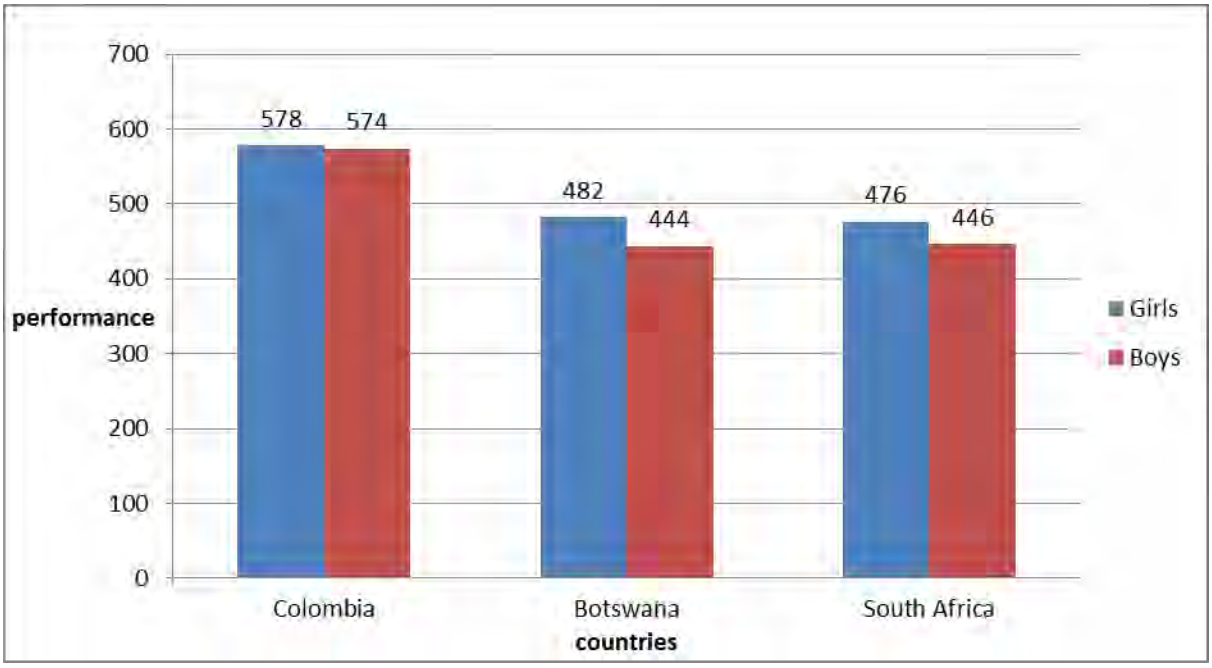

Figure 3. 3: *prePIRLS countries performance by sex*

Figure 3.3 shows that girls performed significantly better in reading compared to the boys in South Africa and Botswana, whereas in Colombia boys and girls performed at the same level. Since few countries participated in prePIRLS, there were no benchmarks developed from the results.

Botswana Performance by Purposes of Reading and Processes of Comprehension

Table 3.1 shows pupils overall performance as well as performance by purposes of reading and processes of comprehension in the prePIRLS study.

Table 3. 1: *Pupils' performance in purposes of reading and processes of comprehension*

	Mean (SE)	SD
Overall	463.28 (3.50)	84.55
Literary Purpose	459.35 (3.47)	83.79
Information Purpose	466.00 (3.58)	87.12
Interpreting process	463.59 (3.48)	81.84
Straight Forward inferences process	463.77 (3.53)	88.59

According to Table 3.1, the mean overall performance was 463.28. Performance by purposes of reading varied with the pupils performing better in acquiring information purpose with a mean score of 466.00, whilst performance in literary experience purpose was the lowest with a mean score of 459.35. This is contrary to the other two countries which either performed at the same level (Colombia) in the two purposes of reading or performed better in literary purpose (South Africa).

Performance on Purpose of Reading and Processes of Comprehension by Sex

Table 3.2 shows the performance of pupils on purposes of reading and processes of comprehension by sex.

Table 3. 2: *Performance by sex in purposes of reading and processes of comprehension*

	Sex	n	Mean (SE)	SD	Diff
Overall	Girl	2178	482.50(3.73)	80.25	1,2:37.94(7.10)*
	Boy	2202	444.56(3.83)	84.41	
Literary Purpose	Girl	2178	478.20(3.80)	80.46	1,2:37.15(7.06)*
	Boy	2202	441.05(3.64)	82.82	
Information Purpose	Girl	2,178	485.85(3.73)	83.02	1,2:39.21(7.12)*
	Boy	2,202	446.64(4.05)	86.64	
Interpreting process	Girl	2,178	480.99(3.70)	78.50	1,2:34.43(6.62)*
	Boy	2,202	446.56(3.65)	81.49	
Straight Forward inferences process	Girl	2,178	485.10(3.71)	84.11	1,2:42.16(7.92)*
	Boy	2,202	442.94(3.82)	87.87	

**Statistically significant at 5% level*

Girls constituted 49.77% and, according to Table 3.2, they performed significantly better with an overall mean performance of 482.50 compared to boys‟ overall mean performance of 444.56. Generally, girls performed significantly better than boys in all purposes of reading and processes of comprehension.

Summary

The performance of Botswana pupils was below the international average of 500. Other studies conducted in Botswana, such as Monitoring of Learning Achievement (MLA 2001) for Standard 4 pupils; and Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ II 2005) for Standard 6 pupils also revealed low performance by pupils. The pupils performed better in the purpose of acquiring information than the literary purpose. Girls performed significantly better than boys in all the purposes of reading and processes of comprehension.

Recommendations

The following recommendations are made.

1. The decline in performance of the boys needs to be addressed. Government has initiatives to empower women and the girl child through the adoption of the Millennium Development Goals (MDGs) and the Revised National Policy on Education of 1994. There might be need to revisit such policies in order to empower both boys and girls.

2. In order to raise proportions of Botswana students attaining higher levels of reading skills teaching of the purpose of literary experience in reading should be emphasised in pre and in-service training. Classroom instruction should be monitored with the intension of ensuring that the purpose of literary experience is taught effectively.

CHAPTER FOUR
PUPILS' BACKGROUND VARIABLES AND PERFORMANCE

This chapter discusses the pupils‟ performance in relation to their background variables. The background variables that were identified and related to pupils‟ performance were: sex, speaking English at home, number of books pupils had at home, home possessions; home support, pupil‟s age; and bullying at school. A number of these variables were computed indices which were then:

a) correlated with achievement to predetermine their likelihood of predicting achievement
b) related with achievement to check how the different levels affected performance
c) included in a regression model to determine the relative contribution of each when controlling for other variables
d) included in a regression model to determine variables that predict achievement better

Performance by Sex

Girls constituted 49.77% and performed significantly better with an overall mean performance of 482.50 compared to boys‟ overall mean performance of 444.56. Generally, girls performed significantly better than boys in all purposes and processes as presented in Figure 4.1.

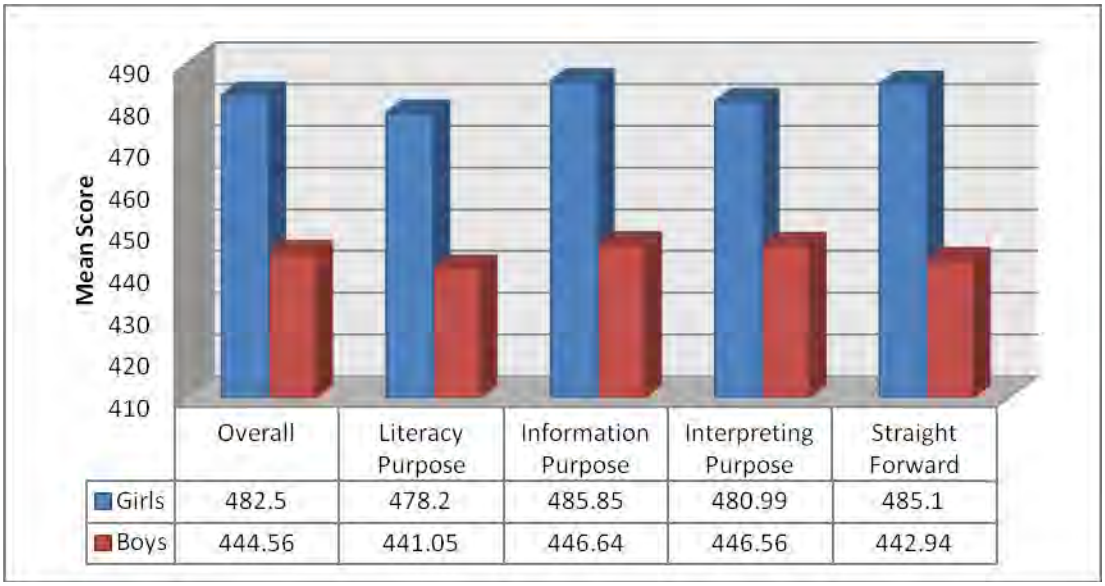

Figure 4. 1: *Performance by sex*

Performance by Speaking English at home

English is used as language of instruction from Standard 2 upwards. Speaking English all the time helps pupils practise and master the language. It is hoped that as pupils speak the language, they get used to it and eventually become competent in it. Speaking English should therefore not be limited to during school hours but throughout the day. Pupils were requested to indicate whether they A*lways*, S*ometimes* or *Never* speak English at home. The results are shown in Table 4.1.

Table 4. 1: *Frequency of speaking English at home and pupils' performance*

	n	%	Mean (SE)	SD	Diff
Always	839	20.09	445.20(5.24)	86.39	1,2:-36.93(-5.45)*
Sometimes	2,301	54.36	482.13(4.30)	86.31	1,3:-3.56(-.59)
Never	1,080	25.56	448.76(3.03)	68.53	2,3:33.37(6.34)*

** Statistically significant at 5% level*

Table 4.1 shows that majority of pupils (54.36%) *Sometimes* spoke English while those who A*lways* and *Never* spoke English constituted slightly less than half (20.09% and 25.56% respectively). Learners who *Sometimes* spoke English at home performed significantly better than both those who *Always* spoke English (445.20) and those who *Never* spoke English (448.76). It is surprising that pupils who never speak English and those who always do are performing at the same level.

Performance by Number of books at Home

Most of the Standard 4 Learners have very few books at home compared to the other categories of amounts of books at home as depicted in Table 4.2.

Table 4. 2: *Pupils' performance by number of books at home*

	n	%	Mean (SE)	SD	Diff
None or very few (0-10 books)	1630	40.08	455.26 (3.06)	74.14	1,2:-23.62(-4.90)*
1 shelf (11-25 books)	1183	28.08	478.88 (3.73)	82.79	1,3:-34.23(-4.08)*
1 book case(26-100 books)	641	15.42	489.49 (7.82)	94.00	1,4:1.71(.22)
At least 2 book cases (At least 101 books)	679	16.41	453.55 (7.07)	91.64	2,3:-10.61(-1.22)
					2,4:25.33(3.17)*
					3,4:35.94(3.41)*

**Statistically significant at 5% level*

It can be seen from Table 4.2 that 40% of the Standard 4 learners had none or few books whilst 16% had 101 or more books. Learners with books amounting to 1 book case had the highest mean of 489.49 and those with 0-10 books had the lowest mean. There was a decline in the reading achievement mean as the number of books increased from 101 upwards. A question on the relevance of the books can be posed here. Generally, pupils with more books (up to 100 books) performed significantly better than those who had fewer books.

Performance by Home Possession

A Home Possession index was derived from overall means of sub-items that sought to find out if learners had facilities that included a computer, study desk/table, books, a room internet connection, calculator, dictionary, running tap water, electricity, a television and radio at home. The index scale was calibrated into High, Medium and Low. Table 4.3 shows the results.

Table 4. 3: *Pupils' performance by amount of items possessed at home*

	n	%	Mean (SE)	SD	Diff
High	920	21.39	509.44 (8.19)	91.87	1,2:50.69(5.83)*
Medium	2,567	60.72	458.75 (2.94)	79.47	1,3:67.86(7.47)*
Low	740	17.89	441.58 (3.92)	67.30	2,3:17.17(3.50)*

**Statistically significant at 5% level*

According to Table 4.3, majority of the pupils, 60.72%, were in the *Medium Home Possession* category whilst 21.39% and 17.89% were in the *High and Low* categories respectively. The reading achievement mean for the *High Home Possession* subgroup was the highest (509.44), and greater than the international mean of 500. Pupils with *High Home Possessions* performed significantly better than those with *Low Home Possessions*.

Performance by Home Support

An index for Home Support was developed from 4 sub-items. The sub-items sought to measure frequencies on the following: parents asking learners what they learn at school, talking about school work with parent, parents ensuring that learner set aside time for homework and parents checking if the learner did homework. The scale for frequencies was subdivided into *everyday or almost every day, once or twice a week, once or twice a month* and *never or almost never*. The results are shown in Table 4.4.

Table 4. 4: *Pupils' performance by amount of home support*

	n	%	Mean (SE)	SD	Diff
Everyday	1,677	40.09	496.57(4.69)	81.59	1,2:38.57(6.54)* 1,3:73.06(11.60)*
Once or twice a week	1447	34.73	458.00(3.57)	80.29	1,4:68.33(6.39)*
Once or twice a month	894	21.73	423.51(4.20)	73.44	2,3:34.49(6.25)*
Never	134	3.45	428.24(9.65)	70.77	2,4:29.76(2.89) 3,4:-4.73(-.45)

**Statistically significant at 5% level*

It can be observed from Table 4.4 that a great proportion of the learners, 40.09%, received support *every day* whilst a small minority of 3.45% *never* received support. The highest reading achievement mean of 496.57 was reached by pupils who received home support *every*

day. The results show that pupils who received home support frequently performed better than those who received home support less frequently.

Performance by frequency of Bullying at School

An index, Bullying, was developed from six sub-items that included: I was made fun of or called names; I was left out of games; someone spread lies about me; something was stolen from me; I was hit or hurt by other pupils, and I was meant to do things I didn't want to do by other pupils. The scale for frequencies included: at least once a week, once or twice a month, a few times a year and never. Table 4.5 shows frequency of Bullying and how it was related to performance.

Table 4. 5: *Pupils' performance by bullying*

	n	%	Mean(SE)	SD	Diff
At least once a week	195	4.39	421.79(6.77)	80.67	1,2:-35.12(-4.51)*
Once or twice a month	1,555	35.31	456.91(3.85)	82.04	1,3:-45.17(-5.88)*
A few times a year	2,174	50.14	466.96(3.62)	83.00	1,4:-70.36(-6.06)*
Never	425	10.16	492.15(9.44)	89.77	2,3:-10.05(-1.90)
					2,4:-35.24-3.46)*
					3,4:-25.19(-2.49)*

**Statistically significant at 5% level*

Table 4.5 shows that 89.8% of the learners had experienced some form of bullying to varying degrees, whilst 10.16% had never been bullied. Those who had never been bullied had the highest mean of 492.15 whilst those who were frequently bullied had the lowest mean of 421.79. Conclusively, pupils who were less bullied performed significantly better than those who were bullied frequently.

Relationship between Achievement and Background Variables

A regression model was constructed using variables shown in Table 4.6 as predictors of achievement. It should be noted that majority of these variables were categorical as such they were dummy coded. The group for each variable used as a reference point was the one of desirable effect, with the exception of sex which was chosen on the basis of higher performance. For sex, *female* was used as the reference group; for home support, *every day* was the reference group; for books, *at least 100 books* was the reference for home

possession, the reference was *high home possession*; for bullying, the reference was *Never bullied*; for age, the *mean age* was used; for speaking English, *always* was the reference group. The constant term in the model represents the mean performance of pupils who have characteristics similar to a reference group in each variable. That is, the value 514.16 is the average score obtained by female pupils whose age is around the mean age of the pupils in the sample, who come from household with high home possessions, who had 100 or more books at home, whose parents were involved in their school work on almost daily basis, and who were never bullied at school by other pupils. According to the model, male pupils performed 24.60 points lower than their female counterparts when controlling for other variables. Likewise, when controlling for other variables, pupils whose parents were involved in their daily schoolwork performed 49.71 points higher and 23.91 points higher than those whose parents were involved in their school work *at most twice a month* and *once or twice a week* respectively. It is interesting to note that pupils who were bullied performed significantly lower than those who were not. In fact the magnitude of performance decreases with the intensity of bullying.

Unexpectedly, speaking English always at home and having more than 100 books did not influence achievement in reading after controlling for other variables This contradicts results in the parent chapter of this report (Tables 7.14 and 7.15). Internationally, higher frequencies of speaking English at home were associated with higher achievement. The lack of influence of speaking English always and more than 100 books could be due to error arising from self-reporting by the learners.

Table 4. 6: *Regression analysis for the background variables*

Variable	Coefficient	Standard error	t-value
CONSTANT	514.16	10.79	47.64
AGE	-19.70	2.43	-8.10*
SEX			
Male	-24.60	3.05	-8.06*
HOME SUPPORT			
At most twice a month	-49.71	4.49	-11.07*
Twice a week	-23.91	3.10	-7.72*
SPEAKING ENGLISH AT HOME			
Sometimes	27.45	4.09	6.71*
Never	10.46	4.47	2.34*
HOME POSSESSION			
Medium Home Possession	-24.77	3.55	-6.97*
Low Home Possession	-42.56	7.27	-5.86*
BULLYING AT SCHOOL			
At most twice a month	-44.48	7.47	-5.96*
A few times a year	-23.32	6.76	-3.45*
NUMBER OF BOOKS AT HOME			
26 -100 books	20.71	4.86	4.26*
11-25 books	11.65	5.58	2.09*
0-10 books	6.89	5.54	1.24

**Statistically significant at 5% level*

Time Spent Reading Outside School

Pupils were asked to indicate the amount of time they spend reading outside school during school days. It was found that majority of pupils (39.54%) spent less than 30 minutes reading after school as shown in Table 4.7.

Table 4. 7: *Amount of time spent reading outside school and pupils' performance*

	N	%	Mean(SE)	SD	Diff
Less than 30 minutes	1 642	39.54	460.81(3.28)	79.43	1,2:-9.10(-161)
30 minutes to 1 hour	1 412	34.16	469.91(4.61)	86.30	1,3:2.64(.43)
1 hour to 2 hours	588	14.16	458.17(5.25)	85.20	1,4:-25.29(-3.61)
2 hours or more	518	12.15	486.10(6.18)	86.37	2,3:11.74(1.68)
					2,4:-16.19(-2.10)*
					3,4:-27.93(-3.44)*

**Statistically significant at 5% level*

Only around 12% were found to spend more than 2 hours reading after school. Time spent on reading after school (studying) was found to be associated with a high score, that is, generally those who spent more time reading obtained significantly higher scores.

Reading for Fun after School

Pupils were asked to indicate how often they do the following activities outside school which were related to reading:

- reading for fun
- reading things that they chose for themselves
- reading to find out about things they wanted to learn

The results are presented in Table 4.8.

Table 4. 8: *Frequency of reading for fun and pupils performance*

Frequency	n	%	Mean(SE)	SD	Diff
Every day or almost everyday	1 331	30.42	482.83(4.71)	85.17	1,2:21.51(3.64)*
Once/twice a week	2 032	46.90	461.32(3.57)	82.31	1,3:38.03(5.54)*
Once or twice a month	822	19.19	444.80(4.99)	83.42	1,4:39.76(4.24)*
Never or almost never	153	3.50	443.07(8.10)	73.99	2,3:16.52(2.69)*
					2,4:18.25(2.06)*
					3,4:1.73(.18)

**Statistically significant at 5% level*

Table 4.9 shows that majority of pupils (46.90%) read things that interested them after school once or twice a week, while only 3.50% never or almost never read anything. It can be

inferred from Table 4.9 that reading for fun was positively correlated with achievement as those pupils who read frequently performed significantly better (482.83) than those who seldom read.

Frequency of Reading outside School

An index for Reading outside school was developed from five sub-items that included:

- I read stories or novels
- I read books that explain things
- I read magazines
- I read comic books
- I read newspapers

The results are presented in Table 4.9.

Table 4. 9: *Frequency of reading outside school and how it affects performance*

	n	%	Mean(SE)	SD	Diff
Every day or almost every day	679	15.49	461.10(5.42)	83.46	1,2:-6.55(-.98)
Once or twice a week	2 364	54.25	467.65(3.90)	85.13	1,3:-1.50(-.22)
Once or twice a month	1 119	26.00	462.60(4.25)	84.81	1,4:25.45(3.23)*
Never or almost never	188	4.26	435.65(5.72)	66.72	2,3:5.05(.86)
					2,4:32.00(4.62)*
					3,4:26.95(3.78)*

**Statistically significant at 5% level*

The scale for frequencies included *every day or almost every day, once or twice a week, once or twice a month and never or almost never*. According to Table 4.10, about 4% of learners never read outside school while around 15% read almost every day. However, those who never read outside school performed the lowest, with a mean of 435.65. Pupils who read frequently (at least once a week) performed significantly better than those who read less frequently (at most twice a month). Thus, reading outside school was associated with improved performance.

Summary

The girls outperformed boys in all purposes and processes in reading. A majority of the pupils (40%) have none or very few books in their homes. Their performance is lower than those who have more books at home but lower than the international average. A lower proportion of 20% of the pupils have a high index of home possessions that promote learning. Pupils who received home support everyday consisted of 40% of the population and outperformed those who received lower frequencies of home support.

Only 10% of the pupils were never bullied and they had the highest mean scores. Pupils who were over the age level performed lower than those who were at the appropriate age. After controlling for all variables, the following were found to be positively associated with performance namely; more books at home, high home possession and frequent home support for learning whilst bullying and age were negatively associated.

Recommendations

1. The lower performance in reading of the boys compared to that of the girls in all reading purposes and processes is of serious concern. There is need for research to be conducted in this area with the purpose of finding ways of realising sex parity in the achievement of reading skills.
2. Pupils whose reading skills are affected by medium and low Home possessions are in a large majority. Greater access could be provided to some of the items like computers in the schools to enhance their reading skills.
3. The rest of the 60% of the pupils do not receive home support very frequently. Schools and PTA"s should develop ways by which parents could be capacitated to provide more frequent home support. The current adopt a school programme should be encouraged
4. Of serious concern is the finding that 90% of the pupils experienced some bullying at low to high frequencies. All forms of bullying should be identified. Policies and frameworks to deal with the issue of bullying should be developed by the stakeholders including PTA"s, School Management and pupils" leadership structures.

CHAPTER FIVE
TEACHERS' BACKGROUND VARIABLES AND PUPILS' PERFORMANCE IN READING

Reading is considered the most important skill that a child can develop in learning. It is important to cultivate the skill on pupils at an early age of learning. Reading is crucial to success in school and pupils need good reading comprehension to understand and learn material being taught in various classes. It is therefore very important for schools to have good resources to develop and enhance good reading skills.

This chapter discusses teachers‟ academic and professional backgrounds, classroom resources, instructional practices, and attitudes toward teaching. The chapter seeks to determine whether there is a relationship between pupils‟ performance and the teachers‟ academic and professional backgrounds, classroom resources, instructional practices, and attitudes toward teaching. Further analysis may be required to determine the extent to which the teachers‟ academic and professional backgrounds, classroom resources, instructional practices, and attitudes toward teaching relate to performance of pupils, taking into account the fact that these variables may not have direct effect on performance themselves.

Data were obtained by means of administering a questionnaire to teachers of Standard 4 pupils. Specific questions were asked to establish the availability of enhancing resources; the teachers‟ qualifications, teachers‟ job satisfaction, teachers‟ working conditions, teachers‟ understanding of curricular goals, parents‟ involvement/support towards achievement of pupils, security of the school, availability of computers, teachers‟ interactions with each other for benchmarking and the buildings‟ status. The aspect of reading effect was addressed on reading questions where teachers‟ questions emphasize on the pedagogy of English such as reading instructions, strategies and activities they give their pupils. Some of the questions bordered on resources that contribute to the pedagogy of learning such as literary reading materials and informational reading materials.

Teachers' Demographic Variables

There is substantial literature on the relationship between teacher characteristics and pupils learning. A lot of prior research on this topic has focused on teachers‟ educational background, years of teaching experience and salaries. While it is clear that certain teachers are more effective than others at increasing pupils‟ performance, there is considerably less consensus on whether specific, observable teacher characteristics such as education or experience produce higher performance. However, the prePIRLS Standard 4 questionnaires went further to even measure the effect, other than experience and qualification, of age and sex. Table 5.1 shows pupils‟ mean performance by teachers‟ years of experience, age and sex.

Table 5. 1: *Teachers' demographic data and performance*

		n	%	Mean (SE)	SD	Diff
Years of experience	1-10yrs	1688	42.79	448.99(4.90)	76.20	1,2: -25.23*
	11-20yrs	1271	32.68	474.22(7.96)	88.43	1,3: -17.31
	21-30yrs	737	20.03	466.30(11.57)	89.15	1,4: -64.99
	31-40yrs	150	3.81	513.98(42.92)	107.64	2,3: 7.92
						2,4: -39.76
						3,4: -47.68
Age	Under 30yrs	1254	29.45	447.50(5.66)	75.16	1,2: -20.78*
	30-49yrs	2612	60.27	468.28(5.34)	86.73	1,3: -27.02
	Above 50yrs	431	10.28	474.52(16.80)	90.32	2,3: -6.24
Sex	Female	3406	80.18	460.86(4.06)	84.21	1,2: - 9.78
	Male	1403	19.82	470.64(9.00)	85.12	

**Statistically significant at 5% level*

Teachers' Years of Experience

It can be observed from Table 5.1 that pupils whose teachers have the least years of experience from 1-10 years are the most numerous, with the highest percentage of 42.79, and are followed by those with 11-20 years, who have a percentage of 32.68. Pupils whose teachers have 11-20 years of experience performed significantly better than pupils whose teachers have 1-10 years of teaching experience.

Teachers' Sex

As shown in Table 5.1, pupils who were taught by female teachers were the more numerous, with the highest percentage of 80.18%, than those taught by male teachers, who stand at 19.82% of the teacher sample. The pupils taught by male teachers had a mean of 470.64 whereas those taught by female teachers had a mean of 460.86. There is no significant difference in the means and both means are below the international average of 500.

Teacher Age

Table 5.1 shows that there were more pupils (60.27%) taught by teachers within the age bracket of 30-49 than those under 30 years (16.5%), and those who were 50 years and above (10.28%). Pupils that were taught by teachers who were above 50 years of age have the highest mean of 474.52 followed by those who were taught by teachers aged between 30-49 (mean of 468.28) and lastly those who were taught by teachers under the age of 30 (mean of 447.50). The means indicate that the older the teachers the better the reading of the learners. These means however, are all below the international average of 500, but there was a significant difference between the means of learners who were taught by teachers under 30 and those who were 30 to 49 in age.

Formal Education Completed by Teachers

Historically, training of primary school teachers was mainly the responsibility of the Teacher Training Colleges (TTCs). Over the years, the TTCs have awarded four different kinds of teaching certificates; the Elementary Teachers Certificate (ETC), Primary Lower (PL), Primary Higher (PH), and Primary Teacher Certificate (PTC). All TTCs have been upgraded to Colleges of Education following the RNPE (1994) recommendations of improving teacher qualifications to the Diploma level. The Colleges of Education and the University of Botswana (UB) currently share the responsibility of training and certifying teachers. Four Colleges of Education train teachers for the primary level, while two are responsible for the Junior Secondary School level.

English teachers were requested to indicate their levels of qualification, which were categorised as; *At most Senior Secondary, At most Diploma and At least First Degree.* Table 5.2 shows the qualifications of teachers in the study and the impact on the pupils" performance.

Table 5. 2: *Highest level of formal education completed by teachers and pupils performance*

	n	%	Mean(SE)	SD	Diff
At most Senior Secondary	24	0.61	406.42(3.86)	73.28	1,2: -53.21*
At most Diploma	3330	79.72	459.63(4.09)	83.44	1,3:-54.02*
At least First Degree	814	19.67	475.92(10.33)	88.06	2,3: - 69.50

**Statistically significant at 5% level*

Table 5.2 shows that pupils taught by teachers with *At most a Diploma* are the majority, with 79.72% among the teachers of reading at Standard 4, whilst 0.61% and 19.67% are taught by teachers who have *At most Senior Secondary* education and *At least First Degree* respectively. Learners with teachers who have *At least a Degree* have a higher significant mean of 475.92 compared to those who are taught by teachers who completed *At most Senior Secondary* (406.42).

Teachers' Perceptions about their Profession

Teachers were asked to opine on the following by rating very low to very high:

a) Teachers" job satisfaction
b) Teachers" understanding of the school curricular goals
c) Teachers" degree of success in implementing the school"s curriculum
d) Teachers" expectations for pupil achievement
e) Parental involvement in school activities
f) Pupils" regard for school property
g) Pupils" desire to do well in school

The teachers" ratings about teacher characteristics in the schools initially revealed five options; namely: very high, high, medium, low and very low. However, the options for rating were collapsed to three: low, medium and high. Tables 5.3 to 5.5 show the results of the relationship between the teachers" responses and pupils" performance.

Table 5. 3: *Teachers' perceptions about teacher characteristics in the schools against pupils' performance*

		n	%	Mean(SE)	SD	Diff
Teachers' job satisfaction	High	1671	39.48	470.52(7.60)	88.46	1,2: 15.94
	Medium	2173	51.28	454.58(4.08)	79.70	1,3: 9.40
	Low	398	9.23	461.12(10.93)	77.95	2,3: -6.54
Teachers' understanding of the school's curricular goals	High	3221	74.33	467.85(4.49)	84.87	1,2: 20.15*
	Medium	962	23.23	447.70(6.89)	82.55	1,3: 2.75
	Low	92	2.44	465.10(35.47)	73.23	2,3: -17.40
Teachers' degree of success in implementing the school's curriculum	High	2568	61.12	470.08(5.20)	86.06	1,2: 13.96*
	Medium	1539	35.06	456.12(1.64)	80.13	1,3: 52.66*
	Low	150	3.82	417.42(16.79)	82.38	2,3: 38.70*
Teacher's expectation of pupil's achievement	High	3233	76.72	466.41(4.37)	84.99	1,2: 11.34
	Medium	911	20.45	455.07(8.81)	83.45	1,3: 34.92*
	Low	131	2.83	431.49(8.34)	65.83	2,3: 23.58

**Statistically significant at 5% level*

Table 5.3 shows that the highest number of pupils (51.28%) was taught by teachers who viewed the level of job satisfaction in their schools to be medium, whilst 39.48% and 9.23% of pupils were taught by teachers who described it as high and low respectively. The mean of 470.52 for learner achievement was the highest mean and it was associated with high teacher job satisfaction. For teacher job satisfaction characterised as medium the mean for learner achievement was 454.58, whilst the mean of 461.12 was associated with job satisfaction described as low. However, there was no statistical significant difference in the three means.

A large number of pupils (74.33%) were taught by teachers who described the teachers‟ understanding of the school‟s curricular goals as be high, whilst 23.23% and 2.44% of pupils were taught by teachers who thought it was medium and low respectively. The 467.85 mean for learner achievement where teachers‟ understanding of the curriculum goals was believed to be high was significantly higher than the mean where there were medium perceptions for the understanding of the curriculum.

Pupils who were taught by teachers who considered teachers‟ degree of success in implementing the school‟s curriculum to be high comprised 61.12%, whereas those who rated it medium and low constituted 35.06% and 3.82% respectively. The 470.08 mean for learner

achievement where teachers believed that the teachers‟ degree of success in implementing the school‟s curriculum was significantly higher than where implementation was viewed to be medium (456.12) and low (417.42). There is a statistical significant difference across all means.

A great majority of pupils (76.72%) were taught by teachers who had high expectations of pupils achievement compared to 20.45% and 2.83% of pupils whose teachers have medium and low expectations respectively. Pupils who were taught by teachers with high expectation of them performing well did significantly better than those who were taught by teachers with low expectation of their pupils doing well.

Table 5. 4: *Teachers' views of parental support pupils and involvement in school activities against pupils' achievement*

		n	%	Mean(SE)	SD	Diff
Parental Support	High	494	12.17	515.72(17.51)	94.73	1,2: 37.18*
	Medium	1395	31.45	478.54(6.10)	84.20	1,3: 73.12*
	Low	2408	56.38	442.60(3.24)	74.94	2,3: 35.94*
Parental involvement	High	505	11.31	505.99(16.66)	89.87	1,2: 33.27
	Medium	1247	29.07	472.72(7.77)	86.26	1,3: 56.22*
	Low	2545	59.62	449.77(3.54)	78.99	2,3: 22.95*

**Statistically significant at 5% level*

Regarding parental support for pupils‟ achievement, Table 5.4 shows that where the support is high, the achievement is much higher, with a mean of 515.72, than where the support is medium and low. This mean, 515.72, is even higher than the international average of 500. However, at 12.17, the percentage of pupils who receive high support from parents is very low, while the percentage for the pupils whose parents provide low support is high (56.38). There is a significant difference between the means of all the three levels of parental support. These responses from teachers indicate that generally, in Botswana, there is very low parental support for pupils, a factor which contributes to poor performance. Generally, parental involvement in school activities is very low since it can be seen from Table 5.4 that only a small percentage (11.31) of pupils have parents who are highly involved in the school activities. Nonetheless, it is that small percentage (11.31) of high parental involvement that has the highest mean of 505.5. From this observation, an inference can be made that high parental involvement in school activities has a propensity of producing high performance. The

significance test shows a significant difference between all means across all levels; high medium and low.

Teachers' Views on Pupils' Regard for School Property and Pupils Desire to do Well in School

The study sought to find out teachers views on how pupils regard school property and, further, to establish the level of pupils‟ desire to do well in school. The results are shown in Table 5.5.

Table 5. 5: *Pupils regard for school property and their pupils' desire to do well in school against performance*

		n	%	Mean(SE)	SD	Diff
Regard for school property	High	503	10.64	487.18(14.42)	83.55	1,2: 17.79
	Medium	2081	50.68	469.39(6.31)	87.25	1,3: 38.95*
	Low	1691	38.68	448.23(4.27)	78.29	2,3: 21.16*
Desire to do well in school	High	652	15.55	513.04(14.0.)	93.41	1,2: 44.99*
	Medium	1836	43.65	468.05(5.41)	80.60	1,3: 74.95*
	Low	1776	40.80	438.09(4.32)	75.00	2,3: 29.96*

**Statistically significant at 5% level*

According to teachers, pupils who regard school property highly perform better than those who regard school property at a medium level and those who regard it lowly. This is verified by Table 5.5 which shows a small percentage (10.64) of pupils who regard school property highly with the highest mean performance. There is a significant difference between the means of pupils who held high regard for school property and those who held low regard for school property, and between those who have medium regard and low regard for school property. Pupils with high desire to do well in school perform better than those with medium and low desire. The respective means are 513.04, 468.05 and 438.09, and there is a significant difference between these means.

Discipline and Safety in the School

Standard 4 teachers were asked to think about their current school and indicate the extent to which they agree or disagree with the following statements.

- The school is located in a safe neighbourhood
- I feel safe at this school
- This school"s security policies and practices are sufficient

Initially the respondents had to choose their responses based on; *agree a lot*, *agree a little*, *disagree a little* and *disagree a lot*. The responses were then collapsed to just two; *agree* and *disagree*. The findings are presented in Table 5.6.

Table 5. 6: *School Location, Safety and Safety Policies and Practices and Pupils Performance*

		n	%	Mean(SE)	SD	Diff
The school is located in a safe neighbourhood	Agree	3161	73.51	470.04(4.49)	86.37	1,2: 27.81*
	Disagree	1119	26.49	442.23(5.48)	75.40	
I feel safe at this school	Agree	3611	84.45	464.22(4.01)	84.00	1,2: 13.86
	Disagree	649	15.55	450.36(8.05)	85.09	
This school's security policies and practices are sufficient	Agree	3142	72.79	466.93(4.41)	84.79	1,2: 16.78*
	Disagree	1096	27.21	450.15(6.59)	81.85	

**Statistically significant at 5% level*

It can be observed from Table 5.6 that the mean performance of the pupils was significantly higher at 470.04 for teachers who were of the view that their schools were located in a safe neighbourhood than for the teachers who felt they were not in a safe neighbourhood, who had a mean performance of 442.23. The conclusion that can be drawn from the findings is that the safer the location of the school the better the performance of the learners.

Teachers who are feeling safe in their schools produce pupils with better reading scores than those who are feeling unsafe, even though there is no significant difference between the means of learners. The mean performance of pupils was significantly higher for teachers who agreed that school"s security policies and practices are sufficient at their schools than those who disagreed with school"s security policies and practices.

Teachers' Views on Pupils' Behaviour

The study asked teachers to reflect on their current school and indicate the extent to which they agree or disagree with each of the following statements regarding learners‟ behaviour.

- The pupils behave in an orderly manner
- The pupils are respectful of the teachers

The findings are presented in Table 5.7.

Table 5. 7: *Teachers views on pupils' behaviour and performance*

		n	%	Mean(SE)	SD	Diff
Pupils behave in an orderly manner	Agree	2748	64.81	468.48(4.86)	84.12	1,2: 16.50*
	Disagree	1532	35.19	451.98(5.49)	84.14	
The pupils are respectful of teachers	Agree	3295	76.38	464.77(4.30)	84.48	1,2: 8.89
	Disagree	985	23.62	455.88(8.14)	84.20	

**Statistically significant at 5% level*

Table 5.7 shows that the pupils‟ mean achievement of 468.48 was associated with teachers agreeing that pupils behave in an orderly manner. The mean was significantly higher than the mean where teachers disagree that pupils behave in an orderly manner (451.98). The highest percentage of 76.38 was obtained for pupils whose teachers agreed that pupils were respectful to teachers. The means for pupils were higher where it was agreed that pupils are respectful of teachers. However, there was no statistical difference between the means.

Teachers' Working Conditions

In the quest to establish the severity of problems that schools may be faced with and the teacher working conditions, teachers were asked to indicate whether the following were *not a problem*, *a minor problem*, or *a serious problem* in their school.

- The school building needs significant repair
- Classrooms are overcrowded
- Teachers have too many teaching hours
- Teachers do not have adequate workspace for preparation, collaboration or meeting with pupils
- Teachers do not have adequate instructional materials and supplies

The findings of the issues above and the corresponding pupils‟ performance are shown in Table 5.8.

Table 5. 8: *Teacher working conditions and their association with learners' performance*

		n	%	Mean(SE)	SD	Diff
School building needing significant repair	Not a problem	344	9.57	501.43(23.63)	106.84	1,2: 39.62
	Minor problem	3024	71.34	461.81(3.97)	81.39	1,3: 54.12*
	Serious problem	850	19.09	447.31(7.09)	78.05	2,3: 14.50
Classrooms are overcrowded	Not a problem	1506	38.94	468.96(7.72)	92.16	1,2: 9.82
	Minor problem	1967	44.53	459.14(5.16)	79.28	1,3: 11.58
	Serious problem	807	16.53	457.38(6.78)	78.06	2,3: 1.76
Teachers have too many teaching hours	Not a problem	1546	35.42	474.23(6.62)	87.46	1,2: 15.05
	Minor problem	2154	51.41	459.18(5.12)	83.64	1,3: 29.03*
	Serious problem	580	13.17	445.20(7.36)	74.92	2,3: 13.98
Teachers do not have adequate workspace	Not a problem	1297	31.87	475.57(8.27)	91.00	1,2: 17.26
	Minor problem	2024	46.97	458.31(5.70)	83.73	1,3: 24.62*
	Serious problem	928	21.16	450.95(4.89)	72.62	2,3: 7.36
Teachers do not have adequate instructional materials and supplies	Not a problem	217	6.03	509.59(31.69)	115.65	1,2: 38.11
	Minor problem	2127	51.39	471.48(5.96)	84.05	1,3: 64.34*
	Serious problem	1899	42.58	445.28(3.69)	75.37	2,3: 26.20*

**Statistically significant at 5% level*

Regarding the issue of school buildings needing significant repair, it can be observed from Table 5.8 that a large number of pupils were taught by teachers who indicated that it was a minor problem (71.34%), 19.09% of the learners were taught by teachers who thought the school‟s buildings need for significant repair was a serious problem, and lastly, 9.57% were taught by teachers who thought it was not a problem at all. The pupils‟ mean performances from teachers who thought it was not a problem reached the international average and performed significantly better than pupils whose teachers reported school building as needing repairs was a serious problem.

Majority (44.53%) of pupils were taught by teachers who indicated that overcrowding of classrooms was a minor problem, and 38.94% were taught by teachers who did not report overcrowding as a problem. The rest of the pupils (16.53%) were taught by teachers who

reported overcrowding to be a serious problem. However, there is no statistical significant difference in the pupils mean performance.

A large percentage of pupils (51.41) were taught by teachers who thought having too many teaching hours was a minor problem. 35.42% of learners were taught by teachers who thought it was not a problem at all, while 13.17% were taught by teachers who indicated that too many teachings hours was a serious problem. The learners of the teachers who said having too many teaching hours was not a problem performed significantly better than those whose teachers indicated that many teaching hours was a serious problem.

About 46.97% of pupils were taught by teachers who indicated that working space was a minor problem while 31.87% were taught by teachers who indicated that working space was not a problem. Pupils whose teachers indicated that work space was not a problem performed significantly better than those whose teachers indicated that it was a serious problem.

With regards to instructional materials and supplies, 6% of pupils were taught by teachers who indicated that adequate instructional materials and supplies were not a problem. Learners who were taught by teachers who felt that materials and supplies were not a problem have a high mean performance of 509.59, even higher than the international average mean of 500.

Use of Computers

This section covers the use of computers in schools.

Use of Computers for lesson Preparation

There was need to establish whether teachers use computers for lesson preparation and whether this impacted in any way on performance. The results are shown on Table 5.9

Table 5. 9: *Use of computers for preparation and pupils' performance*

	n	%	Mean (SE)	SD	Diff
Yes	190	5.35	513.96(24.93)	98.35	53.70 *
No	3989	94.65	460.26(3.63)	82.94	

**Statistically significant at 5% level*

Table 5.9 shows that 94.65% of teachers reported that they did not use computers when they were preparing for teaching. Only 5.35% said they did. Despite a small sample, the mean

performance of pupils who were taught by teachers who indicated that they use computers for preparation in teaching was significantly higher at 513.96 than that of learners whose teachers did not use computers, which was at 460.26. The learners whose teachers use computers for preparation reached and went beyond the international average mean of 500.

Using Computers in Teaching

Teachers who had indicated that they use computers in classroom instruction were further probed on whether they: were comfortable using computers in teaching, had ready access to computer support staff and whether they received adequate support for integrating computers in teaching activities". The findings are presented in Tables 5.10, 5.11 and 5.12 respectively.

Table 5. 10: *Using computers in teaching and performance*

	n	%	Mean(SE)	SD	Diff
Agree	273	60.98	490.63(20.91)	101.01	1,2: 1.98
Disagree	175	39.02	488.65(33.94)	91.87	

**Statistically significant at 5% level*

Table 5.10 shows that the means of pupils who were taught by teachers who said they feel comfortable using computers in their learning is same as for pupils whose teachers said they did not feel comfortable using computers in their learning. It may be concluded that feeling comfortable using computers in teaching does not seem to add value to pupils" performance.

Table 5. 11: *Ready access to computer support staff and performance*

	n	%	Mean(SE)	SD	Diff
Agree	200	46.03	505.98(26.15)	103.25	1,2: 29.87
Disagree	248	53.97	476.11(25.61)	90.17	

**Statistically significant at 5% level*

It can be observed from Table 5.11 that a high percentage of pupils (53.97) were taught by teachers who reported that they did not have access to computer staff when they had technical problems during classroom instruction. Pupils whose teachers indicated that they had support performed better than pupils whose teachers did not have technical support. However, there was no statistical significant difference between means.

Table 5. 12: *Adequate support for integrating computers in teaching and performance*

	n	%	Mean(SE)	SD	Diff
Agree	65	17.72	604.75(5.95)	58.49	1,2: 139.63*
Disagree	383	82.28	465.12(17.18)	85.88	

**Statistically significant at 5% level*

Table 5.12 shows that teachers who indicated that they had adequate support for integrating computers in teaching during classroom instruction taught a small percentage (17.72) of pupils. The pupils taught by these teachers performed significantly better than pupils whose teachers did not have adequate support for integrating computers in teaching during classroom instruction.

Teachers' Interaction amongst themselves

The study also sought to establish the frequency of interaction amongst them to do the following:

- Discuss how to teach a particular topic
- Collaborate in planning and preparing instructional materials
- Share learnt teaching experiences
- Visit other classrooms
- Work together to try out new ideas

An index of one variable labelled Teachers‟ Interaction was formed and the findings from the analysis and how they are related to the performance of pupils are presented in Table 5.13.

Table 5. 13: *Frequency of interaction with other teachers and performance*

	n	%	Mean(SE)	SD	Diff
Never or almost never	375	9.68	469.40(16.44)	87.54	1,2: 0.78
2 – 3 times per month	1 701	39.78	455.65(6.43)	85.47	1,3: 0.04
1 – 3 times per week	1 517	34.52	468.64(5.96)	79.73	1,4: 0.12
Daily or almost daily	645	16.02	466.97(10.59)	89.17	2,3: -1.48
					2,4: -0.91
					3,4: 0.14

**Statistically significant at 5% level*

It can be seen from Table 5.13 that the mean performances of pupils were statistically the same irrespective of teachers‟ frequency of interaction.

Teachers Position in Relation to their Profession

Research reflects that the effectiveness of teachers varies widely, even within the same school (Rockoff, 2004). In other regions, the concept of the “revolving door,” is prevalent. Early-career teachers steadily left schools in high-minority, high-poverty communities to work in schools in whiter, higher income communities or to take jobs outside of education (Boyd et al., 2007)). Thus, the very schools that most needed effective teachers had the greatest difficulty attracting and retaining them. The question is whether this is the case in Botswana. Questions to solicit the state on the issue can be addressed in many forums, which befit the PIRLS‟ approach to assess the enthusiasm, regard, and satisfaction of teachers towards their profession. Teachers were asked to either agree or disagree with the following statements.

- I am content with my profession as a teacher
- I am satisfied with being a teacher at this school
- I had more enthusiasm when I began teaching than I have now
- I do important work as a teacher
- I plan to continue as a teacher as long as I can
- I am frustrated as a teacher

These statements were indexed into one variable labelled teacher‟s satisfaction with teaching profession, and the results were related to performance and presented in Table 5.14.

Table 5. 14: *Teachers' satisfaction with teaching profession and performance*

	n	%	Mean(SE)	SD	Diff
Agree	3 505	83.73	464.61(4.16)	85.44	1,2: 9.78
Disagree	696	16.27	454.83(6.88)	79.73	

**Statistically significant at 5% level*

From Table 5.14 it can be observed that the majority of pupils (83.73%) are taught by teachers who said that they were satisfied with their profession. The mean performance of these pupils was higher than those who were taught by teachers who reported dissatisfaction in their profession. However, there was no significant statistical difference between the means.

Approaches to Teaching

Teachers were asked the following questions. How often they:

- summarised what pupils have learnt from the lesson
- relate the lesson to pupils‟ daily lives
- use questioning to elicit reasons and explanations
- encourage all pupils to improve their performance
- praise pupils for good effort
- bring interesting materials to class

All these questions were loaded into one variable; teaching by motivating and encouraging pupils. The results were related to performance and are presented in Table 5.15.

Table 5. 15: *Teaching by motivating and pupils performance*

	n	%	Mean(SE)	SD	Diff
Every /Almost every lesson	2 152	49.12	464.48(5.25)	84.03	1,2: 4.22
About half the lessons	2 076	50.21	460.26(5.56)	85.05	1,3: -27.81*
Some lessons	32	0.67	492.29(5.99)	65.63	2,3: -32.03*

**Statistically significant at 5% level*

Summarising the lesson is critical in the teaching and learning process. Through question and answer technique, the teacher can highlight certain aspects as a way of reinforcing what has been learnt. Table 5.15 clearly shows that teachers use various methods to facilitate pupils‟ learning, and this is done in half of the lessons or almost every lesson. It can be observed that the pupils were also performing at the same level. For teachers who apply the various methods sometimes, their pupils performed significantly better than all the groups. However, the percentage of pupils is less than 1%, making it more prone to error and thus being unreliable pupils.

Pupils Lacking Prerequisite Knowledge

The issue of prerequisite knowledge was also addressed in an attempt to establish the extent to which it may limit how teachers teach their classes. The findings are shown in Table 5.16.

Table 5. 16: *Pupils lacking prerequisite knowledge and performance*

	n	%	Mean(SE)	SD	Diff
Not applicable	119	2.86	538.89(55.68)	102.80	1,2: 47.49
Not at all	230	4.78	491.40(34.75)	98.51	1,3: 70.50
Some	2 494	59.97	468.39(4.59)	82.76	1,4: 97.19
					2,3: 23.01
					2,4: 49.70
A lot	1 374	32.39	441.70(5.50)	76.98	3,4: 26.69*

**Statistically significant at 5% level*

Only about 8 (a combination of not applicable and not at all) pupils were taught by teachers who reported that the lack of prerequisite knowledge or skills among pupils did not limit how they taught the class. The significant difference is noted between means of learners whose teachers reported that pupils lacking prerequisite knowledge limited how they teach in some class and those who reported that it limited them a lot.

Pupils Suffering Lack of Nutrition

Teachers‟ opinion was sought to suggest the extent to which pupils suffering from lack of basic nutrition may limit how they teach their classes. The findings are presented in Table 5.17.

Table 5. 17: *Pupils suffering lack of nutrition and performance*

	n	%	Mean(SE)	SD	Diff
Not applicable	1543	35.81	478.29(6.95)	89.13	1,2: -1.42
Not at all	895	22.65	479.71(10.46)	85.69	1,3: 38.59*
Some	1428	34.13	439.70(4.45)	74.69	1,4: 38.43*
					2,3: 40.01*
					2,4: 36.25*
A lot	351	7.41	443.46(10.60)	72.37	3,4: -3.76

**Statistically significant at 5% level*

According to Table 5.17, about 34% of the pupils were taught by teachers who reported that lack of nutrition for the pupils limited how they taught, and their learners performed significantly lower than pupils taught by teachers who reported it as not applicable.

Pupils Not Getting Enough Sleep

The teachers" opinion was sought on the extent to which pupils not getting enough sleep could limit how they taught their classes. The findings are presented in Table 5.18.

Table 5. 18: *Pupils not getting enough sleep and performance*

	n	%	Mean(SE)	SD	Diff
Not Applicable	918	22.61	465.91(7.97)	77.99	1,2: -8.11
Not at all	848	19.90	474.02(11.30)	88.75	1,3: 6.85
Some	2 163	51.27	459.06(5.54)	86.62	1,4: 18.48 2,3: 14.96 2,4: 26.59*
A lot	288	6.22	447.43(6.48)	72.08	3,4: 11.63

**Statistically significant at 5% level*

Table 5.18 shows that (in some lesson), majority of pupils (51.27%) were taught by teachers who reported being limited by pupils not getting enough sleep. 22.61 % pupils were taught by teachers who reported that lack of adequate sleep was not a factor at all. Learners whose teachers indicated that lack of adequate sleep for pupils did not restrict how they taught the class performed significantly better than pupils whose teachers indicated that lack of adequate sleep for pupils placed a lot of limitation on their teaching.

The Extent to which Pupils with Special Needs and Certain Behaviours Limit Teaching

The two burning issues in the fraternity of education in Botswana; namely: pupils with special needs and pupils with somewhat peculiar behaviour, i.e. uninterested and disruptive behaviour, were also addressed. This was done by way of engaging teachers to opine on the extent to which these two issues may limit how teachers teach their classes. The findings are shown in Table 5.19.

Table 5. 19: *The Extent to which pupils with special needs and certain behaviour limit teaching*

		n	%	Mean(SE)	SD	Diff
Disruptive pupils	Not applicable	1182	27.73	458.20(5.28)	76.85	1,2: -28.03
	Not at all	707	17.34	486.23(13.86)	94.08	1,3: -4.85
	Some	1895	46.32	463.05(6.11)	84.59	1,4: 23.20*
						2,3: 23.18
						2,4: 50.32*
	A lot	366	8.60	435.91(8.33)	77.89	3,4: 27.14*
Uninterested pupils	Not applicable	323	8.00	471.32(9.02)	87.30	1,2: -1.68
	Not at all	537	12.13	473.85(13.72)	83.05	1,3: 8.08
	Some	2838	69.66	463.24(4.79)	85.73	1,4: 24.02
						2,3: 10.61
						2,4: 26.55
	A lot	459	10.22	447.30(8.40)	74.15	3,4: 15.94
Pupils with special needs	Not applicable	107	2.38	466.26(14.05)	73.29	1,2: -45.34
	Not at all	405	9.41	511.60(18.94)	91.54	1,3: 1.80
	Some	2640	63.48	464.46(4.35)	81.83	1,4: 25.09
						2,3: 47.14*
						2,4: 70.43*
	A lot	1038	24.73	441.17(8.22)	81.79	3,4: 23.29*

**Statistically significant at 5% level*

As illustrated in Table 5.19, majority of pupils (46.32%) were taught by teachers who indicated that, to some extent, pupils with disruptive behaviour limited the way they taught. Learners taught by teachers who reported that disruptive behaviour limits them a lot had the lowest significant mean scores.

With regards to uninterested pupils, 69.66% were taught by teachers who said that such pupils limit their teaching to some extent, whilst 10.22% were taught by teachers who stated that they limited their teaching a lot. The highest mean of 473.85 for pupils‟ performance was associated with uninterested pupils‟ not being a factor in how the teaching was done. There was no significant difference in learners‟ performance across all the means.

With regard to pupils with special needs, majority (63.48%) were taught by teachers who reported that this, to some extent, was a limiting factor. 24.73% were taught by teachers who reported the issue to be limiting them a lot. Only 9.41% of pupils were taught by teachers who

said special needs pupils do not limit their teaching at all. Pupils whose teachers reported not being limited by learners with special needs performed significantly better than those limited to some extent and a lot.

Meet with Pupils' Parents

Teachers were requested to indicate the frequency with which they met or talked with pupils" parents to discuss pupils" learning progress. They were asked to indicate by choosing one of the following options: *at least once a week, once or twice a month, four to six times a year, one to three times a year or never meet at all*. The findings are presented in Table 5. 20.

Table 5. 20: *Meet with pupils' parents and performance*

	n	%	Mean(SE)	SD	Diff
At least once a week	220	5.40	480.92(22.16)	92.94	1,2: 12.90
Once or twice a month	1174	26.47	468.02(6.66)	81.97	1,3: 7.60 1,4: 24.09
4-6 times a year	687	16.20	473.32(13.38)	94.01	1,5: 42.04 2,3: -5.30
1-3 times a year	1920	45.12	456.83(5.76)	82.52	2,4: 11.19 2,5: 29.14* 3,4: 16.49 3,5: 34.44*
Never	259	6.81	438.88(7.88)	65.50	4,5: 17.95

**Statistically significant at 5% level*

It can be seen from Table 5.20 that 45 % of pupils were taught by teachers who reported that they met parents 1 to 3 times a year, and 26.47 % of pupils were taught by teachers who reported that they met the parents once or twice a month. The mean performances of pupils who were taught by teachers that never met with their parents was the lowest (438.88), therefore an deduction can be made that meeting pupils" parents once in a while has a positive influence on the performance of the pupils. The highest significant difference is between means of learners whose teachers said they met with pupils" parents once or twice a month, 4-6 times a year and those who said they never met with parents.

Progress Report

Educators were requested to specify the regularity with which they sent a progress report to the pupils‟ home. They were asked to indicate that by showing whether they sent a report *at least once a week, once or twice a month, four to six times a year, one to three times a year or never send at all*. The findings are presented in Table 5.21.

Table 5. 21: *Send a progress report home and performance*

	n	%	Mean(SE)	SD	Diff
At least once a week	94	2.19	457.36(9.68)	71.81	1,2: -8.05
Once or twice a month	570	13.46	465.41(11.69)	88.33	1,3: -11.45
					1,4: -4.54
4-6 times a year	394	8.75	468.81(13.00)	81.45	1,5: 6.58
					2,3: -3.40
1-3 times a year	3 083	72.61	461.90(4.51)	85.00	2,4: 3.51
Never	119	2.99	450.78(5.12)	68.57	2,.5: 14.63
					3,4: 6.91
					3,5: 18.03
					4,5: 11.12

**Statistically significant at 5% level*

Table 5.21 shows that about 73% of pupils were taught by teachers who sent a report 1 to 3 times a year, followed by 13.46% whose teachers stated that they send a report once or twice a month. Unlike in the PIRLS 2011 report, the mean performances of pupils who were taught by teachers who said they sent reports at least 4 to 6 times a year was the highest (468.81). The means are not statistically significant.

The Organisation of Classes and Performance in Reading

The frequency with which classes are organised into groups has a bearing on the learning of reading. Teachers were asked how often they organised their classes into different groupings and performance was compared according to the frequencies in the groupings. Table 5.22 displays the results.

Table 5. 22: *Frequency of types of groupings and pupils performance*

		n	%	Mean (SE)	SD	Diff
Teach reading as a whole class activity	Always or almost always	1,338	31.15	449.12(6.66)	80.56	1,2: (-23.21)*
	Often	1,262	30.48	472.33(7.67)	84.52	1,3: (-16.20)
	Sometimes	1,631	38.36	465.32(5.74)	86.77	2,3: 7.01)
Create same ability groups	Always or almost always	483	10.44	455.82 (7.52)	77.43	1,2: (-12.67)
	Often	1,157	28.34	468.49 (8.77)	89.01	1,3: (-5.85)
	Sometimes	2,046	47.49	461.67 (6.17)	84.16	1,4: (-1.43)
						2,3: (7.01)
		574	13.73	457.25 (9.21)	79.76	2.4: (15.08)
	Never					3,4: (8.07)
Create mixed ability groups	Always or almost always	1,234	28.75	455.08 (5.38)	80.79	1,2: (-1.74)
	Often	1,337	32.21	456.82 (6.43)	80.33	1,3: (-20.98)*
	Sometimes	1,656	37.32	476.06 (7.63)	89.10	1,4: (39.04)
						2,3: (-19.24)
		70	1.72	416.04 (5.10)	71.07	2.4: (40.78)*
	Never					3,4: (60.02)*
Use individualised instruction	Always or almost always	612	14.45	470.68 (9.0)	82.10	1,2: (2.70)
	Often	1,204	28.26	467.98 (9.55)	90.09	1,3: (10.53)
	Sometimes	2,256	53.90	460.15 (4.33)	82.48	1,4: (40.21)*
						2,3: (7.83)
		155	3.40	430.47 9.49)	72.63	2.4: (37.51)*
	Never					3,4: (29.68)*
Pupils work independently on an assigned plan	Always or almost always	771	16.36	468.54 (11.9)	88.81	1,2: (6.98)
	Often	1,532	36.13	461.56 (7.25)	85.12	1,3: (6.95
	Sometimes	1,949	47.31	461.59 (4.99)	82.50	1,4: (60.85)*
						2,3: (-0.03)
		21	0.20	468.54 (11.9)	50.33	2.4: (53.87)*
	Never					3,4: (53.90)*
Pupils work independently on a goal they choose	Always or almost always	530	10.81	470.39 (9.62)	77.91	1,2: (9.77)
	Often	1,172	28.14	460.62 (8.52)	85.53	1,3: (7.59)
	Sometimes	2,371	55.04	470.39 (9.62)	85.06	1,4: (7.59)
						2,3: (-2.18)
	Never	224	6.01	460.62 (8.52)	84.67	2.4: (-2.18)

**Statistically significant at 5% level*

The results in Table 5.22 indicate that about 30% of the pupils were taught always and often as a whole class whilst 38% were taught sometimes as a whole class. Although these variables are not very different, the pupils who were often taught as a whole class have the highest performance in reading compared to those taught less frequently as a whole class.

The largest percentage of the pupils, 47%, is sometimes taught in same ability groups. There are no significant differences due to the frequencies with which pupils are taught in same ability groups.

With regard to mixed ability teaching, 37% of pupils are sometimes taught in mixed groups and these pupils had higher significant scores compared to those always taught in mixed ability groups.

A higher percentage of pupils (54) sometimes get individualised instruction whilst 28% and 15% respectfully, often or always get individualised instruction. The results indicate that pupils who often or always get individualised instruction perform better in reading than those who are never offered individualised instruction.

Pupils who are sometimes made to work independently on a goal of their choice comprise 55%. The frequency with which pupils are made to work on a goal of their choice has no significant impact on learner performance in reading.

Use of Various Reading Materials and Pupil Performance

The frequency of using various informational and literary reading materials has a significant impact on the learning of reading. Teachers were asked to respond to questions on how often they had pupils read different types of texts from Informational and Literary reading materials. Table 5.23 presents the findings.

Table 5. 23: *Frequency of the use of types of reading materials and pupils' performance in reading*

		n	%	Mean (SE)	SD	Diff
Literary Reading materials	Every day or almost every day	164.00	3.76	439.05 (14.26)	76.73	1,2: -35.05*
	Once or twice a week	1,527.00	35.75	474.10 (7.93)	83.95	1,3: -19.31
	Once or twice a month	2,347.00	54.08	458.36 (4.13)	94.99	1,4: -10.96
	Never or almost never	230.00	6.41	450.01 14.65)	79.10	2,3: 15.74 2,4: 24.09 3,4: 8.35
Informational reading materials	Every day or almost every day	384.00	8.98	448.61 (8.24)	80.16	1,2: -20.18*
	Once or twice a week	2,251.00	53.10	468.79 (5.42)	92.51	1,3: -13.28
	Once or twice a month	1,351.00	32.16	461.89 (8.02)	93.06	1,4: -3.54
	Never or almost never	232	5.76	452.15 (12.11)	72.98	2,3: 6.90 2,4: 16.64 3,4: 9.74

**Statistically significant at 5% level*

An index for Literary Reading Materials was developed by combining data for different types of literary texts that included short stories, longer fiction books, plays and others. Another index was created for Informational Reading Materials from data sourced from responses on nonfiction subject area books, longer nonfiction books and nonfiction articles.

As can be seen from Table 5.23, the frequency with which instruction in reading was conducted for the two types of texts was measured on a four point scale; i.e. *every day or almost every day, once or twice a week, once or twice a month* and *never or almost never*. The largest percentage of the pupils, 54, were instructed by their teachers to read Literary Reading Materials once or twice a month, whilst 37% were instructed to read once or twice a week. Pupils whose teachers instructed them to read Literary Reading Materials once or twice a week performed significantly better in reading than those whose teachers instructed them to read every day.

Pupils who were taught to read Informational Reading Materials once or twice a week comprised 53%, and those who were instructed to read once or twice a month consisted of 32%. Pupils who were instructed to read Informational Reading Materials once or twice a week performed significantly better than those who were instructed to read every day.

The Frequency of Using Various Reading Activities and Pupils' Performance in Reading

The frequency of exposing pupils to various reading activities presents variety in learning to read amongst pupils. Teachers indicated how frequent they engaged pupils in various reading activities. Table 5.24 shows the results.

Table 5. 24: *Types of reading and pupils' performance*

		n	%	Mean (SE)	SD	Diff
Read aloud to class	Every day or almost every day	2,041	47.97	464.43 (5.95)	86.20	1,2: 3.72
	Once or twice a week	1,970	46.00	460.71 (4.67)	81.55	1,3: 2.95
	Once or twice a month	256	6.04	461.48 (25.04)	91.59	2,3: -0.77
Ask pupils to read aloud	Every day or almost every day	2,641	61.44	458.48 (4.78)	84.24	1,2: -9.09
	Once or twice a week	1,446	34.51	467.57 (6.46)	82.53	1,3: -22.75
	Once or twice a month	180	4.05	481.23 (32.38)	98.02	2,3: -13.66
Ask pupils to read silently	Every day or almost every day	1,612	37.92	477.09 (8.76)	93.12	1,2: 22.67*
	Once or twice a week	2,130	49.99	454.42 (3.48)	76.33	1,3: 27.67
	Once or twice a month	429	10.24	449.42 (13.69)	85.38	1,4 19.90
		75	1.86	457.19 (12.53)	63.08	2,3: 5.00
						2,4: -2.77
	Never or almost never					3,4: -7.77
Give pupils time to read books of their own choosing						1,2: -7.07
	Every day or almost every day	1,364.00	32.60	462.22 (8.58)	88.76	1,3: 13.52
	Once or twice a week	1,957.00	45.04	469.29 (5.42)	84.25	1,4: 2.73
	Once or twice a month	872.00	20.87	448.70 (7.00)	76.22	2,3: 20.59*
	Never or almost never	74.00	1.49	459.49 (12.2)	79.48	2,4: 9.80
						3,4: -10.79
Teach pupils strategies for decoding sounds and Words						1,2: 7.43
	Every day or almost every day	995.00	23.96	468.75 (9.49)	91.45	1,3: 3.09
	Once or twice a week	1,863.00	44.64	461.32 (6.05)	83.77	1,4: 29.30*
	Once or twice a month	949.00	21.73	465.66 (7.46)	80.14	2,3: -4.34
	Never or almost never	401.00	9.68	439.45 (5.74)	74.01	2,4: 21.87*
						3,4: 26.21*
Teach pupils new vocabulary						1,2: 18.60*
	Every day or almost every day	1,689.00	40.27	473.12 (7.18)	91.76	1,3: 15.44
	Once or twice a week	2,006.00	46.95	454.52 (5.00)	79.85	1,4: 7.01
	Once or twice a month	507.00	11.34	457.68 (6.11)	73.50	2,3: -3.16
	Never or almost never	65.00	1.44	466.11 5.96)	63.42	2,4: -11.59
						3,4: -8.43
Teach skimming and scanning						1,2: -20.85*
	Every day or almost every day	434.00	9.99	445.44 (8.26)	88.76	1,3: -17.34
	Once or twice a week	2,054.00	49.76	466.29 (5.66)	84.25	1,4 -16.87
	Once or twice a month	1,068.00	25.21	462.78 (8.57)	76.22	2,3 3.51
	Never or almost never	639.00	15.03	462.31 10.10)	79.48	2,4: 3.98
						3,4: 0.47

**Statistically significant at 5% level*

As illustrated in Table 5.24, majority of the pupils in Botswana had their teachers read aloud to them during reading lessons once or twice a week and almost every day. The frequency of reading aloud to pupils in class was not associated with any differences in performance in reading. Pupils who were asked to read aloud in class every day and once a week comprised 61% and 35% respectively. The frequency with which pupils were asked to read aloud in class did not have differentials in performance in reading amongst the pupils. Pupils who were given time to read books of their own choice every day and once a week consisted of 33% and 45% respectively. Pupils who were given a chance to read books of their own choice once or twice a week performed better than those who were given the opportunity once or twice a month.

45% and 24% of the pupils were taught strategies for decoding sounds and words once a week and every day respectively. Pupils who did this more frequently perform significantly higher than those pupils who were never taught the strategies.

About 40% of the pupils were taught new vocabulary every day and they perform significantly better than pupils who were taught new vocabulary once or twice a week. 50% of the pupils were taught skills for scanning and skimming once or twice a week and these pupils performed significantly better than those who practiced it every day.

Frequency of Comprehension Activities and Pupils' Performance

Teachers were asked to indicate the frequency with which they engaged pupils in activities intended to develop comprehension skills. The frequencies of activities were matched with pupils" performance as indicated in Table 5.25.

Table 5. 25: *Instruction in activities that develop reading comprehension skills and pupils' performance*

		n	%	Mean (SE)	SD	Diff
Locate information within text	Every day or almost every day	1,538	35.39	475.92 (8.85)	92.26	1,2: 9.9*
	Once or twice a week	2,088	50.33	455.94 (4.52)	80.55	1,3: 23.37*
	Once or twice a month	578	13.56	452.55 (6.73)	76.03	1,4:-8.24
						2,3: 3.39
						2,4:-28.22*
						3,4:-31.61*
Identifying the main ideas	Every day or almost every day	1,855	41.41	473.39 (7.12)	89.99	1,2: 15.22
	Once or twice a week	1,922	47.18	458.17 (4.82)	80.59	1,3: 4.09
	Once or twice a month	492	11.41	443.54 (7.58)	75.24	2,3: 14.63
Explaining what they have read	Every day or almost every day	1,768	39.31	469.30 (7.29)	89.64	1,2: 8.03
	Once or twice a week	1,940	47.34	461.27 (5.21)	82.24	1,3: 22.50*
	Once or twice a month	486	11.96	446.80 (8.22)	74.54	1,4: 30.07*
	Never or almost never	44	1.39	439.23 (7.53)	75.95	2,3: 14.47
						2,4: 22.0 *
						3,4: 7.57
Comparing what they have read and their experiences	Every day or almost every day	1,189	25.15	479.54 (10.57)	91.28	1,2: 23.77*
	Once or twice a week	2,022	48.80	455.77 (4.82))	81.73	1,3: 18.63
	Once or twice a month	893	22.62	460.91 (7.8)	83.11	1,4: 31.54*
	Never or almost never	132	3.43	448.00 (10.49)	66.46	2,3: -5.14
						2,4: 7.77
Comparing what they have read and what they read elsewhere	Every day or almost every day	988	21.29	471.00 (10.41)	87.20	1,2: 5.46
	Once or twice a week	2,12	50.23	465.54 (4.82)	86.18	1,3: 23.58
	Once or twice a month	939	23.01	447.42 (7.8)	75.93	1,4 0.54
	Never or almost never	221	5.47	470.46 (23.23)	86.71	2,3: 18.12*
						2,4:-4.92
						3,4:-23.04
Predict what will happen next from what they have read	Every day or almost every day	681	15.41	475.66 (13.06)	89.50	1,2: 9.70
	Once or twice a week	2,018	46.43	465.96 (5.57)	84.95	1,3: 20.04
	Once or twice a month	1,300	31.50	455.62 (6.49)	81.54	1,4 30.67
	Never or almost never	270	6.66	444.99 (10.27)	79.08	2,3 10.34
						2,4: 20.97

						3,4: 10.63
Draw inferences on what they read	Every day or almost every day	694	15.36	473.79 (12.43)	89.14	1,2: (13.86) 1,3: (10.19)
	Once or twice a week	1,860	42.93	459.93 (5.22)	81.53	1,4 (17.77)
	Once or twice a month	1,305	31.35	463.60 (6.83)	84.79	2,3: (-3.67)
	Never or almost never	410	10.36	456.02 16.02)	88.34	2,4: (3.91) 3,4:(7.58)
Describe the style of what they read	Every day or almost every day	822	17.66	475.04 (10.28)	86.58	1,2: (18.07) 1,3: (9.27)
	Once or twice a week	1,578	36.65	456.97 (5.71)	82.06	1,4 (18.54)
	Once or twice a month	1,201	30.79	465.77 (7.64)	84.05	2,3: (-8.80)
	Never or almost never	668	14.90	456.50 (11.98)	87.80	2,4: (0.47) 3,4: (9.27)
Determine author's perspective or intension	Every day or almost every day	576	13.51	474.04 (13.08)	86.43	1,2: (25.11) 1,3: (-1.06)
	Once or twice a week	1,519	34.88	448.93 (4.20)	74.30	1,4 (21.11)
	Once or twice a month	1,625	39.48	475.10 (7.48)	91.20	2,3: (-26.17)
	Never or almost never	525	12.13	452.93 (10.19)	80.18	2,4: (-4.00) 3,4: (22.17)

**Statistically significant at 5% level*

It can be noted from Table 5.25 that majority of pupils, 35% and 50%, were engaged by their teachers every day or once or twice a week respectively, in locating information in the text. Pupils who were more frequently engaged in locating information in the text performed higher than those less engaged in the activity. Identifying the main idea in the text is an activity on which 41% and 47% of pupils were engaged every day and once or twice a week respectively. Despite this large percentage there is no significant difference in performance related to the frequencies of engagement in identifying the main idea in the text. Explaining what the pupils had read from the text was an activity in which 39% and 47% of the pupils were involved every day and once or twice a week respectively. The frequency with which pupils were made to explain what they read did not have any significant impact on the pupils‟ performance.

About 25% and 49% of the pupils were required to compare what they had read to their experience every day and once or twice a week respectively. Pupils who related what they had read to experiences every day performed significantly better than those who did it once or twice a week. Teachers engaged 50% of their pupils once or twice a week in comparing what

they had read with what they had read elsewhere and these learners performed significantly better than those engaged once or twice a month.

About 15% and 43% of the pupils were engaged in drawing inferences from the text every day and once or twice a week respectively. The differences in the frequency with which pupils got involved in drawing inferences from the text were not associated with performance in reading. Teachers also engaged 18% and 15% of the pupils in describing the style of writing in the text every day and never respectively. The differences in the frequency with which pupils got involved in describing the style of writing in the text had no significant impact in the performance of the learners.

39% and 12% of the pupils were involved in determining the author"s perspective from the text once or twice a month and never respectively. The frequency with which the pupils are involved in the activity was not related to any real difference in performance.

Computer and Library Resources and Pupil's Performance

The availability of computers and library resources are key to successful learning of reading by pupils. Teachers responded to a number of items related to the availability and the frequency of use of computers and library resources, and how this impacted on performance. Table 5.26 shows the results.

Table 5. 26: *Availability of computers for use during their reading lessons and pupils' performance*

		n	%	Mean (SE)	SD	Diff
Availability of computers	Yes	192	4.21	492.91 (12.02)	78.60	1,2: 30.93
	No	3,941	95.79	461.98 (3.77)	85.29	
Internet connection for computers	Yes	32	11.18	569.01 (4.5)	67.17	1,2: 85.53*
	No	128	88.82	483.48 (10.91)	77.30	

**Statistically significant at 5% level*

According to the information in Table 5.26, only 4.2% of pupils had computers available for use during reading lessons, whilst 96% did not. There was no significant difference in performance between pupils who had and those who did not have computers available for reading lessons. Of the pupils who had computers only 11% of the pupils had internet whilst 89% did not have computers with internet connection. There was a significant difference in performance in

reading between pupils whose computers had and those whose computers did not have internet connection. Therefore, computers with internet had a positive impact on reading achievement.

Availability of Reading Resources and Pupils' Performance

Reading resources are very essential for instruction in reading. Their availability and the frequency with which they are used are important for pupils and teachers. Teachers were asked the following questions regarding library resources available in the schools or classrooms.

- Do you have a library or reading corner in your classroom?
- About how many books are available in the classroom/library?
- About how many magazines with different titles are available in you classroom/library?
- How often do you give the pupils in your class time to use the classroom/library or reading corner?
- Can the pupils borrow books from the classroom/library or reading corner to take home?

Table 5.27 provides information on reading resources and pupils‟ performance.

Table 5. 27: *Reading resources and pupils performance in reading*

		n	%	Mean (SE)	SD	Diff
Availability of reading corner or library in the classroom	Yes	2,485	80.43	463.52 (4.11)	82.97	1,2: 3.30
	No	794	19.57	460.22 (10.81)	91.08	
Time given to use of classroom library and reading corner	Every day or almost every day	2,104	60.75	457.68 (4.54)	80.36	1,2: -16.83 1,3: -3.90 2,3: 12.93
	Once or twice a week	1,235	35.48	474.51 (8.87)	87.81	
	Once or twice a month	114	3.77	461.58 (13.10)	67.71	

**Statistically significant at 5% level*

A very high percentage of pupils, 80, had access to a library or a reading corner, whilst 20% did not. Learners were performing at the same level irrespective of whether they had a library in the classroom or not. A majority of the pupils, 61%, were given time to use the library or

reading corner every day whilst 35% and 4% used it every day and never given time respectively. Learners performed at the same level irrespective of whether they were given time to use a library in the classroom or not.

The Assignment of Reading as Part of Homework and Performance in Reading

The frequency of assigning homework plays an important role in enhancing learning in reading. Table 5.28 shows results on the frequency, length of homework assigned, post homework activities and how these relate to the performance of the pupils".

Table 5. 28: *Homework activities and performance in reading*

		n	%	Mean (SE)		Diff
Frequency of assigning reading as part of homework	Less than once a week	693	16.03	460.28 (7.36)	73.17	1,2: 8.36
	1 or 2 times a week	1727	40.11	451.92 (5.64)	81.39	1,3: -28.94*
	3 or 4 times a week	688	16.19	489.22 (11.21)	90.09	1,4 -10.60
	Every day	627	15.59	470.88 (12.4)	87.44	2,3: -37.30*
						2,4:-18.96
						3,4: 18.34
Time pupils are expected to spend on reading homework	15 minutes or less	498	12.94	456.11 (9.4)	81.08	1,2: -9.02
	16-30 minutes	1880	50.93	465.13 (6.16)	81.44	1,3: -9.99
	31-60 minutes	1091	28.35	466.10 (8.88)	88.78	1,4 2.90
	More than 60 minutes	293	7.77	453.21 (13.79)	84.90	2,3: -0.97
						2,4:11.92
						3,4:12.89
Frequency of correcting assignments and giving feedback	Always or almost always	3,082	82.80	465.83 (4.48)	85.38	1,2: 16.54*
	Sometimes	589	16.12	449.29 (6.92)	74.91	1,3: -2.86
	Never	32	1.09	468.69 (3.35)	52.93	2,3:-19.40*
Frequency of discussion of homework in class	Always or almost always	3,181	84.88	466.86 (4.46)	85.31	1,2: 25.20*
	Sometimes	496	13.27	441.66 (6.85)	73.48	1,3: -11.61
	Never	64	1.85	478.47 (21.5)	59.76	2,3: -36.81
Frequency of monitoring if homework was completed	Always or almost always	3,474	93.85	464.27 (3.91)	84.27	1,2: 16.37
	Sometimes	235	6.15	447.90 (12.97)	72.27	

**Statistically significant at 5% level*

According to Table 5.28, about 40% of the pupils were assigned reading as part of homework once or two times a week. The frequency of 3 to 4 times a week of reading assignment as part of homework had the highest significant score compared to 1 or 2 times a week or less. The most common period of time pupils were expected to spend on homework was 16-30 minutes since 51% of the pupils were engaged for that period. The performance of pupils in reading did not differ significantly across the different times pupils were expected to spend on the assignment of reading.

Majority of the pupils, 83%, always had their assignments marked/corrected and given feedback. These learners performed significantly better than those who were given feedback sometimes. Pupils with whom teachers always discussed homework were in the majority, 85%, and they performed significantly better than those whose teachers only discussed homework sometimes. The teachers of 94% of the pupils always monitored whether the pupils completed their homework, compared to 6% whose teachers sometimes monitored completion of homework. However, both groups performed at the same level.

Measures Taken for Remediation in Reading and Pupils' Performance

It is important that teachers engage pupils in remediation activities when pupils fall behind in reading. This can be done either by teachers providing specialised human resource or taking appropriate action. Tables 5.30 and 5.31 illustrate the extent to which various measures were taken and their impact on the pupils‟ performance.

Table 5. 29: *Resources for remediation and pupils' performance*

		n	%	Mean (SE)	SD	Diff
A specialised professional	Always	49	1.28	464.57 (7.80)	69.51	1,2: (-32.78)*
	Sometimes	234	5.80	497.35 (14.78)	91.40	1,3: (3.14)
	Never	3,896	92.93	461.43 (3.79)	84.04	2,3:(35.92)*
A teacher aid	Always	258	5.72	482.69 (18.96)	93.72	1,2: (-10.32)
	Sometimes	579	14.16	493.01 (12.40)	92.70	1,3: (26.14)
	Never	3,378	80.11	456.55 (3.79)	81.18	2,3: (36.47)*
An adult volunteer	Sometimes	197	5.02	506.38 (27.12)	103.77	1,2: (46.40)
	Never	3,957	94.98	459.98 (3.32)	82.05	

Statistically significant at 5% level

As shown in Table 5.30, a big majority of pupils, 93%, were taught by teachers who did not have specialised professionals who could work with their pupils if the pupils fell behind. However, the performance of pupils in reading was significantly higher where teachers had pupils sometimes working with a professional if the pupils fall behind compared to those who never. About 14% of the pupils sometimes had a teacher aid and they performed significantly better than those who never had.

Table 5. 30: *Action taken by teacher when pupils' fall behind in reading and pupils performance*

		n	%	Mean (SE)	SD	Diff
I have the pupil work with specialised professional	Yes	316	8.00	509.26 (17.09)	17.04	1,2: 50.06*
	No	3,899	92.00	459.20 (3.89)	3.89	
I wait to see if pupil improves …	Yes	1,487	34.29	464.51 (6.5)	6.50	1,2: 1.98
	No	2,728	65.71	462.53 (4.69)	4.69	
Spend more time individually with that pupil	Yes	3,608	85.64	465.30 (4.19)	4.19	1,2: 14.55
	No	607	14.36	450.75 (8.33)	8.33	
Ask parents to help …	Yes	3,937	93.10	464.24 (3.87)	3.87	1,2: 14.92
	No	278	6.90	449.32 (11.95)	11.95	

**Statistically significant at 5% level*

Learners whose teachers work with specialised professionals (8%) performed significantly better than those who did not. A great majority of the pupils, who fell behind 86%, have teachers who spend more time with them individually. However, there are no significant differences in performance in reading between pupils whose teachers spend more time with them individually and those whose teachers did not. A very high number of pupils, 93%, had teachers who would ask for help from parents if the pupils fell behind. However, the mean for pupils in reading where the teachers sought help was not significantly higher than where teachers did not seek help.

Teachers' Areas of Study during Training and Pupils' Performance in Reading

Teachers take different areas of specialisation during their pre-service training. Teachers were asked to indicate the extent to which they studied different areas by indicating: *not at all, an overview or introduction* and *it was an area of emphasis.*

Table 5.31 shows the extent to which areas of specialisation were taken during training and their influence on pupils‟ performance in reading.

Table 5. 31: *The extent to which areas of specialisation were taken by teachers and pupils' performance*

		n	%	Mean (SE)	SD	Diff
English	Not at all	89	2.71	450.28 (25.42)	72.48	1,2: -5.51
	Overview or introduction to topic	1,824	43.37	455.79 (4.46)	78.50	1,3: -19.95
	It was an area of emphasis	2,291	53.92	470.23 (6.52)	89.30	2,3: -14.44
Pedagogy/teaching reading	Not at all	336	8.87	444.36 (9.23)	74.23	
	Overview or introduction to topic					1,2: -12.99
		1,922	47.37	457.35 (4.55)	79.50	1,3: -30.13
	It was an area of emphasis					2,3: -17.14
		1,713	43.76	474.49 (8.20)	91.59	
Educational psychology	Not at all	102	3.16	452.49 (9.95)	76.82	1,2: (6.23)
	Overview or introduction to topic					1,3: (-26.39)*
		1,812	44.49	446.26 (4.14)	75.49	
	It was an area of emphasis					2,3: (-32.62)*
		2,195	52.35	478.88 (6.41)	89.78	
Remedial reading	Not at all	594	14.68	446.86 (6.15)	72.14	1,2: (-11.75)
	Overview or introduction to topic					1,3: (-32.42)*
		2,228	53.03	458.61 (4.58)	82.34	
	It was an area of emphasis					2,3: (-20.67)*
		1,326	32.29	479.28 (9.41)	90.99	
Reading theory	Not at all	443	10.24	446.95 (9.84)	78.92	1,2: (-8.71)
	Overview or introduction to topic					1,3: (-34.93)*
		2,383	56.73	455.66 (3.68)	78.35	
	It was an area of emphasis					2,3: (-26.22)*
		1,350	33.04	481.88 (9.72)	93.72	
Special education	Not at all	721	17.80	474.18 (9.42	85.32	1,2: (18.90)
	Overview or introduction to topic	2,057	49.32	455.28 (4.91)	80.71	1,3: (4.37)
	It was an area of emphasis	1,426	32.88	469.81 (8.11)	88.83	2,3: (-14.53)
Second language learning	Not at all	796	19.56	447.06 (7.54)	79.33	
	Overview or introduction to topic					1,2: (-15.68)
		2,215	52.64	462.74 (44.65)	80.07	1,3: (-31.97)
	It was an area of emphasis					2,3: (-16.29)
		1,095	27.79	479.03 (9.95)	93.75	

	Not at all	492	12.55	438.90 (4.84)	72.54	
Assessment	Overview or introduction to topic					1,2:(-19.12)
methods in		2,243	54.44	458.02 (4.47)	79.88	1,3:(-42.95)
reading	It was an area of emphasis					2,3:(-23.83)
		1,404	33.01	481.85 (9.10)	92.75	

**Statistically significant at 5% level*

Table 5.31 shows that slightly more than half of the pupils were taught by teachers who had English as an area of emphasis whilst the rest were taught by teachers who just did an overview of English or who did an introduction of English only. Nonetheless, the mean performance of pupils in reading did not differ significantly depending on the extent to which the teachers studied English.

Teachers who had Pedagogy or teaching as an area of emphasis taught 44% of the pupils whilst 47% and 9% were taught by teachers who had Pedagogy as an overview or for who pedagogy was not at all an area of emphasis respectively. Pupils‟ performance in reading was not significantly different according to the different amounts of emphasis.

About 52% of the pupils had teachers with Psychology as an area of emphasis whilst 44% and 3% had teachers who had it as an introduction and none respectively. The performance in reading among the pupils was significantly higher in depending on the extent of emphasis in teacher preparation in Psychology.

About 32% of pupils were taught by teachers with Remedial reading as an area of emphasis whilst 53% and 15% had it as an introduction and none respectively. Pupils whose teachers had more emphasis in Remedial reading during training performed higher in reading compared to those who had less emphasis. Likewise, pupils whose teachers had more emphasis in Reading Theory during training performed significantly better compared to those who had less emphasis on Reading Theory.

About 49% and 33% of pupils had teachers who, during training, had Special education as an introduction and area of emphasis respectively. The different areas of emphasis in Special education did not have any impact on performance in reading among the pupils.

About 28% and 53% of the pupils were taught by teachers who had Second language learning as a major area and as an introduction respectively. The pupils‟ performance in reading did

not vary significantly depending on the extent of emphasis that the teachers had in second language learning during training.

About 33% and 54% of the pupils had teachers who had Assessment reading methods as a major area and introduction respectively. The extent of emphasis during training in Assessment methods in reading was not associated with differences in performance amongst the pupils.

Teacher Professional Development and Pupils' Performance

Professional development and in-service training are very important in developing teaching skills of teachers. Table 5.32 depicts the time spent by teachers in professional development and the frequency with which they read children"s books as part of professional development.

Table 5. 32: *Teachers' time spent in professional development and pupils' performance*

		n	%	Mean (SE)	SD	Diff
Number of hours spent on reading related in-service development activities in the last 2 years	None	2,014	48.59	461.31 (6.05)	85.39	1,2: -3.33 1,3: -6.11
	Less than 6 hours	1,052	25.29	464.64 (7.5)	82.54	1,4: 4.23
	6-15 hours	681	15.46	467.42 (8.49)	81.60	1,5: -7.01
	16-35 hours	263	5.47	457.08 (12.43)	82.16	2,3: -2.78 2,4: 7.56
	More than 35 hours					2,5: -3.68 3,4:10.34 3,5: -0.90
		192	5.18	468.32 (25.26)	96.71	4,5:-11.24
Reading children's books for professional development	At least once a week	2,995	73.81	462.96 (4.42)	84.35	1,2:-4.65
	Once or twice a month	947	22.83	467.61 (9.72)	87.89	1,3: 21.02
	Once or twice a year	87	2.31	441.94 (30.68)	79.03	1,4: -17.61 2,3: 25.67
	Never or almost never	54	1.05	480.57 (21.64)	68.86	2,4: -12.96 3,4: -38.63

**Statistically significant at 5% level*

Table 5.32 shows that 49% of the pupils were taught by teachers who had never engaged in in-service activities. The number of pupils also declined with the number of hours spent by

teachers on professional development. The teachers therefore lacked professional development in teaching the skill of reading. There were no significant differences in pupils‟ performance due to the different hours spent by teachers on professional development.

Majority of pupils (74%) were taught by teachers who read children‟s books for professional development at least once a week. Pupils‟ performance in reading was not significantly different due to the frequency with which teachers read children‟s books for professional development.

Summary

The results of the research showed a number of issues as follows:

A large number of the pupils, (80%) were taught by female teachers whilst 60% had teachers who fell within the age group 30-49 years. Teachers with years of experience between 1-10 years taught 43% of the pupils. Teachers with diplomas taught 80% of the pupils. Pupils taught by teachers aged between 30-49 years performed better than those whose teachers are under 30. Pupils whose teachers had 1-10 years‟ experience perform lower than pupils whose teachers had 11-20 years‟ experience. It was also noted that the more the teachers were educated the higher the performance of pupils in reading. Whilst 51% of the pupils had teachers who believed that teachers‟ job satisfaction was medium, 74% had teachers whose perception of the teachers‟ understanding of the school‟s curricular goals was high, 61% had teachers whose perception of success in the implementation of the schools‟ curriculum was high and 77% had teachers whose expectation of pupil‟s achievement was high. With the exception for job satisfaction where corresponding pupils‟ performance was not significant, pupils‟ performance in reading was significant for variables just mentioned above where the perception of teachers was high.

Additionally, teachers‟ perception on parental support and involvement was low, standing at 56% and 60% respectively. Pupils whose teachers had higher perceptions of parental involvement and support performed significantly higher than those whose teachers had perceptions that were medium or low. Teachers with the highest percentage of pupils, 51% and 44%, described the pupils‟ regard for school property and desire to do well at school as medium respectively. There was significantly high performance in reading among the pupils whose teachers‟ described the pupils‟ desire to learn and regard for school property as medium and high.

With respect to the safety of the school, 74% of the pupils were taught by teachers who indicated that their schools were in safe neighbourhoods. 84% said they felt safe at school and 73% pointed out that the schools‟ security policies and procedures were sufficient. Except for the teachers‟ feelings of safety at school, the pupils‟ performance in reading was significantly high where pupils were taught by teachers whose perceptions of safety at the school were positive. About 65% and 76% of the pupils were taught by teachers who said that their pupils behaved in an orderly manner and were respectful of the teachers respectively.

About 43% of the pupils are taught by teachers who thought that lack of adequate instructional materials and supplies were a serious problem. Lack of repair, overcrowding in classrooms, lack of workspace and too many teaching hours for teachers affected 13% to 20% of the pupils. With the exception of overcrowding in classrooms, the rest of the attributes related to the instructional environment had a significant impact on performance on reading among the pupils.

Pupils whose teachers had access to computers for teaching comprised 61%, and 46% had teachers who had access to support staff. Only 18% had teachers who had adequate support for integrating computers in teaching. It is only when there was support for integrating computers in teaching that the performance of pupils in reading was significantly higher at 604.75 than when there was no support at 465. 12.

The highest percentage of pupils, 40, had teachers who collaborated with other teachers 2-3 times a week for instructional or pedagogical purposes. The frequency with which teachers interacted with other teachers had no effect on pupils‟ performance. From an index on teacher job satisfaction it is estimated that 84% were satisfied with their jobs, but the amount of satisfaction had no effect on the performance of the pupils‟.

The school structures and buildings did not seem to be a serious challenge. A big percentage of pupils indicated that teachers thought it was a minor problem (71.34%). If majority of the pupils said that teachers thought repair of school buildings was a minor problem then it is safe to conclude that school buildings were in good condition. Overcrowding was relatively moderate as shown by majority of pupils (44.53%) whose teachers reported overcrowding of classrooms as a minor problem, followed by 38.94% of pupils whose teachers did not report overcrowding as a problem.

For teacher working conditions, only overcrowding of classrooms did not affect performance whereas the physical condition of buildings, inadequate workspace, inadequate instructional materials and too many teaching hours adversely affect performance.

Computer use was generally very low. 95% of pupils were taught by teachers who said they did not use computers in their teaching. It would be premature to assess the effect of computers in pupils „performance at this stage since computers were not fully used in teaching and other subsets of teaching and learning.

Unexpectedly, it was found that teachers who frequently interact with each other to discuss how to teach a particular topic, collaborate in planning and preparing instructional materials,, share learnt teaching experiences, visit other classrooms, work together to try out new ideas their pupils are performing at the same level as those who were taught by teachers who never or almost never met.

The findings further showed that a high percentage of pupils (83) taught by teachers who were comfortable with their profession, produced mean performances that were higher than the performance means for the remaining pupils whose teachers showed discomfort in their profession.

The results obtained in the study also showed that it was counterproductive to summarize each and every lesson. It is imperative to summarise comprehensive materials, rather than to produce bits and pieces of summaries. This is further verified by the statistically significance difference between the means of pupils whose teachers summarised every/almost every lesson and those who summarised some lessons only.

Sending a progress report home often was seen to be linked with good performance. This was shown by high means in the performance of learners who were taught by teachers who reported that they sent progress report home often. The performance means for these pupils was higher than those whose report was not sent at all.

Teachers were asked how often they organised their classes into different groupings; and the findings indicated that the mean performances of pupils whose teachers did different groupings sometimes and never were higher than where groupings were done always or often.

Pupils who were given a chance to read books of their own choice perform better than those who were never given that opportunity. 44% of the pupils‟ are taught strategies for decoding sounds once a week and 23% are taught words every day. Pupils who do this more frequently perform significantly higher than those who are never taught the strategies.

Recommendations

The following recommendations are made.

1. About 80% and 20% of the pupils who were taught by teachers with at least a diploma or degree respectively, performed significantly higher than pupils whose teachers had at least at secondary education. The international average for teachers with a diploma and degree are 15% and 53% respectively. The percentage of teachers with a degree in Botswana is far less than the international average whist the percentage is high. The MOESD should upgrade teachers‟ qualifications to degree and higher qualifications so that achievement in reading improves in Botswana.

2. About 65% of the pupils were taught by teachers who thought their behaviour was orderly, and these pupils performed higher in reading than pupils whose teachers thought their behaviour was disorderly. School Management associations and PTA‟s should address the issue of disorderly behaviour in schools.

3. The proportion of pupils who were taught by teachers who perceived their job satisfaction to be high was at 39%, and the learners performed higher than the 60% whose teachers perceived their job satisfaction to be between medium and low. The teacher job satisfaction have to be ceaselessly sustained to raise it to higher levels for a great majority of teachers. The MoESD should continuously engage teachers in consultative dialogue about their professional needs.

4. About 20% of the pupils were taught in buildings which needed significant repair. These pupils performed lower than those in buildings that did not need significant repair. In addition to the conditions of the buildings, the adequacy of workspace for teachers influenced performance, with the pupils whose teachers stated that they had adequate space performing higher than those who said otherwise. MoESD should address conditions of buildings needing serious repair and provide workspace for teachers.

5. The proportion of learners whose teachers used computers for lesson preparation was 5%, and those learners performed higher than those whose teachers did not use computers. Since instruction nowadays should prepare learners for the 21st century information age, there was a need to consider a major investment in teacher training, especially in the use of computers for instructional purposes. Examples of the benefits of this included Singapore, where a phased programme was used to implement the use of digital instruction, which resulted in huge benefits in learner achievement.

6. About 43% of the pupils were taught by teachers with serious shortage of teaching materials. The performance of these pupils was lower than those whose teachers had adequate materials. To improve the reading skills a substantial investment has to be made by the MOESD towards the improvement of the adequacy of instructional materials.

7. About 13% of the pupils performed lower than others because teachers had too many teaching hours. Thresholds for teaching hours for teachers should be decided upon by the MoESD.

8. About 40% of the pupils were taught by teachers who said that lack of nutrition was a limiting factor in their teaching. The lack of nutrition should be investigated by the MoESD to ensure that learners do not suffer from it.

9. Teachers should increase the frequency of assigning homework, marking /grading and giving feedback since increased frequency of these activities is associated with better performance.

10. About 63% of the pupils were taught by teachers who indicated that pupils with special needs limited how they taught their classes to some extent, compared to 12% whose teachers said limitation to their teaching by such pupils did not apply. Teacher education programmes must infuse techniques for the teaching of learners with special needs.

CHAPTER SIX
SCHOOL BACKGROUND VARIABLES AND PERFORMANCE OF PUPILS

The school heads of schools sampled to take part in the prePIRLS study were requested to fill-in a questionnaire to provide (some) background information about the schools. The information required was mainly on; school enrolment and characteristics, instruction time, resources and technology, involvement of parents in school, school climate, teachers in school, leadership activities, school readiness and reading in school. The responses under each variable were analysed against the pupils‟ performance in the prePIRLS, which focussed on Standard 4 pupils. It must be noted that the selected variables might not necessarily be the causative agent of the pupils‟ performance.

School Enrolment and Characteristics

The questions under school enrolment were mainly focused on finding: the total number of pupils in the school, the total number of Standard 4 pupils, the economic status of pupils in school, location of the school and the average income level of the area where the school is located.

School Enrolment and Pupils Performance

Table 6.1 shows the performance of the pupils in relation to the schools‟ overall enrolment. The aim of this analysis was to find out if there was any correlation between overall school enrolment and performance.

Table 6. 1: *School enrolment and pupils' performance*

School Enrolment	n	%	Mean(SE)	SD	Diff
					1,2: -15.73
					1,3: -14.06
0-200	369	9.72	445.72 (10.74)	77.07	1,4: -23.30*
					1,5: -25.73*
201-400	776	20.22	461.45 (10.90)	87.15	1,6: -14.91
					2,3: 1.67
401-600	1 065	23.28	459.78 (7.95)	86.76	2,4: -7.57
					2,5: -10.00
601-800	1 121	24.34	469.02 (8.08)	86.21	2,6:0.82
					3,4:-9.24
801-1000	713	15.25	471.45 (7.52)	78.81	3,5: -11.67
					3,6:-0.85
					4,5: -2.43
					4,6:8.39
1000+	309	7.19	460.63 (10.41)	78.32	5,6:10.82

**Statistically significant at 5% level*

As can be seen from Table 6.1, the sampled schools had an enrolment ranging from 0-200 to 1000+. The majority of the pupils were from schools with an enrolment of 401-600 and 601-800. School enrolment did not seem to cause much variation on the performance of the pupils in the school categories. The highest performance was for schools with an enrolment of 801-1000 and the lowest performance was for schools with an enrolment of 0-200. A significant difference in means is observed between enrolment category 0-200 and the two categories of 601-800 and 801-1000.

Standard 4 Enrolment and Pupils' Performance

The school heads also provided information on the number of Standard 4 pupils. The number of the pupils was categorised into six and each category was correlated to the performance of the pupils. Table 6.2 shows the performance of the pupils by grade enrolment.

Table 6. 2: *Standard 4 school enrolment and pupils' performance*

	n	%	Mean (SE)	SD	Diff
0-20	92	2.52	482.85 (20.40)	77.95	1,2: 53.03*
					1,3:7.13
					1,4: 26.24
21-40	318	8.21	429.82 (13.18)	79.26	1,5:21.27
					1,6:16.02
					2,3:- 45.9*
41-60	623	16.45	475.72 (13.02)	90.19	2,4: -26.79
					2,5: -31.76*
					2,6: -37.01*
61-80	871	18.07	456.61 (8.30)	86.21	3,4: 19.11
					3,5: 14.14
					3,6:8.89
81-100	749	18.45	461.58 (9.39)	81.09	4,5:-4.97
					4,6: -10.22
100+	1 700	36.30	466.83 (5.35)	81.50	5,6:- 5.35

**Statistically significant at 5% level*

Table 6.2 shows that a large percentage of the pupils (36.30), attended schools which had Standard 4 enrolments of 100+. The lowest performance was for pupils who attended schools that had 21- 40 pupils (429.82). The highest performance was for pupils in the 0-20 category (482.85) although, as can be seen from Table 6.2, their percentage is very low. The difference in performances for most categories is not significant.

Economic Background and Pupils' Performance

The school heads gave information on the approximate percentage of pupils in the school who they thought were economically disadvantaged or were economically affluent. The study also attempted to find out whether the economic status of the pupils had any bearing on their performance. The findings are shown in Table 6.3.

Table 6. 3: *Economic background and pupils' performance*

		n	%	Mean (SE)	SD	Diff
Disadvantaged	0 -10%	699	17.17	523.11 (12.63)	90.35	1,2:60.36*
	11 - 25%	1 048	24.30	462.75 (5.35)	78.32	1,3:73.45*
	26 - 50%	905	19.99	449.66 (6.78)	75.45	1,4:81.30*
						2,3:13.09
	> 50%	1 568	38.54	441.81 (3.91)	73.41	2,4:20.94*
						3,4:7.85
Affluent	0 - 10%	1 438	39.05	441.63 (4.81)	75.23	1,2: -7.92
	11 - 25%	676	16.95	449.55 (7.67)	73.87	1,3:-43.16*
	26 - 50%	943	24.27	484.79 (7.62)	85.45	1,4:-60.97*
						2,3:-35.24*
	> 50%	813	19.73	502.60 (13.19)	92.77	2,4:-53.05*
						3,4:-17.81

**Statistically significant at 5% level*

Table 6.3 shows that the majority of the sampled pupils (38.54%) were economically disadvantaged, and very few candidates were thought to be economically affluent (19.73%) by school heads. The pupils who came from schools with a big percentage of disadvantaged or less number of affluent pupils performed significantly lower than those in schools with smaller proportion of disadvantaged pupils.

Proportion of Native English Speaker and Pupils' Performance

The performance of the pupils was analysed against pupils who had English as their native language. The results are summarised in Table 6.4.

Table 6. 4: *Percentage of native English speaker and pupils' performance*

	n	%	Mean (SE)	SD	Diff
> 90%	282	6.06	472.68 (9.43)	74.43	1,2:49.97 1,3:-2.88
76 - 90%	63	1.20	422.71 (34.81)	70.29	1,4:-17.15 1,5:9.37
51 - 75%	147	3.55	475.56 (26.04)	83.71	2,3:-52.85 2,4:-67.12
26 - 50%	184	4.28	489.83 (27.66)	86.55	2,5:-40.6 3,4:-14.27
25% or less	3 468	84.91	463.31 (4.19)	84.28	3,5:12.25 4,5:26.52

**Statistically significant at 5% level*

The majority of the sampled pupils (84.91%) did not have English as their native language. The other three categories had very few pupils who had English as their native language, with each category having a percentage lower than 5, except for greater than 90% which had a percentage of 6.06. Generally, the performance of the pupils was influenced by the population, and, the impact on the overall performance of categories with very low percentages of pupils was very insignificant. There was no significant difference in performances between pupils who belonged to schools with majority of native English speakers compared to those with little. Therefore, being a native speaker did not enhance reading ability in Standard 4.

School Locality and Average Income of the Area and Pupils' Performance

Another category which was looked at was the locality of the school. This involved variables such as the population of the area, the description of the area where the school was located and the average income level of the area where the school was located. Table 6.5 shows the performance of the pupils in relation to the type of locality and income level of the area where the school was located.

Table 6. 5: *Performance by school locality and average income of the area*

		n	%	Mean (SE)	SD	Diff
Area Description	Urban	576	12.71	489.58 (13.67)	95.02	1,2:-17.02 1,3:1.91
	Suburban	322	7.67	506.60 (22.56)	100.54	1,4:27.22 1,5:54.96*
	Large Town	183	4.11	487.67 (12.86)	77.27	2,3:18.93 2,4: 44.24
	Village	2 196	50.16	462.36 (4.74)	79.92	2,5: 71.98* 3,4: 25.31 3,5: 53.05*
	Remote Rural	1 010	25.35	434.62 (5.84)	71.34	4,5: 27.74*
Income Level	High	59	1.31	503.92 (72.75)	106.66	1,2: 11.13
	Medium	1 536	35.12	492.79 (8.30)	88.89	1,3: 57.08
	Low	2 630	63.57	446.84 (3.24)	76.38	2,3: 45.95*

**Statistically significant at 5% level*

The majority of the pupils (50.16%) were from schools located in villages, and 25.35% were from schools in remote rural areas. The performance of the pupils varied according to the locality of the school, with pupils from urban and suburban schools performing better than pupils from schools in other areas. The significant difference in performance was observed between pupils in the urban (489.58), suburban (506.60), large town (487.67) and those in remote rural areas.(434.62) The majority of the pupils were from schools located in areas with a medium or low income level, 35% and 64% respectively.

Resources and Technology

Meaningful learning can only take place where pupils have unlimited resources available to them. Pupils should have an environment which is conducive for learning and which allows them to explore their surroundings without any limits. Schools must have a school library and encourage the culture of reading in order for pupils to develop interest in reading a variety of books.

Availability of Library and Laboratory and Pupils' Performance

The availability of a library encourages reading and pupils who have libraries with variety of books are likely to learn reading faster than those with no books at all. Table 6.6 shows the performance of the pupils related to whether the school had a school library or not. The results also show the association between laboratory and pupils performance.

Table 6. 6: *Availability of library and laboratory and pupils' performance*

		n	%	Mean (SE)	SD	Diff
	Yes	2 171	49.48	477.17 (6.37)	87.76	
Library	No	2 150	50.52	448.71 (4.20)	78.86	1,2:28.46*
	Yes	294.00	6.81	489.89(28.11)	100.70	1,2: 76.48*
Laboratory	No	3,864.00	93.19	413.42(3.56)	88.50	

**Statistically significant at 5% level*

The percentages of pupils who had a library in the school and those who were in schools without libraries are almost equal. Pupils in schools where there was a library performed better than those in schools without a library. Though school libraries can aid learning, it is not necessarily their presence or absence which contributed to the performance of the pupils. Other issues like location of the school might have more impact than the school library alone. Further, there was significant difference between means of pupils who had laboratory and pupils from schools with no laboratory, with the schools with laboratory having higher mean than those with no laboratory.

How Inadequacy of School Resources Affected Schools Capacity to Provide Instruction

The school heads were asked to indicate their views on how the inadequacy of resources affected the capacity of the school to provide instruction. Their views were encapsulated under two main sub-headings; namely: general school resources and resources for reading instruction. The general school resources were grouped into an index which was formed by; instructional materials (e.g. textbooks), supplies (e.g. papers, pencils), school buildings and grounds, heating/cooling and lighting systems, instructional space (e.g. classrooms), technology competent staff and computers for instruction. The performance of the pupils was analysed by the index and the results are as shown in Table 6.7.

Table 6. 7: *Inadequacy of school resources and pupils' performance*

	n	%	Mean (SE)	SD	Diff
Not at all	34	0.63	580.72 (3.19)	59.91	1,2: 106.29*
A little	973	23.67	474.43 (8.60)	89.92	1,3: 128.13*
Somewhat	2 652	63.01	452.59 (3.40)	75.65	1,4: 88.33*
					2,3: 21.84*
					2,4:-17.96
A lot	538	12.69	492.39 (19.96)	103.18	3,4:-39.8*

**Statistically significant at 5% level*

Table 6.7 shows that the majority of the pupils (63.01%), were from schools where the school head felt that the shortage or inadequacy of the resources „*somewhat'* affected the school"s capacity to provide instruction. The performance of the pupils was lower than that of pupils who were in schools where the school head felt the shortage or inadequacy of resources affected the school"s capability „*a lot'*.

For reading resource, the index derived from items that included: teachers with specialisation in reading, computer software for reading instruction, library books and audio-visual resources for reading instruction. The results of the pupils" performance for the index are shown in Table 6.8.

Table 6. 8: *Inadequacy of Reading Resources and Pupils' Performance*

	n	%	Mean (SE)	SD	Diff
Not at all	432	9.47	475.73 (12.56)	89.59	1,2: 12.36
A little	1 403	32.75	463.37 (6.60)	83.57	1,3: 13.93
Somewhat	1 229	29.62	461.80 (7.00)	82.68	1,4: 13.98
					2,3: 1.57
					2,4: 1.62
A lot	1 133	28.16	461.75 (8.73)	86.38	3,4: 0.05

**Statistically significant at 5% level*

Table 6.8 shows that the percentage of the pupils across *a little*, *somewhat* and *a lot* responses were almost equal. Furthermore, the performance of the pupils did not vary significantly according to the levels of the inadequacy of the reading resources.

Involving Parents in School

Parents play a very big role in the development and overall informal or formal learning, of their children. Parents can greatly influence the way the children view the future, particularly when the children are not mature enough to make (some) independent decisions. For effective learning to take place, parents should be involved in one way or the other in the education of their children. Schools should also be willing to involve parents in the learning of the children, and where possible the parents should be actively involved in the learning of their children.

The Frequency at Which School Informs Parents about Issues Concerning Pupils

Responses to items on the involvement of parents were reduced to an index. The first index was formed using the frequency with which the school: informed parents about their child"s learning progress, informed parents about the behaviour and well-being of their child at school, discussed parents" concerns or wishes about their child"s learning and supported individual parents in helping their child with schoolwork. The results of the index are summarised in Table 6.9.

Table 6. 9: *Frequency at which the school informs parents about pupils' issues and pupils' performance*

	n	%	Mean (SE)	SD	Diff
Once a year	2 941	70.05	460.72 (4.33)	83.63	1,2:-20.09
2-3 times a year	395	10.62	480.81 (12.02)	80.19	1,3:-6.61
More than 3 times a year	871	19.33	467.33 (10.67)	89.07	2,3: 13.48

**Statistically significant at 5% level*

As illustrated in Table 6.9 the performance of the pupils was better where parents were consulted 2-3 times a year. All the schools were making an effort to involve parents in the learning of their children but the frequency with which parents were consulted was low, with 70.05% of the pupils coming from such schools.

The Frequency at Which School Informs Parents about Issues Concerning School in General

Another index, which focused on parental involvement, was formed and incorporated issues such as the frequency with which the school informed parents about: the overall achievement

of the school, school accomplishments, educational goals and pedagogic principles of the school, the rules of the school, discussed parents‟ concerns or wishes about the schools organisation, provided parents with additional learning materials and organised workshops or seminars for parents on learning or pedagogical issues.

The results are summarised in Table 6.10.

Table 6. 10: *The frequency at which school informs parents about school pupils issues and pupils' performance*

	n	%	Mean(SE)	SD	Diff
Once a year	53	1.43	450.25(6.59)	63.35	1,2:-4.17
2-3 times a year	1,665	40.10	461.48(5.94)	85.16	1,3:-11.23
More than 3 times a year	2,510	58.47	465.65(5.18)	84.64	2,3:-15.40

**Statistically significant at 5% level*

The majority of the pupils were from schools where parental involvement occurred more than 3 times a year, and pupils performed at the same level for all categories.

School Climate

The school climate or school environment must be conducive for learners to fully benefit from their learning. The school climate is very complex and can be made uncomfortable to learners by a number of issues including interactions with other pupils, teacher behaviour and parental support. Currently, very few pupils leave school without completing their primary studies or are not able to perform to their full potential due to reasons related to school climate. There are a number of reforms which focus mainly on creating an environment which is conducive for learning. Some of the reforms include, reducing class sizes at primary school, reviewing policies that have negative effect on learning like abolishing corporal punishment, etc.

There were two major questions under the school climate. The first question solicited the view of the school head on how he/she characterised teachers‟ job satisfaction, competency and understanding of school goals. It also wanted to find out the level at which parents were involved in the running of the school as well as pupils‟ regard for school property. The second question sought to find out how problematic issues like late coming, absenteeism, cheating, vandalism, theft, etc. among pupils in their school were.

School Climate and Pupils' Performance

In this section, the pupils‟ reading performance was associated with certain attributes that are usually necessary for pupils to do well. School heads were asked to indicate to what degree these factors were present in their schools. The factors included the following: teachers‟ job satisfaction, teachers‟ degree of understanding and implementing the schools‟ curriculum, parental support and involvement in school activities, expectation of teachers on pupils‟ achievements, pupils‟ regard for school property and pupils high desire to do well in school.

Table 6.11 shows the results in relation to the performance of the pupils.

Table 6. 11: *Positive school climate and pupils' performance*

		n	%	Mean (SE)	SD	Diff
Teachers' job satisfaction	High	108	2.20	508.58 (21.78)	82.70	1,2: 23.83
	Medium	1 501	37.66	484.75 (8.50)	90.34	1,3: 58.30*
	Low	2 448	60.15	450.28 (3.44)	78.17	2,3: 34.47*
Teachers' understanding of the school's curricula goals	High	677	16.63	488.33 (12.63)	95.47	1,2: 19.37
	Medium	2 254	54.28	468.96 (5.32)	82.83	1,3: 47.72*
	Low	1 230	29.09	440.61 (4.78)	76.03	2,3: 28.35*
Teachers' degree of success in implementing the school curriculum	High	327	7.53	538.11 (21.15)	91.52	1,2: 66.18*
	Medium	1 859	46.95	471.93 (5.61)	81.44	1,3: 94.47*
	Low	1 976	45.52	443.64 (4.17)	78.45	2,3: 28.29*
Teachers' expectations for pupil achievement	High	941	23.30	487.85 (11.07)	90.10	1,2: 25.09*
	Medium	2 149	51.28	462.76 (5.38)	84.53	1,3: 43.01*
	Low	1 045	25.42	444.84 (5.02)	74.57	2,3: 17.92*
Parental support for pupils achievement	High	213	5.68	499.19 (12.10)	77.72	1,2: 2.02
	Medium	703	18.56	497.17 (13.29)	86.60	1,3: 40.11*
	Low	2 853	75.76	459.08 (3.70)	82.54	2,3: 38.09*
Parental involvement in school activities	High	109	3.67	467.15 (15.16)	63.79	1,2:-7.40
	Medium	978	24.38	474.55 (8.81)	83.09	1,3: 3.65
	Low	2 753	71.95	463.50 (4.96)	85.90	2,3: 11.05
Pupils' regard for school property	High	100	3.02	511.47 (58.78)	123.87	1,2: 33.28
	Medium	805	20.48	478.19 (10.94)	88.57	1,3: 52.50
	Low	3 115	76.50	458.97 (3.56)	80.89	2,3: 19.22
Pupils desire to do well in school	High	178	4.58	503.00 (35.75)	93.51	1,2:-8.28
	Medium	876	23.06	511.28 (11.12)	90.30	1,3; 53.76
	Low	2 815	72.36	449.24 (2.98)	76.48	2,3: 62.04*

**Statistically significant at 5% level*

For issues that are related to teachers, Table 6.11 shows that teacher job satisfaction was high for a very low percentage of pupils (2%), whilst 60.15% of the pupils had teachers with low job satisfaction. Most of the responses for the other categories were either *medium* or *low*. Where teachers‟ understanding of the curricula was *high*, degree of success in implementing curriculum was *high* and expectations on pupils‟ achievements were *high*, pupils also had high mean scores, and in some instances exceeding the mean of 500 which is the international average. Parental support and parental involvement were *low* in most of the schools. The performance of pupils was *low* in the schools where parental support for pupils‟ achievement was also low. However, there was no difference in performance with regard to different levels of parental involvement in school activities. Pupils‟ regard for school property and desire to do well were *low* in most of the sampled schools. For these issues, parental support and pupils desire to do well; there was a significant difference in performance between pupils who came from schools which regard such behaviour as *high* or *medium* and pupils who came from schools which regard that behaviour as low.

Pupils Problematic Behaviour and Pupils' Performance

School heads were asked to indicate to what degree the following attributes were prevalent in their school. These were: arriving late at school, absent from school with no apparent reason, classroom disturbances, cheating, profanity, vandalism, theft, intimidation among pupils, physical fights and intimidation of teachers.

Table 6.12 shows the results in relation to performance.

Table 6. 12: *Pupils problematic behaviour and pupils' performance*

		n	%	Mean (SE)	SD	Diff
Arriving late at school	Not a problem	734	16.78	499.73 (14.34)	95.27	1,2: 34.87*
	Minor problem	2 189	50.54	464.86 (4.89)	82.53	1,3: 54.91*
	Moderate problem	1 088	27.37	444.82 (5.41)	75.11	1,4: 62.49*
						2,3: 20.04*
						2,4: 27.62
	Serious problem	217	5.31	437.24 (13.31)	75.01	3,4: 7.58
Absenteeism	Not a problem	616	14.22	528.34 (15.19)	91.96	1,2: 68.93*
	Minor problem	2 430	56.99	459.41 (4.25)	79.69	1,3: 87.72*
	Moderate problem	859	20.75	440.62 (5.86)	75.12	1,4: 88.30*
						2,3: 18.79*
						2,4: 19.37
	Serious problem	323	8.04	440.04 (9.37)	71.19	3,4: 0.58
Classroom disturbance	Not a problem	987	24.58	479.81 (9.75)	92.06	1,2: 15.47*
	Minor problem	2 182	50.54	464.34 (5.44)	83.80	1,3: 30.68*
	Moderate problem	797	19.09	449.13 (5.34)	75.39	1,4: 35.39*
						2,3: 15.21*
						2,4: 19.92
	Serious problem	223	5.79	444.42 (13.23)	75.11	3,4: 4.71
Cheating	Not a problem	1 642	42.04	465.55 (7.88)	91.28	1,2: 0.08
	Minor problem	1 889	43.40	465.47 (4.53)	80.22	1,3: 6.61
	Moderate problem	588	13.29	458.94 (9.32)	77.37	1,4: 29.22
						2,3: 6.53
						2,4: 29.14*
	Serious problem	57	1.28	436.33 (13.26)	68.43	3,4: 22.61
Profanity	Not a problem	1 404	40.30	470.74 (8.75)	93.74	1,2: 1.86
	Minor problem	1 451	38.60	468.88 (6.40)	82.01	1,3: 21.63
	Moderate problem	583	17.09	449.11 (6.58)	76.57	1,4: 30.60
						2,3: 19.77*
						2,4: 28.74*
	Serious problem	165	4.01	440.14 (13.22)	65.08	3,4: 8.97
Vandalism	Not a problem	1 426	35.35	478.31 (8.64)	92.52	1,2: 13.03
	Minor problem	1 729	39.24	465.28 (5.55)	79.92	1,3: 39.83*

	Moderate problem	834	19.51	438.48 (6.81)	76.00	1,4: 28.32* 2,3: 26.80* 2,4: 15.29
	Serious problem	239	5.91	449.99 (11.30)	70.09	3,4:-11.51
Theft	Not a problem	983	24.90	486.24 (11.32)	95.71	1,2: 28.41*
	Minor problem	2 432	57.49	457.83 (4.53)	80.52	1,3: 33.41*
	Moderate problem	645	15.50	452.83 (6.71)	76.62	1,4: 39.32* 2,3: 5.00 2,4: 10.91
	Serious problem	98	2.11	446.92 (13.39)	68.48	3,4: 5.91
Intimidation or verbal abuse among pupils	Not a problem	1 370	34.26	481.01 (8.49)	92.43	1,2:21.24*
	Minor problem	1 865	41.48	459.77 (5.97)	81.90	1,3:34.67*
	Moderate problem	712	17.70	446.34 (3.88)	72.52	1,4: 35.08* 2,3:13.43 2,4: 13.84
	Serious problem	281	6.57	445.93 (11.69)	71.71	3,4: 0.41
Physical fights among pupils	Not a problem	623	16.17	500.92 (16.44)	100.82	1,2: 40.53*
	Minor problem	2 299	54.83	460.39 (4.01)	80.25	1,3: 48.52*
	Moderate problem	869	18.82	452.40 (8.07)	78.51	1,4: 57.07* 2,3: 7.99 2,4: 16.54
	Serious problem	437	10.18	443.85 (8.84)	72.25	3,4: 8.55
Intimidation or verbal abuse of teachers or staff	Not a problem	2 902	69.10	468.97 (4.99)	86.94	1,2: 11.63
	Minor problem	1 113	25.87	457.34 (5.45)	77.67	1,3: 44.65*
	Moderate problem	190	4.42	424.32 (13.50)	74.14	1,4: 37.76* 2,3: 33.02* 2,4: 26.13*
	Serious problem	23	0.61	431.21 (8.83)	69.21	3,4:-6.89

**Statistically significant at 5% level*

Table 6.12 shows that most of the responses from the school heads indicated that the behavioural problems were either a „*minor problem*" or „*not a problem*," covering at least 65% of the pupils. There were very few responses for „*moderate problem*" and „*serious problem*". In most of the categories the performance of the pupils decreased with an increase in the severity of the problem. For the majority of the behavioural problems, the school heads did not believe that they were a „*serious problem*" as evidenced by the very low percentages of the category in

most of the items. For most behaviour, the performance was significantly higher for *not a problem* category compared to when there is a problem, irrespective of the severity of the problem.

Standard 4 Teachers' Problem Behaviours and Pupils' Performance

Table 6.13 shows some of the behavioural problems of teachers which were analysed against the performance of pupils.

Table 6. 13: *Standard 4 teachers' negative behaviours and pupils' performance*

		n	%	Mean (SE)	SD	Diff
Arriving Late/living \early	Not a problem	1 688	41.85	472.44 (7.26)	87.52	1,2: 12.45
	Minor problem	1 850	44.67	459.99 (5.07)	82.51	1,3: 15.77 1,4: 41.78*
	Moderate problem	513	12.15	456.67 (9.09)	81.78	2,3: 3.32 2,4: 29.33*
	Serious problem	55	1.34	430.66 (4.35)	69.91	3,4: 26.01*
Absenteeism	Not a problem	616	14.22	528.34 (15.19)	91.96	1,2: 68.93*
	Minor problem	2 430	56.99	459.41 (4.25)	79.69	1,3: 87.72* 1,4: 88.30*
	Moderate problem	859	20.75	440.62 (5.86)	75.12	2,3: 18.79* 2,4: 19.37
	Serious problem	323	8.04	440.04 (9.37)	71.19	3,4: 0.58

**Statistically significant at 5% level*

According to Table 6.13, late arrival by teachers is *not a problem* in most of the schools. However, absenteeism of teachers is a concern. For schools whose absenteeism of teachers was *not a problem*, the learners performed significantly better than were it"s a *serious problem.*

Teachers in School

There are different ways which can be employed by various school heads and/or the ministry to monitor the performance of the teachers. Some of the ways which can be used are listed in Table 6.14, correlated with the performance of the pupils.

Method Used to Evaluate the Practice of Teachers

Teachers‟ performance is evaluated to measure how far they have gone in implementing school curriculums. This is done to assess the teachers‟ shortcomings, and proper initiatives are usually placed to help the teachers achieve their goals. In this section, 4 methods were used and correlated with pupils achievements. The results of analysis are shown in Table 6.14.

Table 6. 14: *Method used to evaluating the practice of teachers and pupils' performance*

		n	%	Mean(SE)	SD	Diff
Observations by the Principal or Senior Staff	Yes	4,207	99.29	462.74(3.43)	83.92	1,2: -143.00*
	No	21	0.71	605.74(5.39)	56.97	
Observations by inspectors or other persons external to the school	Yes	2,89	68.20	459.82(4.07)	80.35	1,2: -12.38
	No	1,334	31.80	472.20(9.36)	92.58	
Pupil achievement	Yes	4,048	96.19	465.00(3.65)	84.80	1,2: 37.33*
	No	149	3.81	427.67(12.46)	71.34	
Teacher Peer Review	Yes	3,327	80.57	467.66(4.33)	85.77	1,2: 20.59*
	No	852	19.43	447.07(5.84)	78.40	

**Statistically significant at 5% level*

Observation by the senior management and pupil achievements are the two methods widely used to monitor the performance of teachers. While some teachers could initiate the peer review method, others were not willing to use/do it. These unwilling teachers taught about 19.43% of the pupils. The performance of pupils was significantly better where peer review was done among teachers. Observation by inspectors only applies to teachers who taught 68.20% of the pupils. Observation by inspectors needs to be increased to strengthen the delivery of instruction by teachers. However, there was no significant difference in pupils‟ performance whether teachers had been observed by inspectors or not.

Leadership Activities

School heads were asked to give the approximate time they spent on (some) leadership activities. The activities were grouped together into an index, and comprised of the following: promoting the school‟s educational vision or goals, developing the school‟s curricular and educational goals, monitoring teachers‟ implementation of the school‟s educational goals in their teaching, monitoring pupils‟ learning progress to ensure that the school‟s educational goals were reached, keeping an orderly atmosphere in the school, ensuring that there were

clear rules for pupils behaviour, addressing disruptive pupils behaviour, creating a climate of trust among teachers, initiating a discussion to help teachers who had problems in the classroom, advising teachers who had questions or problems with their teaching, visiting other schools or attending educational conferences for new ideas, initiating educational projects or improvements and participating in professional development activities specifically for school principals.

School Leadership and Pupils' Performance

School heads have a responsibility to guide the school on many issues relating to the school. They must promote the school"s educational vision or goals, develop school"s curricular and educational goals, monitor the teachers" implementation of schools goals and curricular, formulate rules to govern the pupils and teachers, solve problems among teachers or pupils etc. In this section, the school heads were asked to indicate how often they did these activities and their responses were grouped into an index of school leadership having the categories of *sometime* and *a lot of time*. The responses were also related to pupils" achievements as shown in Table 6.15.

Table 6. 15: *School leadership and pupils' performance*

	n	%	Mean (SE)	SD	Diff
Some time	352	8.65	449.45 (11.16)	80.93	1,2: -16.05
A lot of time	3 791	91.35	465.50 (3.96)	84.76	

**Statistically significant at 5% level*

Most of the pupils (91.35%) were in schools where school heads were involved in leadership activities in one way or the other. The performance of the pupils was not necessarily influenced by the involvement of the school head in leadership activities.

School Readiness

The questions under school readiness sought to find out the extent to which beginners at the school were equipped to do things like writing, reading and counting. The kids were expected to know the following activities when they began school: recognise most of the letters of the alphabet, read some words, read sentences, write letters of the alphabet, write some words, count up to 100 or higher, recognise all 10 written numbers from 1-10 and write all numbers from 1-10. The results of the analysis against the performance are shown in Table 6.16.

Table 6. 16: *Pupils readiness to start schooling and pupils' performance*

		n	%	Mean (SE)	STD	Diff
Recognise alphabet letters	Less than 25%	2 861	67.50	447.59 (3.60)	76.07	1,2:-14.26*
	25 – 50 %	793	17.67	461.85 (6.09)	78.43	1,3:-64.74*
	51 – 75 %	371	7.63	512.33 (16.91)	86.89	1,4:-112.4*
						2,3:-50.48*
						2,4:-98.14*
	More than 75 %	270	7.21	559.99 (15.17)	83.63	3,4:-47.66*
Read some words	Less than 25%	3 353	77.46	450.65 (2.84)	76.86	1,2:-14.27
	25 – 50 %	507	11.73	464.92 (8.07)	77.24	1,3:-51.38*
	51 – 75 %	202	4.86	502.03 (24.33)	92.72	1,4:-131.81*
						2,3:-37.11
						2,4:-117.54*
	More than 75 %	224	5.95	582.46 (16.45)	80.99	3,4:-80.43*
Read sentences	Less than 25%	3 742	85.55	453.12 (3.10)	77.54	1,2:-24.84
	25 – 50 %	249	5.76	477.96 (19.31)	88.62	1,3:-77.85*
	51 – 75 %	248	6.30	530.97 (24.01)	98.12	1,4:-134.23*
						2,3:-53.01
						2,4:-109.39*
	More than 75 %	83	2.39	587.35 (28.84)	80.55	3,4:-56.38
Write letters of alphabet	Less than 25%	3 075	71.51	446.49 (2.77)	74.27	1,2:-26.44*
	25 – 50 %	613	13.85	472.93 (9.19)	83.31	1,3:-78.50*
	51 – 75 %	524	11.73	524.99 (16.33)	93.56	1,4:-113.3*
						2,3:-52.06*
						2,4:-86.86*
	More than 75 %	110	2.92	559.79 (28.35)	92.72	3,4:-34.80
Write some words	Less than 25%	3 47	80.14	447.96 (2.52)	74.66	1,2:-49.59*
	25 – 50 %	514	11.23	497.55 (13.21)	87.84	1,3:-100.04*
	51 – 75 %	212	5.54	548.00 (26.10)	94.32	1,4:-116.10*
						2,3:-50.45
						2,4:-66.51*
	More than 75 %	117	3.09	564.06 (31.00)	91.14	3,4:-16.06
Count up to 100 or more	Less than 25%	3 551	82.27	450.37 (2.59)	75.30	1,2:-62.45*
	25 – 50 %	405	10.01	512.82 (20.07)	100.21	1,3:-76.58*
	51 – 75 %	211	4.70	526.95 (32.12)	100.70	1,4:-90.41*
	More than 75 %	114	3.02	540.78 (19.87)	85.78	2,3:-14.13

						2,4:-27.96
						3,4:-13.83
Recognise all written numbers	Less than 25%	3 174	74.58	446.72 (2.82)	74.08	1,2:-40.68*
	25 – 50 %	544	11.49	487.40 (12.55)	87.09	1,3:-44.03
	51 – 75 %	255	5.52	490.75 (26.47)	97.92	1,4:-105.12*
						2,3:-3.35
						2,4:-64.44*
	More than 75 %	349	8.41	551.84 (16.82)	87.87	3,4:-61.09
Write all 10 numbers	Less than 25%	3 159	74.23	447.43 (2.91)	74.60	1,2:-42.25
						1,3:-62.47
	25 – 50 %	500	10.38	489.68 (13.69)	86.62	1,4:-79.58
						2,3:-20.22
	51 – 75 %	342	8.20	509.90 (19.57)	99.18	2,4:-37.33
	More than 75 %	321	7.19	527.01 (23.32)	96.58	3,4:-17.11

**Statistically significant at 5% level*

Table 6.16 shows that generally, pupils who had some little knowledge or some development in reading, writing or counting performed better than pupils who were clueless at the beginning. The majority of pupils (70%) were in the *less than 25*% category. This shows that most of the pupils only interacted with formal learning when they started their primary school.

Reading in School

It is important to instil skills and strategies to pupils at a young age rather than at an older age so that they can be able to apply them in real life confidently. Different skills that are usually given to pupils were related to performance. The school heads provided information on the levels at which they introduced certain reading skills to pupils in their schools. The results are presented in Table 6.17.

Table 6. 17: Standards at which reading skills and strategies first receive major emphasis and pupils' performance at Standard 4

		n	%	Mean (SE)	SD	Diff
Knowing letters of the alphabet	Standard one or earlier	3 438	79.32	465.48 (4.47)	85.96	1,2: 19.25* 1,3: 1.72 1,4: 11.91*
	Standard two	676	16.48	446.23 (6.37)	75.03	1,5: 21.03* 2,3:-17.53
	Standard three	126	3.44	463.76 (17.38)	79.27	2,4:-7.34 2,5: 1.78
	Standard four	35	0.45	453.57 (3.07)	70.23	3,4: 10.19
	Not in these standards	9	0.31	444.45 (5.17)	75.89	3,5: 19.31 4,5: 9.12
Knowing letter sound relationships	Standard one or earlier	3 564	81.50	466.46 (4.23)	85.9	1,2: 23.97 1,3:-3.44 1,4: 24.65
	Standard two	601	14.46	442.49 (7.20)	74.33	2,3:-27.41 2,4: 0.68
	Standard three	92	2.38	469.9 (14.46)	75.48	3,4: 28.09
	Standard four	65	1.66	441.81 (25.08)	73.17	
Reading words	Standard one or earlier	3 446	78.77	467.71 (4.29)	85.85	1,2:26.39* 1,3:13.40 1,4:11.43*
	Standard two	707	17.08	441.32 (7.60)	75.43	2,3:-12.99 2,4:-14.96
	Standard three	135	3.36	454.31 (18.08)	77.48	3,4:-1.97
	Standard four	34	0.79	456.28 (3.44)	67.95	
Reading isolated sentences	Standard one or earlier	2 681	62.1	470.49 (4.94)	86.15	1,2:18.33 1,3:26.42 1,4:28.97
	Standard two	1 328	31.35	452.16 (7.45)	81.2	2,3:8.09 2,4:10.64
	Standard three	182	4.76	444.07 (13.95)	73.24	3,4:2.55
	Standard four	71	1.79	441.52 (21.08)	73.02	

Reading connected text	Standard one or earlier	1 517	35.26	474.80 (7.48)	89.21	1,2:15.74 1,3: 26.38* 1,4:-20.10 2,3:-10.64 2,4:-4.36 3,4:6.28
	Standard two	1 941	44.41	459.06 (5.78)	81.47	
	Standard three	589	14.71	448.42 (9.75)	80.68	
	Standard four	218	5.62	454.7 (10.07)	74.59	
Locating information within text	Standard one or earlier	734	16.36	457.95 (9.40)	89.23	1,2:-13.92 1,3:-12.89 1,4: 20.18 1,5 19.12 2,3: 1.03 2,4: 34.10* 2,5: 33.04 3,4: 33.07* 3,5: 32.01 4,5:-1.06
	Standard two	1 446	32.69	471.87 (7.82)	83.7	
	Standard three	1 340	31.54	470.84 (7.11)	85.22	
	Standard four	743	18.03	437.77 (5.63)	74.33	
	Not in these standards	59	1.38	438.83 (25.74))	(67.81)	
Identifying the main idea of a text	Standard one or earlier	315	7.67	462.71 (12.63)	92.67	1,2:-11.67 1,3: 0.71 1,4: 4.90 1,5: 15.49 2,3: 12.38 2,4: 16.57 2,5: 27.16* 3,4: 4.19 3,5: 14.78 4,5:10.59
	Standard two	1 038	23.35	474.38 (10.05)	89.06	
	Standard three	1 270	29.36	462 (5.54)	77.61	
	Standard four	1 330	31.97	457.81(7.51)	86.13	
	Not in these standards	345	7.65	447.22 (9.41)	73.62	
Explain or supporting understanding of a text	Standard one or earlier	353	8.01	443.34 (11.03)	79.96	1,2:-36.66 1,3:-28.69 1.4:-11.25 1,5:-15.33 2,3:7.97 2,4:25.41 2,5:21.33 3,4:17.44 3,5:-4.08
	Standard two	869	20.29	480.00 (10.21)	91.4	
	Standard three	855	18.9	472.03 (9.01)	80.7	
	Standard four	1 644	39.79	454.59 (5.90)	81.53	
	Not in these	565	13.01	458.67 (11.47)	83.46	

	standards					4,5:13.36
Comparing a text with a personal experience	Standard one or earlier	352	8.15	442.56 (10.51)	78.31	1,2:-36.54 1,3:-36.26 1,4:-15.46
	Standard two	637	14.41	479.1 (14.53)	100.65	1,5:-16.50 2,3:0.28
	Standard three	530	12.63	478.82 (10.78)	81.49	2,4:21.08 2,5:20.04
	Standard four	1 785	41.52	458.02 (5.79)	80.1	3,4:20.80
	Not in these standards	1 018	23.29	459.06 (7.54)	81.22	3,5:19.76 4,5:-1.04
Comparing different texts	Standard one or earlier	294	6.79	443.27 (11.32)	80.21	1,2:-14.52 1,3:-52.20 1,4:-15.82
	Standard two	574	12.41	457.79 (15.44)	91.65	1,5:-16.34 2,3:-37.68
	Standard three	520	12.81	495.47 (13.00)	92.2	2,4:-1.30 2,5:-1.82
	Standard four	1 599	38.11	459.09 (6.18)	80.14	3,4:36.38
	Not in these standards	1 299	29.88	459.61 (6.50)	80.48	3,5:35.86 4,5:- 0.52
Making predictions about what will happen	Standard one or earlier	279	6.54	446.98 (11.07)	79.33	1,2:-20.71 1,3:-33.47 1,4:-9.92
	Standard two	470	9.72	467.69 (18.63)	94.68	1,5:-16.38 2,3:-12.76
	Standard three	638	14.88	480.45 (12.47)	87.03	2,4:10.79 2,5:4.33
	Standard four	1 642	40.09	456.9 (5.81)	82.84	3,4:23.55
	Not in these standards	1 293	28.77	463.36 (6.78)	80.73	3,5:17.09 4,5:-6.46
Making generalisations and drawing inferences based on test	Standard one or earlier	382	8.51	451.49 (9.61)	80.01	1,2:-7.42 1,3:-32.31 1,4:-10.76
	Standard two	513	10.51	458.91 (18.17)	95.3	1,5:-10.72 2,3:-24.89
	Standard three	329	7.86	483.8 (16.65)	83.9	2,4:-3.34

						2,5:-3.30
	Standard four	1 563	37.64	462.25 (6.81)	86.36	3,4: 21.55
	Not in these standards	1 535	35.49	462.21 (5.84)	78.9	3,5: 21.59 4,5:0.04
	Standard one or earlier	258	6.06	446.44 (11.93)	80.35	1,2:-18.6 1,3:-29.94
						1,4:-5.51
	Standard two	366	8.78	465.04 (18.00)	90.86	1,5:-16.79
Describing the style or structure of a text						2,3:-11.34
	Standard three	278	5.88	476.38 (20.47)	86.46	2,4:3.09
						2,5:1.81
	Standard four	1 581	37.55	461.95 (5.53)	83.89	3,4:14.43
	Not in these standards	1 839	41.72	463.23 (6.32)	83.21	3,5:13.15 4,5:-1.28
	Standard one or earlier	173	4.00	443.6 (15.42)	83.71	1,2:19.73 1,3:-62.51*
						1,4:-18.36
	Standard two	247	5.74	423.87 (8.78)	66.97	1,5:-20.25
Determining the author's perspective or intention						2,3:-82.24*
	Standard three	263	6.47	506.11 (21.51)	92.03	2,4:-38.09*
						2,5:-39.98*
	Standard four	1 353	31.8	461.96 (6.73)	85.42	3,4:44.15
	Not in these standards	2 251	52.00	463.85 (5.21)	82.05	3,5:42.26 4,5:-1.89

**Statistically significant at 5% level*

According to Table 6.17, the basics of reading, like knowing letters of alphabet, knowing letter sounds relationships, reading words, isolated sentences and connected text were mainly done in first and second grade by most of the pupils. More complex issues like comparing text with personal experience, comparing different texts, making generalisations and drawing inferences, describing the style and determining the author"s perspective or intention were either done mainly at Standard 4 or were not done in the first four grades at all. The performance of the pupils did not seem to be affected by the level at which the skill or strategy was first introduced to the pupils.

Summary

The analysis of pupils‟ achievement in relation to school background can be summarised as follows:

Most of the pupils in the study were from schools which had enrolments ranging from 201 to 1000. The performance of the pupils was better in schools with an enrolment of 601-1000 compared to those with less than 200. The performance was not also affected by the enrolment of Standard 4 pupils.

The majority of the pupils were from schools where (the school head indicated that) they were from an economically disadvantaged background and their performance was lower than that of pupils from affluent homes.

The majority of the pupils in the sample (50%) were from villages, followed by remote rural areas (25%). The performance of the pupils varied with the locality of the school, with pupils from urban and sub-urban areas performing better than pupils from other localities. The performance decreased with change in the classification of the area, being worst in remote rural area.

Attributes which are usually necessary for pupils to do well in school were also investigated on. These were scored as high, medium or low. The majority of the pupils (at least 76%), were from schools where school heads indicated *medium and low* teacher job satisfaction, teacher understanding of the curricula and teachers‟ degree of success in implementing the school curriculum.

About 95% of the pupils were said to be having medium to low parental support and desire to do well at school. These pupils performed lower than their peers who had high parental support and desire to do well.

Generally, primary schools in Botswana do not have a serious problem with problem behaviours that can impact negatively on the learning of pupils. Most of the responses from school heads indicated that, at least 70% of the pupils were either *not a problem* or *minor problem* with regard to their behaviour*,*

The majority of pupils were from schools where evaluation of teachers‟ work was mainly through observation by the principal or senior staff as well as through pupils‟ achievement. Teacher peer review and observation by inspectors can still be improved.

The majority of the pupils started their primary school whilst they were still unable to count, read and write basic letters and/or numbers. Pupils from schools with a higher percentage of those who could read, write or count performed better than the pupils from schools where the percentage was lower.

About 49% of the pupils were in schools which had a library and performed significantly better than those without a library.

Recommendations

The following recommendations are made.

1. The pupils‟ socio-economic status has direct impact on their performance. The schools with larger proportion of socio-economically disadvantaged pupils tend to perform lower than schools with moderate proportion of socio-economically disadvantaged pupils. The government programmes which targets economically disadvantaged pupils should be evaluated with the view to improving them.

2. Rural areas have large numbers of pupils and the performance of pupils is low. This is an indication that most resources are clustered in the urban areas where the performance of pupils is high. The MOESD must make sure that the amount of resources in rural and urban areas are comparable so pupils in rural areas attain equal opportunity to learn afforded to pupils in urban areas. The MOESD must also improve incentives for teachers who are in rural areas.

3. The government should continue to seek parental involvement in schools and in pupils learning. The results show that pupils whose parents are keen on assisting them with school work tend to do well at school.

4. Teachers have issues which need to be addressed as they have medium to low percentages in job satisfaction, understanding of the curriculum and implementation of the curriculum. As long as the teachers cannot effectively implement the curriculum pupils‟

performance will be low. The MOESD should consult with teachers and increase professional development activities.

5. Pre-school education should be formalised. The majority of the pupils started their primary school whilst they were still unable to count, read and write basic letters and/or numbers. This problem can be alleviated by encouraging the parents to introduce their children to pre-school education while they are still young. At pre-school, the pupils will grasp elementary skills to enable them to perform at high level. Further, they will gain confidence to speak out or to write and read words that are basic in primary level.

6. Schools should have well-resourced libraries and laboratories to support the learning of pupils in schools.

CHAPTER SEVEN
PARENTAL BACKGROUND VARIABLES AND PERFORMANCE OF PUPILS

This chapter discusses the pupils‟ performance in relation to parental background variables. Since learning takes place long before the child goes to school, learning that takes place at home is therefore of fundamental importance for the child‟s subsequent learning at primary school. Parental background variables considered in this study were grouped into six themes of activities the parents did with their children: before beginning primary school, beginning primary school, child‟s schoolwork, and pupils‟ school, literacy in the home and additional parental information.

Before Beginning Primary School

The following items constitute the child‟s knowledge of before beginning primary school.

Non-formal pre-school activities

a) Language the child‟s speaks at home
b) Pre-school attendance

Non-Formal pre-school activities

The construct of non-formal pre-school activities was made up of 15 items relating to the pupil‟s reading, talking about things s/he has read, singing, playing various educational games, writing, and counting, among other things. An index, with three levels of *often did it, sometimes did it,* and *never or almost never did it* was created. Performance of the pupils was then related to the frequencies of doing these non-formal pre-school activities as shown in Table 7.1.

Table 7. 1: *Children's' frequency of doing non-formal pre-schooling activities and performance*

	n	%	Mean (SE)	SD	Diff
Often	406	11.00	512.37(8.89)	95.96	1,2:45.74*
Sometimes	2720	73.21	466.63(3.96)	83.63	1,3:70.27*
Never or almost never	589	15.79	442.10(3.96)	73.13	2,3:24.53*

**Statistically significant at 5% level*

Table 7.1 shows that the majority (73.21%) of pupils had parents who performed these activities *sometimes,* and their performance was positively related to the frequency of doing the activities. For example, pupils who did the activities with parents *often* performed the highest, (512.37), while those who *never or almost never did* performed the lowest (442.10).

Language spoken at home

There are many different languages spoken in Botswana and only English and Setswana are official languages. However, research indicates that pupils learn better if they are taught in their mother tongue at an early stage. Table 7.2 shows the frequency with which English and Setswana are spoken at home, and how this is related to performance.

Table 7. 2: *Performance by Language spoken at home by the pupil*

		n	%	Mean(SE)	SD	Diff
English	Yes	989	27.50	493.77(7.24)	96.31	1,2:35.41*
	No	2 619	72.50	458.36(3.22)	79.28	
Setswana	Yes	3 104	83.84	465.28(3.69)	84.15	1,2:-14.90
	No	564	16.16	480.18(8.12)	91.36	

**Statistically significant at 5% level*

Table 7.2 shows that a great majority of pupils spoke Setswana (83.84%) and only 16.16% did not speak it, while only 27.50 % spoke English before beginning school. Pupils who communicated with their in English performed significantly better, with an average mean of 493.77, than those who did not, with a mean of 458.36.

Pre-school attendance

Pre-school attendance is not compulsory in Botswana as is the case in other countries. In 2009, nearly 10% of pupils aged between 2 and 5 received pre-primary education (MoE&SD, 2009.p.15), while only 3.22% of Standard 1 learners had access to pre-school education in

2006 (MoE&SD, 2006.p.22). Currently, there is no common curriculum to link teaching with formal education, and activities vary from one school to the other (MFDP, 1991). There is only one training institution serving the whole country, with an output of only 30 teachers per year. As a result, the number of untrained teachers is high. For example, the number of untrained teachers constituted 48.5% in 2005, and increased to 49.6% in 2006 (MoE&SD, 2009. p. 8). Thus, the quality of teaching at pre-primary is questionable due to the absence of training institutions for this level.

TIMSS 2003 and 2007 showed that pupils who had attended pre-school were found to perform significantly better than those who did not. Table 7.3 presents the results of performance of the pupils by pre-schooling status.

Table 7. 3: *Pre-schooling and performance*

	n	%	Mean(SE)	SD	Diff
Yes	1 699	46.43	495.81(6.23)	92.20	1,2:50.99*
No	1 928	53.57	444.82(2.82)	71.95	

**Statistically significant at 5% level*

According to Table 7.3, pupils whose parents indicated that they attended pre-schooling were slightly less than half (46.43%), and they performed significantly better, with a mean of 495.81 than those who did not 444.82. Further, the more the pupil attended pre-school, the better the performance as depicted in Table 7.4

Table 7. 4: *The length of pre-schooling versus performance*

	n	%	Mean(SE)	SD	Diff
3 years or more	494	31.50	508.76(6.96)	91.27	1,2:-2.73
Between 2 & 3 years	306	19.21	511.49(11.90)	99.31	1,3:5.56
					1,4:22.02*
2 years	410	25.91	503.20(7.95)	89.36	1,5:37.70*
Between 1 & 2 years	149	9.12	486.74(8.08)	81.71	2,3:8.29
					2,4:24.75
1 year or less	240	14.25	471.06(6.64)	77.01	2,5:40.43*
					3,4:16.46
					3,5:32.14*
					4,5:15.68

**Statistically significant at 5% level*

Beginning Primary School

Issues that were discussed under beginning primary school were: age at schooling, reading/writing ability, and schooling activities, such as counting, recognition of different shapes, numbers, and doing some simple arithmetic.

Age at Schooling

The average age for starting school in Botswana public schools is 7 years, and policy recommendation is 6 years in public schools and 5 years in private schools (RNPE, 1994). Table 7.5 presents composition and achievement by age.

Table 7. 5: *Age at the start of schooling versus performance*

	n	%	Mean(SE)	SD	Diff
5 years old or younger	391	10.69	521.05 (10.60)	96.27	1,2:46.34*
6 years old	1 567	43.23	474.71 (4.65)	85.18	1,3:67.97*
7 years old	1 480	40.63	453.08 (2.92)	76.62	1,4:91.03*
At least 8 years old	207	5.45	430.02 (6.32)	75.95	2,3:21.63*
					2,4:44.69*
					3,4:23.06*

**Statistically significant at 5% level*

The results in Table 7.5 show that majority of pupils attended school when they were either 6 years (43.23%) or when they were 7 years old (40.63%). Younger pupils performed significantly better than the older pupils. Similar results were reported in Standard 4 Assessment Report (BEC, 2007).

Literacy Competency Before Schooling

It is expected that when pupils start schooling, they should know at least a little bit of reading, writing and counting having learnt them, either formally or informally, from pre-schooling activities. Table 7.6 shows literacy competence of pupils, in relation to performance, at the time they started school.

Table 7. 6: *Literacy competence versus performance*

	n	%	Mean(SE)	SD	Diff
Very well	948	25.46	503.27(5.01)	86.26	1,2:33.68*
Moderately well	1 531	41.79	469.59(4.89)	83.77	1,3:64.60*
Not very well	932	24.73	438.67(3.76)	76.29	1,4:65.66*
Not at all	290	8.03	437.61(6.16)	76.01	2,3:30.92*
					2,4:31.98*
					3,4:1.06

**Statistically significant at 5% level*

In Table 7.3 it was discovered that about 54% of the parents indicated that their pupils did not attend pre-school, yet, as can be observed from Table 7.6, analysis on literacy competence before schooling shows that only about 8% of the parents pupils were illiterate when they started school, and at least 67% were at least moderately literate. This shows that indeed there is a lot of informal learning taking place in the home. However, it was not surprising to find that those who commanded a lot of literacy at the time they started school performed significantly higher, with a mean of 503.27, than those who were illiterate at the time they started school, with a mean of 437.61. This showed that early schooling is positively associated with good performance.

Arithmetic Competence before Schooling

Just like literacy, pupils are expected to have some knowledge of numeracy when they start school. Table 7.7 shows some of the numeracy content and how children fared in them.

Table 7. 7: *Numeracy competence of pupils at the beginning of schooling*

		N	%	Mean(SE)	SD	Diff
Counting	Up to 100 or higher	1 014	27.47	495.64(6.25)	89.73	1,2:22.19*
	Up to 20	1 468	39.91	473.45(3.88)	82.64	1,3:53.52*
	Up to 10	998	26.85	442.12(4.03)	75.61	1.4:73.61*
	Not at all	205	5.77	422.03(6.81)	74.84	2,3:31.33*
						2,4:51.42*
						3,4:20.09*
Different Shapes recognition	More than 4 shapes	918	25.10	510.04(7.20)	90.07	1,2:38.16*
	3-4 shapes	1 091	29.79	471.88(4.36)	84.92	1,3:62.48*
	1-2 shapes	932	25.44	447.56(3.63)	74.05	1.4:72.53*
	None	718	19.68	437.51(3.41)	71.79	2,3:24.32*
						2,4:34.37*
						3,4:10.05*
Recognise numbers from 1-10	All 10 numbers	2 527	69.05	481.85(4.55)	86.26	1,2:33.97*
	5-9 numbers	384	10.68	447.88(5.47)	78.41	1,3:45.41*
	1-4 numbers	435	11.99	436.44(4.96)	75.46	1.4:52.04*
	None	300	8.28	429.81(5.39)	74.01	2,3:11.44*
						2,4:18.07*
						3,4:6.63
Write numbers from 1-10	All 10 numbers	2 451	68.75	481.94(4.55)	85.06	1,2:24.36*
	5-9 numbers	365	10.82	457.58(6.55)	85.21	1,3:49.25*
	1-4 numbers	415	11.72	432.69(4.83)	73.75	1.4:46.56*
	None	309	8.71	435.38(6.19)	78.88	2,3:24.89*
						2,4:22.20*
						3,4:-2.69
Addition	Yes	2 740	75.13	474.79(4.18)	86.25	1,2:26.13*
	No	912	24.87	448.66(4.21)	80.53	
Subtraction	Yes	2 307	64.49	479.67(4.37)	86.23	1,2:30.59*
	No	1 278	35.51	449.08(3.91)	80.79	

**Statistically significant at 5% level*

Table 7.7 indicates that, majority of the pupils had parents who reported that they were competent for each category of the numeracy domain. For example 27.47% were competent in counting up to 100 or higher; 25.10% could recognise different shapes; 69.05% could recognise all numbers from 1-10, and so on. Pupils whose parents indicated that they were highly competent in all domains of numeracy performed significantly higher than those who were comparably less competent in these domains. For example, pupils who could count up to 100 or higher performed significantly better (495.64) than those who could count up to 20 (473.45), whilst those who could not count at all had the lowest mean of 422.03.

Pupil's Schoolwork

The pupils" schoolwork constituted the time the pupils spent on homework, and parental home support for learning.

Time Spent on Home Work

Parents were asked to indicate how much time their pupils spent on homework each day. Table 7.8 shows the results and the corresponding performance of the pupils.

Table 7. 8: Time spent doing homework and performance

	N	%	Mean(SE)	SD	Diff
					1,2:-24.31(-4.06)*
No homework	309	8.51	430.29(4.31)	72.26	1,3:-52.40(-8.20)*
15 minutes or less	833	23.02	454.60(4.15)	81.30	1,4-54.75(-6.48)*
16-30 minutes	1 336	36.49	482.69(4.72)	83.86	1,5:-28.14(-3.97)*
31-60 minutes	666	18.46	485.04(7.26)	90.31	2,3:-28.09(-4.47)*
More than 60 minutes	479	13.52	458.43(5.62)	84.79	2,4:-30.44(-3.64)*
					2,5:-3.83(-0.55)
					3,4:-2.35(-.27)
					3,5: 24.26(3.31)*
					4,5:26.61(2.90)*

**Statistically significant at 5% level*

As can be observed from Table 7.8, about 9% of parents indicated that their pupils were not given homework. This is surprising because supervisors should detect this at the earliest possible and enact corrective actions. However, about 68.47% of pupils spent at least 15 minutes per day on homework. Pupils who spent more time on homework performed

significantly better than those who spent less. The 31-60 minutes time is probably the pupil"s concentration span and anything beyond that results in diminishing returns.

Home Support

Pupils should be assisted with school work at home as well. An index was created with four levels of *everyday or almost every day, once or twice a week, once or twice a month,* and *never or almost never*. Table 7.9 presents the frequency of assistance given to pupils and corresponding performance.

Table 7. 9: Home support received by the pupils

	N	%	Mean(SE)	SD	Diff
Every day or almost every day	1 555	42.01	490.86(5.48)	87.00	1,2:30.55*
Once or twice a week	1 639	43.75	460.31(3.80)	80.28	1,3:66.84*
Once or twice a month	437	12.14	424.02(4.92)	75.75	2,3:36.29*
Never or almost never	76	2.10	421.85(9.22)	72.07	

**Statistically significant at 5% level*

According to Table 7.9, about 42% of the pupils got help from parents *every day or almost every day*, while only about 2% *never or almost never*. However, the pupils who were helped by their parents more frequently performed significantly better than those whose parents helped them less frequently.

Parent's Perception about the Pupil's School

An index about the parents" perception regarding the effort of the school"s in moulding the child was created, and scaled in two levels of *agree* and *disagree*. As shown in Table 7.10.

Table 7. 10: Parents perception about the pupil's school

	N	%	Mean(SE)	SD	Diff
Agree	3 501	95.79	424.69(4.44)	91.45	1,2:54.71(4.91)*
Disagree	156	4.21	369.98(10.22)	85.40	

**Statistically significant at 5% level*

That majority of pupils (95.79%) had parents with positive perception about the school‟s in moulding the pupil. Pupils whose parents have a positive perception about the school performed significantly better than those whose parents have a negative perception.

Literacy in the Home: Time Spent Reading

Parents‟ literacy level has a bearing on the schoolwork-related help that the pupil receives at home. Table 7.11 depicts the frequency with which the parents read magazines and work materials for themselves, and how this impacted on the pupils‟ performance.

Table 7. 11: Time spent reading for oneself at home and pupils' performance

	n	%	Mean(SE)	SD	Diff
Less than one hour a week	1 595	44.68	458.69(3.54)	78.70	1,2:-18.95*
1-5 hours a week	1 295	35.77	477.62(4.95)	87.68	1,3:-10.34
6-10 hours a week	367	10.61	469.03(7.43)	94.42	1,4:-31.12*
More than 10 hours a week	314	8.94	489.81(7.70)	89.91	2,3:8.59
					2,4:-12.19

**Statistically significant at 5% level*

Table 7.11 shows that majority of pupils (80.45%) had parents who read less than 6 hours a week. Pupils whose parents read more often performed better than those whose parents read less often. Reading at least one hour a week seemed to be the barest minimum that can be positively related to pupils‟ performance. Pupils whose parents read less than 1 hour a week performed significantly lower (458.69) than those whose parents read 1-5 hours a week (477.62). Similarly, pupils whose parents read 1-5 hours a week performed significantly lower than those whose parents read 6-10 hours week (469.03) and so on.

Reading for Enjoyment

Table 7.12 shows the results for reading for enjoyment.

Table 7. 12: Time spent reading for own enjoyment at home

	n	%	Mean(SE)	SD	Diff
Every day or almost every day	1 326	36.98	487.59(4.46)	84.80	1,2:20.83*
Once or twice a week	1 609	44.36	466.76(4.59)	84.35	1,3:45.99*
Once or twice a month	390	11.05	441.60(5.86)	82.65	1,4:54.45*
Never or almost never	276	7.61	433.14(5.13)	72.38	2,3:25.16*
					2,4:33.62*

**Statistically significant at 5% level*

Table 7.12 shows that majority of pupils (37.98%) had parents who read *every day or almost every day*, while a few (7.61%) did not even read for their own enjoyment. Parents‟ reading for enjoyment and pupils‟ performance were positively correlated with each other. Pupils whose parents read frequently for enjoyment performed significantly better than those whose parents read less frequently.

Perception about Reading

Parents‟ perception about reading was found to be low.

Table 7. 13: Parents' attitudes towards reading

	n	%	Mean (SE)	SD	Diff
Agree	1 377	38.90	450.99 (5.22)	90.83	44.99*
Disagree	2 213	61.10	406.03 (4.59)	88.15	

**Statistically significant at 5% level*

According to Table 7.13, about 39% of the pupils had parents who liked reading. Pupils whose parents liked reading performed significantly higher (450.99) than those whose parents did not like reading (406.60).

Books in the Home

Parents were asked to indicate the number of books in the home they have. They were also to specify whether they are written in English and there are pupils‟ books. Table 7.14 shows the number of books at home by pupils performance.

Table 7. 14: *Number of books in the home and performance*

		n	%	Mean(SE)	SD	Diff
Books in home	0-10	2 004	55.28	453.84(3.24)	77.88	1,2:-19.69*
	11-25	872	23.95	473.53(4.45)	81.06	1,3:-51.95*
	26-100	516	14.09	505.79(8.14)	95.76	1,4:-49.614*
	>100	114	3.24	503.45(10.77)	99.09	2,3:-32.26*
						2,4:-29.92*
						3,4:2.34
Pupils' books in home	0-10	2 389	65.70	459.22(3.32)	79.55	1,2:-33.28*
	11-25	753	20.68	492.50(6.77)	89.28	1,3:-33.60*
	26-50	301	8.28	492.82(9.53)	99.93	1,4:-7.10
	>50	185	5.34	466.32(8.12)	88.49	2,3:-.32
						2,4:26.18*
						3,4:26.50*
Books in English	Yes	2 546	71.23	480.38(4.81)	88.12	1,2:37.91*
	No	1 019	28.77	442.47(3.37)	72.74	

**Statistically significant at 5% level*

As can be seen from Table 7.14, majority of pupils (55.28%) had few books in the home 0-10, while those who had more books (at least 26) (14.09%). Children whose parents had more books performed better (505.79) than those whose parents had few books (453.84). Similarly, pupils had few pupils‟ books in the home 0-10 formed the majority (65.70%). Generally, pupils whose parents had more books performed significantly better (492.50) than those whose parents had few books (459.22). About 71% of books were written in English. Reading books written in English is positively associated with pupils‟ performance.

Language of Communication at Home

Table 7.15 presents information regarding language of communication at home.

Table 7. 15: Language of communication at home versus performance

		n	%	Mean (SE)	SD	Diff
Father	English	382	16.13	515.87(9.47)	98.12	1,2:51.51*
	Setswana	1755	71.53	464.36(3.94)	82.35	1,3:45.07*
	Other	208	9.47	470.80(10.12)	80.19	2,3:-6.44
	Not Applicable	66	2.87	449.34(11.94)	85.65	
Mother	English	330	12.79	521.87 (10.05)	96.6	1.2:58.27*
	Setswana	1984	75.40	463.60 (3.84)	82.35	1.,3:53.79*
	Other	256	10.77	468.08 (7.53)	80.12	2,3:-4.48
	Not Applicable	25	1.04	459.82 (22.80)	97.30	

**Statistically significant at 5% level*

It can be observed from table 7.15 that 16.13% of pupils‟ fathers use English more often when talking to them at home, compared to 12.79% of the mothers. However, majority of pupils had (71.53% and 75.40% of fathers and mothers respectively) use Setswana when talking to them. Other languages were also used, although the proportion is low (about 10%). Pupils whose parents used English as the medium of communication at home performed significantly better than those whose parents spoke Setswana or other languages.

Parents' Background

Additional information about parents‟ educational level, their employment status, and their expectation with regard to their pupils‟ educational attainment was collected. These issues are discussed in detail below.

Highest level of education of parent

Table 7.16 shows the educational attainment of the pupils‟ parents.

Table 7. 16: *Highest level of education of father*

		n	%	Mean (SE)	SD	Diff
Father	At most junior education	854	41.52	449.53 (4.43)	74.25	1,2:-27.78*
	Completed secondary education	551	25.87	477.31 (5.04)	80.79	1,3:-79.37*
	Completed diploma	314	15.00	528.90 (8.69)	88.82	1,4:-57.85*
	Completed first degree or higher	364	17.62	507.38 (11.52)	102.59	2,3:-51.59*
						2,4:-30.07*
						3,4:21.52
Mother	At most junior education	981	40.44	443.77 (3.79)	72.19	1,2:-28.53*
	Completed secondary education	900	36.70	472.30 (3.64)	80.55	1,3:-93.72*
	Completed diploma	355	14.52	537.49 (8.57)	83.74	1,4:-91.86*
	Completed first degree or higher	202	8.34	535.63 (14.66)	102.61	2,3:-65.19*
						2,4:-63.33*
						3,4:1.86

**Statistically significant at 5% level*

Table 7.16 shows that majority of the parents went as far as Junior Secondary Education for example, 41.52% of fathers and 40.44% of the mothers had Junior Secondary Education. Quite a reasonable number of parents (17.62% fathers and 8.34% mothers) had attained at least first degree qualification. Analysis shows that the higher the level of education of the parents, the better the performance of their pupils. However, the higher level of education reaches a point of diminishing return where the mean for higher education level is not significantly different from that of the next lower level.

Expectation of child’s education

Parents send their pupils to school to get educated and become productive citizens of the country. To some parents, their pupils would be the source of income for the household. Table 7.17 shows parental expectation of their pupils‟ education and performance.

Table 7. 17: Parental expectation of their pupils' education and performance

	n	%	Mean (SE)	SD	Diff
					1,2:.91
Finish Junior Secondary	194	5.49	432.36 (6.34)	72.26	1,3:4.05
Finish Senior Secondary	258	7.28	431.45 (6.22)	76.37	1,4:-17.11
					1,5:-40.69*
Finish Vocational/Technical	271	7.73	428.31 (5.65)	74.00	1,6:-56.13*
					2,3:3.14
Finish Diploma	358	10.20	449.47 (4.84)	73.41	2,4:-18.02*
Finish First Degree	540	15.45	473.05 (4.92)	75.75	2,5:-41.60*
					2,6:-57.04*
Beyond First Degree	1 878	53.86	488.49(5.49)	88.10	3,4:-21.16*
					3,5:-44.74*
					3,6:-60.18*
					4,5:-23.58*
					4,6:-39.02*
					5,6:-15.44*

**Statistically significant at 5% level*

Table 7.17 shows that a majority of pupils of 53.86% had parents who expected them to go beyond degree level. Pupils whose parent"s expected them to progress far in their education performed significantly better than those whose parents did not expect them to go far in their education.

Employment of the pupils' parents

Pupils" parents were employed in different kinds of jobs such as Labourer, Craftsmanship, Clerical, Agriculture, Professional, etc. as indicated in Tables 7.18.

Table 7. 18: *The kind of work done by parents*

	Fathers		Mothers	
	n	%	n	%
Never worked	170	9.37	373	15.55
Small Business Owner	152	8.02	313	13.21
Clerk	51	2.50	177	7.14
Service or Sales worker	181	9.29	244	9.84
Skilled Agricultural	106	6.14	98	4.45
Craft/trade worker	209	10.55	28	1.23
Plant or Machine operator	150	7.71	24	1.04
General Labourers	193	10.02	406	16.64
Manager or Senior Official	123	6.45	63	2.78
Professional	174	9.11	236	9.73
Technician	80	4.10	41	1.80
Not Applicable	325	16.72	399	16.59

Majority of parents are employed on a full time basis as shown in Tables 7.19 and 7.20. About 57% of fathers and 42% of mothers were on full time employment. Pupils whose parents were working on full time basis performed better than those whose parents were not employed on full time basis. Being employed on full time basis meant that parents generally had a regular and dependable source of income to be able to support their pupils" educational needs, hence the improvement in the performance of the pupils.

Table 7. 19: Employment status of the pupil's father and performance

	n	%	Mean (SE)	SD	Diff
					1,2:40.96*
At least full-time	1 267	57.40	496.60(6.53)	90.91	1,3:51.86*
Part-time	315	14.10	455.64(5.17)	77.32	1,4:11.84
Not working for pay	204	9.96	444.74(8.78)	75.44	1,5:44.39*
Other	156	7.24	484.76(11.42)	90.90	2,3:10.90
Not applicable	252	11.30	452.21(5.75)	77.05	2,4:-29.12*
					2,5:3.43
					3,4:-40.02*
					3,5:-7.47
					4,5:32.55*

**Statistically significant at 5% level*

Table 7. 20: *Employment situation of the pupil's mother and performance*

	n	%	Mean (SE)	SD	Diff
					1,2:46.37*
At least full-time	1 118	41.92	499.58 (6.84)	91.37	1,3:44.77*
Part-time	475	18.08	453.21 (4.65)	78.97	1,4:24.68*
Not working for pay	487	19.37	454.81 (6.51)	79.67	1,5:35.94*
Other	188	7.38	474.90 (8.74)	79.85	2,3:-1.60
					2,4:-21.639*
Not applicable	356	13.26	463.64 (6.49)	78.76	2,5:-10.43
					3,4:-20.09
					3,5:-8.83
					4,5:11.26

**Statistically significant at 5% level*

Summary

The analyses of parental background variables revealed some interesting findings. It was found that non-formal pre-school activities were positively associated with performance. Pre-school attendance is not compulsory in Botswana, as such only slightly less than half (46.43%) of the pupils were sent to pre-schools by their parents, and that such pupils were found to perform significantly better than those who did not attend pre-school. However, parents who did not have the means to send their pupils to pre-primary formal set-up continued with informal teaching of their pupils at home, as evidenced by pupils" high literacy rate (92.0%) and some arithmetic competence by the time they started school.

Majority (94.55%) of Botswana pupils attended school when they were 7 years or younger, as per the policy requirement, and tended to perform better. However, either early schooling or the number of years spent in pre-school was also of paramount importance in the child learning and performance. A small proportion of pupils (27.5%) had parents who spoke English with and to them at home before starting school and this enhanced the pupils" performance.

Learning is not confined to school set-up; parents must assist their pupils in doing schoolwork. Pupils who either spent some time doing their homework and/or being helped by parents tended to perform better than those who spent less time and/or did not do their homework at all. Majority of parents went as far as attaining some junior secondary education (40%) for

themselves. Thus pupils whose parents had higher educational level seemed to benefit from them in terms of assistance with homework. However, there are some schools which still do not give pupils homework (9%), despite the fact that learning can be done anywhere and anytime.

Likewise, availability of more books and interest in reading on the part of the parents were related to educational level of the parents which were in turn positively related to pupils" performance. Although a large number of parents had low levels of education, they still had a high expectation of their own pupils achieving higher levels of education, and pupils whose parents had high expectation performed better.

Recommendations

1. Pupils who attended formal set-up of pre-primary education and those who were taught informally at homes performed better than those who did not have formal pre-primary or informal one. MoESD should formalise pre-primary education in Botswana, and should be made free and compulsory. The initial cost of a project of such magnitude will be huge, but in the long run, the benefits will outweigh the capital investment. Pupils who attend pre-primary schools get accustomed to learning early, and make learning part of their culture.

2. Instruction in government schools is done in English from Standard 2 as such pupils who come to school already speaking English understand the language of instruction well and learn better and faster. Schools should have English speaking policies so that pupils get an opportunity to frequently speak in English for those who do not speak English at home.

3. Younger pupils were found to perform better than those who were older. Thus a policy on early age enrolment i.e. 5 years should be formulated so that pupils can start learning at an early age.

4. Although repetition is meant to give pupils a chance to prove themselves, it could also act against the intended objective. Remedial teaching could be better options to ensure that almost all, if not all, pupils attain promotion to another level.

5. Pupils who are given homework frequently perform higher than those who get less frequent homework. Since learning takes place anywhere anytime, schools should therefore give reasonable amount of homework almost every day (or most frequently). In fact, some pupils learn better at home than at school. The MoESD should come up with homework policy which will accommodate the participation of parents. Schools should also monitor pupils‟ homework.

6. Schools should provide relevant children‟s books in the library to complement what the parents provided at home thereby creating an enabling reading environment at school.

CHAPTER EIGHT
SUMMARY

The main objectives of PIRLS was to assess the level of reading in English at Standard 4, identify factors that impact on teaching and learning of English, make a comparison between participating countries internationally and provide a rich source of information for policy makers and other stakeholders. Vision 2016 advocates for Botswana to compete with the best in the world.

How did Botswana pupils perform?

Three countries participated in prePIRLS, namely Botswana, Colombia and South Africa.

The mean performance of Botswana pupils in reading was 463 which was below the international average of 500. This low level of achievement led to Botswana being amongst the three countries which participated in prePIRLS which is a lower version of PIRLS. Other studies conducted in Botswana, such as Monitoring of Learning Achievement (MLA 2001) for Standard 4 pupils; and Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ II 2005) for Standard 6 pupils also revealed low performance by pupils. Girls performed better than boys in reading even internationally.

Performance by Purpose of Reading and Processes of comprehension

Performance by purposes of reading varied with the pupils performing better in acquiring information purpose with a mean score of 466, whilst performance in literary experience purpose was the lowest with a mean score of 459. This is contrary to the other two countries which either performed at the same level (Colombia) in the two purposes of reading or performed better in literary purpose (South Africa). The pupils performed at the same level in the processes of comprehension, namely straightforward inferences and interpreting. Girls performed significantly better than boys overall in all the purposes of reading and processes of comprehension. The curriculum and policies that are in place form the background against which educational provision is shaped. It is interesting to study the Botswana curriculum and the language policy in light of the prePIRLS 2011 results.

Factors Associated with Pupils Performance

Several variables were related to performance and the regression analysis carried out shows that after controlling for all variables, the following were found to be positively associated with performance namely more books at home, high home possession and frequent home support for learning. Internationally learners from educationally advantaged homes with more literary resources achieve higher reading scores than their less well-resourced. The Botswana prePIRLS 2011 data confirms this. This highlights the important role of the school in compensating for the minimal home opportunities offered to pupils from low socio-economic backgrounds.

Only 10% of the pupils were never bullied and they had the highest mean scores. Bullying was negatively associated with performance. The study also reveals that pupils who were over the age level performed lower than those who were at the mean age of 10.

Teacher background variables

The results of the research showed a number of issues as follows. A large number of the pupils, (80%) were taught by female teachers whilst 69% had teachers who fell within the age group 30-49 years. Teachers with years of experience between 1-10 years and those with diplomas taught 43% and 80% of the pupils respectively. Pupils taught by teachers aged between 30-49 performed significantly better than pupils whose teachers were younger. Similarly, pupils taught by teachers with 11-20 years‟ experience performed significantly better than pupils whose teachers have less than 10 years‟ experience. It was also noted that the more the teachers were educated the higher the performance of pupils in reading.

About 51% of the pupils had teachers who believed that teachers‟ job satisfaction was medium, 74% had teachers whose perception of the teachers‟ understanding of the school‟s curricular goals was high, 61% had teachers whose perception of success in the implementation of the schools‟ curriculum was high and 77% had teachers whose expectation of pupils‟ achievement was high. It was found that where the teachers‟ perception was high pupils‟ performance in reading was also high. Teachers‟ perception on parental support and involvement was low, standing at 56% and 60% respectively. Pupils whose teachers had higher perceptions of parental involvement and support performed significantly higher than those whose teachers had perceptions that were medium or low.

Performance of Pupils by Teacher Perception of School Environment

Teachers with the highest percentage of pupils, 51% and 44%, described the pupils‟ regard for school property and desire to do well at school as medium respectively. There was significantly high performance in reading among the pupils whose teachers‟ described the pupils‟ desire to learn and regard for school property as medium and high.

With respect to the safety of the school, 74% of the pupils were taught by teachers who indicated that their schools were in safe neighbourhoods. About 84% said they felt safe at school and 73% pointed out that the schools‟ security policies and procedures were sufficient. The pupils‟ performance in reading was significantly high where pupils were taught by teachers whose perceptions of safety at the school were positive.

About 43% of the pupils are taught by teachers who thought that lack of adequate instructional materials and supplies were a serious problem. Buildings not being repaired, overcrowding in classrooms, lack of workspace and too many teaching hours for teachers affected 13% to 20% of the pupils. With the exception of overcrowding in classrooms, the rest of the attributes related to the instructional environment had a significant negative impact on performance.

Instructional materials and supplies were inadequate and that was evidenced by the fact that only about 6% of pupils were taught by teachers who indicated that adequate instructional materials and supplies were not a problem, which meant the rest were of the view that material and supplies were a problem. That there is a positive relationship between adequate materials and supplies and good performance is shown by the observation that learners taught by teachers who felt that materials and supplies were not a problem had a high mean performance of 509.59, even higher than the international average mean of 500. This means schools must have adequate supply of instructional materials and supplies in order to produce high performing pupils.

Pupils whose teachers had access to computers for teaching comprised 60%, and 46% had teachers who had access to support staff. Only 17% had teachers who had adequate support for integrating computers in teaching. It is only when there was support for integrating computers in teaching that the performance of pupils in reading was significantly higher at 604.7 than when there was no support at 465. 12. The high score only apply to few pupils.
Computer use was generally very low. About 95% of pupils were taught by teachers who said they did not use computers in their teaching. It would be premature to assess the effect of

computers in pupils „performance at this stage since computers were not fully used in teaching and other subsets of teaching and learning.

The study also showed that a high percentage of pupils (83) taught by teachers who were comfortable with their profession produced mean performances that were higher than the performance means for the remaining pupils whose teachers showed discomfort in their profession.

Methods of teaching

Teachers were asked how often they organised their classes into different groupings; and the findings indicated that the mean performance of pupils whose teachers did different groupings sometimes had the highest significant scores.

Pupils who were given a chance to read books of their own choice perform better than those who were never given that opportunity. Forty-four percent of the pupils‟ are taught strategies for decoding sounds once a week and 23% were taught words every day. Pupils who do this more frequently perform significantly higher than those who were never taught the strategies.

Majority of the pupils 54% have teachers who provide them with literary texts once or twice a month followed by 36% which is once or twice a week while for informational 32% is once or twice a month and 54% being once or twice a week. Pupils‟ scores are highest when the materials are done once or twice a week.

Sending a progress report home often was seen to be linked with good performance. This was shown by high means in the performance of learners who were taught by teachers who reported that they sent progress report home often which was higher than those whose report was not sent at all.

School background variables

The analysis of pupils‟ achievement in relation to school background can be summarised as follows:

- Most of the pupils in the study were from schools which had enrolments ranging from 201 to 1000. The performance of the pupils was better in schools with an enrolment of

601-1000 compared to those with less than 200. The performance was not also affected by the enrolment of Standard 4 pupils.

- The majority of the pupils were from schools where the school head indicated that they were from an economically disadvantaged background and their performance was lower than that of pupils from affluent homes.

- The majority of the pupils in the sample (50%) were from villages, followed by remote rural areas (25%). The performance of the pupils varied with the locality of the school, with pupils from urban and sub-urban areas performing better than pupils from other localities. The performance decreased with change in the classification of the area, being worst in remote rural area.

Attributes which are usually necessary for pupils to do well in school were also investigated on. These were scored as high*, medium* or *low*. The majority of the pupils (at least 76%), were from schools where school heads indicated *medium and low* teacher job satisfaction, teacher understanding of the curricula and teachers‟ degree of success in implementing the school curriculum. Parental support for pupils‟ achievement and pupils‟ desire to do well had at least 95% of pupils for the *medium* and *low* categories combined. The performance of the pupils is *low* where parental support and pupils desire to do well are *low*.

Generally, primary schools in Botswana do not have a serious problem with problem behaviours that can impact negatively on the learning of pupils. Most of the responses from school heads indicated that, at least 70% of the pupils were either *not a problem* or *minor problem* with regard to their behaviour*,*

The majority of pupils were from schools where evaluation of teachers‟ work was mainly through observation by the principal or senior staff as well as through pupils‟ achievement. Teacher peer review and observation by inspectors can still be improved.

The majority of the pupils started their primary school whilst they were still unable to count, read and write basic letters and/or numbers. Pupils from schools with a higher percentage of those who could read, write or count performed better than the pupils from schools where the percentage was lower.

About 49% of the pupils were in schools which had a library and performed significantly better than those without a library.

Home Background and Pupils Performance

The analyses of parental background variables revealed some interesting findings. It was found that non-formal pre-school activities were positively associated with performance. Pre-school attendance is not compulsory in Botswana, as such only slightly less than half (46.43%) of the pupils were sent to pre-schools by their parents, and that such pupils were found to perform significantly better than those who did not attend pre-school. However, parents who did not have the means to send their pupils to pre-primary formal set-up continued with informal teaching of their pupils at home, as evidenced by pupils" high literacy rate (92.0%) and some arithmetic competence by the time they started school.

Majority (94.55%) of Botswana pupils attended school when they were 7 years or younger, as per the policy requirement, and tended to perform better. However, either early schooling or the number of years spent in pre-school was also of paramount importance in the pupil"s learning and performance. A small proportion of pupils (27.5%) had parents who spoke English with them at home before starting school and this enhanced the pupils" performance.

Learning is not confined to school set-up; parents must assist their pupils in doing schoolwork. Pupils who either spent some time doing their homework and/or being helped by parents tended to perform better than those who spent less time and/or did not do their homework at all. Majority of parents went as far as attaining some junior secondary education (40%) for themselves. Thus pupils whose parents had higher educational level seemed to benefit from them in terms of assistance with homework. However, there are some schools which still do not give pupils homework (9%), despite the fact that learning can be done anywhere and anytime.

Likewise, availability of more books and interest in reading on the part of the parents were related to educational level of the parents which were in turn positively related to pupils" performance. Although a large number of parents had low levels of education, they still had a high expectation of their own pupils achieving higher levels of education, and pupils whose parents had high expectation performed better.

CHAPTER NINE
RECOMMENDATIONS

How to address low achievement is a challenge to every parent, teacher, administrator and policy maker. Based on the findings the following recommendations are made.

1. Overall Performance in reading by Botswana pupils

1.1. Botswana pupils were assessed at Standard 4 in prePIRLS compared to the other international PIRLS. However, their performance was in most cases below the international average. The Department of Curriculum Development and Evaluation should consider alignment of the local curriculum with the international current trends with regards to what pupils are expected to know and do at particular levels. MoESD should encourage more curricular reviews when need arises.

1.2. In order to raise proportions of Botswana pupils attaining higher levels of reading skills teaching of the purpose of literary experience in reading should be emphasised in pre and in-service training. Classroom instruction should be monitored with the intension of ensuring that the purpose of literary experience is taught effectively.

2. Pupil Factors

2.1. Pupils‟ gender and performance

The decline in the performance of boys needs to be addressed. Government had initiatives to empower women and the girl child through the adoption of the Millennium Development Goals (MDGs) and the Revised National Policy on Education of 1994. However, there might be a need to revisit such policies in order to empower both boys and girls.

2.2. Bullying

Of serious concern is the finding that 90% of the pupils experienced some bullying at low to high frequencies. All forms of bullying should be identified. Policies and frameworks to deal with bullying should be developed by the stakeholders including PTA"s, school management and pupils leadership structures.

2.3. Pupils desire to learn

There was a higher proportion of pupils at 84%, whose teachers stated that their desire to do well in school was medium to low. The performance of the pupils was lower than that of pupils with a higher level of the desire to do well. The importance of education and higher achievement at school has to be emphasised amongst pupils by the teachers and parents. Also, teacher education programmes need to emphasise techniques for the motivation of pupils. The guidance and counselling programmes in schools should be strengthened to address pupils" various needs.

2.4. Pupils problematic behaviour

The performance of pupils was affected by misconduct of pupils that included arriving late, physical fights,verbal abuse of pupils and teachers and absenteeism. Such behaviours should not be tolerated in schools. PTA,s and school management must draw up policies and guidelines for dealing with misconduct in schools.

3. Pedagogical Factors

3.1. Teacher qualification

About 80% and 20% of the pupils who were taught by teachers with at least a diploma or degree respectively, perfomed significantly higher that pupils" whose teachers had at least secondary education. The international average for teachers with a diploma and degree is 15% and 53% respectively. The percentage of teachers with a degree in Botswana is far less than the intenrational average whilst the percentage of teachers with diploma is much higher in Botswana. The MoESD should upgrade teachers to higher degree and higher qualification so that achievement in reading improves in Botswana.

3.2. Teacher job satisfaction

The proportion of pupils who were taught by teachers who perceived their job satisfaction to be high was at 39%, and the learners performed higher than the 60% whose teachers perceived their job satisfaction to be between medium and low. The teacher job satisfaction have to be sustained to raise it to higher levels for a great majority of teachers. The Ministry of Education and Skills Developmenrt should conitnuously engage teachers in consultative dialogue about their professional and welfare needs with a view to improving their job satisfcation.

3.3. Instructional Approaches

3.3.1. About 88% of the students were taught by teachers who indicated that students with disabilities limited how they taught their classes at least to some extent compared to 12% whose teachers said limitation to their teaching by such students did not apply. Teacher education programmes must infuse techniques for the teaching of learners with special needs.

3.3.2. Pupils who were taught by teachers who used more frequent individualised instruction (44%) performed higher than those whose teachers never. Class sizes should be reduced to cater for individualised instruction.

3.3.3. More frequent discussion of homework and monitoring if homework was completed had an impact on the performance in reading. Schools must develop policy on homework which will ensure that teachers increase the frequency of discussion and monitoring to improve reading. The policy should also accommodate the participation of parents.

3.4. Teachers understanding of school curricular goals and implementation

About 25% and 39% of pupils had teachers with medium to low understanding of the school curricular goals and its implementation respectively. Their performance was lower than that of pupils whose teachers highly understood the curriculum goals and implementation. Understanding curriculum goals and its implementation should be addressed at pre-service and in-service training.

4. School Factors

4.1. Conditions of buildings and working space

Only 10% of the pupils were taught by teachers who indicated that the conditions of buildings in the school were not a problem and they did not need repair. The performance of the learners was higher than that of the 90% of learners whose teachers indicated that the conditions of the buildings ranged from being a minor to being a serious problem. In addition to the conditions of the buildings, the adequacy of workspace for teachers influenced performance, with 32% of the pupils whose teachers stated that they had adequate space performing higher than those who said otherwise. MoESD should address conditions of buildings needing serious repair and provide adequate workspace for teachers.

4.2. Instructional materials

Only 6% of the learners were taught by teachers who indicated that the inadequacy of the instructional materials was not a problem. Their pupils performed higher than the 94% whose teachers stated that the inadequacy of the instructional materials ranged from being a minor to being a serious problem. To improve the reading skills, a substantial investment has to be made by the MoESD towards the improvement of the adequacy of the instructional materials.

4.3. Resource schools with libraries

About 50% of the pupils were from schools which did not have a library and their performance was lower than that of pupils in schools with libraries. The MoESD should provide libraries to those schools without libraries.

4.4. Computers for instructional purposes

The proportion of learners whose teachers used computers for instructional purposes was 5%, and those learners performed higher than those whose teachers did not use computers. Since instruction nowadays should prepare learners for the 21st century information age, there was a need to consider a major investment in teacher training, especially in the use of computers for instructional purposes. Examples of the benefits of

this included Singapore, where a phased programme was used to implement the use of digital instruction, which resulted in huge benefits in learner achievement.

4.5. Pre-school should be formalised

Pre-school attendance is not compulsory in Botswana, as such only slightly less than half (46.43%) of the pupils were sent to pre-schools by their parents, and that such pupils were found to perform significantly better than those who did not attend pre-school. Also those pupils who have done pre-literacy and pre-numeracy activities before schooling performed better. The MoESD should provide pre-school education in all primary schools in Botswana.

4.6. School age entry

About 11% of pupils entered school when 5 years or younger and performed better than those who entered at 6 years or older. The recommendation 16 of the RNPE should be reformed to allow both children in private and public schools to enter school at age 5.

5. Parental involvement

At least 88% of the pupils were taught by teachers who thought parental support and involvement was medium to low. The performance of those pupils was lower than that for the 12% whose teachers perceived parental involvement and support to be high. Programmes have to be designed and implemented by PTA"s and school management to ensure that parents support and get involved in the education of their children.

REFERENCES

Botswana Examinations Council, Botswana (2009). Botswana TIMSS Report . Gaborone; Government Printers and Publishing Services.

Republic of Botswana. (2001). Report on the Monitoring of Learning Achievement (MLA 2001) for Standard Four students. Gaborone; Ministry of Education.

Republic of Botswana (1994). Revised National Policy on Education. Gaborone; Government Printers.

Mullis, I. Martin, M., Kennedy, A., Trong, T., and Sainsbury, M., (2009). PIRLS 2011 International Results in Reading. Chestnut Hill; International Association for the Evaluation of Educational Achievement.

Mullis, I.V.S., Martin, M.O., Foy, P., & Drucker, K.T. (2012). PIRLS 2011 International Results in Reading Chestnut Hill, MA: TIMSS & PIRLS International Study Center, Boston College