

Progress in International Reading Literacy Study 2021

South African Main Report



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The contributing authors were Roux, K., van Staden, S., & Tshele, M. with additional commentary by the Department of Basic Education. For any enquiries relating to the report and further use of PIRLS data, please contact Dr M Chetty, Director of National Assessment at the Department of Basic Education. The Report can be referenced as follows:

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Dr. Mark Chetty

Director, National Assessments

Department of Basic Education





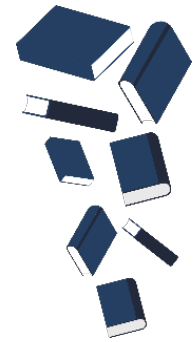
INTRODUCTION



INTRODUCTION

The Progress in International Reading Literacy Study (PIRLS) assesses reading comprehension and monitors trends and indicators of growth in reading literacy at five-year intervals. This project falls under the auspices of the International Association for the Evaluation of Educational Achievement (IEA). The PIRLS international scale has a range that is set from 0 to 1 000, with a centre point of 500, and a standard deviation of 100. PIRLS 2021 marks the fourth cycle of South Africa's participation in the study.

Studies like PIRLS allow participating countries to make international comparisons across education systems and monitor trends and indicators of growth in the early phases of children's education. While attention will be drawn to the overall league table standings that are released after every cycle to indicate country positions, the value of large-scale international assessments is most valuable in analysing data and trends against the IEA's tripartite curricular framework. In this framework, the link between the intended curriculum (as described by policy and curricular documents), the implemented curriculum (that which is taught in schools) and the attained curriculum (as seen by learner achievement) is essential for ensuring that assessment instruments that are developed are fair, reliable, valid and accurate for cross-national use.



It is important to note that PIRLS 2021 is the first international large-scale assessment to report achievement trends after successfully collecting data during the COVID-19 pandemic, assessing 400 000 students in 57 countries. PIRLS achievement trends in fourth grade reading show a negative impact from the COVID-19 pandemic; home and school socioeconomic status persist as strong indicators of achievement; most children attend schools with positive environments; and many learners and their parents only “somewhat” like reading.

Among the 57 participating countries, Africa is underrepresented and South Africa is one of three countries to participate with countries using developed education systems from the global north (Europe, North America, Middle and Far East). In the Sub-Saharan region, South Africa is the only participating country.

An added complexity is that South Africa is the only country in the PIRLS that stratifies its sample among 11 official language groupings resulting in a high percentage of low socio-economic schools featuring. Its diverse non-homogenous language context should always preface a deeper understanding of achieved reading literacy scores.

PIRLS OBJECTIVES

- To assess how well South African Grade 4 and 6 learners read, and to identify possible associated contextual factors.
- To compare the reading literacy of Grade 4 South African learners, both internationally and on a national level for all 11 official languages, and across all nine provinces.

PARTICIPATION IN PIRLS 2021

Traditionally, the PIRLS main study is conducted during two time periods. Under normal circumstances, participating countries from the Southern Hemisphere would have collected data from October to December 2020, when the school year for Grade 4 learners was close to its end.

Children are therefore tested at the end of an academic year, where they would have enjoyed the full benefit of a year's education. For Northern Hemisphere countries, data collection would typically occur from March to June 2021 since these months correspond to the end of the school year for Grade 4 learners from these countries, keeping the same rationale in mind that learners would have enjoyed the full benefit of a year's education.

SOUTH AFRICAN PARTICIPATION IN PIRLS 2021

Grade 4 learners were assessed across the 11 official languages. Grade 6 learners were assessed in English and Afrikaans. A total of 12 426 Grade 4 learners were assessed, and 9 317 Grade 6 learners were assessed. The PIRLS 2021 sample was nationally representative, and was stratified by language and province.

IMPACT OF COVID-19

COVID-19 unexpectedly brought all of the standard PIRLS plans and procedures to a halt in March 2020, and new strategies for data collection had to be devised. Only 43 countries managed to collect achievement data on schedule. For purposes of PIRLS 2021, data collection took place in three waves.



Wave 1 refers to most PIRLS 2021 countries, including the Northern Hemisphere countries that collected data during March–June 2021 and Southern Hemisphere countries that collected data according to the original schedule during October–December 2020.

Wave 2 refers to 13 Northern Hemisphere countries where COVID-19 led to school closures to the extent that Grade 4 children were tested in Grade 5 when they returned to school in September 2021.

Wave 3 refers to 3 countries that tested their learners at the end of Grade 4 in 2022. However, data was not collected in time for inclusion in the PIRLS 2021 international report.

South Africa collected data during Wave 1, August–December 2021. Plans for South Africa to test in 2021 had been in place before COVID-19 to create extra time for the translation process. This process is the most complex and time-consuming for instruments to be accurately translated into all 11 official languages. The IEAs translation verification process quality-assured all assessment instruments for South Africa.

Despite the COVID-19 pandemic South Africa ensured that data collection activities in both grades were completed with high participation rates. However, learners experienced incredible disruption to teaching and learning and research indicates that learners in all South African schools, especially those from the most fragile and vulnerable sectors of the school population experienced significant loss of learning and teaching time due to national lockdowns, school closures and rotational attendance.

ACHIEVEMENT ASSESSMENTS

Each learner was requested to complete an assessment booklet. Each booklet had two passages:

- Literary (fiction) passage;
- Informational (non-fiction) passage.

The international versions of the passages in US English were changed to UK English; the English passages were also contextualised for South Africa. The passages completed by Grade 4 learners were translated into 10 languages, whereas the Grade 6 passages were only translated into Afrikaans. Learners were tested in the Language of Learning and Teaching (LoLT) used in Grade 1-3 in their school.

The PIRLS assessment consists of 18 passages and accompanying questions. The passages are spread across 18 different booklets in accordance with the group adaptive design. This meant that 70% of the passages were less difficult and 30% more difficult. Children seated next to one another would answer different booklets.



QUESTIONNAIRES

There were five background questionnaires:

- Early Learning Survey (parent/guardian/home);
- School Questionnaire (principal);
- Teacher Questionnaire (classroom);
- Learner Questionnaire (student); and
- Curriculum Questionnaire (national).

CHAPTER 1

PIRLS in the South African context





Chapter 1: PIRLS in the South African context

1.1 Overview of the Progress in International Reading Literacy Study (PIRLS)

The Progress in International Reading Literacy Study (PIRLS) is a trend study undertaken every five years to measure trends in reading comprehension of children in year four of formal education. Under the auspices of the International Association for the Evaluation of Educational Achievement (IEA), studies like PIRLS allow participating countries to make international comparisons across education systems and monitor trends and indicators of growth in the early phases of children's education. While governments, policymakers, academics and education stakeholders are interested in the overall league table standings that are released after every cycle to indicate country positions relative to other participating countries, the value of large-scale international assessments are most valuable in analysing data and trends against the IEA's tripartite curricular framework (Robitaille, 1993, p. 26). In this framework, the link between the intended curriculum (as described by policy and curricular documents), the implemented curriculum (that which is taught in schools) and the attained curriculum (as seen by learner achievement) is essential for ensuring that assessment instruments are developed that are fair, reliable, valid and accurate for cross-national use.

The challenge in any large-scale study is to ensure that assessment instruments are developed that are fair, reliable, valid and accurate for cross-national use. Wagemaker (2020) states that the primary purpose of IEA studies is to establish as reliably and accurately as possible what learners have learnt after a certain period of schooling. Compositional change in terms of priority areas in the global education discourse, and the expansion of assessment activities nationally as countries participate in more assessment programs on offer, mean that countries have more choices in what to assess and at which level. However, these choices all play out against scientific standards of rigour such as reliability, validity, accuracy and fairness that remain at the forefront.

South Africa's participation in PIRLS dates back to its first participation in PIRLS 2006. Subsequently, participation took place in the 2011 and 2016 cycles with learner achievement that was available for nationally representative samples of South African Grade 4 learners. Table 1.1 provides information for the number of schools and learners in intact classes sampled across the PIRLS 2006, prePIRLS 2011 and PIRLS Literacy 2016 studies that tested learners at Grade 4 in the Language of Learning and Teaching (LoLT) during the Foundation Phase. These would be the languages in which learners were taught how to read from Grade 1 to Grade 3; therefore, Grade 4 achievement would represent the best approximation of the foundations of reading comprehension skills and abilities in the early grades. It has to be kept in mind that PIRLS participation at Grade 4 meant several permutations across cycles to accommodate participation in easier assessments (i.e. prePIRLS 2011 and PIRLS Literacy 2016) due to low performance in PIRLS 2006 (see Howie et al., 2017).

It is important to note that PIRLS 2021 is the first international large-scale assessment to report achievement trends after successfully collecting data during the COVID-19 pandemic, assessing 400 000 students in 57 countries. PIRLS achievement trends in fourth grade reading show a negative impact from the COVID-19 pandemic; home and school socioeconomic status persist as strong indicators of achievement; most children attend schools with positive environments; and many learners and their parents only “somewhat” like reading.

Among the 57 participating countries, Africa is underrepresented and South Africa is one of three countries to participate with countries using developed education systems from the global north (Europe, North America, Middle and Far East). In the Sub-Saharan region, South Africa is the only country participating.

An added complexity is that South Africa is the only country in the PIRLS that stratifies its sample among 11 official language groupings resulting in a high percentage of low socio-economic schools featuring. Its diverse non-homogenous language context should always preface a deeper understanding of achieved reading literacy scores.

Table 1.1 Number of schools and Grade 4 learners per cycle of PIRLS administration

	Number of sampled schools	Number of learners	Languages of testing
PIRLS 2006	429 schools	16 073	All 11 languages
prePIRLS 2011	341 schools	15 744	All 11 languages
PIRLS Literacy 2016	293 schools	12 810	All 11 languages

Historically, South Africa also opted to participate in Grade 5 to find evidence of progress once children advanced from Grade 4 to Grade 5. In Grade 5, children are in the Intermediate Phase, and the language of instruction would now mostly take place in Afrikaans or English. Table 1.2 provides information on the number of schools and learners who were sampled across cycles for purposes of PIRLS Grade 5 participation.

Table 1.2 Number of schools and Grade 5 learners per cycle of PIRLS administration

	Number of sampled schools	Number of learners	Languages of testing
PIRLS 2006	397 schools	14 657	All 11 languages
PIRLS 2011	92 schools	3 515	Afrikaans and English
PIRLS 2016	125 schools	5 282	Afrikaans, English and IsiZulu

Table 1.2 shows that Grade 5 sampled school numbers dropped drastically during the PIRLS 2011 and PIRLS 2016 cycles. This drop is because the main (and nationally representative) sample of schools for the 2011 and 2016 cycles was taken at the Grade 4 level. Therefore, Grade 5 participation in PIRLS 2011 and 2016 was in the form of benchmark participation and limited to selected languages of instruction only, as indicated by Table 1.2. Benchmark participation only (i.e. not a nationally representative sample of the population) at Grade 5 attempts to retain the Afrikaans and English trend in PIRLS 2011 and possible evidence of progress in PIRLS 2016 for IsiZulu, the largest of the African languages.

Across cycles, the overall achievement for South African learners remains disappointingly poor, with rankings amongst the lowest among participating education systems (see Howie et al., 2006; Howie et al., 2012; Howie et al., 2017). However, education researchers, policymakers and academics delve deeper into the data after each cycle and find emerging evidence of growth and improvement when looking at the microdata and specific sub-groups of learners where the national system's focus on improvement has been the greatest. With the release and availability of PIRLS 2021 results, it is hoped that a deeper investigation of these data will provide more insights to provide meaning to and justification for South Africa's participation in an international study such as PIRLS.

The challenge faced by large-scale international studies is twofold: firstly, to ensure validity and reliability where these studies are administered in countries that vary in terms of culture, language, economic development, national education systems and structures (such as inception year, curricular content to which learners are exposed). Secondly, to maintain scientific rigour against contexts where additional challenges that South Africa, as many other participating countries face, include available finances to secure large enough samples with high-quality data, local expertise to inform design decisions and assessment delivery, changing contexts (e.g. societal instability, unrest, or as we have experienced in 2020 and 2021, a global pandemic).

The next section outlines the importance of PIRLS 2021 from the perspective of the Sustainable Development Goals (SDGs) to inform progress.

1.2 How PIRLS can help with SDGs to inform progress

The United Nations Development Programme (UNDP) is one of the leading agencies that work to fulfil the SDGs by 2030. The 17 SDGs represent goals for social improvement (e.g. reducing hunger, poverty, and inequalities, and promoting health and well-being), the environment (e.g. climate action, clean energy, life below water, and life on land), economic development (e.g. industry maturation, increased innovation and infrastructure, decent work and economic growth). SDG 4 represents quality education, a goal that broadens opportunities across all phases, including primary, secondary education, vocational, higher and adult education, to encompass outcomes of literacy, numeracy and

broader aspirations such as citizenship, sustainability and gender equality (Unterhalter, 2019; Bruns et al., 2018; English et al., 2019).

Quality education as a goal is made up of several targets. In operationalising these targets, PIRLS can be instrumental in tracking and monitoring performance and mobilising the associated metrics that better depict the key tenets of the goal. These include:

1.2.1 Primary education (target 4.1)

Through the International Benchmarks, PIRLS can provide diagnostic evidence of children's reading comprehension skills and abilities when they reach year four of primary school, which translates to Grade 4 for most countries. PIRLS uses four benchmarks: Low International Benchmark, Intermediate International Benchmark, High International Benchmark and Advanced International Benchmark (Mullis et al., 2017). South African benchmark results from PIRLS Literacy 2016 served as the main point of reference for the president's State of the Nation Address (SONA) when it was stated that 78% of South African children do not reach the International Low Benchmark and therefore cannot read with understanding.

1.2.2 Early childhood (target 4.2)

In recent years, the importance of attending pre-primary school has gained momentum, with several initiatives by the National Department of Education to ensure that Early Childhood Education (ECE) receives attention to ensure school readiness and that adequate basic skills are in place for children entering the formal system from Grade 1 onwards. The PIRLS Learning to Read Survey (or Parent Questionnaire) assesses the availability of these facilities but also interrogates the kinds of early reading activities at home that parents afford their children.

1.2.3 Skills for work (target 4.4)

In addition to PIRLS, other international large-scale assessment results consistently show a gender difference for boys and girls in literacy, numeracy and science, as evidenced by the Trends in International Maths and Science Study (TIMSS). PIRLS data highlight the need for systemic intervention to ensure equitable skills for work but also point to differences in exposure to digital resources and technology that ensure relevant work skills for different labour market contexts.

1.2.4 Equity (target 4.5)

PIRLS allows for greater disaggregation of data by gender, indicators of socio-economic status and language to provide essential evidence for targeted intervention, monitoring and planning for crucial sub-groups of the population who may be at a continued educational disadvantage. The complex South African landscape means that achievement is often the result of low socio-economic status and lack of resources for a large proportion of children. With 11 official languages, PIRLS provides crucial evidence for reading comprehension skills and abilities in each of these languages to ultimately inform Language in Education Policy (LiEP) reforms, targeted resource provision across languages and equitable language development initiatives where these are needed most for under-performing or marginalised groups of learners, schools and communities.

1.2.5 Learning environment (target 4a)

PIRLS provides information on the quality of the learning environment. Teacher Questionnaires gather information about school safety issues and associated factors that severely impact teachers' ability to deliver the curriculum effectively. Learner Questionnaires gauge attitudes, opinions and instances of bullying and the severity thereof, as bullying may not only be a hindrance to academic performance and well-being in the early years but may well continue into secondary school and phases beyond the initial grades when firm foundations in a climate of safety and orderliness are of great importance.

1.2.6 Teachers (target 4c)

The supply of a qualified teacher workforce is crucial for every education system. While a universally accepted definition of a qualified teacher cannot be applied across contexts and participating countries, PIRLS provides information on the highest levels of qualification obtained for each country. Disaggregation of these data into the different sub-groups of teacher qualification remains the responsibility of national researchers to identify those teachers with the chances of the best-expected achievement based on their qualifications. While formal qualifications provide some indication of who is needed in front of the classroom to ensure success, other indicators of pedagogical training (such as classroom language, reading pedagogy, reading theory and assessment methods) refine the outcomes that are obtained over and above formal qualifications as the sole indicator of quality.

1.3 South Africa's participation in PIRLS 2021 during the COVID-19 pandemic

Traditionally, the PIRLS main study is conducted during two time periods. Under normal circumstances, participating countries from the Southern Hemisphere would have collected data from October to December 2020, when the school year for Grade 4 learners was close to its end. Children are therefore tested at the end of an academic year, where they would have enjoyed the full benefit of a year's education. For northern hemisphere countries, data collection would typically occur from March to June 2021 since these months correspond to the end of the school year for Grade 4 learners from these countries, keeping the same rationale in mind that learners would have enjoyed the full benefit of a year's education. In doing so, achievement data across countries are as comparable as possible by taking the time of testing in the academic year into account when all children would have had more or less the same exposure to schooling at the end of Grade 4 (i.e. nine years of age).

COVID-19 unexpectedly brought all of the standard PIRLS plans and procedures to a halt in March 2020, and new strategies for data collection had to be devised. For purposes of PIRLS 2021, data collection took place in three waves. Details of each wave and how data collection was affected for each country, depending on the COVID-19 situation, are described in the PIRLS 2021 International Report (IEA's Progress in International Reading Literacy Study, 2021). Wave 1 refers to most PIRLS 2021 countries, including the northern hemisphere countries that collected data during March–June 2021 and southern hemisphere countries that collected data according to the original schedule during October–December 2020.

South Africa collected data during Wave 1 during August–December 2021. Plans for South Africa to test in 2021 had been in place before COVID-19 to create extra time for the translation process. This process is the most complex and time-consuming for instruments to be accurately translated into all 11 official languages. The IEAs translation verification process to quality-assure all assessment instruments for South Africa is also time-consuming; therefore, any extra time afforded would ensure an end product of assessment instruments of the highest quality possible.

The COVID-19 pandemic affected the PIRLS 2021 main study data collection activities in South Africa to a relatively limited extent. However, challenges arose, which meant that initial appointments with schools for testing could not materialise, and follow-up appointments had to be made for second visits. Examples of such instances included:

- Administering tests in sampled classrooms was planned to take place in one day. However, instances occurred where schools chose to follow a limited physical presence of learners at the school due to COVID-19. This challenge meant that return visits were needed in several schools to test the remaining sampled classroom if only half of the sampled learners were present at the school on the original day of testing.
- Schools requested to change testing dates at short notice due to COVID-19-related concerns or unforeseen logistical matters.
- Specific areas posed challenges at specific times. So, for example, schools from a specific area in KwaZulu Natal closed or reported extremely low school attendance due to being classified as COVID-19 hot spots. These schools were contacted to reschedule testing dates where possible.
- The COVID-19 pandemic adversely affected learner attendance and made scheduling visits for test administration particularly difficult. At many schools, learner attendance was on a rotational basis, which resulted in the necessity of arranging multiple visits in more than one instance.
- In some schools, learners were split into multiple groups to accommodate social distancing, where schools had the requisite infrastructure. This split in classes resulted in additional fieldworkers having to be deployed to schools for test administration to be conducted according to IEA protocol and standards.

1.4 Methods

1.4.1 PIRLS 2021 data collection instruments

The PIRLS 2021 assessment consists of reading achievement booklets and contextual background questionnaires.

1.4.1.1 Achievement tests

PIRLS 2021 assesses Grade 4 reading comprehension with two purposes for reading:

1. Reading for literary experience, with reading passages of a fictional, narrative nature
2. Reading to acquire and use information, where texts are typically of a scientific, factual nature (Mullis et al., 2019).

Reading passages for both purposes are accompanied by multiple-choice or extended response

questions to a maximum of four points. Each question (or test item) is linked to one of four comprehension processes that measure children’s reading comprehension from basic to advanced, namely:

- focus on and retrieve explicitly stated information;
- make straightforward inferences;
- interpret and integrate ideas and information; and
- evaluate and critique content and textual elements.

Table 1.3 shows the percentage of each reading purpose and process of comprehension:

Table 1.3 Percentage composition by comprehension process

Purpose for Reading	Percentage coverage in PIRLS 2021
Literary Experience	50%
Acquire and Use Information	50%
Comprehension Process	
Focus on and retrieve explicitly stated information	20%
Make straightforward inferences	30%
Interpret and integrate ideas and information	30%
Evaluate and critique content and textual elements	20%

Mullis et al. (2019) make two important points in describing the PIRLS 2021 Assessment Framework:

1. The PIRLS 2021 reading achievement tests include reading passages that range in difficulty, but the assessment design allows for achievement to be reported across countries on the same achievement scale.
2. The introduction of digitalPIRLS 2021 to transition from paper-based booklets to assess learners using computer-based tasks. While digitalPIRLS 2021 expose learners to the same reading passages and questions as paper-based PIRLS 2021, this computer-based assessment looks and feels like the internet, a virtual environment to which children become more accustomed as internet reading increasingly becomes a key component of curricula worldwide.

While South Africa participated in a case study of ePIRLS 2016 to test the computer environment in a sub-sample of Gauteng schools (see Howie et al., 2017), PIRLS 2021 was administered as a paper-based assessment entirely since administering digitalPIRLS 2021 to nationally representative samples of learners in any grade is not yet possible.

1.4.1.2 Contextual background questionnaires

PIRLS 2021 administered four contextual background questionnaires to track trends in contextual changes and link contextual background factors to learner reading achievement (Mullis et al., 2019). These questionnaires include:

1. **The Home Questionnaire**, entitled 'Learning the Read Survey'. A parent or primary caregiver of each participating learner completed this questionnaire, which solicits information about reading in the home environment, such as early home activities, language spoken in the home, parent's level of education, and reading attitudes and behaviours. In South Africa, these questionnaires were translated into all 11 official languages, and parents completed the questionnaire in correspondence with the language in which their child was tested, along with an English version of all questions.
2. **The Teacher Questionnaire** was completed by the sampled PIRLS 2021 classroom teacher or the teacher responsible for reading instruction. This questionnaire seeks information on aspects of teaching in the classroom, ranging from teaching reading activities and strategies, the availability of resources, and teacher characteristics, such as career satisfaction, levels of education and participation in professional development activities.
3. **The School Questionnaire** was given to all sampled schools' principals to elicit information about the school environment and community in which it is situated, availability of resources and technology.
4. **The Learner Questionnaire**, which all learners completed once they completed the reading assessment. This questionnaire seeks information about the learners' home environment, attitudes and behaviours toward reading and their experience of reading instruction in school. It has to be noted that for purposes of administering the Learner Questionnaire in South Africa, group administration was possible in some schools where learners responded to the questionnaires by themselves. Provision was made for instances where learners were guided question-by-question by the fieldworkers to accommodate struggling learners in the best way possible. The Learner Questionnaire was translated into all 11 official languages, and learners responded to these questions in the same language in which they were tested.

In addition to these questionnaires, the NRC's completed Curriculum Questionnaires indicate how countries' respective education systems are structured and the expectations set by the curriculum in the early grades.



1.4.2 Field testing of instruments

Participation in PIRLS 2021 requires English-speaking participating countries to conduct field tests of all testing materials. Due to time restrictions, countries participating in the field test are only required to test instruments in English. The aggregate of these items' statistics provides enough information about the statistical properties of newly developed reading passages and test items included in the final set of achievement materials. Background questionnaires were administered too to ensure that contextual scale items function uniformly to provide an accurate picture of the contextual background obtained from school principals, teachers, learners and parents. The aim of the field test was, therefore, to:

1. Identify problematic passages or reading items in the achievement booklets and background questionnaires. These problems include, among others, item bias, or newly developed reading passages that prove to be inappropriate and are therefore excluded from the set of reading passages that are included in the final assessment in consultation with the Reading Development Group (RDG), the Questionnaire Development Group (QDG) and National Research Coordinators (NRCs) from each participating country.
2. Simulate the logistics of PIRLS 2021 test administration as closely as possible to the main study. In doing so, any problems related to logistics, unclear instructions in booklets, or any other standardised procedures that should be addressed before the main study are identified and refined.
3. Test procedures for booklet assembly and layout verification to ensure that all test booklets (with figures and illustrations) and background questionnaires appear the same across participating countries.

Table 1.4 shows that 29 classes were selected for the field test in South Africa:

Table 1.4 Number of test booklets in the South African field test

Data collection instrument	Number of booklets administered for field test purposes
Achievement Booklets	1 228
Student Questionnaires	1 230
Learning to Read Survey (Home Questionnaire)	1 013
Teacher Questionnaires	28
School Questionnaires	15

It is important to note that none of the PIRLS 2021 field test activities for South Africa were affected by the outbreak of the COVID-19 pandemic early in March 2020. Many countries already saw school closures in early March 2020, meaning field test activities had to be postponed to later. South Africa was one of the few countries that could administer the field test to all sampled schools by 12 March 2020, just before the national lockdown was announced. Meeting this deadline successfully meant that field test data was submitted to the IEA at the end of May 2020.

1.4.3 Adaptive design

One of the biggest changes to the PIRLS 2021 design cycle was the introduction of the Group Adaptive Design. During the PIRLS 2011 and PIRLS 2016 cycles, lower-performing countries could participate in prePIRLS 2006 and PIRLS Literacy 2016, respectively (see Mullis et al., 2012; Martin et al., 2017). These studies were similar to PIRLS in design and scope but with easier, less demanding reading passages. Countries could therefore decide which version of PIRLS would provide them with more accurate estimates of learner ability: PIRLS, with longer, more complex passages, or prePIRLS 2011 or PIRLS Literacy 2016, with easier, more accessible passages for developing readers. For example, based on poor performance in PIRLS 2006, South Africa opted to participate in PIRLS 2011 in Grade 5 and prePIRLS 2011 in Grade 4. Similarly, participation in PIRLS 2016 was at Grade 5 level, with PIRLS Literacy (previously referred to as prePIRLS in 2011) at Grade 4.

For purposes of PIRLS 2021, the study design did away with separate studies based on difficulty. Instead, a Group Adaptive Design was implemented, where all assessment passages were grouped into three groups: easy, medium and difficult, with three literary and three informational passages at each difficulty level (Mullis et al., 2019). Twelve of these passages were used in PIRLS 2016 and were re-administered in PIRLS 2021 for trend purposes, while six passages were newly developed and field tested for first-time administration in PIRLS 2021. This process means that a total of 18 passages were used in the PIRLS 2021 cycle.

According to Mullis et al. (2019), distinct differences between the easy, medium and difficult categories were essential. The easy passages consisted of 500 words, an average of 78% correct responses were required, and characterised by relatively accessible texts with clear, linear structure, explicit meanings with simply described characters, everyday vocabulary and straightforward sentence structures. The medium group of passages, at 700 words, required an average of 66% correct across the learner population and was characterised by texts of intermediate complexity. The difficult group of passages, at 850 words, were characterised by complex text that allowed for layers of meaning, plot twists, development of characters and abstract ideas. Imagery and figurative language categorised these passages as difficult, with only 40% average correct responses.

To ensure that the same assessment was administered in each country, all 18 passages were used, but in varying proportions of difficulty depending on the average reading ability of the learner population. These abilities were estimated from prior PIRLS results or the field test for countries that participated in PIRLS 2021 for the first time. Therefore, higher-performing countries administered achievement booklets with higher difficulty levels, while lower-achieving countries administered more achievement booklets¹ at an easier level. Table 1.5 illustrates this distribution according to country achievement profile:

Table 1.5 Country performance profiles and proportional booklet distribution by difficulty

Country performance profiles	Rating of achievement booklets
Countries with >550 average performance	70% difficult, 30% easy
Countries with average performance between 450 and 550	50% difficult, 50% easy
Countries with <450 average performance	30% difficult, 70% easy

¹ See Mullis et al., (2019) for a detailed description of how achievement booklets were assembled according to passage difficulty.

The Group Adaptive Design, therefore, exposes all countries to the same passages, with varying proportions of difficulty and overlap in performance between the cut-points from difficult to medium and medium to easy.

1.4.4 Sample procedures

For South Africa, the aim and ideal of participation in a study such as PIRLS were to obtain nationally representative data of the schooling system in terms of different languages and regions of the country for a particular learner population. The PIRLS assessment tests children at a critical time when they have been exposed to formal schooling for four years – for most children in participating countries, this translates to the age of ten or Grade 4.

The PIRLS sample size requirements demanded the participation of a minimum of 150 schools and 4 000 tested learners per country for accurate nationally representative estimates. From Table 1, it can be seen that the raw numbers of sampled schools differed across cycles for the Grade 4 cycles. The following sections detail the technical aspects of PIRLS sampling that are implemented to ensure that nationally representative results remain as accurate, valid and reliable as possible despite changes in raw numbers from one participation cycle to the next.

1.4.4.1 Decisions that inform PIRLS sampling procedures: Defining the target population

The IEA's decision to test learners after they have had at least four years of schooling (or reached Grade 4) is justified by several reasons. Firstly, testing an age cohort of learners as the unit of analysis brings challenges related to different enrolment policies regarding school starting age for different countries. While an age-based sample would be normally distributed, defining the population in such a manner would mean that learners selected for participation would have different amounts of exposure to schooling, resulting in compromised analyses because of a potentially significant grade effect (Wagemaker, 2020). However, a counter-argument for a grade cohort can also be made since a sample based on grade may also be open to potential maturational effects that can result in policies where learners of different ages can be placed in the same grade. According to Wagemaker (2020), the IEA's stance favours grade instead of cohort since school attendance and exposure to the curriculum develop learners' knowledge, skills and disposition, not ageing by itself. Secondly, the organisation of schooling based on grade means that instruction reflects a progressive advance in subject matter. Gauging skills and knowledge levels at Grade 4 and learners' exposure to such content is perhaps simpler than estimating the same skills and knowledge for age groups.

Further details of defining the target population are presented in PIRLS in a particular and detailed manner according to the International Standard Classification of Education (ISCED) scheme to describe levels of schooling across countries regardless of how systems are individually structured. As illustrated by Meinck (2020), PIRLS assesses:

“All learners enrolled in the grade that represents four years of schooling counting from the first year of ISCED Level 1, providing the mean age at the time of testing is at least 9,5 years (Martin et al. 2017, p.3.3).”

This definition provides for a minimum age since it is not recommended for children under 9,5 years to be tested in PIRLS due to its cognitive demands (LaRoche et al. 2016). It has to be kept in mind that while the IEA prescribes the grade of testing as specifically as illustrated above, participating countries have national options to test additional grades if it is in the national interest of the education system. So, for example, was South Africa's decision to test Grade 5 learners justified in PIRLS 2006

when low overall achievement was expected at Grade 4 and possible evidence of progress at Grade 5 was thought to provide valuable additional insight? Decisions to test learners at Grade 5 in the subsequent cycles attempted to retain trend data, at least for the best-performing languages in PIRLS 2011 (Afrikaans and English) and a continuation of the trend in 2016 for Afrikaans, English and evidence of growth in IsiZulu as a larger African language that has not been tested since PIRLS 2006.

1.4.4.2 Developing the sampling frames

According to Meinck (2020), the sampling frame is the list of units from which the sample is selected. This frame is devised in a collaborative effort between the PIRLS National Research Coordinator and the PIRLS sampling experts and contains the school population list with classes with learners in the target grade. Figure 1 provides an excerpt of the South African sampling frame as received from the Department of Basic Education's Education Management Information System (EMIS). This system contains all information on public schools in South Africa, information about the province in which the school is situated, the Language of Learning and Teaching (LoLT), the total number of learners per grade, its physical location and other contact information for each public primary school in South Africa.

Sampling procedures from the IEA follow steps of identifying schools from sampling frames that are eligible for selection, then sampling classes within these schools to test learners from intact classes. WinW3S software assists with these procedures to ensure that national research centres responsible for administering PIRLS can effectively and accurately identify classrooms and learners once school-level sampling has occurred.

It should be noted that a school sampling frame is rarely up to date. This fact is especially true for developing contexts, where information at school level is often available with some delay. These delays make contacting sampled schools to inform them of their selection to participate in PIRLS cumbersome and often result in even more delays in obtaining school-level information, such as class lists from which Grade 4 classes are randomly selected for test administration. In South Africa, inaccurate information from the sampling frame include, for example, problems with inaccurate school telephone numbers and, in some instances, an absence of telephones at schools. This lack of telephone contact means that communication with the school is limited to principals' (or other staff members') cellular phones and only if (and when) these numbers are available and still current. Schools in remote rural areas often lack cell phone network reception, so principals are difficult to get hold of and often request to be phoned at specific times when they are in areas with better reception. Additionally, these schools often lack physical addresses or exact locations that can be tracked down, even when using satellite technology. Alternative ways of obtaining correct information to contact schools include phoning nearby police stations or neighbouring schools for accurate information or visiting schools before test administration to confirm physical locations.

From the first cycle of PIRLS 2006 administration in South Africa to the most recent round of administration of PIRLS 2021, the National Department of Education has become increasingly involved in assisting the national research centre responsible for administering PIRLS. So, for example, have provincial coordinators from within the department been appointed to assist with problematic cases where initial contact with schools is challenging. Provincial coordinators have also proven indispensable in gathering subsequent information required from schools after the first contact. So, for example, were provincial coordinators valued partners in obtaining school class lists when repeated requests from the national coordinating centre have been unsuccessful, in assuring schools that the study is endorsed by the Ministry of Education, in securing cooperation from schools

who are unwilling to participate and as point of contact where schools are hesitant to provide the information requested.

Meinck (2020) mentions the importance of ensuring that eligible learners are represented only once in sampled classes. This requirement means that sampled classes within sampled schools contain mutually exclusive and exhaustive groups of learners, thereby reducing selection bias of learners within classes either not being eligible for testing or being eligible for testing multiple times.

1.4.4.3 Strategies used as part of PIRLS sampling procedures: Inclusion and exclusion criteria

Across cycles, PIRLS participation requirements are set at 85% of initially sampled schools. This requirement means that schools that were initially sampled but could not participate (e.g. due to closure, amalgamation with others in the area, or schools that no longer existed) were kept at a minimum. These non-participating schools are substituted by matched 'replacement schools' to meet sample size requirements. Although a system of up to two replacement schools is available, participating countries are discouraged from utilising replacement schools too often and are still required to have the participation of at least 50% of the initial sample of schools. This requirement ensures that no sample manipulation can occur; for example, national research centres, governments, funders or other stakeholders may want better-performing schools to replace poor-performing schools to ensure higher overall achievement. Stringency in participation rates ensures a random sample selection of schools from a national sampling frame for all participating countries.

In terms of classroom participation, a high rate of 95% of sampled classrooms is required. The substitution of classrooms is not permitted. In terms of learners and teachers, an 85% participation rate is required. Student participation is calculated at 85% of the selected learners at the national level, not necessarily for each participating school. As with classroom substitution, teacher substitution is not allowed since PIRLS requires teachers of participating Grade 4 classrooms to complete questionnaires relating teaching practices and classroom variables to student achievement at that particular sampled classroom-level.

Despite these stringent requirements, the PIRLS 2021 study makes provision for exclusions. Already in earlier cycles, Foy and Joncas (2003) provided reasons for exclusion, which are usually of a practical nature, for example, increased survey costs, increased complexity in the sample design or difficult test conditions. Exclusions could occur at school level, where entire schools are excluded, or within schools, where specific learners or specific classrooms are excluded from participation.

School-level exclusions were acceptable in cases where schools are:

- geographically inaccessible;
- extremely small in size that would not make adequate class size sampling requirements possible; and
- offer a curriculum or school structure profoundly different from the mainstream educational system.

Within-school exclusion criteria allow for the exclusion of the following learners:

- Intellectually disabled learners who are unable to follow the general instructions of the test. This criterion does not include learners with poor academic performance but only those professionally and psychologically evaluated as intellectually disabled.

- Functionally disabled learners who could not respond physically to a testing situation.
- Non-native language speakers, including those learners who cannot overcome the language barrier of the test.

Exclusions must be kept to a minimum, specifically not more than 5% of the national desired target population, both at school level and within-school samples.

To have valid and reliable data, ILSAs such as PIRLS must ensure that the population estimate is a mirror image of the entire population, which means that the data gathered should be precise enough for the intended purposes of the specific study (Meinck, 2020). The precision estimates of student achievement are viewed as the intended purpose of PIRLS. The IEA has a comprehensive set of guidelines for selecting samples for each of their studies, one of which is that all samples are random. These guidelines further state that studies may utilise stratification, cluster, and/or multiple-stage sampling. To determine the correct sampling technique, the IEA and the participating country select the best sampling technique based on the country's requirements while also meeting the requirements of the international assessment – these include unbiasedness and precision. For any participating country, including South Africa, a requirement is that the standard error should not be greater than 0,035 standard deviation units for the participating country's mean learner achievement (LaRoche et al., 2017).

PIRLS utilises a stratified two-stage cluster sample design, where:

- A sample of schools is selected as the first stage. During this stage, schools are sampled with probabilities to their size (PPS) based on the list of schools that meet the inclusion criteria. These schools may be stratified according to demographic variables such as province or language.
- The second stage involves the selection of one or more entire classes of learners from the target grade from each of the schools identified in the first stage. The class sampling is conducted using the Within-School Sampling Software (WinW3S). After the classes were selected, specific information was requested, such as the number of classes in the target grade and the number of learners within each class. When a class is selected, all learners in that class participate in the assessment (LaRoche et al., 2017).

When schools are selected during the first stage, it may happen that a school can no longer participate. The IEA planned for such occurrences by allocating two replacement schools to each sampled school. If the initially sampled school refuses to participate, these replacement schools may be contacted to participate. Replacement schools are made available to compensate for sample size loss because the original school is unwilling to participate in the study, but the use of replacement schools is limited. In the second stage, if a class refuses to participate in the study, it is not replaced, as mentioned earlier.

1.4.4.4 Stratification and sampling weights

Participating countries may wish to use stratification as part of the sampling process. This stratification entails arranging schools into groups (or strata) that share common characteristics, for example, geographical region, language of instruction, socioeconomic status and/or source of funding for the school. In South Africa, stratification is utilised to improve the efficiency of the sample design, which in turn ensures more reliable estimates by language and province within each language.

All statistical analyses are computed as weighted estimates of the matching population parameters (LaRoche et al., 2017; Meinck, 2020). Each learner's sampling weight is, in principle, the inverse of the learner's probability of selection in the study, but with suitable adjustments for non-responses. A stratified two-stage cluster sample design like that of PIRLS provides learner samples with equal selection probabilities. According to LaRoche et al. (2017), the PIRLS learner sampling weight is a mixture of a) weighting components which mirrors the selection probabilities and b) the sampling outcomes across three levels, namely school, class and learner. At each level above, the weighting component comprises a basic weight – the inverse of the selection probability at that level – and an adjustment for non-participation. As a result, the overall sampling weight for each learner is the combination of the school, class and learner weight components.

1.4.5 Grades assessed

For PIRLS 2021, one intact class from two grades was assessed: Grade 4 (across all 11 official languages) and Grade 6 (Afrikaans and English LoLT). Sections 1.4.5.1 and 1.4.5.2 provide detailed information for these samples, respectively.

1.4.5.1 Grade 4 sample information

PIRLS 2021 was administered to Grade 4 learners across all 11 official languages in South Africa. The average age for these learners was 10,5 years at the time of Grade 4 enrolment, and eligible learners were chosen from a population of 17 368 schools and 1 109 949 Grade 4 learners nationally. Table 1.6 describes the exclusions of schools that were not eligible for inclusion in the sampling frame:

Table 1.6 PIRLS 2021 Grade 4 coverage and exclusions

Description of exclusion	Number of schools	Number of Grade 4 learners
Special needs schools	7	300
Small schools (less than 10 Grade 4 learners)	1 617	9 216
Foreign language schools	13	884
Language of testing cannot be determined/No Foundation Phase	90	7 394
Sum of exclusions	1 727	17 794
Percentage of school-level exclusions	9,9%	1,6%
Eligible schools after exclusions	15 641	1 092 155

The Grade 4 sample was stratified by each of the 11 official languages, then by the nine provinces. Table 1.7 details the intended and attained sample of schools tested in Grade 4 in PIRLS 2021. South Africa reached a 97% school participation rate:

Table 1.7 School sample sizes: Grade 4

Number of schools in the original sample	Number of eligible schools in the original sample	Number of schools that participated	Number of replacement schools that participated	Total number of schools that participated
330	327	319	2	321

A total of 12 426 Grade 4 learners were assessed from a sampled total of 14 833 learners. Sampled learners who were not assessed include those absent on the day of testing, learners who were not in the class or school anymore, and exclusions described in Table 1.6.

1.4.5.2 Grade 6 sample information

PIRLS 2021 also tested a sample of Grade 6 learners in English and Afrikaans. A separate Grade 6 sample was not drawn; a maximised overlap of Grade 4 sampled schools was requested. This means all Grade 4 sampled schools offering Grade 6 were automatically included to test Grade 6 learners in Afrikaans and English. Decisions in previous cycles to test learners at Grade 5 in PIRLS 2016 attempted to retain trend data, at least for the best-performing languages in PIRLS 2011 (Afrikaans and English). As benchmark participants in these cycles, sample sizes were relatively small. Therefore, for PIRLS 2021, Grade 6 was tested from a nationally representative sample of learners to gauge performance at the end of the Intermediate Phase, where learners should be accustomed to using Afrikaans or English as LoLT.

The average age of Grade 6 learners were 12,5 years. These learners came from a total population of 16 518 eligible schools and a learner population of 929 960. Table 1.8 describes exclusions of schools that were not eligible for inclusion in the sampling frame:

Table 1.8 PIRLS 2021 Grade 6 coverage and exclusions

Description of exclusion	Number of schools	Number of Grade 4 learners
Special needs schools	8	262
Small schools (less than 10 Grade 4 learners)	1 769	10 214
Foreign language schools	12	846
Sum of exclusions	1 789	11 322
Percentage of school-level exclusions	10,8%	1,2%
Eligible schools after exclusions	14 729	918 638

Table 1.9 provides details of the intended and attained samples of schools where PIRLS 2021 took place for testing Grade 6 learners. South Africa reached a 98% school participation rate for Grade 6 learners. Readers are reminded that the Grade 6 sample overlapped as much as possible with the Grade 4 sample, meaning that a separate Grade 6 sample of schools was not drawn for testing. Instead, Grade 4 sampled schools that offered teaching at Grade 6 were used for both grades.

Table 1.9 School sample sizes: Grade 6

Number of schools in the original sample	Number of eligible schools in the original sample	Number of schools that participated	Number of replacement schools that participated	Total number of schools that participated
255	255	249	4	253

A total of 9 317 Grade 6 learners were assessed from a sampled total of 10 776 learners. Sampled learners who were not assessed include those absent on the day of testing, learners who were not in the class or school anymore, and exclusions described in Table 1.6.

1.4.6 Quality assurance procedures

1.4.6.1 Instrument translation quality assurance procedures

In consultation with the DBE, the translation process involved a consultative process where translators were required to discuss all PIRLS 2021 assessment materials during the translation process to ensure that translations were done as accurately as possible, taking the context of achievement and other materials at Grade 4 level as much as possible into consideration.

The finalised international instruments, including all reading passages, test items and background questionnaires, were provided to the participating countries on 27 August 2020. All the instruments were in US English. The first part of the translation process was to convert the six new PIRLS 2021 passages from US English to UK English. After this process, the PIRLS 2021 achievement passages were sent to a service provider for translation into the other ten South African languages, namely Afrikaans, IsiNdebele, isiXhosa, Sepedi, Sesotho, Setswana, Siswati, Tshivenda and Xitsonga.

Due to COVID-19 restrictions, introducing translators to PIRLS 2021 and providing training, assistance, and guidance took place virtually. During these sessions, issues were addressed, such as the required rigour of the translation process, directions for translations and the completion of the National Adaptation Forms (NAFs), which the IEA uses to track any translation deviations from the original English instruments.

The translation process was divided into five parts.

- **Forward translation**, where all the instruments were translated from English to 10 other South African languages.
- **Back translation**, where all translated texts were sent to separate language practitioners to be translated back into English.
- **Revision** of both forward translation and backward translation. Professional translators reviewed these translations.
- **Consultation** with the Department of Basic Education (DBE) and their team of language practitioners.
- **The reconciliation** of the original English text to both the back and forward translations. These texts were then compared with the original English text. The reviewer and the translator of the target language addressed discrepancies.

1.4.6.2 Data collection quality assurance procedures

The main study data collection for PIRLS 2021 occurred from August to October 2021. These activities are outlined below in terms of main study data collection training, monitoring training, data collection at sampled schools, monitoring activities and the role of the International Quality Control Monitor (IQCM), and data capture.

It should be noted that the COVID-19 pandemic affected the PIRLS 2021 main study to a limited extent. In a few cases, schools were visited on more than one occasion where learner presence was kept low by the school management. South Africa met international deadlines and submitted data on time to the IEA. In this regard, the DBE and its provincial coordinators were instrumental in its assistance in establishing follow-up communications with sampled schools, dealing with problematic schools that denied access for testing and negotiating new dates for testing in cases where schools were not available on initial dates of testing as arranged by the service provider.

1.4.7 Data collection procedures

This sections describe events and data collection procedures in more detail.

1.4.7.1 Data collection training

Training to conduct data collection or PIRLS 2021 across all nine provinces was undertaken online due to COVID-19 restrictions to travel to provinces physically. Fieldworkers, who were employed by the service provider responsible for PIRLS 2021 data collection from each province, and officials from the DBE attended the training at three different online events from 18–21 August 2021. Aspects that were discussed during fieldwork training, as indicated by the training presentation, included:

- Introduction to PIRLS
- The role of the test administrator
- Working with the test administration manual and the materials
- Preparation for fieldwork before testing
- On the day of testing
- After the testing
- Practice and scenarios
- Going over the processes together
- Dividing into groups for practice sessions
- Discussion: questions and challenges

As far as possible, data collection training followed the normal sequence and content despite the online format of the training. It had to be ensured that fieldworkers were familiar with the PIRLS

2021 instruments, test administration manual, exercise exposure, and handling different school scenarios as effectively as possible. Each training session was recorded, and the training videos were made available to SAB&T, the fieldworkers, and the DBE. Doing so enabled fieldworkers to review aspects covered during the training session.

1.4.7.2 Monitoring training

In addition to data collection as part of the PIRLS 2021 main study, monitoring occurred at 10% of the sampled schools to ensure that data collection activities adhered as far as possible to IEA standards and protocol. In addition to CEA staff, independent individuals were recruited and attended the monitoring training alongside DBE officials from the different provinces were also in attendance. Aspects covered during fieldwork monitoring training included:

- Introduction to PIRLS
- The role of the Monitor and Test Administrator
- Administering the PIRLS instruments
- Forms to be completed

During the training session, the attendees participated in a question-and-answer activity to ensure that all the monitors were familiar and comfortable with their role as PIRLS 2021 monitors.

1.4.7.3 International quality control monitoring (IQCM) activities

In addition to monitoring 10% of the sample, the International Quality Control Monitor (IQCM), whom the IEA appointed, monitored data collection activities in sampled schools in the Western Cape, the Eastern Cape and KwaZulu Natal. The IQCM reported their monitoring observations directly to the IEA and independent from the DBE or the CEA to ensure that quality assurance procedures during data collection were indeed accurately reported by an independent third party.

1.4.7.4 Scoring procedure quality assurance

Achievement booklets contained extended response questions that had to be completed by learners. The CEA recruited postgraduate students from the Faculty of Education, University of Pretoria, to assist with this task. Scoring training took place for five days to allow the recruited scorers to interact with the achievement material, go through each story and scoring guide, and then practice scoring from practice guides provided by the IEA. Some booklets were marked as reliability booklets as part of the scoring quality assurance procedure. Two different scorers marked these booklets – firstly on a separate scoring sheet by one scorer (Scorer A in case of a B booklet and vice versa) and then inside the booklet by the other scorer. As prescribed by the IEA, this process was done to ensure consistency in scoring between scorers.

Cross-country reliability scoring was conducted following the manual scoring of achievement booklets. As prescribed by the IEA, this process involved the scoring of English achievement booklets by South African scorers. Scores were captured electronically and shared with scorers from other English-speaking participating countries to ensure that scoring occurred consistently across countries. Trend reliability scoring was also conducted electronically for Afrikaans, English and isiZulu achievement booklets.

CHAPTER 2

Overall achievement results





Chapter 2:

Overall achievement results

2.1 Introduction

Chapter 2 details South African achievement in PIRLS 2021 in Grades 4 and 6. Two critical aspects of the PIRLS 2021 testing cycle need explanation before presenting the achievement results: data collection in waves of assessment and the effects of COVID-19.

As indicated in Chapter 1, the COVID-19 pandemic complicated PIRLS administration worldwide. Data collection took place in three waves as follows:

- **Wave 1** refers to the 41 countries that administered PIRLS 2021 as planned. These countries include the northern hemisphere countries that collected data during March–June 2021, as well as southern hemisphere countries that collected data according to the original schedule from October to December 2020 (except for South Africa, that tested during this time in 2021 to allow more time for quality assurance of translation procedures in addition to COVID-19 pressure). Wave 1 countries included Albania, Australia, Austria, Azerbaijan, Belgium (Flemish), Belgium (French), Brazil, Bulgaria, Chinese Taipei, Cyprus, Czech Republic, Denmark, Egypt, Finland, France, Germany, Hong Kong SAR, Italy, Jordan, Kosovo, Macao SAR, Malta, Montenegro, Netherlands, New Zealand, North Macedonia, Norway, Oman, Poland, Portugal, Qatar, Russian Federation, Serbia, Singapore, Slovak Republic, Slovenia, South Africa, Spain, Sweden, Turkiye and Uzbekistan, with Quebec Canada, Abu Dhabi and Dubai, UAE as benchmarking participants.
- **Wave 2** refers to 13 northern hemisphere countries where COVID-19 led to school closures to the extent that Grade 4 children were tested in Grade 5 when they returned to school in September 2021. These countries included Bahrain, Croatia, Georgia, Hungary, Ireland, Kazakhstan, Latvia, Lithuania, Morocco, Northern Ireland, Saudi Arabia, United Arab Emirates and the United States.
- **Wave 3** refers to 3 countries that tested their learners at the end of Grade 4 in 2022. However, data was not collected in time for inclusion in the PIRLS 2021 international report but will be included for trend purposes in the PIRLS 2021 International Database. These countries included England, Israel and the Republic of Iran.

These waves brought about complexities in data analysis for PIRLS 2021. Because COVID-19 necessitated data collection in waves, the comparability of results across and between countries was affected, specifically the comparability between Wave 1 and Wave 2 countries. Wave 2 countries collected data during a different time of year and issues of learner maturation, variation across countries in how the pandemic impacted primary school operations, interaction with education policies, mode effects, the general education environment, and the possible effects of COVID-19 may have provided Wave 2 countries with an advantage over Wave 1 countries. Despite these difficulties, the International Study Centre (ISC) at Boston College confirmed that all samples were adjudicated to have yielded high-quality data and analysis of results.

The second important point of consideration pertains to assigning COVID-19 as having causal effects on PIRLS 2021 results. While the pandemic certainly shows an association with PIRLS 2021 data patterns, the causal nature of these associations cannot be established beyond doubt. For this reason, descriptive results provide the safest route for reporting until the IEA can provide reliable estimates and methods that would enable causal inference, given the complexity of data for PIRLS 2021 globally.

The third important point is that Grade 4 results are unreliable because more than 25% of learners were at or below guessing. This statement means that estimates and predictions at Grade 4 level could not be made for achievement, as PIRLS 2021 was too difficult for many Grade 4 learners.

2.2 PIRLS 2021 countries

Table 2.1 lists countries that participated in PIRLS 2021, either in the digital assessment or the paper version. Countries could not participate in combining digitalPIRLS 2021 and the paper version during the PIRLS 2021 cycle.

Table 2.1 PIRLS 2021 participating countries

Albania	Hungary	Portugal
Australia	Islamic Republic of Iran	Qatar
Austria	Ireland	Russian Federation
Azerbaijan	Israel	Saudi Arabia
Bahrain	Italy	Serbia
Belgium (Flemish)	Jordan	Singapore
Belgium (French)	Kazakhstan	Slovak Republic
Brazil	Kosovo	Slovenia
Bulgaria	Latvia	South Africa
Chinese Taipei	Lithuania	Spain
Croatia	Macao SAR	Sweden
Cyprus	Malta	Turkiye
Czech Republic	Montenegro	United Arab Emirates
Denmark	Morocco	United States
Egypt	Netherlands	Uzbekistan
England	New Zealand	*Alberta Canada
Finland	North Macedonia	*British Columbia Canada
France	Northern Ireland	*Newfoundland and Labrador, Canada
Georgia	Norway (Grade 5)	*Quebec, Canada
Germany	Oman	*Moscow City, Russian Federation
Hong Kong SAR	Poland	*South Africa (Grade 6)
		*Abu Dhabi and Dubai UAE

- Green indicates participation in Paper PIRLS 2021
- Blue indicates participation in digitalPIRLS
- Countries with asterisks indicate benchmarking participants

The overall results for PIRLS 2021 for South Africa are presented in the next section against the background of COVID-19 perceptions as reported by learners' school principals and parents (or guardians). Based on school principal reports, 28% (SE=3,3) of Grade 4 learners were affected by more than eight weeks of instruction disruption due to COVID-19. These percentages remain relatively high for reports of five to eight weeks of disruption (14%, SE=2,6) and two to four weeks (28%, SE=4,0). Only 16% (SE=3,0) reported that school operations were unaffected, with 15% (SE=2.6) reporting less than two weeks. Reported patterns of disruption to schooling by number of affected weeks are similar for Grade 6 learners.

Parents of learners were asked whether their child stayed home during the COVID-19 pandemic and the extent to which they perceived their child's learning progress to have been adversely affected. In this regard, 68% (SE=1.1) of Grade 4 learners' parents and 73% (SE=1,2) of Grade 6 learners' parents indicated that their children stayed home. A majority of Grade 4 learner parents (56%, SE=0,8) indicated that their children were somewhat affected in their estimation, with different patterns observed for reports by parents of Grade 6 learners: 23% (SE=1,0) reporting that they were somewhat affected and 35% (SE=1,2) reporting that their children were adversely affected.

2.3 PIRLS 2021 overall achievement results for South Africa: Grade 4

2.3.1 Grade 4 Overall Results

South African Grade 4 learners achieved 288 (SE=4,4) scale score points in PIRLS 2021. Figure 2.1 illustrates these results when compared to countries who were closest in achievement to South Africa (Egypt, Jordan, Kosovo and Brazil) and top-performing countries (Russian Federation, Hong Kong SAR and Singapore):

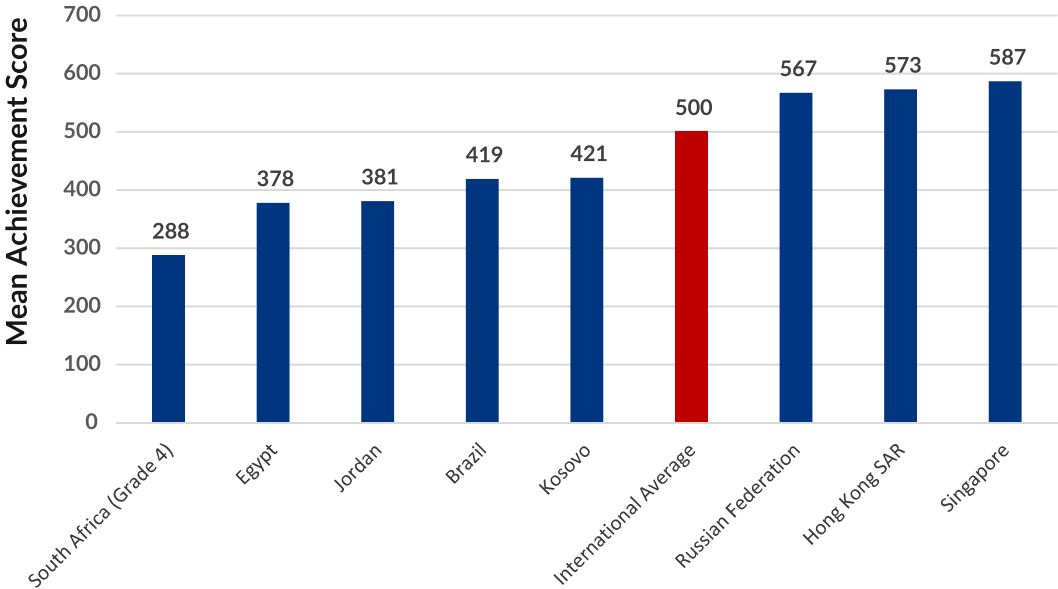


Figure 2.1 Overall PIRLS 2021 South African Grade 4 achievement

South African Grade 4 reading literacy achievement in PIRLS 2021 is 32 scale points lower than the overall score of 320 (SE=4,4) in PIRLS 2016.

2.3.2 Multiple comparisons of reading achievement by language in Grade 4

Table 2.2 details overall achievement at Grade 4 for each of the 11 official languages in which learners were tested. As observed during previous PIRLS cycles, achievement remains the highest for Grade 4 learners tested in Afrikaans and English. A substantial drop in achievement is observed for learners tested across each of the remaining African languages, with learners tested in Xitsonga, Sepedi and Setswana representing the lowest achievement in the language of the test.

Table 2.2 PIRLS 2021 Grade 4 Achievement by language of the test

	Percent	Percent (s.e)	Mean	Mean (s.e)
Afrikaans	9%	1,3	387	15,4
English	22%	2,0	382	14,5
isiZulu	20%	1,5	267	6,5
Sesotho	8%	2,8	258	10,9
siSwati	2%	0,2	257	6,2
Tshivenda	2%	0,2	255	9,0
isiNdebele	1%	0,0	255	9,8
isiXhosa	15%	1,4	254	8,1
Xitsonga	3%	0,4	223	13,2
Sepedi	10%	0,7	216	8,7
Setswana	8%	0,6	211	7,3

Figure 2.2 illustrates these results visually, where poor achievement of African languages below the overall South African score of 288 points (SE=4,4) is observed. While Grade 4 learners tested in Afrikaans and English are the best performers in the South African testing languages in PIRLS 2021, these average achievement scores remain far below the international average score of 500. The evidence that Afrikaans and English learner performance is above the overall South African score is encouraging. However, when interpreted against the international mean, it still falls below the international mean, separating high and poor-performing countries and sub-populations within countries.

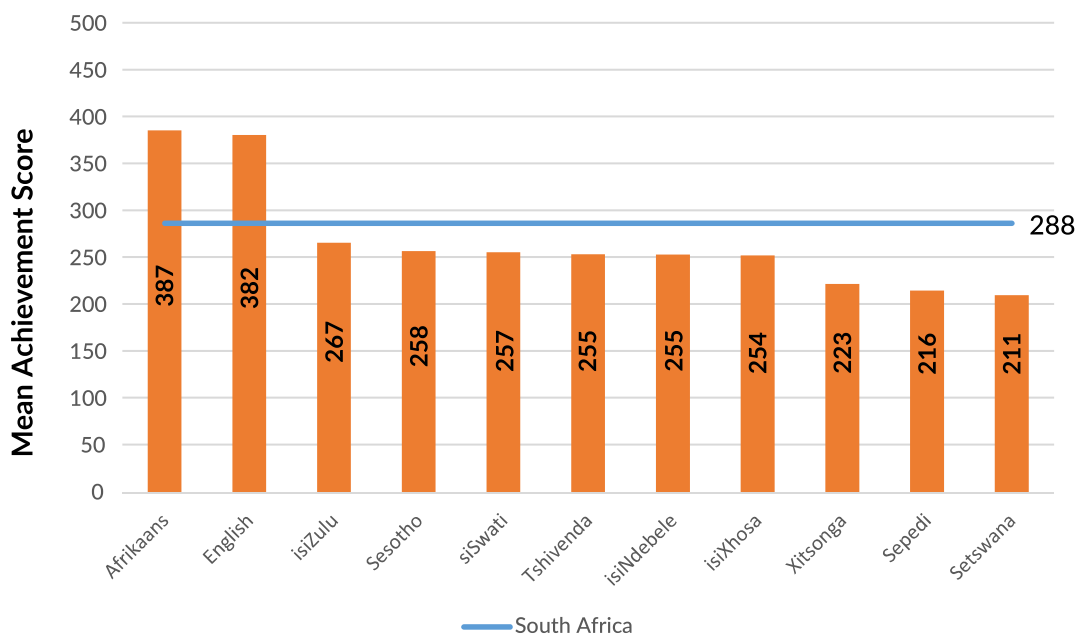


Figure 2.2 PIRLS 2021 Grade 4 achievement by test language

Figure 2.3 illustrates the percentage of Grade 4 learners who wrote the PIRLS 2021 test in the same language they speak at home and the percentage of learners who wrote the PIRLS 2021 test in a language different from what is dominantly spoken at home. Encouragingly, more than two-thirds of Grade 4 learners reported a coincidence between the language they tested and what is most spoken at home. By implication, it can be said that most Grade 4 learners tested in PIRLS 2021 were tested in the language in which they received reading instruction in the Foundation Phase since the language of the PIRLS 2021 test coincided with the schools' Language of Learning and Teaching.

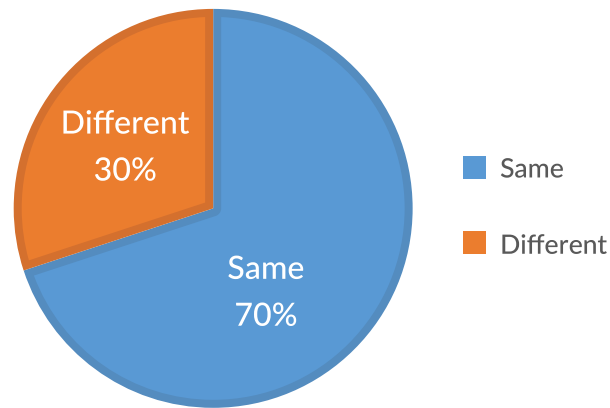


Figure 2.3 Grade 4 percentage coincidence between language of testing and language spoken at home

Interestingly, Table 2.3 indicates that the difference in overall achievement between learners for whom the language of the PIRLS test coincided with the language they speak mostly at home and for those for whom it did not does not result in statistically significant results.

However, a disaggregation of results per language dissects these overall results more to indicate results per language of testing and where statistically significant differences occurred. More specifically, the reading achievement was statistically better for learners who were tested in Afrikaans, English, isiXhosa, isiZulu, Sepedi and Setswana when these were the languages they spoke most at home.

As indicated by Table 2.3, learners tested in English still constitute the most heterogeneous group for whom differences between the PIRLS 2021 test language and language spoken at home exist. This evidence perhaps points to parental choices in favour of English as a better option for their children than other languages of instruction in the early grades.



Table 2.3 Statistically significant differences for coincidence between the language of the PIRLS test and the language most spoken at home

Test Language		Percent	Percent (s.e)	Mean	Mean (s.e)	t-value	Significance
South Africa	Same	70%	1,6	291	5,2	0,0	■
	Different	30%	1,6	293	7,6	0,0	
Afrikaans	Same	80%	3,3	398	16,6	-2,0	▲
	Different	20%	3,3	363	16,8	2,0	
English	Same	35%	3,9	433	16,1	-4,9	▲
	Different	65%	3,9	356	15,5	4,9	
IsiNdebele	Same	74%	2,4	256	12,2	0,0	■
	Different	26%	2,4	256	14,1	0,0	
IsiXhosa	Same	82%	1,5	268	8,7	-2,3	▲
	Different	18%	1,5	238	15,0	2,3	
IsiZulu	Same	84%	1,6	276	5,9	-3,8	▲
	Different	16%	1,6	240	11,7	3,8	
Sepedi	Same	81%	2,7	225	7,8	-3,5	▲
	Different	19%	2,7	184	14,2	3,5	
Sesotho	Same	79%	8,1	264	9,2	-1,4	■
	Different	21%	8,1	243	16,9	1,4	
Setswana	Same	63%	3,0	228	7,9	-5,6	▲
	Different	37%	3,0	194	6,7	5,6	
SiSwati	Same	75%	2,8	264	6,4	-1,5	■
	Different	25%	2,8	243	13,5	1,5	
Tshivenda	Same	79%	2,0	258	9,0	-1,0	■
	Different	21%	2,0	243	15,9	1,0	
Xitsonga	Same	79%	3,1	227	14,4	-1,2	■
	Different	21%	3,1	213	15,6	1,2	

- ▲ Significantly higher than
 - Not significantly different than
 - ▼ Significantly lower than
- Significance level < 0,05

Table 2.4 and Figure 2.4 describe provincial achievement in descending order for PIRLS 2021. Provincial comparisons of PIRLS 2021 achievement have to be interpreted with caution. Firstly, the South African sample was explicitly stratified by each of the 11 official languages, then implicitly by each of the provinces where these languages appear proportionally within each province. Therefore, the PIRLS 2021 Grade 4 South African sample paints a nationally representative picture by language, a main determinant of achievement in South Africa and essential for the Department of Basic Education to know. Secondly, any provincial achievement results from PIRLS 2021 merely reflect a snapshot of reading achievement for a specific province at the time of data collection. Any links to possible causal

effects (e.g. COVID-19 or national reading interventions that targeted specific provinces or districts) should be made with caution. Thirdly, large standard errors, as indicated by Table 2.4 for provinces like the Northern Cape, impede the reliability with which results can be interpreted to be an accurate reflection of achievement, possibly due to small sample sizes of the province in proportion to its representation with other provinces in South Africa.

Table 2.4 PIRLS 2021 Grade 4 provincial achievement

Province	Percent	Percent (se)	Mean	Mean (se)
Western Cape	9,4%	0,4	363	14,0
Gauteng	18,1%	1,5	320	16,1
KwaZulu Natal	19,8%	1,2	297	7,9
Free State	6,7%	2,9	285	18,4
Northern Cape	3,4%	0,9	284	39,3
Eastern Cape	14,7%	1,5	271	8,5
Mpumalanga	7,7%	0,4	264	13,2
Limpopo	14,4%	0,9	244	10,2
North West	5,8%	0,8	232	16,5

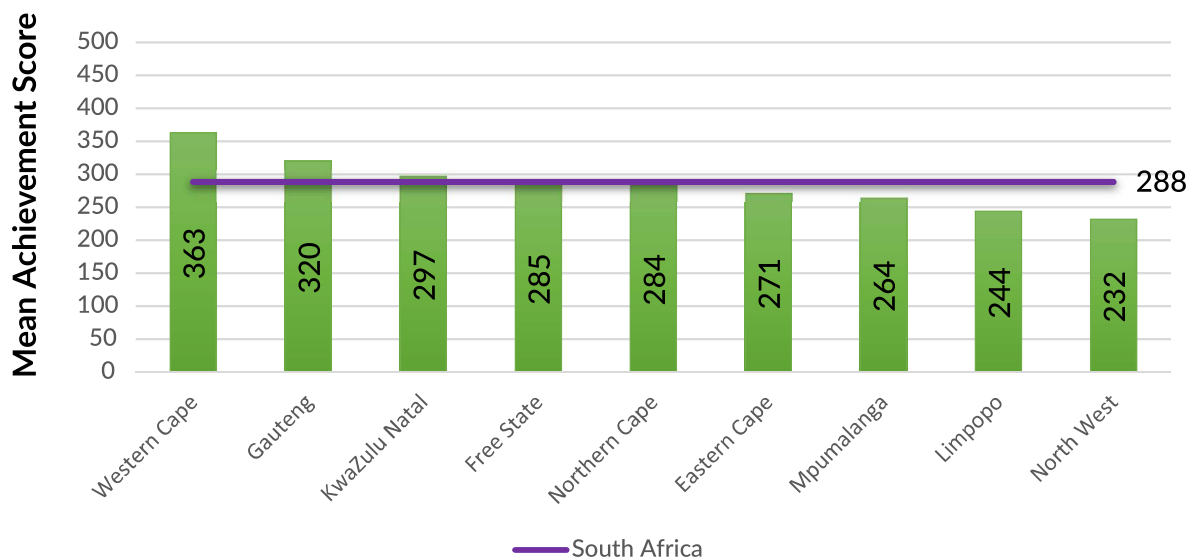


Figure 2.4 PIRLS 2021 Grade 4 provincial achievement against overall South African achievement

In terms of comparisons between provinces, further information is presented in Table 2.5, which illustrates each province's overall achievement compared to each other province. So, for example, is Western Cape performance statistically significantly higher than for all provinces except the Northern Cape (but the reader here points to the large SE for the Northern Cape as discussed in an earlier section).

Table 2.5 Between-province comparisons on differences in overall PIRLS 2021 Grade 4 achievement

Province	Mean	Western Cape	Gauteng	KwaZulu Natal	Free State	Northern Cape	Eastern Cape	Mpumalanga	Limpopo	North West
Western Cape	363		▲	▲	▲	■	▲	▲	▲	▲
Gauteng	320	▼		■	■	■	▲	▲	▲	▲
KwaZulu Natal	297	▼	■		■	■	▲	▲	▲	▲
Free State	285	▼	■	■		■	■	■	▲	▲
Northern Cape	284	■	■	■	■		■	■	■	■
Eastern Cape	271	▼	▼	▼	■	■		■	▲	▲
Mpumalanga	264	▼	▼	▼	■	■	■		■	■
Limpopo	244	▼	▼	▼	▼	■	▼	■		■
North West	232	▼	▼	▼	▼	■	▼	■	■	

▲ Significantly higher than

■ Not significantly different than

▼ Significantly lower than

Significance level < 0,05

2.3.3 Trends in reading achievement across PIRLS cycles

One of the points of interest in PIRLS is evidence of trend growth (or decline) from one cycle to the next. To establish a trend from PIRLS 2016, PIRLS 2021 requires a different cohort of Grade 4 learners to respond to a selection of the same reading passages to which learners responded in PIRLS 2016. Figure 2.5 illustrates a decline in trend from PIRLS 2016 to PIRLS 2021.

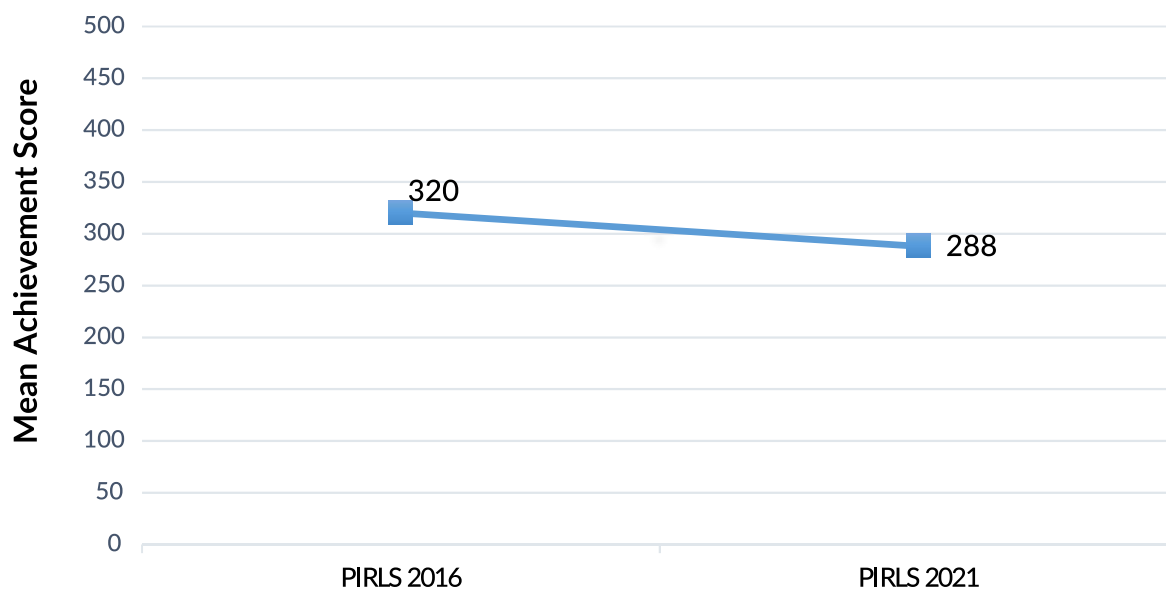


Figure 2.5 Trends in overall Grade 4 achievement across PIRLS 2016 and PIRLS 2021 cycles

The differences in scores from PIRLS 2016 to PIRLS 2021 are significant. Of the 41 countries participating in Wave 1, 35 were repeat participants, which meant it was possible to ascertain trend achievement. Of these 35 countries, 26 countries from both developed and developing contexts saw a decline in PIRLS trends from 2016 to 2021.

2.3.4 Reading achievement by gender

The PIRLS 2021 Grade 4 results by gender for South Africa follow international patterns where girls outperform boys, as illustrated by Figure 2.6. It has to be noted that participating countries were allowed to make national adaptations based on national needs to provide more response options (e.g. transgender, other) about gender. The Learner Questionnaire administered in South Africa simply asked learners whether they were boys or girls.

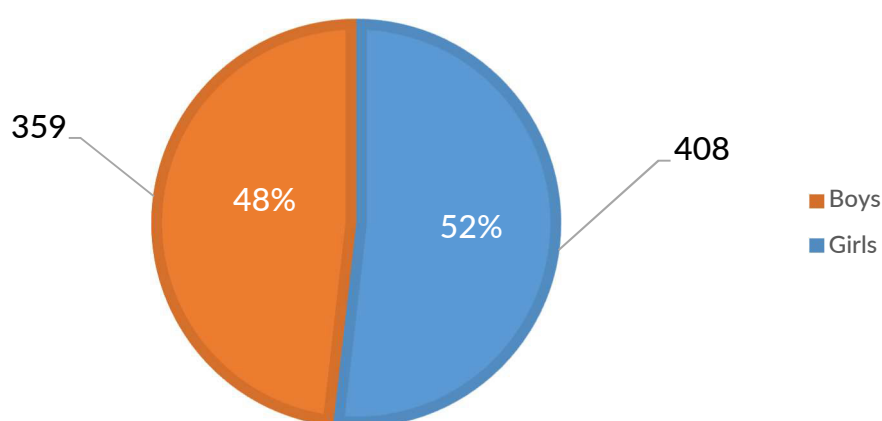


Figure 2.6 Overall PIRLS 2021 Grade 4 achievement comparison by gender

2.3.5 Trends in reading achievement by gender

Table 2.6 presents a picture of trends in overall achievement by gender from PIRLS 2016 to PIRLS 2021. These trends mirror the overall national trends, where performance was lower in PIRLS 2021 when compared to PIRLS 2016. More specifically, the trend decline went from 347 points for girls in PIRLS 2016 to 317 points in PIRLS 2021. For boys the decline is equally stark, with a decline from 295 points in PIRLS 2016 to 260 points in PIRLS 2021.

Table 2.6 Grade 4 Trends in reading achievement by gender

Cycle	Girls				Boys			
	% of learners	SE of %	Average Achievement	SE	% of learners	SE of %	Average Achievement	SE
PIRLS2016	48%	0,7	347	4,0	52%	0,7	295	5,1
PIRLS2021	49%	0,6	317	4,4	51%	0,6	260	5,0

2.3.6 Performance by discrete international benchmarks

PIRLS 2021 provides results for achievement at each of four International Benchmarks, namely achievement at the Advanced International Benchmark (625 points), the High International Benchmark (550 points), the Intermediate International Benchmark (475 points) and the Low International Benchmark (400 points).

Evidence of achievement that falls short at the Low International Benchmark in PIRLS 2016 (see Howie et al., 2017) was used in the president's State of the Nation Address to refer to the fact that 78% of Grade 4 learners cannot read for meaning. This same evidence is used by the Human Rights Commission, which declared basic reading skills a human right all children in South Africa should have attained by age 10.

Table 2.7 shows overall results for South African Grade 4 learners and confirms a stable trend for lack of achievement for 81% of learners who could not reach the Low International Benchmark. This finding implies that 81% of South African Grade 4 learners cannot provide evidence of basic reading skills at the lowest achievement level, such as retrieving and stating explicitly mentioned detail in the text when reading a literary passage. For informational passages, the ability to locate and reproduce two or three pieces of information or use subheadings, textboxes and illustrations to locate parts of the text is still lacking.

A total of 19% of Grade 4 learners can reach the Low International Benchmark, but the percentages of Grade 4 learners show a marked decrease in achievement at each increment of a higher benchmark. So, for example, only 1% of Grade 4 learners in South Africa can interact with and respond to PIRLS 2021 literary texts fully by providing evidence of integrating ideas and evidence to appreciate overall themes and interpret story events and character actions (e.g. motivation, reasons, feelings) with text-based support. For informational texts, this 1% of learners show evidence of distinguishing and interpreting complex information from different parts of the text while integrating information across a text to provide text-based support for explanations, significance, and sequence of activities.

INTERNATIONAL BENCHMARKS

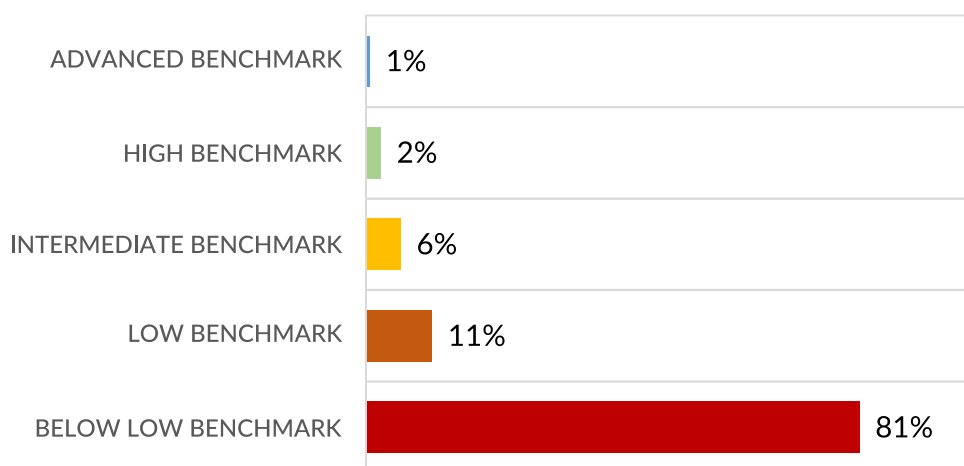


Figure 2.7 Overall Grade 4 results by international benchmarks

Table 2.7 disaggregates the overall benchmark results by each of the 11 official languages in which testing occurred. Just over half of the Grade 4 learners tested in Afrikaans and English did not reach the Low International Benchmark. These percentages rise steeply for learners tested across other African languages, with so much as 97% of learners tested in Sepedi who could not reach the Low International Benchmark. Note: Figures rounded to 1 decimal place.

Table 2.7 Grade 4 benchmark achievement by the language of testing

	Did Not Reach Low Benchmark	Low Benchmark	Intermediate Benchmark	High Benchmark	Advanced Benchmark
Afrikaans	51,7%	19,4%	17,1%	8,8%	3,1%
English	51,5%	22,9%	16,4%	7,5%	1,7%
isiNdebele	93,0%	6,0%	1,0%	0,0%	0,0%
isiXhosa	90,8%	7,5%	1,7%	0,0%	0,0%
isiZulu	91,7%	7,6%	0,7%	0,0%	0,0%
Sepedi	96,5%	3,3%	0,2%	0,0%	0,0%
Sesotho	93,0%	6,0%	1,0%	0,0%	0,0%
Setswana	97,5%	2,3%	0,2%	0,0%	0,0%
siSwati	91,6%	7,2%	1,2%	0,0%	0,0%
Tshivenda	92,2%	7,1%	0,7%	0,0%	0,0%
Xitsonga	95,4%	4,1%	0,4%	0,0%	0,0%
South Africa	80,5%	10,8%	5,6%	2,4%	0,6%

2.3.7 Trends in performance by cumulative international benchmarks

Table 2.8 details the trends in benchmark performance across PIRLS 2016 and PIRLS 2021. While trends for the Intermediate, High and Advance International Benchmarks remained stable, the most significant change across cycles is observed for smaller percentages of Grade 4 learners who reached the Low International Benchmark, which fell from 22,1% in PIRLS 2016 to 19,5% in PIRLS 2021. Despite the drop in PIRLS 2021, the slow and steady growth at the top end of the benchmark scale could mean that more children are at least attempting items in the PIRLS 2021 reading passages and that more children are getting the basic items right that require focusing on and retrieving explicitly information that is stated in the text.



Table 2.8 Grade 4 trends in performance by cumulative international benchmarks

	Cycle	Percent	SE
Did Not Reach Low Benchmark	PIRLS2016	77,9%	1,5
	PIRLS2021	80,5%	1,2
Reached Low Benchmark	PIRLS2016	22,1%	1,5
	PIRLS2021	19,5%	1,2
Reached Intermediate Benchmark	PIRLS2016	7,5%	1,0
	PIRLS2021	8,7%	0,9
Reached High Benchmark	PIRLS2016	1,9%	0,4
	PIRLS2021	3,0%	0,5
Reached Advanced Benchmark	PIRLS2016	0,2%	0,1
	PIRLS2021	0,6%	0,2

Figure 2.8 illustrates the trends in international benchmark performance graphically:

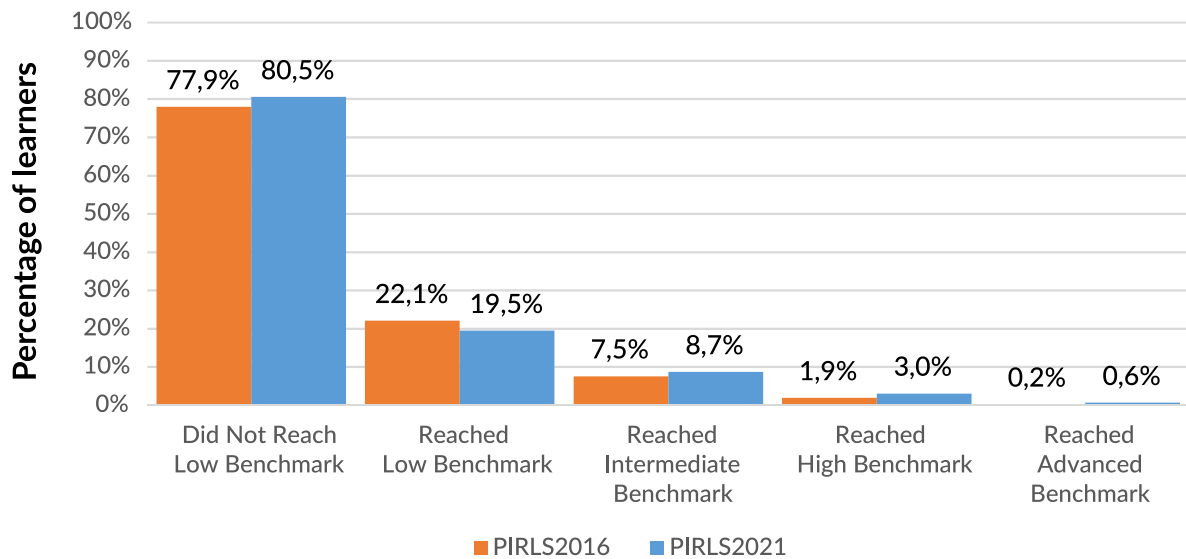


Figure 2.8 Grade 4 trends in international benchmark performance



2.4 PIRLS 2021 overall achievement results for South Africa: Grade 6

2.4.1 Grade 6 overall results

South African Grade 6 learners achieved 384 (SE=4,5) scale score points in PIRLS 2021. Figure 2.9 illustrates these results when compared to countries who were closest in achievement to South Africa (Egypt, Jordan, Brazil and Kosovo) and top-performing countries (Russian Federation, Hong Kong SAR and Singapore):

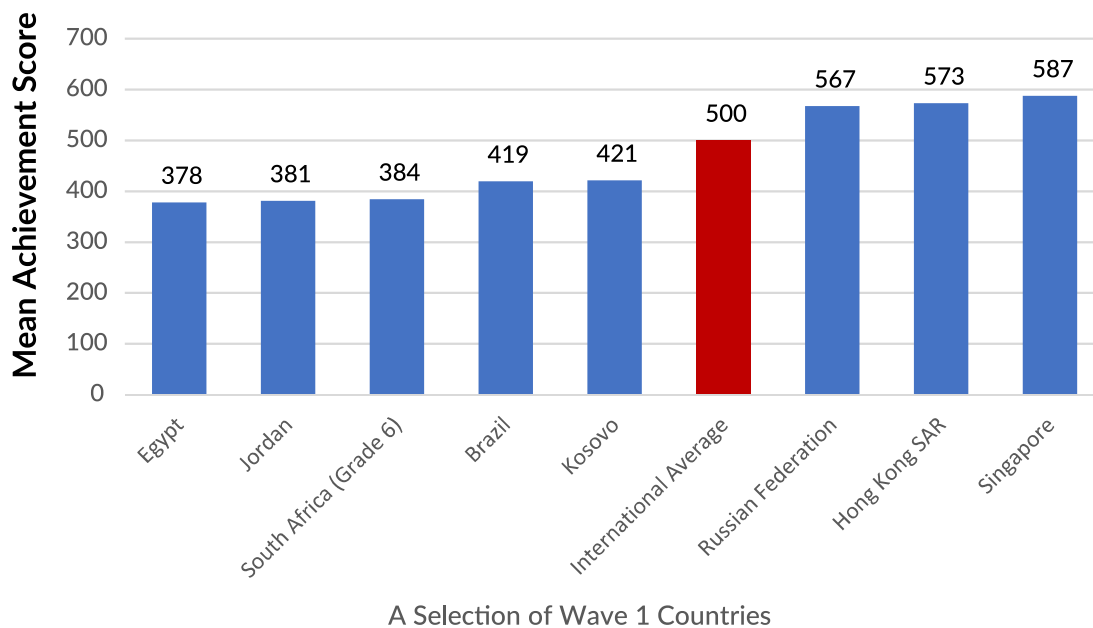


Figure 2.9 Overall PIRLS 2021 South African Grade 6 achievement

South African Grade 6 reading literacy achievement in PIRLS 2021 is 116 scale points below the International Centre point of 500 for Grade 4 learners internationally.

2.4.2 Multiple comparisons of reading achievement by language in Grade 6

Table 2.9 details overall achievement at Grade 6 for each of the two official languages in which Grade 6 learners were tested: Afrikaans and English.

Table 2.9 PIRLS 2021 Grade 6 achievement by language of the test

	Percent	Percent (s.e)	Mean	Mean (s.e)
South Africa (Grade 6)	100%	0,0	384	4,5
Afrikaans	9%	1,3	456	14,2
English	91%	1,3	377	4,9

Figure 2.10 illustrates these results visually, where learners tested in Afrikaans achieved 456 points (SE=14,2) compared to English learners at 377 points (SE=4,9). The evidence presented here shows that Afrikaans and English learner performance in Grade 6 is encouraging. However, when interpreted against the international mean, it still falls below international mean achievement, separating high and poor-performing countries and sub-populations within countries at Grade 4 level.

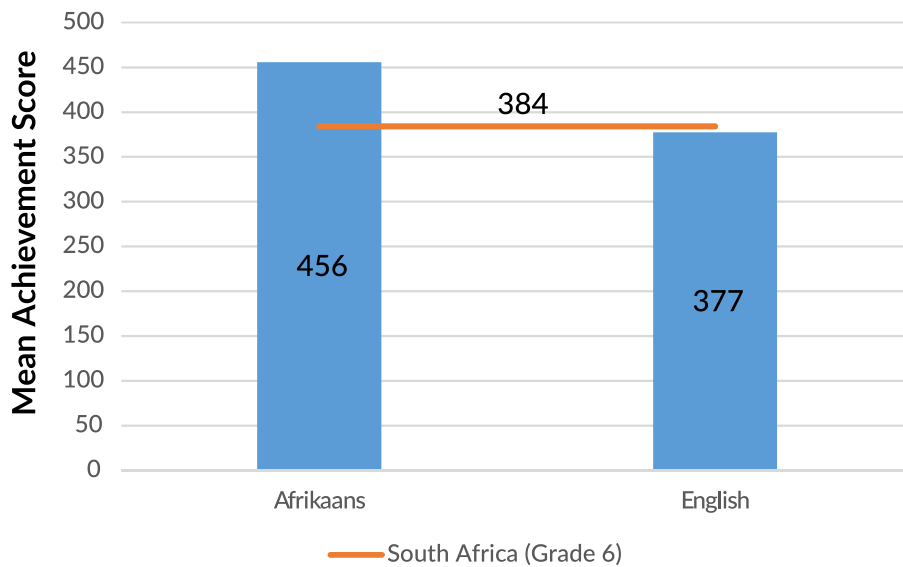


Figure 2.10 PIRLS 2021 Grade 6 achievement by language of the test

Figure 2.11 illustrates the percentage of Grade 6 learners who wrote the PIRLS 2021 test in the same language they speak at home and the percentage of learners who wrote the PIRLS 2021 test in a language different from what is dominantly spoken at home. More than three-quarters of Grade 6 learners reported no coincidence between the language they tested and what is most spoken at home. By implication, it can be said that 17% who reported a coincidence may well be the Afrikaans and English group of learners who have been receiving home language instruction since the Foundation Phase, continuing well into the Intermediate Phase.

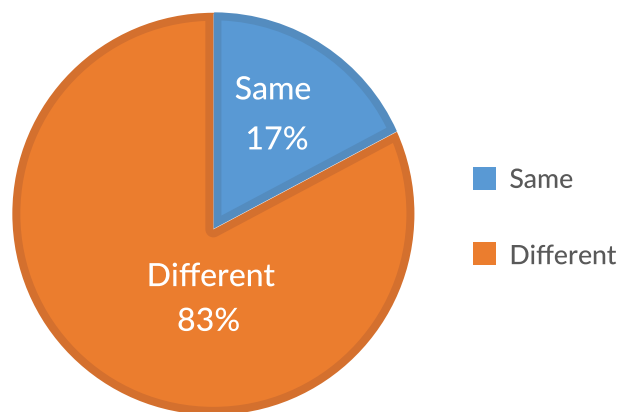


Figure 2.11 Grade 6 percentage coincidence between language of testing and language spoken at home

Interestingly, Table 2.10 indicates that the difference in overall achievement between learners for whom the language of the PIRLS test coincided with the language they speak mostly at home resulted in statistically significant results.

As indicated by Table 2.10, learners tested in English still constitute the most heterogeneous group for whom differences between the PIRLS 2021 test language and language spoken at home exist.

This evidence perhaps points to parental choices in favour of English as a better option for their children than other languages of instruction in the early grades.

Table 2.10 Statistically significant differences for coincidence between Language of the PIRLS test and language most spoken at home

Test Language		Percent	Percent (s.e)	Mean	Mean (s.e)	t-value	Significance
South Africa	Same	17%	1,3	489	9,3	-11,5	▲
	Different	83%	1,3	365	4,8	11,5	
Afrikaans	Same	79%	8,9	477	13,0	-4,7	▲
	Different	21%	8,9	391	14,9	4,7	
English	Same	11%	1,2	497	12,0	-9,8	▲
	Different	89%	1,2	364	4,9	9,8	

▲ Significantly higher than

■ Not significantly different than

▼ Significantly lower than

Significance level < 0,05

Table 2.11 and Figure 2.12 describe provincial Grade 6 achievement in descending order for PIRLS 2021. Provincial comparisons of PIRLS 2021 achievement have to be interpreted with caution. Firstly, the South African sample was explicitly stratified by each of the 11 official languages, then implicitly by each of the provinces where these languages appear proportionally within each province. Therefore, the PIRLS 2021 Grade 6 South African sample paints a nationally representative picture by language, a main determinant of achievement in South Africa and important for the Department of Basic Education to take note of. Secondly, any provincial achievement results from PIRLS 2021 merely reflect a snapshot of reading achievement for a specific province at the time of data collection. Any links to possible causal effects (e.g. COVID-19 or national reading interventions that targeted specific provinces or districts) should be made with caution. Thirdly, large standard errors, as indicated by Table 2.11 or provinces like the Northern Cape, impede the reliability with which results can be interpreted to be an accurate reflection of achievement, possibly due to small sample sizes of the province in proportion to its representation with other provinces in South Africa.

Table 2.11 PIRLS 2021 Grade 6 provincial achievement

Province	Percent	Percent (se)	Mean	Mean (se)
Western Cape	9,3%	1,1	460	13,3
Gauteng	17,2%	1,5	426	15,0
Northern Cape	4,0%	1,0	416	23,9
Mpumalanga	8,1%	0,9	390	14,4
Free State	4,2%	0,5	376	9,9
KwaZulu Natal	19,8%	1,7	363	10,7
North West	6,6%	0,5	362	8,0
Limpopo	14,7%	1,9	353	11,1
Eastern Cape	16,2%	1,3	351	11,6

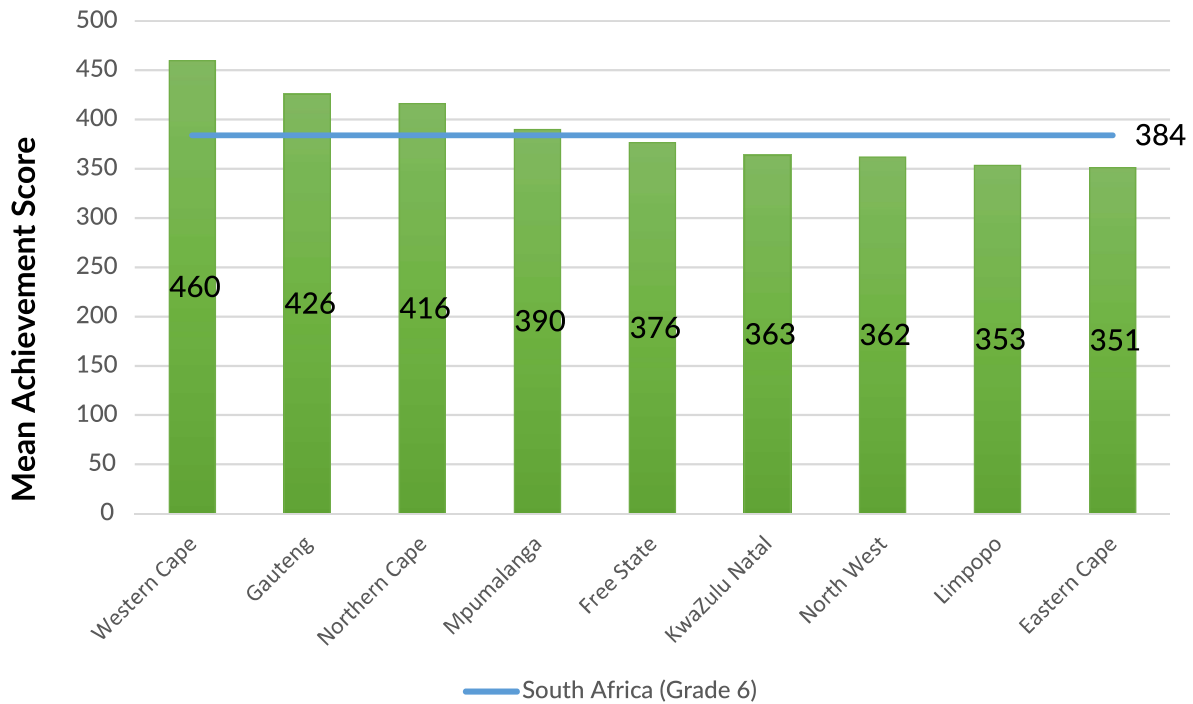


Figure 2.12 PIRLS 2021 Grade 6 provincial achievement against overall South African achievement

In terms of comparison between provinces, further information is presented in Table 2.12, illustrating each province's overall achievement compared to the other. So, for example, is Western Cape and Gauteng's performance statistically significantly higher or the same when compared to performance for all provinces. The Eastern Cape presents disappointing results in not comparing favourably with provinces like the Free State, Mpumalanga, KwaZulu Natal and North West.

Table 2.12 Between-province comparisons on differences in overall PIRLS 2021 Grade 6 achievement

Province	Mean	Western Cape	Gauteng	Northern Cape	Mpumalanga	Free State	KwaZulu Natal	North West	Limpopo	Eastern Cape
Western Cape	460		■	▲	■	■	▲	■	▲	▲
Gauteng	426	■		▲	■	■	■	■	■	▲
Northern Cape	416	▼	▼		▼	▼	■	▼	■	■
Mpumalanga	390	■	■	▲		■	■	■	▲	▲
Free State	376	■	■	▲	■		▲	■	▲	▲
KwaZulu Natal	363	▼	■	■	■	▼		■	■	▲
North West	362	■	■	▲	■	■	■		▲	▲
Limpopo	353	▼	■	■	▼	▼	■	▼		■
Eastern Cape	351	▼	▼	■	▼	▼	▼	▼	■	

▲ Significantly higher than
 ■ Not significantly different than
 ▼ Significantly lower than
 Significance level < 0,05

2.4.3 Reading achievement by gender

The PIRLS 2021 Grade 6 results by gender for South Africa follow international patterns where girls outperform boys, as illustrated by Figure 2.13. It has to be noted that participating countries were allowed to make national adaptations based on national needs to provide more response options (e.g. transgender, other) about gender. The Learner Questionnaire administered in South Africa simply asked learners whether they were boys or girls.

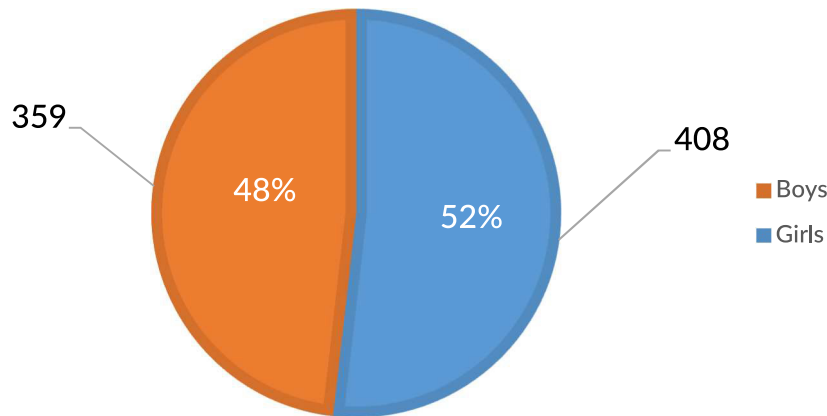


Figure 2.13 Overall PIRLS 2021 Grade 6 achievement comparison by gender

2.4.4 Performance by discrete international benchmarks

PIRLS 2021 provides results for achievement at each of four International Benchmarks, namely achievement at the Advanced International Benchmark (625 points), the High International Benchmark (550 points), the Intermediate International Benchmark (475 points) and the Low International Benchmark (400 points).

Figure 2.14 shows overall results for South African Grade 6 learners and confirms a stable trend for lack of achievement for 56% of learners who could not reach the Low International Benchmark. This finding implies that 56% of South African Grade 6 learners cannot provide evidence of basic reading skills at the lowest level of achievement when tested in Afrikaans and English at the end of the Intermediate Phase, such as retrieve and state explicitly mentioned detail in a text when reading a literary passage. For informational passages, the ability to locate and reproduce two or three pieces of information or use subheadings, textboxes and illustrations to locate parts of the text is still lacking.

A total of 44% of Grade 6 learners can reach the Low International Benchmark, but the percentages of Grade 6 learners show a marked decrease in achievement at each increment of a higher benchmark. So, for example, can only 3% of Grade 4 learners in South Africa interact with and respond to PIRLS 2021 literary texts fully by providing evidence of integrating ideas and evidence to appreciate overall themes and interpret story events and character actions (e.g. motivation, reasons, feelings) with text-based support. For informational texts, this 3% of learners show evidence of being able to distinguish and interpret complex information from different parts of the text while integrating information across a text to provide text-based support for explanations, significance, and sequence of activities.

INTERNATIONAL BENCHMARKS

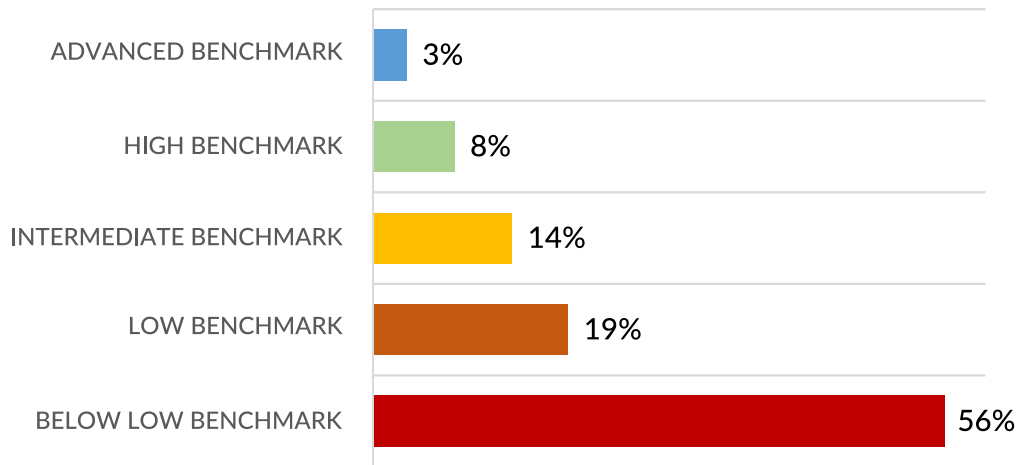


Figure 2.14 Grade 6 overall results by international benchmarks

Table 2.13 disaggregates the overall benchmark results by each of the 2 official languages in which testing took place. Just over a third of the representative sample of Grade 6 learners who were tested in Afrikaans and over half of the learners who were tested in English did not reach the Low International Benchmark. These percentages rise steeply for learners tested across the more complex benchmarks, with as little as 9% for Afrikaans-tested learners and 3% for English-tested learners who reached the Advanced international benchmark.

Table 2.13 Grade 6 benchmark achievement by the language of testing

	Did Not Reach Low Benchmark	Low Benchmark	Intermediate Benchmark	High Benchmark	Advanced Benchmark
Afrikaans	33,7%	22,4%	18,7%	16,2%	8,9%
English	58,2%	18,8%	13,1%	7,2%	2,8%
South Africa (Grade 6)	56,0%	19,1%	13,6%	8,0%	3,3%



CHAPTER 3

Item statistics in relation to the curriculum





Chapter 3:

Item statistics in relation to the curriculum

3.1 An overview of CAPS expectations in the Foundation Phase and Intermediate Phase

In the PIRLS 2021 Encyclopaedia, van Staden & Roux (2022) summarise the Foundation Phase Curriculum as follows:

In the Foundation Phase, the guiding curricular principle is that language development involves a gradual process of improving literacy teaching and learning. For example, the reading and phonics skills must enable learners to read and view for information and enjoyment and to recognise the purpose of each type of text. These skills also aim to produce learners who are creative and critical thinkers. The curriculum advocates an integrated approach to language and literacy development as it is used across the curriculum, though in Grade 4 onward, the language teaching approach is text-based, communicative and process-oriented.

The Curriculum and Assessment Policy Statement (CAPS) for Grades R to 3 emphasises that all learners must be enabled to learn to read. The curriculum policy allows schools to decide whether to have more or less teaching time for home and first additional languages based on the learners' needs. Of the seven hours per week allocated to language instruction, 4,5 hours are dedicated to phonics, shared reading, and group reading. The curriculum recognises that all learners must be taught strategies that help them to decode written text to read with understanding. Learners should also learn to interpret pictures and other graphics that help them make sense of visual and multimedia texts. Furthermore, skills such as knowing how to locate and use information, following a process or argument, summarising, developing their own understanding, and adapting and demonstrating what they learn from their reading. As part of this process, learners are encouraged to attempt to respond to higher-order questions based on what they have read.

Table 3.1 details these skills that are expected to be in place between Grade R and Grade 3 at different points during the Foundation Phase.

Table 3.1 Reading and viewing skills, Grades R to 3

Skills		Grades
Emergent Reading Skills	<ul style="list-style-type: none"> Recognising common objects in pictures Interpret pictures and arranging pictures to form a story Book handling skills Reads own name and names of peers Begins to 'read' high-frequency words (e.g., door, cupboard) 	R-1
Shared Reading	<ul style="list-style-type: none"> Reads enlarged texts Link stories with own experiences Sequences the events of the story Uses visual cues to predict what the story is about Discusses main idea, Identified the characters, the 'problem' in the story and the plot 	R-3
Group Reading	<ul style="list-style-type: none"> Reads aloud from own book Uses phonics and contextual and structural analysis to make meaning Monitors self when reading Uses self-correcting strategies when reading Uses diagrams and illustrations in text to increase understanding 	1-3
Independent Reading	<ul style="list-style-type: none"> Reads picture books Reads own writing Starting to correct errors 	R-1
	<ul style="list-style-type: none"> Reads own and others writing Reads aloud to a partner Reads independently simple fiction/nonfiction books, including magazines, poetry, and comic books 	2-3

During the Intermediate Phase (Grades 4 to 6), learners are expected to further develop their proficiency in reading and viewing a wide range of literary and non-literary texts, including visual texts. The reading curriculum envisages learners who can engage at higher reading skill levels, including recognising genre and reflecting on texts' purpose, audience, and context. In this phase, learners learn to become critical and creative thinkers through classroom and independent reading. Learners in the Intermediate Phase are assessed in three language areas: Oral Literacy Skills, Reading Comprehension, Language in Context, and Writing. Learners need at least an overall score (mark level) of four (50% to 59%) for their home language and an overall score of three (40% to 49%) for the first additional language to pass the language subject.

Based on this summary of the curriculum expectations, the following section provides two examples of PIRLS 2021 released passages: one literary and one informational. The item statistics follow each passage to illustrate how South African Grade 4 and Grade 6 learners responded to these questions.

3.2. PIRLS 2021 literary experience reading passage: 'The Empty Pot'

'The Empty Pot' is a PIRLS 2021 reading passage of medium difficulty. Questions take the form of multiple-choice questions or constructed response questions to a maximum of three marks. The example of 'The Empty Pot' is presented here as an exact reproduction to which Grade 4 learners responded across all 11 languages and a reproduction to which Grade 6 learners responded in Afrikaans and English.

The Empty Pot

retold by Elaine L. Lindy
illustrated by Jennifer Moher

The Emperor of China announced a contest to decide the next heir to the throne. The Emperor was old and had no children. Because he loved plants, he declared that any child who wanted to be emperor should come to the palace to receive one royal seed. Whichever child could show the best results within six months would win the contest and become the next emperor.



You can imagine the excitement! On the day the seeds were to be handed out, crowds of hopeful children filled the palace. Each child returned home holding one precious possibility.



And so it was with the boy Jun. He was already considered the best gardener in the village. His neighbours loved to share the melons, cabbages, and snow peas from his garden. Jun carefully carried the Emperor's seed home, sealing it securely in his hands so it wouldn't fall, but not so tightly that it might be crushed.



At home, he spread the bottom of a flowerpot with large stones, covered the stones with pebbles, then filled the pot with rich moist soil. He pressed the seed about two centimetres below the surface and covered it with light soil. Over the next few days Jun, along with every child he knew, watered his pot every day and watched for the first leaf to burst through the surface.

Cheun was the first child in Jun's village to announce that his seed was sprouting. This was met with whoops of congratulations. He bragged that he would surely be the next emperor and practised his royal skills by bossing around the younger children. Ming was the next child whose tiny plant had emerged from his pot, then it was Wong. Jun was puzzled—none of these boys could grow plants as well as him! But Jun's seed did not grow.

Soon sprouts emerged from pots all over the village. Children built fences around their pots and guarded them from those who might accidentally—or not so accidentally—topple them over. Soon, dozens of sprouts in pots throughout Jun’s village were stretching out their first leaves. But Jun’s seed did not grow. He was confused—what was wrong? Jun carefully replanted his seed into a new pot with the very best and richest black soil from his garden. He crumbled every ball of soil into tiny particles. He gently pressed in the seed, and kept the top moist and watched the pot every day. Still Jun’s seed did not grow.

Strong, powerful stalks soon emerged from the pots cared for by other children in Jun’s village. Jun was sad and defeated. The other children laughed at him.

Six months passed. The day approached when the children were supposed to bring their plants to the palace for judging. They cleaned their pots until they shone, gently wiped the great leaves, and dressed in their finest clothes. Some parents walked alongside their child as they carried the pot to the palace, holding the plant upright to keep it from tipping over.

“What will I do?” wailed Jun to his parents as he gazed out the window at the other children preparing for their triumphant return to the palace. “My seed wouldn’t grow! My pot is empty!”

“You did the best you could,” said his father, shaking his head.

“Jun, just bring the Emperor your pot,” said his mother, “it was the best you could do.”



Ashamed, Jun carried his empty pot on the road to the palace, while gleeful children carrying pots tottering with huge plants marched to his right and left.

At the palace, children lined up in rows with their blossoming plants and awaited judgement. The Emperor, wrapped in his silk robe, strode down the line of hopeful contestants, viewing each plant with a frown. When he came to Jun, he scowled even more and said, “What is this? You brought me an empty pot?”

It was all Jun could do to keep from crying. “If you please, Your Majesty,” said Jun, “I tried my best. I planted your seed with the best soil I could find, I kept it moist and watched it every day. When the seed didn’t grow I even replanted it in new soil. But it just didn’t grow. I’m sorry.” Jun hung his head.

“Hmm,” said the Emperor. Turning so everyone could hear, he thundered, “I don’t know where all these other children got their seeds. Nothing could grow from the seeds I gave you, because those seeds had all been boiled!”

And the Emperor smiled at Jun.

Questions The Empty Pot

1. Why did the Emperor hold the contest?

- (A) to teach children about plants
- (B) to choose the next emperor
- (C) to show how grand he was
- (D) to find the best kind of plant


2. What did each child receive from the Emperor?



3. Why was each seed called a “precious possibility”?

- (A) Each seed gave a chance to win the contest.
- (B) Each seed was royal and very expensive.
- (C) Each seed would grow into a beautiful plant.
- (D) Each seed gave a chance to become the best gardener.

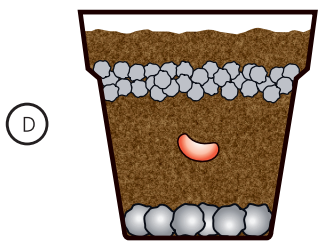
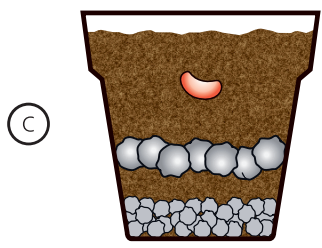
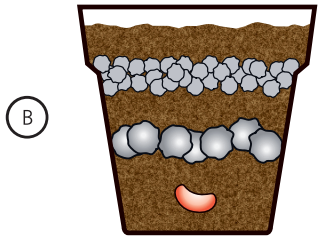
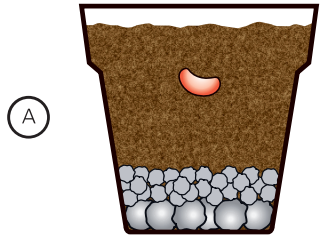



4. Find the part of the story next to this picture of a leaf:  .
What shows that Jun was the best gardener in the village?



1
0
8
9

5. Which of these looks most like Jun's flowerpot when he first planted the seed?



6. Find the part of the story next to this picture of a flower: .
What does this paragraph show about Jun?

- Ⓐ that he wondered what would grow
- Ⓑ that he felt he would win the competition
- Ⓒ that he planted the seed with care
- Ⓓ that he made mistakes when planting the seed

7. Why did the children build fences around their pots?

- Ⓐ to keep the leaves clean
- Ⓑ to keep their plants from being knocked over
- Ⓒ to keep the soil moist
- Ⓓ to keep other children from seeing their plants

8. What was the first thing Jun did when his seed did not grow?

- Ⓐ He built a fence around his pot.
- Ⓑ He watered the seed more often.
- Ⓒ He complained to his parents.
- Ⓓ He replanted his seed in a new pot.

9. Why did the other children laugh at Jun? Use what happened in the story to explain your answer.



10. Why do you think Jun's parents told him to take his empty pot to the palace?



11. Which word best describes how Jun felt when he walked to the palace for the judging?

- (A) ashamed
- (B) puzzled
- (C) hopeful
- (D) excited

2
1
0
8
9

1
0
8
9

12. Why did the Emperor scowl while looking at Jun's pot?

- (A) He was worried about the contest.
- (B) He thought Jun's pot was not shiny enough.
- (C) He was hiding what he was thinking.
- (D) He did not know why Jun was there.

13. Why did Jun say, "I'm sorry" to the Emperor?

- (A) He had cheated in the contest.
- (B) He didn't want to become an Emperor.
- (C) He thought he disappointed the Emperor.
- (D) He watered his seed too often.

14. Why did plants grow in other children's pots?

- (A) The other children used better soil.
- (B) The other children watched their pots.
- (C) Their seeds were protected by fences.
- (D) Their seeds were replaced with new ones.

15. What do you think the Emperor valued most in a person?

- (A) having royal skills
- (B) being an honest person
- (C) having respect for their parents
- (D) being a good gardener


16. Why did the Emperor smile at Jun?



1
0
8
9

17. Jun had different feelings during the story. Use what you have read to explain why Jun had **each** of these feelings.

 1 hopeful

 1 puzzled

 1 defeated

1
0
8
9

1
0
8
9

1
0
8
9



Stop

End of this part of the booklet.
Please stop working.

Empty Pot retold by Elaine L. Lindy, from *Absolutely Whootie: Stories to Grow By* (<http://www.storiestogrowby.com>).
Illustrations by Jennifer Moher © 2010 IEA.

Table 3.2 Items statistics for 'The Empty Pot' for Grade 4 and Grade 6

#Item	Process	Type	Grade 4							Grade 6							
			N	0	1	2	3	Omitted	Not Reached	N	0	1	2	3	Omitted	Not Reached	
Literary Experience (The Empty Pot)																	
1	Focus On & Retrieve	MCQ	1343	55%	38%				8%	0%	1043	43%	55%			2%	0%
2	Focus On & Retrieve	CR	1343	70%	25%				5%	0%	1043	53%	44%			3%	0%
3	Evaluate & Critique	MCQ	1343	61%	30%				9%	0%	1043	65%	33%			2%	0%
4	Straightforward Inferences	CR	1342	85%	6%				8%	1%	1043	72%	25%			3%	0%
5	Straightforward Inferences	MCQ	1343	43%	31%				24%	2%	1043	47%	47%			6%	0%
6	Evaluate & Critique	MCQ	1343	64%	25%				8%	3%	1043	57%	40%			3%	0%
7	Straightforward Inferences	MCQ	1343	61%	27%				7%	4%	1043	49%	48%			2%	1%
8	Focus On & Retrieve	MCQ	1343	57%	30%				9%	4%	1043	40%	56%			3%	1%
9	Interpret & Integrate	CR	1342	61%	23%	5%			7%	5%	1043	39%	46%	13%		2%	1%
10	Interpret & Integrate	CR	1342	77%	6%				11%	6%	1043	65%	31%			3%	1%
11	Focus On & Retrieve	MCQ	1343	46%	36%				8%	9%	1043	39%	56%			2%	2%
12	Interpret & Integrate	MCQ	1343	62%	18%				10%	10%	1043	57%	38%			2%	2%
13	Straightforward Inferences	MCQ	1343	51%	29%				8%	13%	1043	33%	62%			2%	3%
14	Interpret & Integrate	MCQ	1343	60%	18%				8%	14%	1043	55%	38%			3%	3%
15	Evaluate & Critique	MCQ	1343	57%	20%				9%	15%	1043	55%	38%			3%	4%
16	Interpret & Integrate	CR	1343	70%	8%				5%	16%	1043	67%	27%			2%	4%
17	Interpret & Integrate	CR	1339	59%	9%	3%	1%		8%	20%	1043	47%	20%	15%	10%	4%	5%
17A	Interpret & Integrate	CR	1342	64%	8%				9%	20%	1043	59%	30%			6%	5%
17B	Interpret & Integrate	CR	1341	62%	6%				11%	20%	1043	64%	25%			7%	5%
17C	Interpret & Integrate	CR	1340	62%	5%				13%	20%	1043	63%	24%			8%	5%

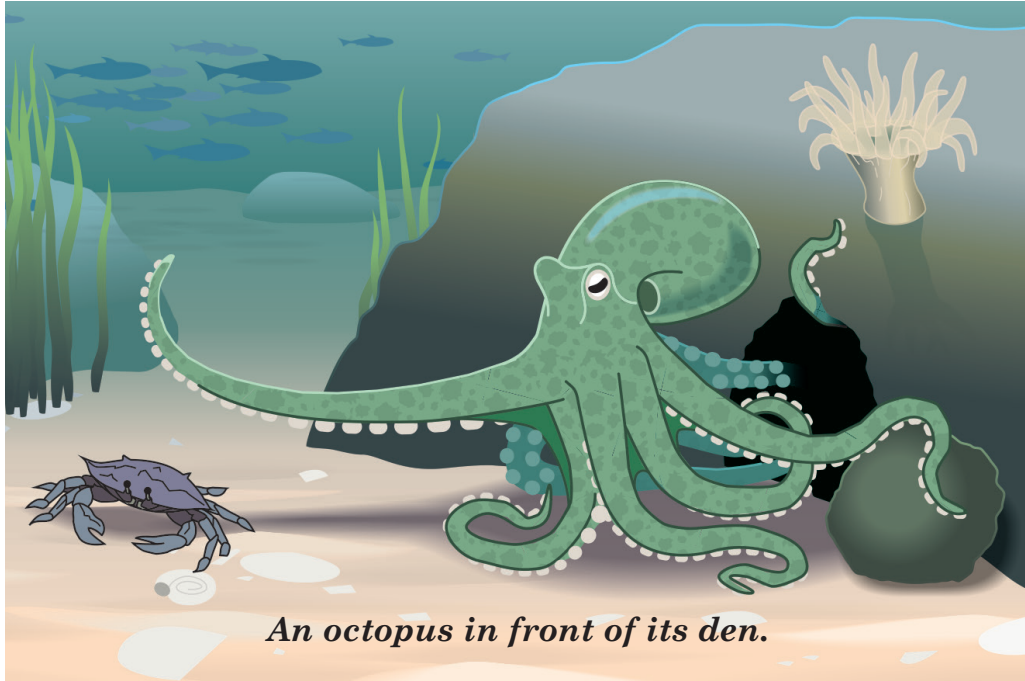
Table 3.2 indicates that the maximum number of Grade 4 learners who answered correctly to a multiple-choice question (MCQ) was 38% for question 1, a *Focus on and retrieve explicitly stated information* test item. For Grade 6 learners, the highest percentage correct was obtained by 62% of learners for MCQ question 13, a *Making straightforward inferences*-type question. For constructed response questions, Grade 4 learners performed best on question 2, again a *Focus on and retrieve explicitly stated information* test item, with only 1% of learners being able to obtain full credit for a 3-point question 17. In Grade 6, the highest percentage was obtained for question 9 at 46%. This *Interpret and Integrate Information* question represents the same comprehension process for the 10% of Grade 6 learners who received full credit for question 17.

It has to be noted that Table 3.2 makes a distinction between those learners who did not reach a question (e.g. by running out of time) and those learners who omitted an answer to a question (e.g. patterns of skipping questions that were perhaps too hard).

3.3 PIRLS 2021 acquire and use information reading passage: 'The Amazing Octopus'

'The Amazing Octopus' is a PIRLS 2021 reading passage of easy difficulty. Questions take the form of multiple-choice questions or constructed response questions to a maximum of 3 points. The example of 'The Amazing Octopus' is presented here as an exact reproduction to which Grade 4 learners responded across all 11 languages and a reproduction to which Grade 6 learners responded in Afrikaans and English.

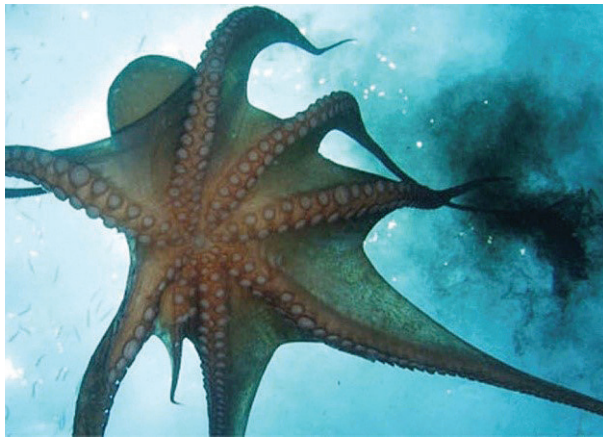
The Amazing Octopus



An octopus in front of its den.

Octopuses are sea animals that have rounded bodies, bulging eyes, and eight long arms. Their arms are very strong and lined with powerful suction cups. They live in all the world's oceans but they especially like warm, tropical waters. They often stay on the ocean floor where they can find their favorite foods. They like to eat crabs, shrimp, and small fish. They capture their prey with their suction cups and then put the food into their mouths.

Octopuses often live alone in dens built from rocks. Octopuses sometimes even make rock "doors" for their dens that can be pulled closed to keep them safe.



An octopus shoots ink to escape danger.



An octopus scares away predators with its spots.

Escaping Danger

Octopuses can escape from danger because they are fast swimmers and can shoot a cloud of thick, dark ink at any attackers. This gives them enough time to speed away.

Octopuses also are experts in disguise. They can change their skin color to pink, blue, brown, or green to blend into the rocks, sand, and coral around them and become invisible. Octopuses can look just like lumpy seaweed covered rocks. They also can create a variety of spots, stripes, and blotches in a matter of seconds to look like something else that would not be good to eat.

Octopuses can hide by slipping through cracks in rocks or coral. They have no backbones. In fact, they do not have any bones at all and are soft all over. Without bones, octopuses can flow like water and fit their whole body into very tiny places. They are famous for showing up in places you don't expect them. Octopuses have been found in shells, scientists' equipment, and bottles left in the sea.

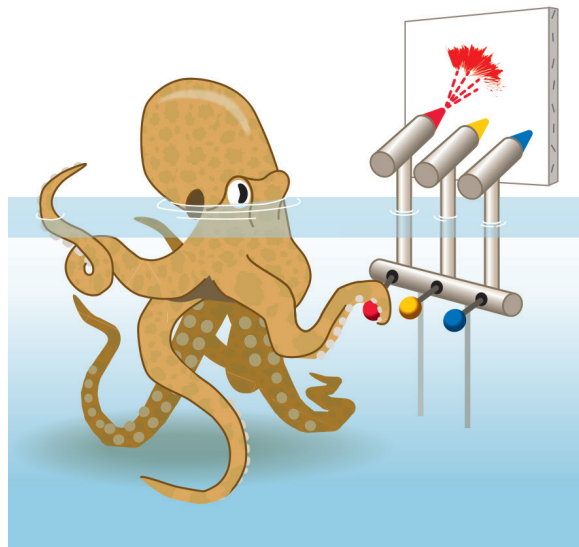
Sometimes, octopuses even use shells to hide. They pick up shells with their suction cups. Then, they wrap their arms around their bodies with the shells facing out. Passing predators think the octopus is just an old pile of shells.



An octopus hiding itself under shells.



Frieda opens jars of food.



Squirt makes “art.”

Learning to Do Things

An octopus named Frieda lived in an aquarium in Germany. After watching her keepers twist open the glass jars containing her food, she learned to open the jars herself. Pressing the lid against her body and grasping the jar with her arms, she twisted her boneless body to unscrew the lid. She only opened jars containing her favourite foods, such as crabs and shrimp. She ignored the jars with everyday fish.

At a marine center in the United States, an octopus named Squirt learned to paint. He could do this by moving levers that spray the paint onto a canvas. The “art” was then sold to make money to help maintain the octopus tank.

Keeping Octopuses Busy

People like to watch octopuses in aquariums that show their natural environments. But, octopuses are easily bored, so aquarium staff have to invent ways to keep their octopuses occupied. For example, they give octopuses puzzles and toys that can be taken apart.

At an aquarium in the United States, an octopus named Sammy enjoyed playing with a plastic ball that could be screwed together by twisting the two halves. His keeper would put food inside the ball and Sammy would open the ball and then screw it back together when he was finished eating.



An octopus playing with a toy in its tank.

Recognising Their Keepers

Besides toys and puzzles, octopuses like it when their keepers spend time touching them and playing with them. When octopuses see their keepers coming to feed them and stroke their heads, they turn red to show they are excited. They also might greet their keepers by standing up tall on their arms and leaning forward. Octopuses have been known to hop on their back “legs” while waving their arms to get the attention of their keepers.

Octopuses like the company as much as they like the food. When the octopuses finish eating they will reach up with one arm and then another, curling them over their keeper’s hands and arms. Octopuses and keepers will hold each other’s arms, with the octopuses gently latching onto their keepers with their suction cups.



An octopus latching on to its keeper’s arms.

Questions The Amazing Octopus

1. According to the article, which statements are true about octopuses?

Tick **all** that apply.

They have round bodies.

They have eight long arms.

They only live in cold parts of the ocean.

They like to eat crabs and small fish.

They catch their food with their mouths.

2. What do octopuses use to make doors for their dens?



3. The article says octopuses are “experts in disguise.”

What does this mean?

- (A) They can look like something else.
- (B) They are very fast swimmers.
- (C) They can shoot dark ink.
- (D) They can be different shapes.

2
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9

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9

4. Octopuses do not have bones. What does this mean they can do?

- (A) Hide with other octopuses
- (B) Hold onto rocks
- (C) Fit into very tiny places
- (D) Look like seaweed

5. Octopuses are famous for showing up in unusual places.

Give one example from the text.



6. Give two ways that octopuses escape their predators.



1. _____



2. _____

7. What did Frieda the octopus learn to do?



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8. What did Squirt the octopus learn to do?

- (A) Draw pictures of the aquarium
- (B) Move levers to shoot paint onto a canvas
- (C) Spray his ink like paint onto a canvas
- (D) Use his many arms like fingers to paint

9. Does the writer think that Squirt makes good paintings?

Tick your choice.

___ Yes

___ No

Give a reason from the text.



10. Why do aquarium staff give octopuses puzzles?



1
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9

11. What toy did Sammy enjoy playing with?



12. What are two things octopuses do to show they are happy to see their keepers?



1. _____



2. _____

13. Octopuses like their keepers to touch them. What do octopuses do that shows this?

- (A) Work on puzzles with their keepers
- (B) Hop up and down when they are hungry
- (C) Reach up and latch onto their keepers' arms
- (D) Eat all of their food

1
0
8
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2
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0
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9

14. The writer thinks octopuses are “amazing.” Give three examples of what octopuses in aquariums have learned to do that are amazing.



1. _____



2. _____



3. _____

15. Based on what you have read in the article, are aquariums good for octopuses?

Tick your choice.

___ Yes

___ No

Give one reason to explain your answer.



3

2

1

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8

9

Table 3.3 Items statistics for 'The Amazing Octopus' for Grade 4 and Grade 6

#Item	Process	Type	Grade 4							Grade 6						
			N	0	1	2	3	Omitted	Not Reached	N	0	1	2	3	Omitted	Not Reached
Acquire and Use Information (The Amazing Octopus)																
1	Straightforward Inferences	CR	1905	61%	20%	13%		7%	0%	1418	41%	24%	34%		2%	0%
2	Focus On & Retrieve	CR	1904	60%	27%			13%	0%	1418	42%	54%			4%	0%
3	Evaluate & Critique	MCQ	1907	62%	18%			19%	1%	1418	53%	40%			7%	0%
4	Focus On & Retrieve	MCQ	1907	53%	26%			17%	3%	1418	43%	52%			5%	0%
5	Focus On & Retrieve	CR	1899	80%	4%			10%	5%	1418	75%	20%			5%	0%
6	Interpret & Integrate	CR	1900	58%	11%	13%		9%	8%	1418	31%	18%	48%		3%	0%
7	Straightforward Inferences	CR	1901	59%	22%			9%	10%	1417	33%	64%			3%	0%
8	Focus On & Retrieve	MCQ	1907	48%	23%			17%	12%	1418	43%	51%			5%	1%
9	Evaluate & Critique	CR	1901	73%	6%			6%	15%	1418	65%	33%			2%	1%
10	Focus On & Retrieve	CR	1899	59%	10%			14%	17%	1418	55%	41%			3%	1%
11	Focus On & Retrieve	CR	1900	52%	17%			8%	23%	1418	42%	53%			3%	2%
12	Straightforward Inferences	CR	1898	51%	8%	7%		8%	26%	1418	38%	22%	33%		4%	3%
13	Straightforward Inferences	MCQ	1907	39%	20%			13%	28%	1418	39%	53%			4%	4%
14	Interpret & Integrate	CR	1897	43%	7%	5%	6%	8%	30%	1417	30%	13%	17%	31%	4%	4%
15	Evaluate & Critique	CR	1900	53%	8%			5%	35%	1417	54%	38%		1%	7%	7%

Table 3.3 indicates that the maximum number of Grade 4 learners who answered correctly to a multiple-choice question (MCQ) was 26% for question 4, a *Focus on and retrieve explicitly stated information* test item. For Grade 6 learners, the highest percentage correct was obtained by 53% of learners for MCQ question 13, a *Making straightforward inferences*-type question. For constructed response questions, Grade 4 learners performed best on question 2, again a *Focus on and retrieve explicitly stated information* test question, with only 6% of learners being able to obtain full credit for a 3-point question 14. At Grade 6, the highest percentage was obtained for question 7 at 64% for a *Making straightforward inferences* question. An *Interpret and Integrate Information* question represents the same comprehension process for 31% of Grade 6 learners who received full credit for question 14.

Like Table 3.2, Table 3.3 distinguishes between learners who did not reach a question (e.g., running out of time) and those who omitted an answer to a question (e.g. patterns of skipping questions that were perhaps too hard).

Anecdotal evidence of the quality of learner responses in the achievement booklets shows that learners regularly do one of three things in response to questions:

1. Relatively well-performing learners usually lost marks for constructed response questions by not providing enough text-based evidence to support their answers. These learners often responded in the right direction with their answers but lacked evidence to justify two or three marks for those questions worth more than one point.
2. Apart from omissions, poor-performing learners Grade 4 learners wrote gibberish. These answers often took the form of only scrambled letters, which made no sense in any of the tested languages.
3. Learners often copied questions instead of responding. The copying would be word-for-word copies from the test booklets and occurred in MCQs and constructed response questions.

CHAPTER 4

Contextual background results





Chapter 4:

Contextual background results

The PIRLS 2021 study provides participating countries with contextual background information which assists in unpacking learner reading literacy achievement; as such, the data enables these countries to track trends in contextual changes over time. The extensive contextual information was obtained from four questionnaires: the Learning-to-Read Survey (the Home Questionnaire), School Questionnaire, Teacher Questionnaire, and the Learner Questionnaire. These questionnaires provide participating countries with both in- and out-of-school experiences and valuable insights into whether changes in policy and practice translated into learner achievement changes.

The chapter provides information on the home environment, support, school composition and resources, school climate, school safety, teacher preparation, learner engagement, and attitudes. The findings are presented first for Grade 4 and then for Grade 6 learners.

4.1 Grade 4 home environment support

Parents or primary caregivers of each participating learner completed the Home Questionnaire, which inquires about reading activities, parents' reading attitudes and behaviours and language spoken in the home. The home context has, over the years, shown its importance in fostering reading literacy. Specifically, the environment for learning and emphasis on children's reading literacy skills are of particular importance.

For the South African study, these questionnaires were translated into all 11 official languages and parents or primary caregivers completed the questionnaire in correspondence with the language in which their child was tested, although some parents or caregivers opted to complete the questionnaire in English. The English version of all questions was on the flip side of the questionnaire.

4.1.1 Home resources for reading

As part of the Home Questionnaire, parents were asked to indicate the home resources for reading. These resources include the number of books at home, children's books at home, and study supports. During the PIRLS 2011 cycle, a scale was created for home resources for reading, which incorporates the resources above. The scale, home resources for learning, also considers parents' education level and occupation. The scale ranges from few, some and many resources to report on the resources available at home.

Figure 4.1 shows the percentage of Grade 4 learners in each PIRLS 2021 home resources for learning scale category.

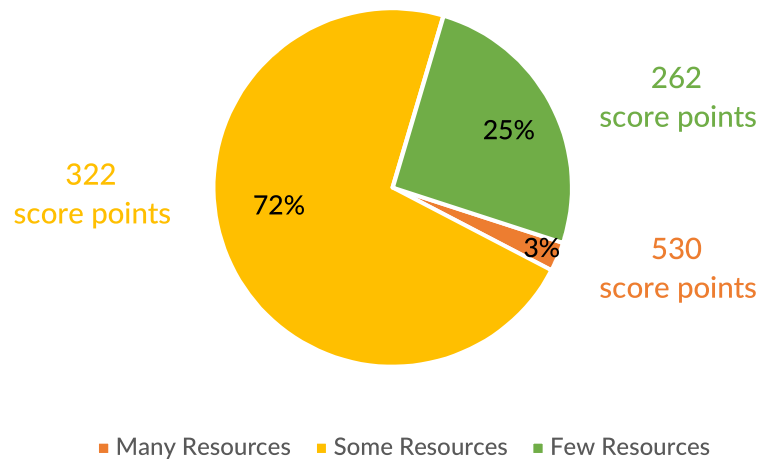


Figure 4.1 Percentage of Grade 4 learners at each category of the home resources for learning scale

Most (72%) of South African Grade 4 learner homes could be described as having some resources. Learner homes with many learning resources obtained the highest mean score (530 score points, SE=14,1). It was observed that there was a positive association between home resources for learning and Grade 4 learner reading literacy achievement. There was an approximate seven-year difference between those learners with few resources (262 score points, SE=5,6) at home compared to those with many resources (530 score points, SE=14,1) at home. A similar pattern was observed during the previous cycles of PIRLS in South Africa. Having resources, particularly educational resources, at home appears to contribute substantially to Grade 4 learner reading literacy achievement.

4.1.2 Language of the test spoken at home

Within a multilingual society such as South Africa, most learners speak more than one language. Moreover, it is commonplace for learners to speak a different language at home than the language used at school for learning. For example, a learner can speak isiZulu at home but attend a school where the language of learning is English. Children's reading literacy development depends on language experiences and the language spoken at home. South African Grade 4 learners were asked how often they spoke the language of the test at home. The learners could select *Always*, *Almost Always*, *Sometimes* or *Never*.

Figure 4.2 presents the percentage of Grade 4 learners in each category of the language of the test spoken at home scale.

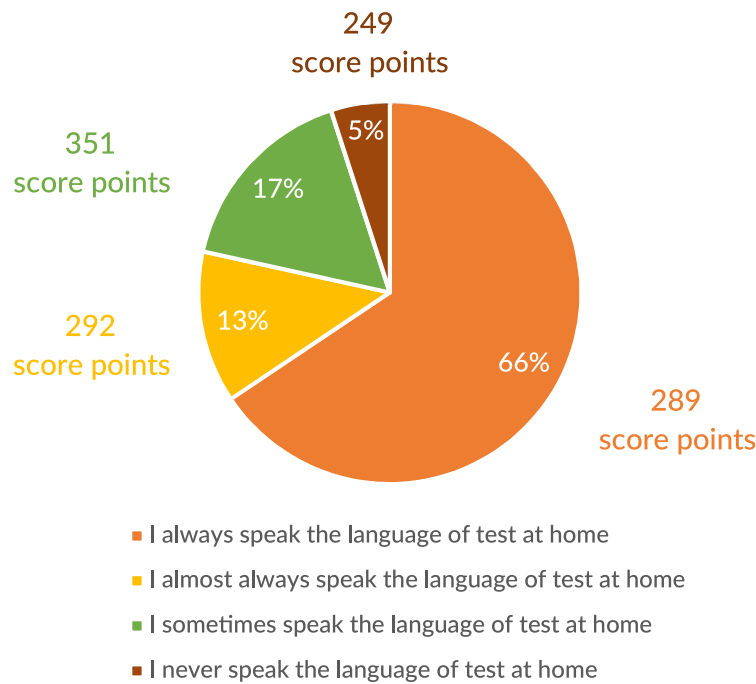


Figure 4.2 Percentage of Grade 4 learners at each category of the language of the test spoken at home scale

Two-thirds (66%) of South African Grade 4 learners indicated that they always speak the language of the test at home, while only five percent of the learners never spoke the language of the test at home. A similar pattern was observed during the previous cycle of PIRLS (Howie et al., 2017). Learners who sometimes spoke the language of the test at home obtained the highest mean score (351 score points, SE=7,8), followed by those who almost always spoke the test language at home (292 score points, SE=6,9). Learners who never spoke the language of the test at home achieved the lowest mean score (249 score points, SE=8,8).

4.1.3 Parents like reading

Parents who like reading and read themselves are important role models for their children as parents are the first sources of positive reading habits. Children often start modelling their parents' reading behaviours which can not only promote their own reading but improve their reading skills. The parents like reading scale was developed in a previous cycle of PIRLS and includes questions based on parents' reading habits and interests.

Figure 4.3 presents the Grade 4 learners' achievement score on the parents like reading scale.

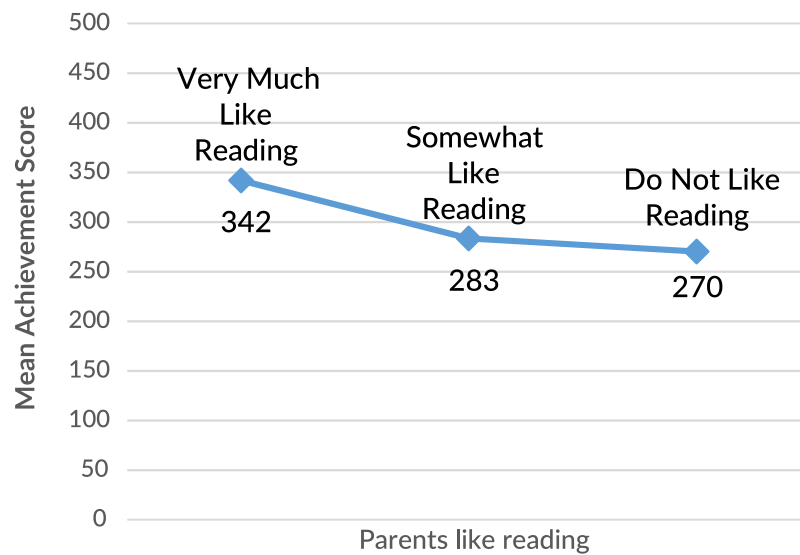


Figure 4.3 Grade 4 learner achievement across parents like reading categories

Almost two-thirds (62%) of Grade 4 learners' parents said they liked reading. These learners obtained an average of 283 score points (SE=4,8). Alarming, 15% of learners' parents did not like reading, and these learners obtained the lowest mean score (270 score points, SE=9,4). Learners' whose parents very much liked reading scored the highest (342 score points, SE=6,8) of the three groups. This pattern was also observed in previous rounds of PIRLS (Howie et al., 2017; Howie et al., 2012).

4.1.4 Early reading activities

Over the years, the importance of early reading activities has shown to be quintessential to children's development. Early reading activities foster learner reading literacy achievement (Combrinck et al., 2014). These activities may include reading books, telling stories, singing nursery rhymes, and helping children write alphabet letters. The early literacy activities scale was created to include nine different activities that parents could do with their children.

Figure 4.4 shows the percentage of Grade 4 learners' whose parents actively participated in early literacy activities.

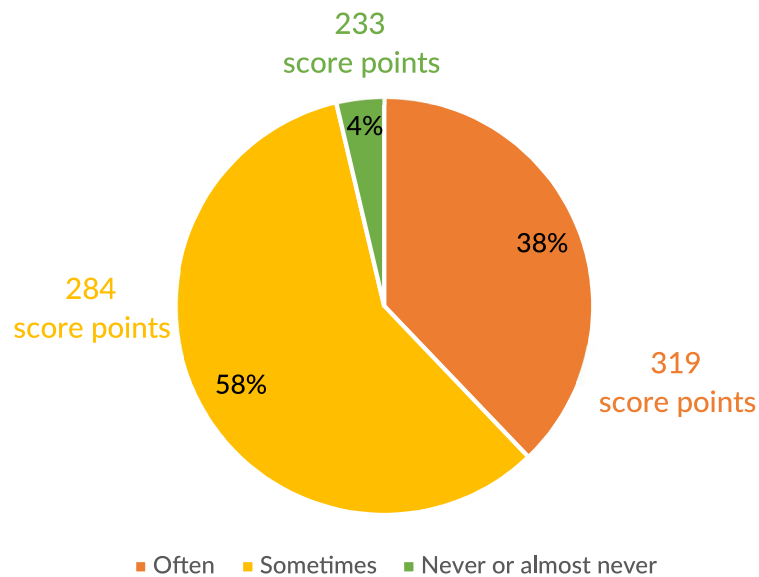


Figure 4.4 Percentage of Grade 4 Learners' whose parents actively participated in early literacy activities

Similar to the previous PIRLS cycle results (Howie et al., 2017), most (58%) of the learners' parents indicated that they sometimes participated in early literacy activities with their children, with learners obtaining an average score of 284 (SE=5,3). Four percent of learners' parents indicated that they never or almost never participated in these types of activities. These learners obtained the lowest overall mean score (233 score points, SE=11,1). Learners achieved higher mean scores when their parents sometimes or often engaged in early literacy activities.

4.2 Grade 4 school composition and resources

Valuable information about school composition and school resources was collected through the School Questionnaire. This information provides insights into the learning contexts in South Africa. The school principals were tasked to complete the School Questionnaire, which asked about school resources for learning, school climate, school discipline and safety and emphasis on reading instruction.

4.2.1 School composition by economic background

The socio-economic background of schools is often related to learners' academic achievement. Research has found that low-socio-economic schools struggle to attract and keep qualified teachers (Pitsoe, 2017; Visser et al., 2015). School principals were asked to indicate the percentage of learners from economically disadvantaged or affluent backgrounds. The importance of socio-economic background was first introduced by the Coleman Report (Coleman et al., 1966).

Figure 4.5 presents the percentage of Grade 4 learners from disadvantaged backgrounds.

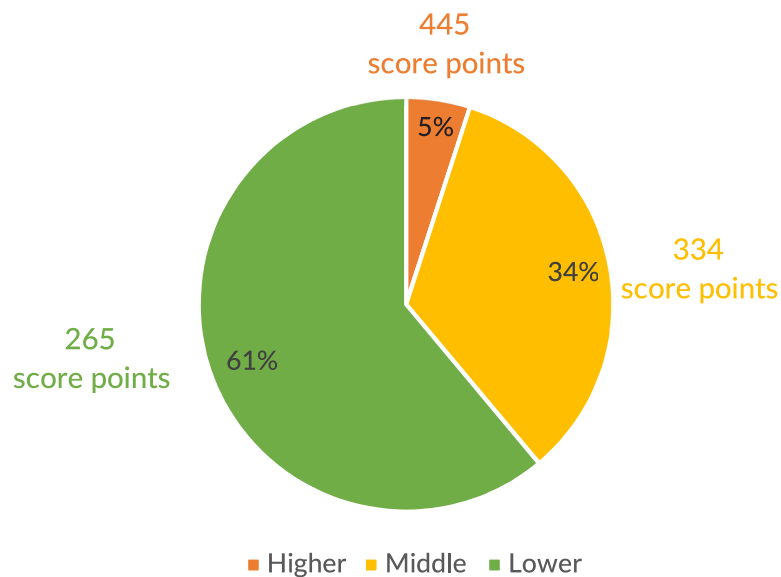


Figure 4.5 Percentage of Grade 4 Learners from disadvantaged backgrounds

As indicated by the school principals, only 5% of Grade 4 learners came from affluent homes, whereas the majority (61%) were from lower-income families. Learners from more affluent homes obtained 445 score points (SE=16,0) compared to those from lower-income families (265 score points, SE=4,2). There was a 180-score point difference between these two categories of learners.

4.2.2 Learners with literacy skills

One of the most beneficial aspects of good literacy skills is having positive learning experiences at home. This is supported by pre-primary education focused on skills development. Internationally, it has been found that having a solid foundation in literacy skills boosts children's later success (Majorano et al., 2021). The schools where students enter the primary grades with early literacy skills scale was developed by PIRLS to show the percentage of learners entering school with early literacy skills.

Figure 4.6 shows the percentage of Grade 4 learners who entered school with early literacy skills as categorised by their school principals.

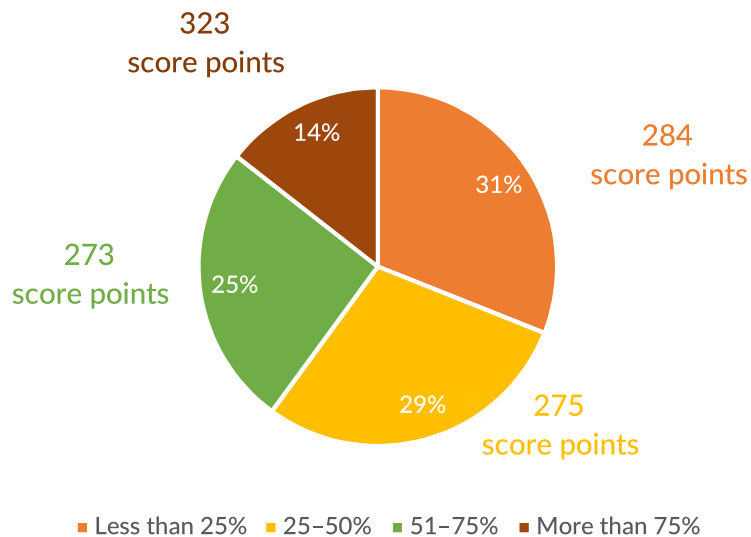


Figure 4.6 Percentage of Grade 4 learners that enter school with early literacy skills

School principals reported that almost a third (31%) of Grade 4 learners entered school with few early literacy skills, while only 14% entered schools with adequate early literacy skills. These learners achieved the highest mean score of 323 (SE=19,9), while learners who entered school with few early literacy skills obtained a score of 284 (SE=9,1).

4.2.3 School resources

It is generally accepted that adequate working conditions and facilities are important factors in fostering a positive learning environment within a school. This includes the availability and state of instructional resources. Since 2001, the PIRLS results have consistently shown that learners in well-resourced schools generally perform better than those in schools with resource shortages (Howie et al., 2006, 2012, 2017). School principals were asked to what extent school resources affected instruction and learning, including instructional materials, school buildings, lighting, heating/cooling, and audio-visual equipment for teaching and learning.

Figure 4.7 depicts the percentage of instruction and learning affected by school resource shortages.

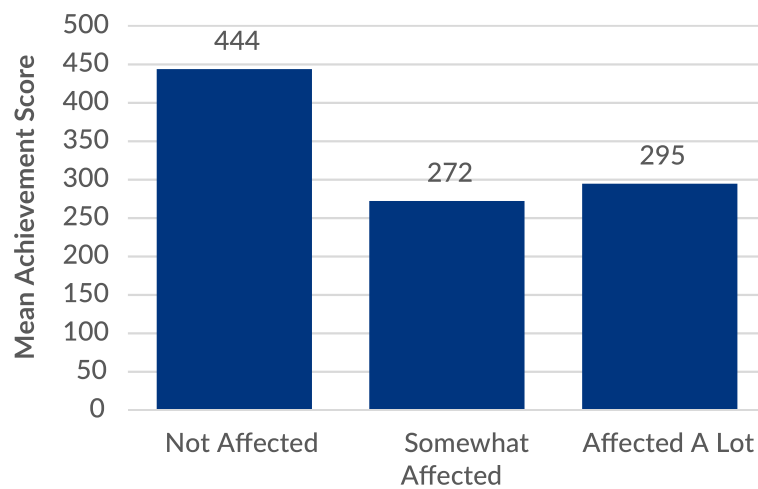


Figure 4.7 Grade 4 instruction and learning affected by school resource shortages

Eighty-nine percent of Grade 4 learners, as categorised by the school principal, attended schools where learning was somewhat affected by school resource shortages. These Grade 4 learners obtained an average score of 272 (SE=5,1). Grade 4 learners whose school principal indicated that teaching and learning were not affected by resource shortages obtained the highest mean score (444 score points, SE=24,7). Interestingly, Grade 4 learners whose learning was significantly affected by school educational resource shortages obtained a higher mean score (295 score points, SE=30,0) than those who were only somewhat affected (272 score points, SE=5,1).

4.3 Grade 4 school climate

A positive school climate is associated with higher educational outcomes. The PIRLS parent and school questionnaire focuses on parents' attitudes towards schools, the school's emphasis on academic success, reading instruction and teacher satisfaction.

4.3.1 Parents' attitude towards the school

The PIRLS Parent Questionnaire asked the parents of the learners about their attitudes towards their children's school. The parents' perceptions of their child's school scale was created and summarises the parents' level of agreement with statements about their child's school, such as academics, school safety and parental involvement in the schools.

Figure 4.8 shows the mean score of Grade 4 learners whose parents were satisfied with their child's school.

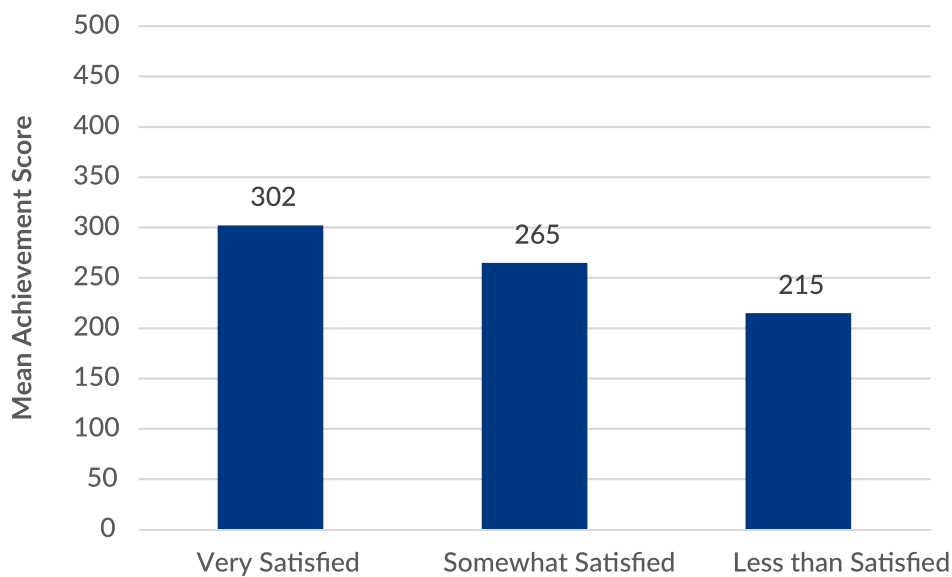


Figure 4.8 Mean achievement score of Grade 4 learners whose parents were satisfied with their child's school

Most (88%) of learners' parents indicated they were very satisfied with their children's school. These learners also obtained the highest mean score (302 score points, SE=4,9) in comparison with those whose parents are only somewhat satisfied (265 score points, SE=9,3) or less than satisfied (215 score points, SE=17,6) with their children's school. Only two percent of learners' parents indicated they were less than satisfied with their children's school.

4.3.2 School emphasis on academic success

Research has shown that schools with a positive atmosphere which emphasises academic success have a positive association with learner academic achievement (Combrinck et al., 2014). The school's emphasis on the academic success scale was developed during the 2011 cycle of PIRLS and includes characteristics of the school such as parental expectations for their children's achievement, trust among school staff, knowledge of curricular goals and school leadership.

Figure 4.9 depicts the percentage of Grade 4 learners in schools and the principal's emphasis on academic success.

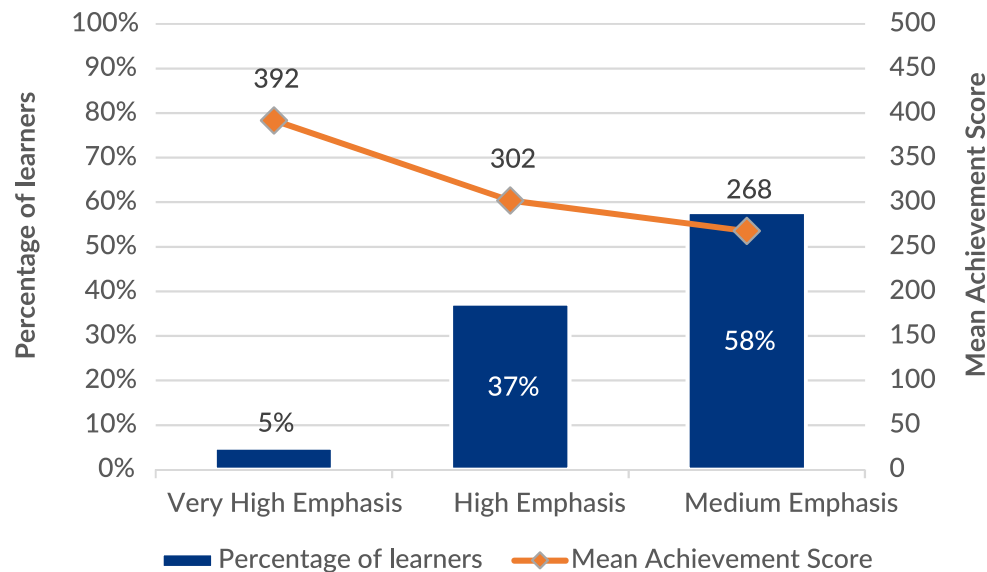


Figure 4.9 Percentage of Grade 4 learners across different levels of emphasis placed on academic success

More than half (58%) of Grade 4 learners attended schools with a medium emphasis on academic success. This figure was similar to the previous cycle of PIRLS. Only a small percentage of learners (5%) attended schools with a very high emphasis on academic success. These learners also obtained the highest mean score (392 score points, SE=29,4) of the three categories. There was a 124-score point difference between those learners who attended schools with medium emphasis and those who attended schools with a very high emphasis on academic success.

4.3.3 Emphasis on reading instruction

The extent to which schools implement the national reading curriculum, as captured in the CAPS, can be determined by looking into the school's reading curriculum. School principals were asked specific questions about the school's Grade 4 reading curriculum. The PIRLS School Questionnaire collects school reading curricula data, specifically when first introducing reading skills and strategies. These skills and strategies include knowing letters of the alphabet, knowing letter-sound relationships, reading isolated sentences, and determining the author's perspective.

Figure 4.10 presents the starting grade where schools emphasised reading skills and strategies.

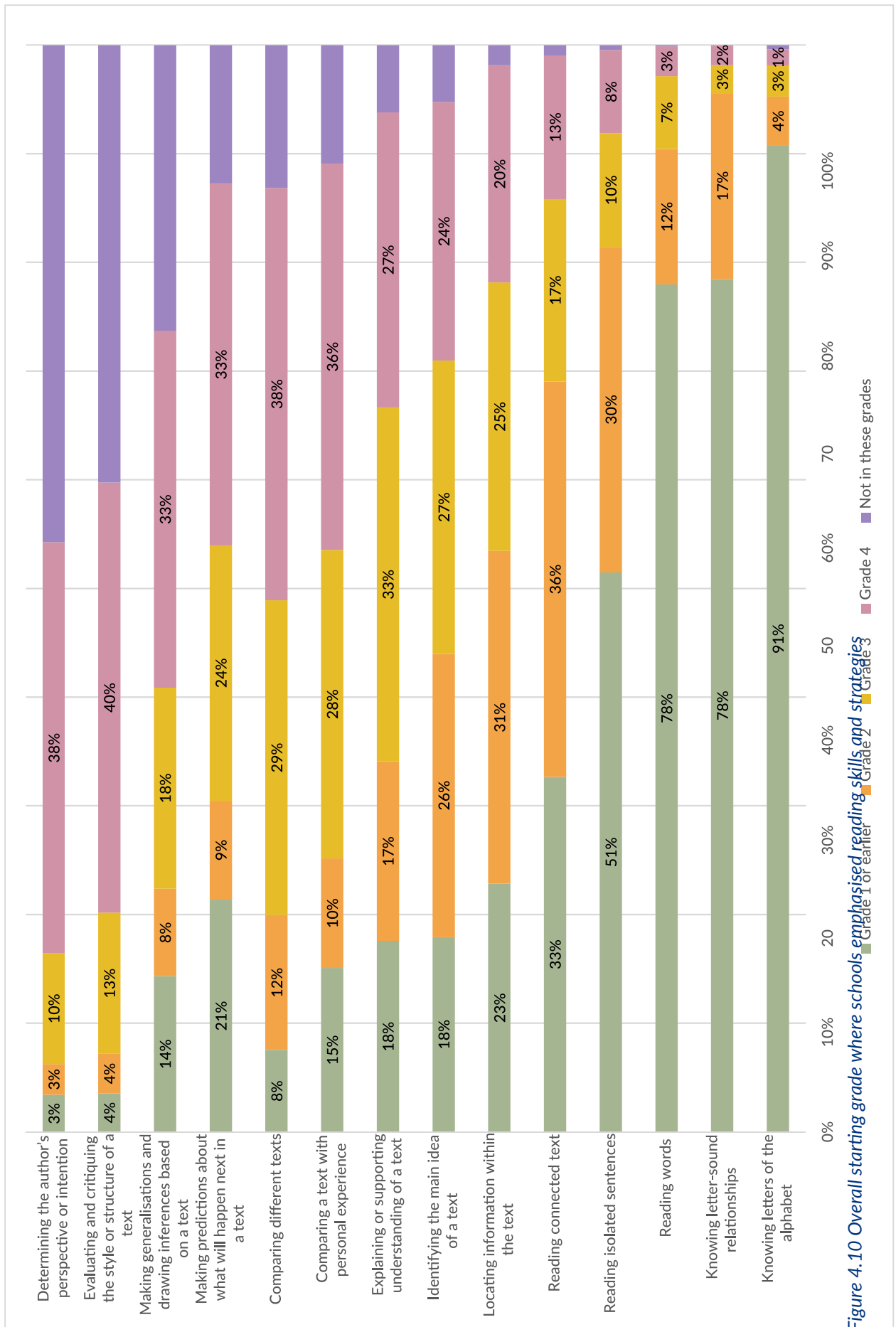


Figure 4.10 Overall starting grade where schools emphasised reading skills and strategies

South African primary schools seemed to emphasise basic reading literacy skills, for example, knowing letters of the alphabet (91%), letter-sound relationships (78%) and reading words (78%). Other lower-order skills included locating information in a text taught across grades 1 to 4. Higher-order reading comprehension skills, such as determining the author’s perspective or intention, were usually only introduced in Grade 4 (38%). However, almost half (46%) of school principals indicated that this skill was introduced in Grade 5 or higher.

4.3.4 Teacher satisfaction

To boost teacher job satisfaction, it is essential to have a positive and conducive environment and good working conditions. In doing so, it is possible to retain qualified teachers. Other factors, such as strong leadership at the school, less stress and positive attitudes, may also assist in retaining these teachers. During the PIRLS 2016 study cycle, the IEA developed a teacher satisfaction scale which includes five statements about job satisfaction ranging from *less than satisfied* to *very satisfied*.

Figure 4.11 presents the percentage of Grade 4 learners’ whose teachers were satisfied with their job.

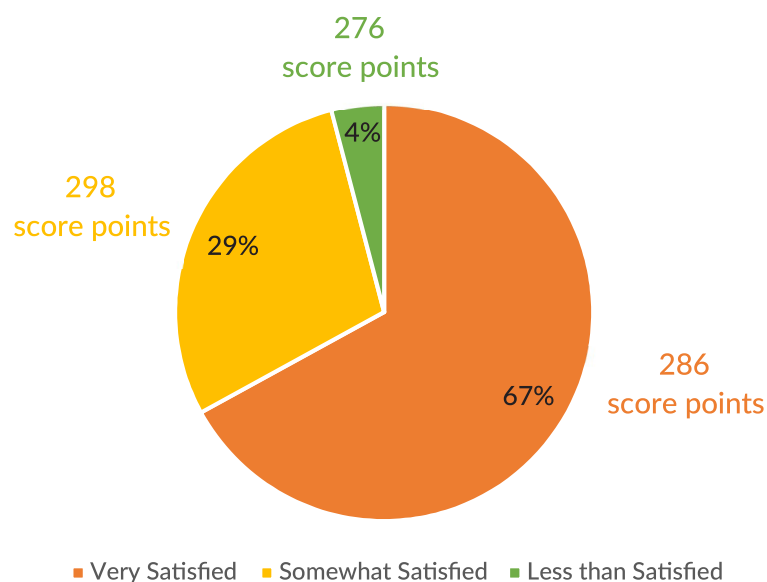


Figure 4.11 Grade 4 Percentage of learners whose teachers were satisfied with their job

Similar to the previous cycle of PIRLS testing, the majority (67%) of the Grade 4 learners’ teachers indicated that they were very satisfied with their jobs even though most schools lacked resources in one form or another. The 4% of learners whose teachers were not satisfied with their jobs obtained the lowest score (276 score points, SE=20,9), lower than those whose teachers were very satisfied with their jobs (286 score points, SE=6,2).

4.4 Grade 4 school safety

Previous studies of PIRLS in South Africa found that schools with moderate to high levels of discipline and safety problems were not conducive to high reading literacy achievement. This section deals with school discipline, safe and orderly schools, and bullying among learners. Other issues that may also impact overall school safety include classroom disturbances, unstable school environment and lack of enforcement of school rules.

4.4.1 School discipline

During the previous cycles of PIRLS, school principals were asked to report on the extent to which discipline, disorderly, disruptive, and bullying behaviours were a problem at their schools. Schools with prevalent discipline issues may lead to other issues, such as bullying or lack of safety for learners and teachers. These negative aspects hinder a positive and conducive teaching and learning environment. School principals were asked to indicate the degree to which they considered discipline, disorderliness and bullying problems in their schools. The school discipline scale was developed during the PIRLS 2011 cycle, summarising the school principals' reports.

Figure 4.12 depicts the mean achievement scores of Grade 4 learners compared to school discipline.

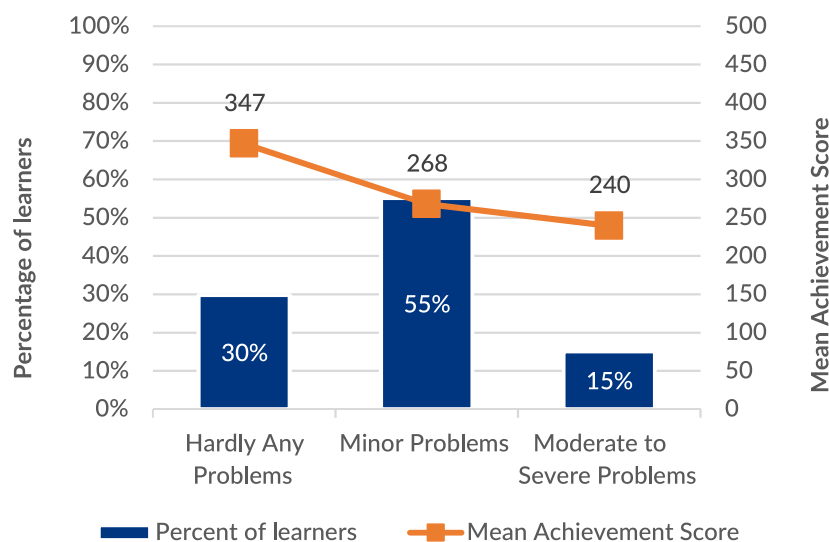


Figure 4.12 Mean achievement scores of Grade 4 learners when compared to school discipline

Over half (55%) of the Grade 4 learners' school principals indicated minor problems. These learners obtained a mean score of 268 points (SE=6,9). Almost one-third (30%) of the learners' school principals indicated hardly any problems with these learners obtaining the highest scores (347 score points, SE=13,6) among the three categories. There was a 107-point score difference between hardly any problems and moderate to severe problems.

4.4.2 Safe and orderly school

Over the years, school effectiveness research has shown that school safety is an essential criterion for positive school outcomes. A safe and orderly school includes teachers and learners having mutual respect, a safe and orderly school environment, clear rules on learner conduct and that learners feel safe at their school. The safe and orderly school scale was developed in a previous PIRLS cycle and considers eight critical questions from the teacher and learner questionnaires.

Figure 4.13 presents the percentage of teacher and learner reports on school safety and orderliness.

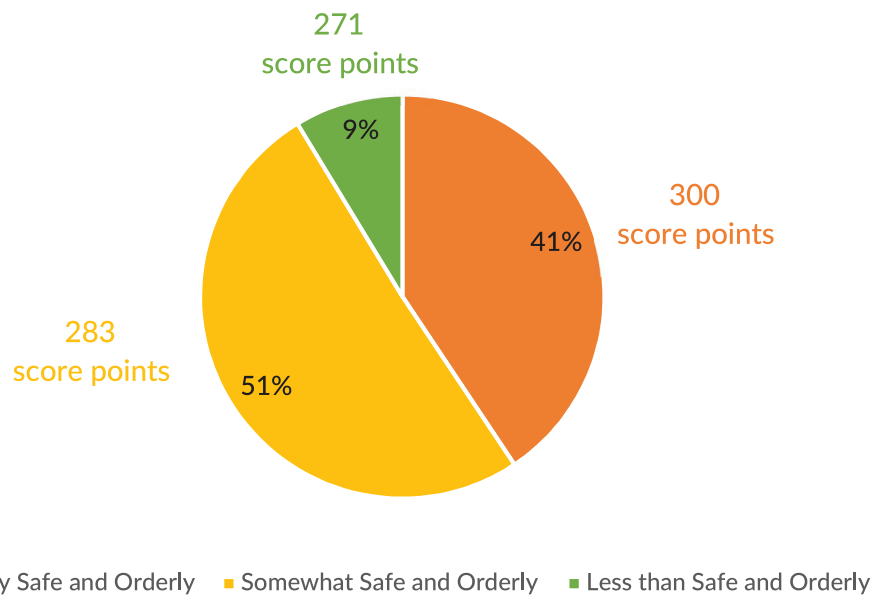


Figure 4.13 Grade 4 Teacher and learner reports on school safety and orderliness

Half (51%) of the South African Grade 4 learners were in classes where teachers indicated that their school was somewhat safe and orderly, a slight increase (9%) from PIRLS 2016. In the PIRLS 2016 cycle, 47% of learners were in classes viewed as very safe and orderly, compared to 41% in the current cycle. Learners obtained the highest mean score where the schools were considered very safe and orderly (300 score points, SE=9,5).

4.4.3 Learner bullying

Bullying is repeated aggressive behaviour towards a victim, which can take many forms, both mentally and physically. This type of negative behaviour causes undue distress to victims and ultimately leads to poor self-esteem and self-worth. As part of the National Life Orientation Curriculum, bullying is discussed from early grades due to its severity. Bullying was first recorded as a problem during the PIRLS 2011 cycle, with South Africa having the highest reported bullying levels amongst the participating countries. Cyberbullying has become more prevalent over the last decade. Cyberbullying includes sending nasty or hurtful messages or having personal information shared online. The PIRLS student bullying scale was expanded in 2016 to include cyber and online bullying and was again expanded for the 2021 cycle.

Figure 4.14 shows the percentage of Grade 4 learners bullied at school and their achievement scores.

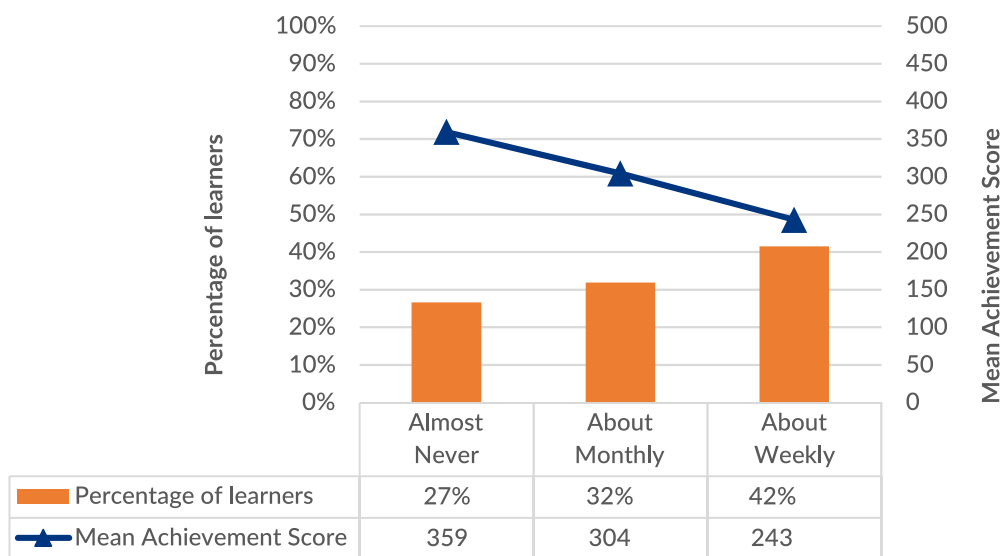


Figure 4.14 Grade 4 learners bullied at school and learner achievement

A similar pattern was observed regarding the frequency of bullying in South African schools during the previous cycle of PIRLS, where the majority (73%) of learners indicated being bullied. Of the 73%, more than half (42%) indicated they were bullied weekly. There appeared to be a relationship between the frequency of bullying and the Grade 4 learners' reading literacy achievement. Grade 4 learners who indicated that they were being bullied weekly obtained the lowest mean score of 243 score points (SE=4,6). There was a 117-score point difference between learners who were almost never bullied and those who experienced weekly bullying.

4.5 Grade 4 teachers' preparation

Teachers were asked to complete the Teacher Questionnaire about their preparedness inside the classroom. This included information such as their highest qualification, years of experience and professional development.

4.5.1 Teachers' formal education

It is commonly agreed that teacher education is essential for effective teaching (Walshaw, 2012). Teachers require substantial knowledge and skills within their respective fields and require coursework to gain that knowledge and skills. By completing coursework, teachers also gain insights into how children learn, different teaching and learning styles, and effective pedagogy for teaching reading. Across PIRLS studies, it was found that there was an association between teachers' reading coursework and learners' reading literacy achievement. In most countries, teachers must have at least a four-year bachelor's degree from a university. However, in South Africa, there are many different options ranging from a diploma to a post-graduate degree.

Table 4.1 depicts the highest level of teachers' formal education in South Africa in conjunction with Grade 4 learner reading literacy achievement.

Table 4.1 Highest level of Grade 4 teachers' formal education

	Percent	Percent (s.e)	Mean	Mean (s.e)
Did not complete Grade 12/Standard 10	0,1%	0,1	281	16,0
Grade 12/Standard 10	5,9%	1,5	278	12,1
Post-secondary training	32,1%	3,7	272	8,2
Technikon diploma	3,3%	1,1	252	35,0
Bachelor's (first) degree	38,7%	3,5	315	9,3
Honours degree	19,4%	2,8	282	14,4
Master's degree	0,2%	0,1	262	27,5
Doctoral degree	0,3%	0,3	222	0,0

Over a third (38,7%) of learners were taught by teachers with a bachelor's degree. These learners scored the highest (315 score points, SE=9,3) of all the categories. Less than 1% (0,1%) of learners were taught by teachers who did not complete Grade 12. These students obtained an average of 281 score points (SE=16,0). Very few learners were taught by a teacher with a master's (0,2%) or a doctoral (0,3%) degree.

4.5.2 Teachers' years of experience

Teacher experience has been found to have a considerable effect on teaching and learning, especially during the early primary years. Figure 4.15 depicts teachers' experience and Grade 4 learner reading literacy achievement.

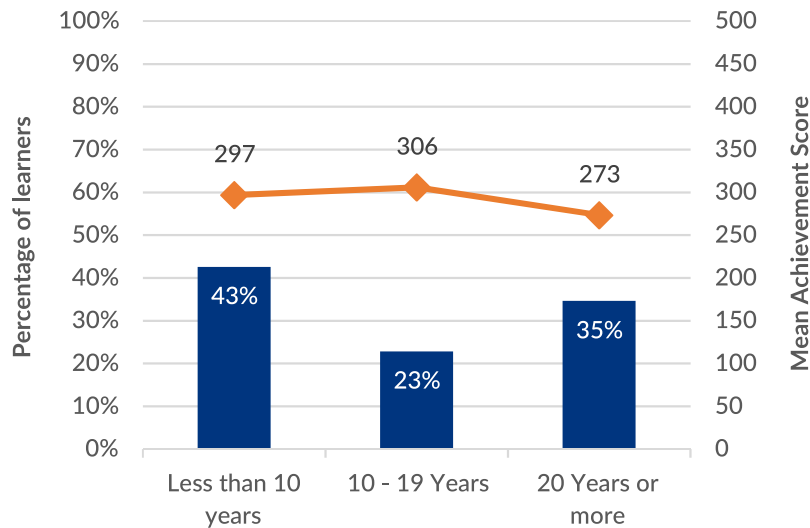


Figure 4.15 Teacher experience and Grade 4 learner achievement scores

Over one-third (35%) of learners were taught by teachers with 20 years or more of teaching experience, whereas 43% were taught by those with less than 10 years of teaching experience. Only 23% of learners were taught by teachers with 10 to 19 years of experience. This pattern showed that most learners had very experienced teachers. Learners taught by those with 20 years or more experience obtained the lowest mean score (273 score points, SE=9,3) across the different categories.

4.5.3 Teachers' professional development

During the PIRLS 2016, it was indicated that many countries are increasing efforts to provide and support teachers with professional development opportunities to enhance their pedagogical knowledge. Teachers may increase their understanding and effectiveness during teaching and learning by attending professional development opportunities. These opportunities include updating knowledge based on recent developments in the field, such as curricular changes, the latest assessment practices, or using new technologies in the classroom. Teacher professional development should be an ongoing process where teachers engage in tasks to boost their skills.

Figure 4.16 presents the percent of Grade 4 learners whose teachers participated in formal professional development in reading.

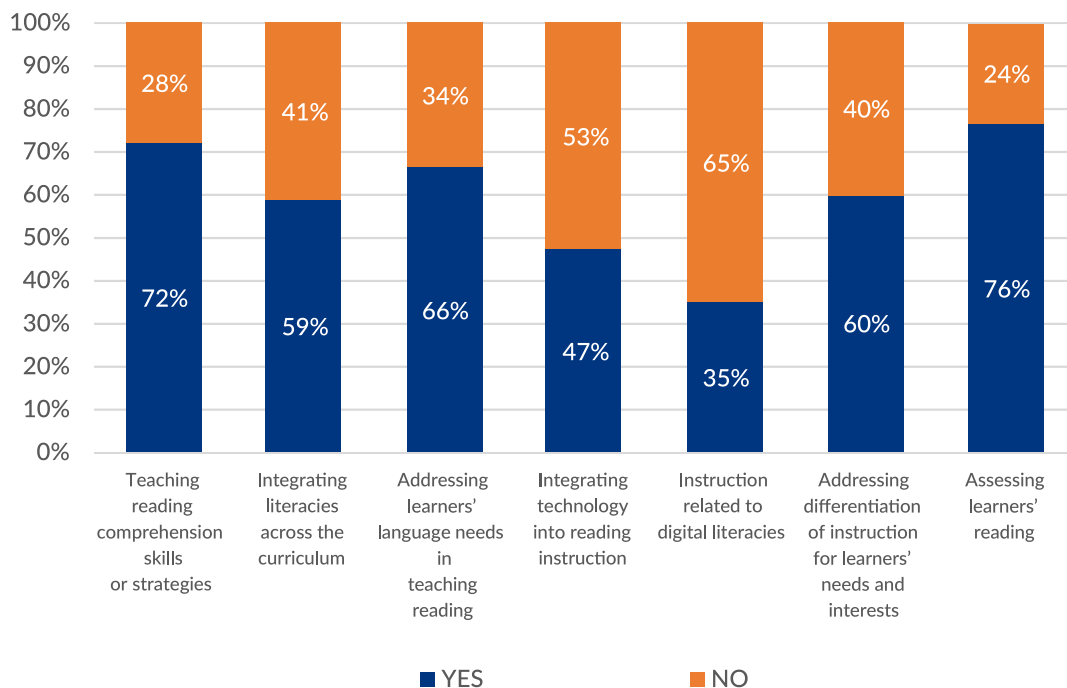


Figure 4.16 Grade 4 teachers who attended professional development in reading

More than three-quarters (76%) of Grade 4 learners' teachers attended professional development sessions specifically for assessing learners' reading, followed by 72% who attended sessions about teaching reading comprehension skills or strategies. Very few teachers (35%) attended professional development sessions on digital literacies. This finding might be linked to the current need for digital literacy in South Africa, as few schools have working computers or digital devices for teaching and learning.

The following figure presents the teachers' professional development priority.

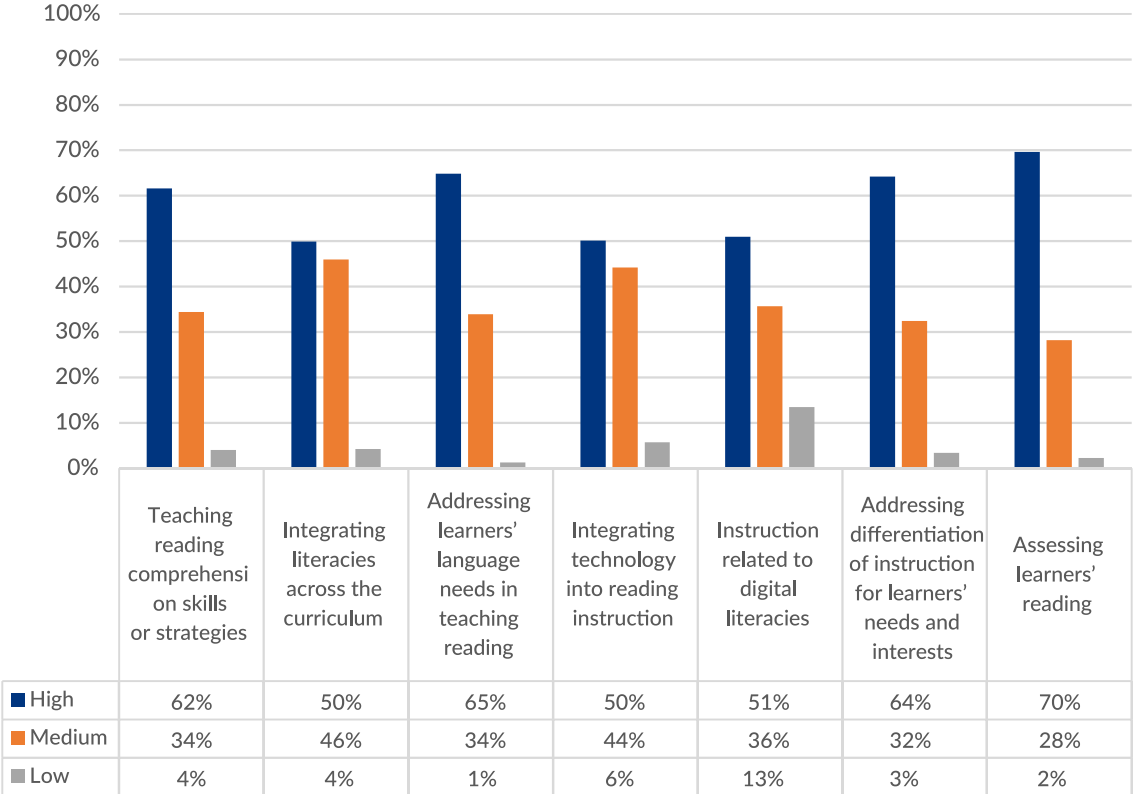


Figure 4.17 Grade 4 teachers' professional development priorities according to level of importance

Even though most Grade 4 learners' teachers did not attend digital literacies professional development sessions, it appeared to be a high priority (51%) for future professional development. Assessing learners' reading was another high priority (70%) for teachers and was followed by addressing learners' language needs in teaching reading (65%). Only half (50%) of the learners' teachers indicated that they required more professional development sessions for integrating technology into reading instruction.

4.6 Grade 4 learner engagement and attitudes

As part of the PIRLS contexts, information about the learner's own attitudes and behaviour towards reading is collected. This section focuses on learners' engagement in reading lessons, whether they like reading, and their confidence in reading.

4.6.1 Learners engaged in reading lessons

Learner engagement centres on the learner's current cognitive interaction with the learning content. Learner engagement occurs when teacher instruction, independent reading or discussing reading texts with peers occurs. Teachers' instructions should always be clear and concise to ensure learners stay focused and engaged during the activity. Another way to keep learners engaged would be to introduce and use reading materials they enjoy.

Figure 4.18 shows the percent and mean scores of Grade 4 learners engaged in classroom reading activities.

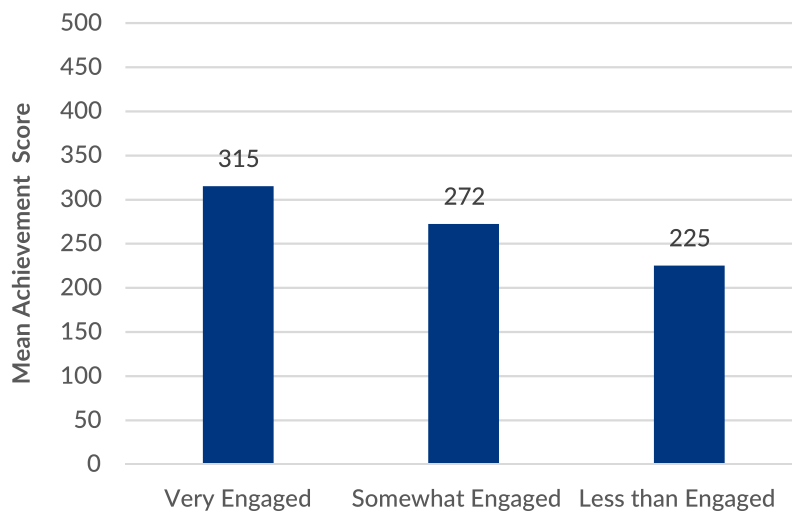


Figure 4.18 Grade 4 Learners engaged in reading instruction

Most (59%) of the teachers indicated that the learners were very engaged compared to 9% who were least engaged. These learners also obtained the lowest mean score with only 225 (SE = 7,5), while those who were somewhat engaged obtained 272 score points (SE = 5,7) and very engaged obtained 315 score points (SE = 5,0). There was a 90-score point difference between those learners who were very engaged and those who were less than engaged.

4.6.2 Learners like reading

Learners who are intrinsically motivated usually find reading enjoyable. Enjoyment of reading can be seen as 'energizer behaviour' (Deci & Ryan, 1985) and ultimately leads to children reading more often. During the PIRLS 2011 cycle, the students like reading scale was developed to measure learners' intrinsic motivation to read. Learners responded to questions ranging from reading for fun to learning a lot from reading.

Figure 4.19 shows the percentage of Grade 4 learners who enjoyed reading in conjunction with their reading literacy scores.

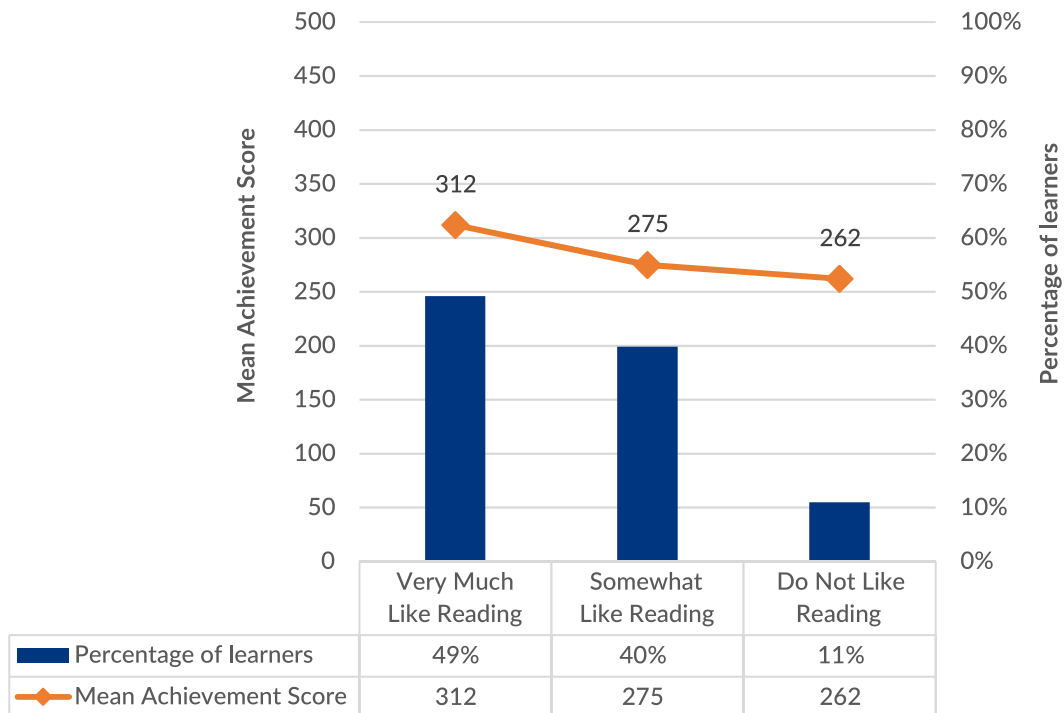


Figure 4.19 Grade 4 Learners liked reading, and reading achievement scores

Almost half (49%) of the Grade 4 learners indicated that they very much like reading, closely followed by 40% of learners who only somewhat liked reading. Few (11%) learners stated that they did not like reading. The mean scores between these three groups varied from those who very much liked reading, with an achievement score of 312 (SE = 4,6), compared to those who did not like reading, with a mean score of 262 (SE=10,5). There was a 50-point difference between these two groups of learners.

4.6.3 Learners confident in reading

Whether or not learners enjoy reading and have the intrinsic motivation to read, learner confidence in their reading ability is based on their past experience (cf. Marsh & Craven, 2006). Learners who are more confident in their reading ability persevere in completing tasks successfully. During PIRLS 2011, the students confident in reading scale was developed, asking learners to indicate the extent to which they agree with statements such as “I usually do well in reading” to “I am just not good at reading”.

Figure 4.20 depicts the percentage of Grade 4 learners who were confident in reading and reading literacy achievement scores.

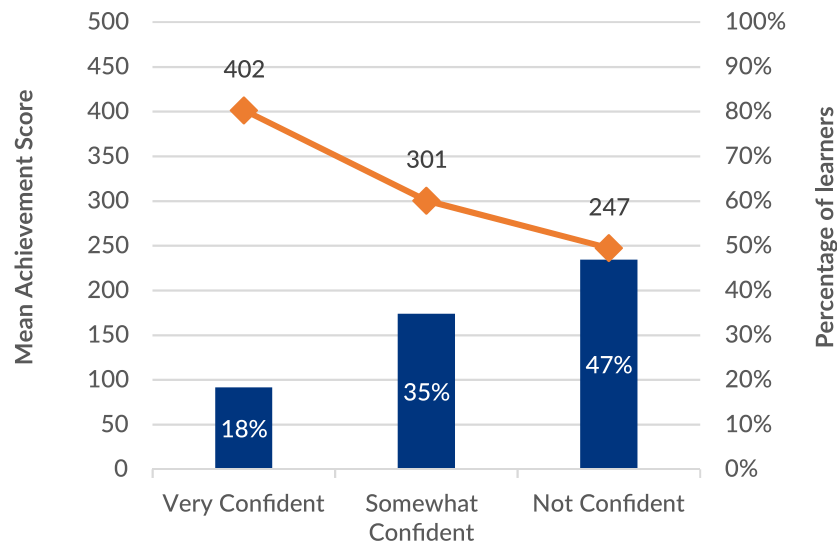


Figure 4.20 Grade 4 Learner confidence in reading and reading achievement scores

Almost half (47%) of the Grade 4 learners indicated they were not confident in their reading skills and abilities. There was a 154-score point difference between those who were very confident in their reading abilities compared to those who were not.

4.7 Grade 6 home environment support

For the South African study, the home questionnaires were translated into Afrikaans and parents or primary caregivers completed the questionnaire in the language in which their child was tested, either English or Afrikaans.

4.7.1 Home resources for reading

Most (70%) of South African Grade 6 learner homes could be described as having some resources. Learner homes with many learning resources obtained the highest mean score (591 score points, SE=15,3).

Figure 4.21 shows the percentage of Grade 6 learners in each category of the PIRLS 2021 home resources for learning scale.

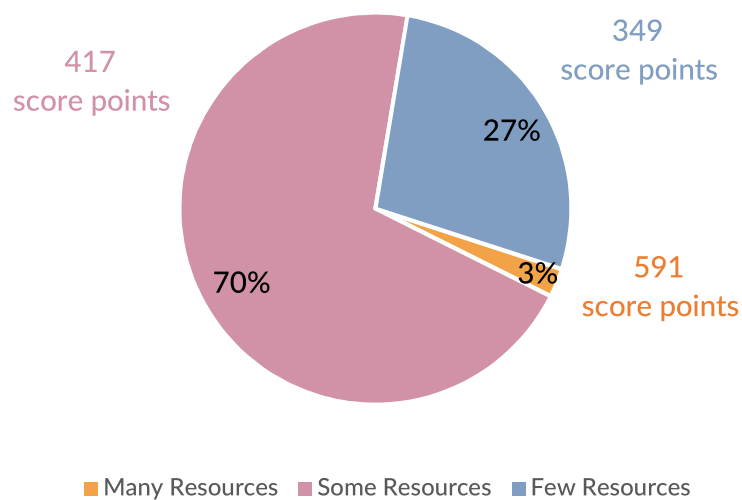


Figure 4.21 Percentage of Grade 6 learners in each category of the home resources for learning scale

It was observed that there was a positive association between home resources for learning and Grade 6 learner reading literacy achievement. There was an approximate seven-year difference between those learners with few resources (349 score points, SE=5,6) at home compared to those with many resources (591 score points, SE=15,3) at home. A similar pattern was observed during the previous cycles of PIRLS in South Africa. Having resources, particularly educational resources, at home appeared to contribute substantially to Grade 6 learner reading literacy achievement.

4.7.2 Language of the test spoken at home

Half (51%) of South African Grade 6 learners indicated that they sometimes spoke the language of the test at home, while only 18% of the learners always spoke the language of the test at home.

Figure 4.22 presents the percentage of learners in each category of the language of the test spoken at home scale.

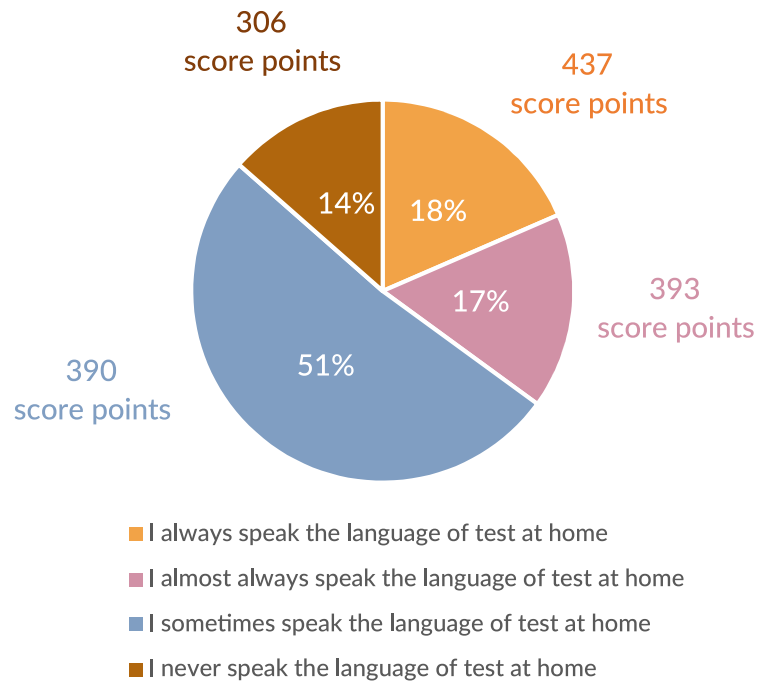


Figure 4.22 Percentage of Grade 6 learners at each category of the language of the test spoken at home scale

Learners who always spoke the language of the test at home obtained the highest mean score (437 score points, SE=9,6), followed by those who almost always spoke the language of the test at home (393 score points, SE=7,6). Learners who never spoke the language of the test at home achieved the lowest mean score (306 score points, SE=4,9).

4.7.3 Parents like reading

Almost two-thirds (62%) of Grade 6 learners' parents said they like reading. These learners obtained an average of 380 score points (SE=5,1). Alarming, 16% of learners' parents did not like reading, and these learners obtained the lowest mean score (366 score points, SE=6,1).

Figure 4.23 presents the percentage of learners whose parents like reading.

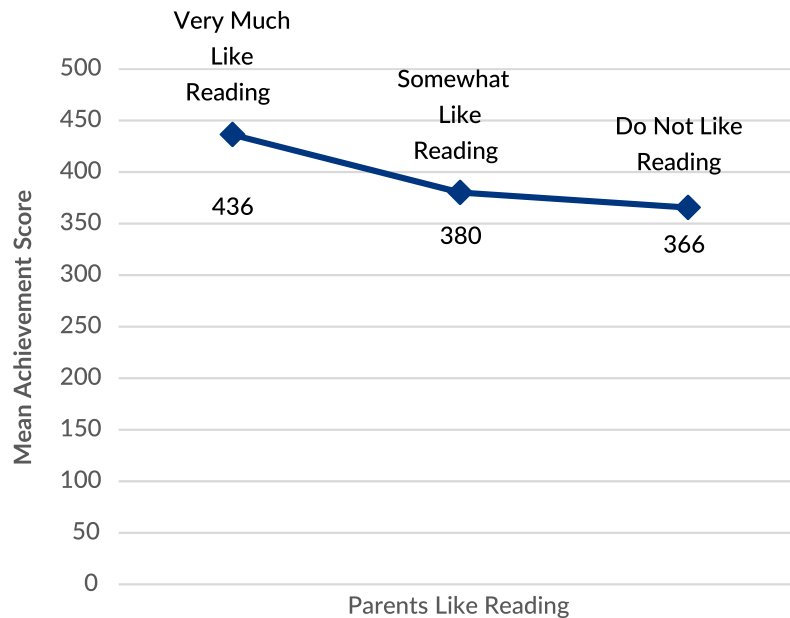


Figure 4.23 Grade 6 learner achievement across parents like reading categories

Learners' whose parents very much liked reading scored the highest (436 score points, SE=6,6) of the three groups. This pattern was also observed in previous rounds of PIRLS (Howie et al., 2017; Howie et al., 2012).

4.7.4 Early reading activities

Similar to the previous PIRLS cycle results (Howie et al., 2017), most (64%) of the learners' parents indicated that they sometimes participated in early literacy activities with their children, with learners obtaining an average score of 379 (SE=5,3).

Figure 4.24 shows the percentage of Grade 6 learners' whose parents actively participated in early literacy activities.

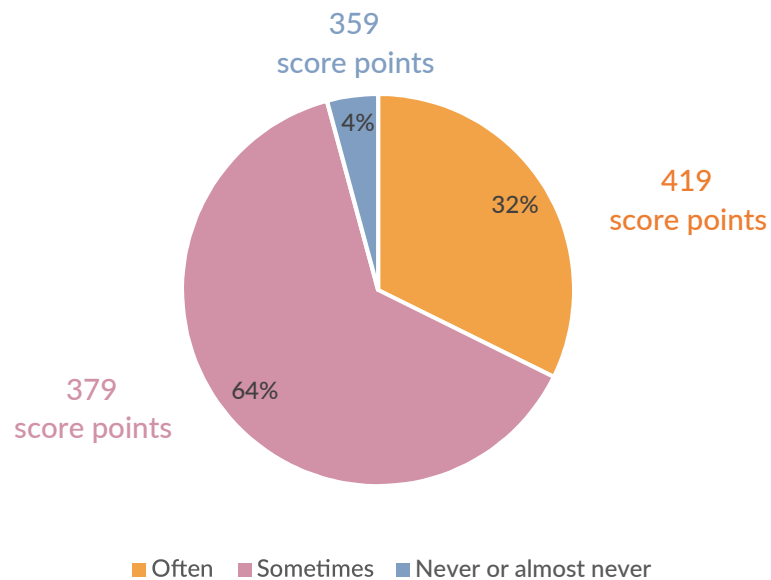


Figure 4.24 Percentage of Grade 6 learners' whose parents actively participated in early literacy activities

Four percent of Grade 6 learners' parents indicated that they never or almost never participated in these types of activities. These learners obtained the lowest overall mean score (359 score points, SE=17,5). Learners achieved higher mean scores when their parents sometimes or often engaged in early literacy activities.

4.8 Grade 6 school composition and resources

The school principals were tasked to complete the School Questionnaire, which asked about school resources for learning, school climate, school discipline and safety and emphasis on reading instruction.

4.8.1 School composition by economic background

As indicated by the school principals, only 5% of Grade 6 learners came from affluent homes, whereas most (58%) were from middle-income families.

Figure 4.25 presents the percentage of Grade 6 learners from disadvantaged backgrounds.

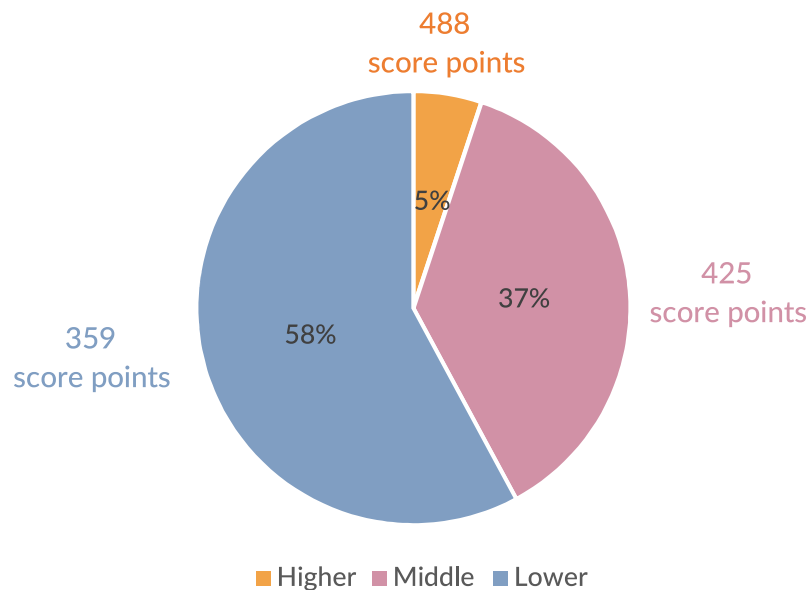


Figure 4.25 Percentage of Grade 6 learners who came from disadvantaged backgrounds

Learners from more affluent homes obtained 488 score points (SE=17,3) compared to those from lower-income families (359 score points, SE=4,8). There was a 130-score point difference between these two categories of learners.

4.8.2 Learners with literacy skills

School principals reported that almost a third (33%) of Grade 6 learners entered school with few early literacy skills, while only 19% entered schools with adequate early literacy skills. These learners achieved the highest mean score of 419 (SE=16,9), while learners who entered school with little early literacy skills obtained a score of 374 (SE=9,8).

Figure 4.26 shows the percentage of learners who entered school with early literacy skills as categorised by their school principals.

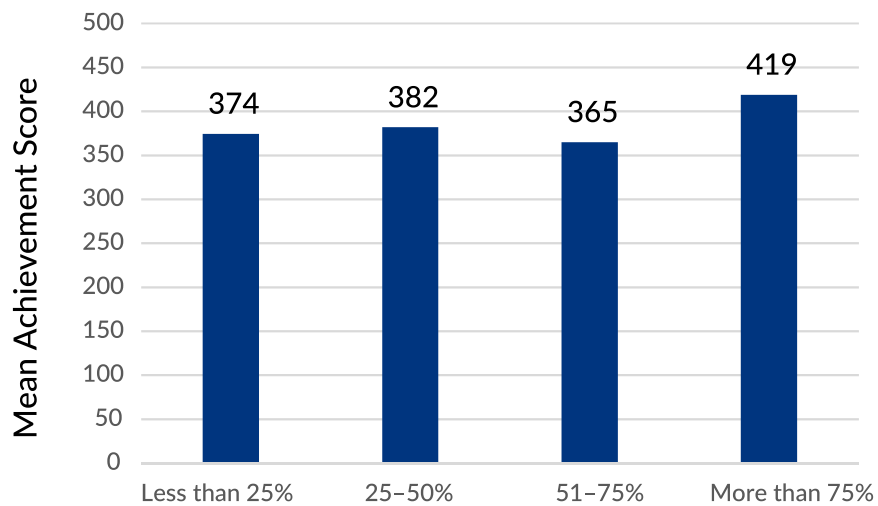


Figure 4.26 Grade 6 Learners that entered school with early literacy skills

4.8.3 School resources

Eighty-six percent of learners, as categorised by the school principal, attended schools where learning was somewhat affected by school resource shortages.

Figure 4.27 depicts the percentage of instruction and learning affected by school resource shortages.

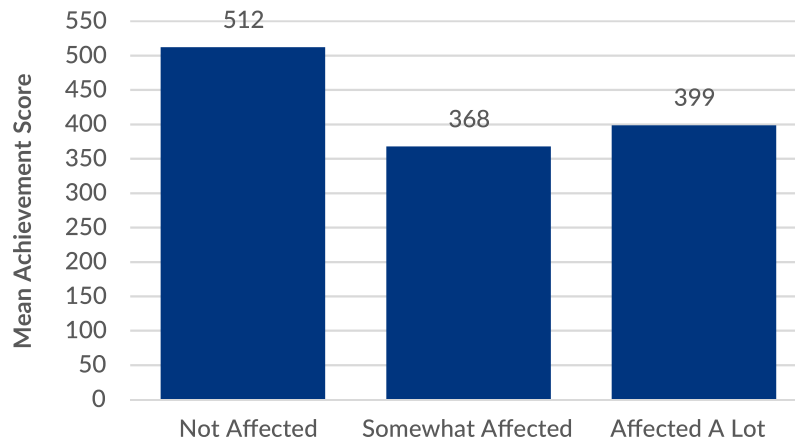


Figure 4.27 Grade 6 Instruction and learning affected by school resource shortages

These Grade 6 learners obtained an average score of 368 (SE=5,5). Grade 6 learners whose school principal indicated that teaching and learning were not affected by resource shortages obtained the highest mean score (512 score points, SE=28,5). Interestingly, Grade 6 learners whose learning was significantly affected by school educational resource shortages obtained a higher mean score (399 score points, SE=28,2) than those who were only somewhat affected (365 score points, SE=5,5).

4.9 Grade 6 school climate

The PIRLS Parent and School Questionnaires focus on parents' attitudes towards schools, the school's emphasis on academic success, emphasis on reading instruction and teacher satisfaction.

4.9.1 Parents' attitude towards the school

Most (84%) of Grade 6 learners' parents indicated they were very satisfied with their children's school. These learners also obtained the highest mean score (398 score points, SE=5,1) in comparison with those whose parents were only somewhat satisfied (361 score points, SE=8,0) or less than satisfied (316 score points, SE=17,0) with their children's school. Only two percent of learners' parents indicated they were less than satisfied with their children's school.

Figure 4.28 shows the mean score of learners whose parents were satisfied with their child's school

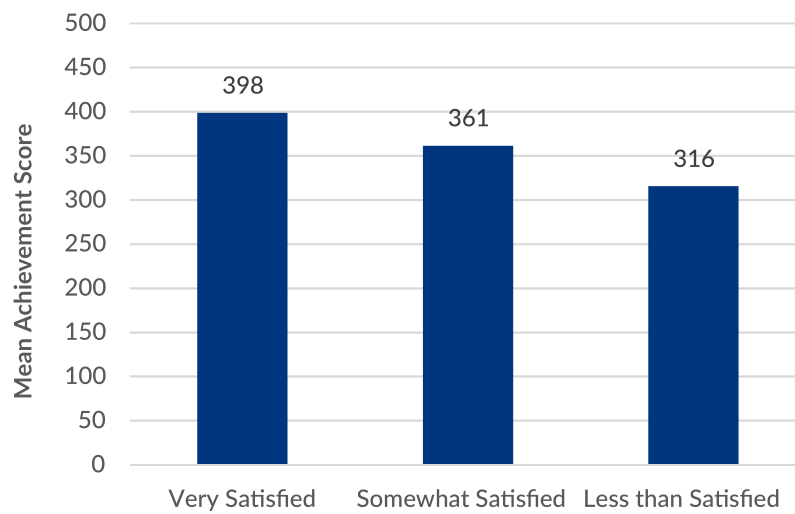


Figure 4.28 Mean achievement score of Grade 6 learners whose parents were satisfied with their child's school

4.9.2 School emphasis on academic success

More than half (67%) of Grade 6 learners attended schools with a medium emphasis on academic success. Only a small percentage of learners (6%) attended schools with a very high emphasis on academic success. Where there was only a high emphasis on academic success, learners obtained the highest mean score (409 score points, SE=13,1) of the three categories.

Figure 4.29 depicts the percentage of Grade 6 learners in schools where the school principal indicated the level of emphasis placed on academic success.

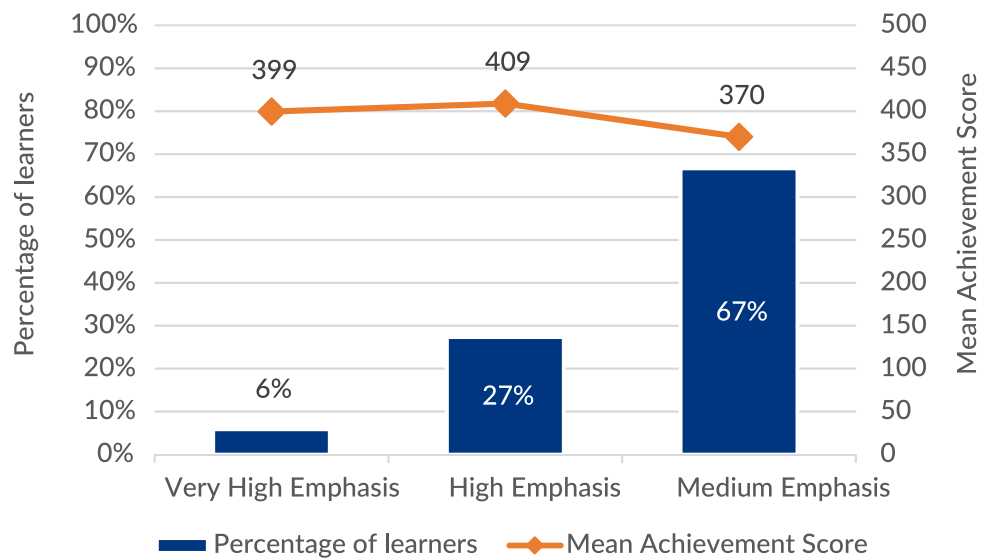


Figure 4.29 Percentage of Grade 6 learners across different levels with emphasis placed on academic success

There was a 39-score point difference between those learners who attended schools with medium emphasis and those who attended schools with a high emphasis on academic success.

4.9.3 Emphasis on reading instruction

South African primary schools seemed to emphasise basic reading literacy skills, for example, knowing letters of the alphabet (91%), letter-sound relationships (78%) and reading words (78%). Other lower-order skills included locating information in a text taught across grades 1 to 4.

Figure 4.30 presents the starting grade where schools emphasise reading skills and strategies.

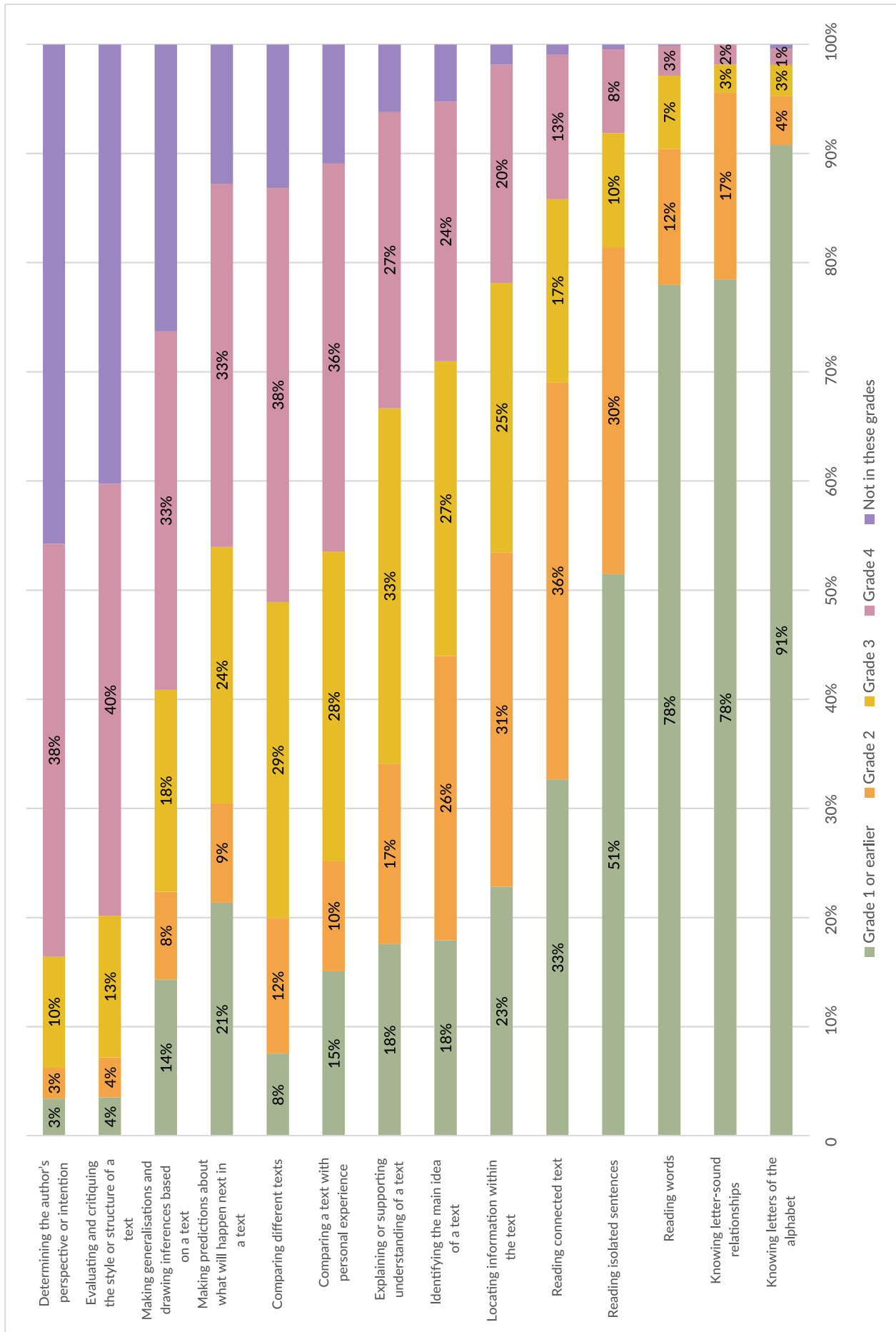


Figure 4.30 Overall starting grade where schools emphasised reading skills and strategies

Higher-order reading comprehension skills, such as determining the author's perspective or intention, were usually only introduced in Grade 4 (38%). However, almost half (46%) of school principals indicated that this skill was introduced in Grade 5 or higher.

4.9.4 Teacher satisfaction

Like the Grade 4 PIRLS testing, most (68%) of the learners' teachers indicated that they were very satisfied with their jobs even though most schools lack resources in one form or another.

Figure 4.31 presents the percentage of Grade 6 learners' whose teachers were satisfied with their job.

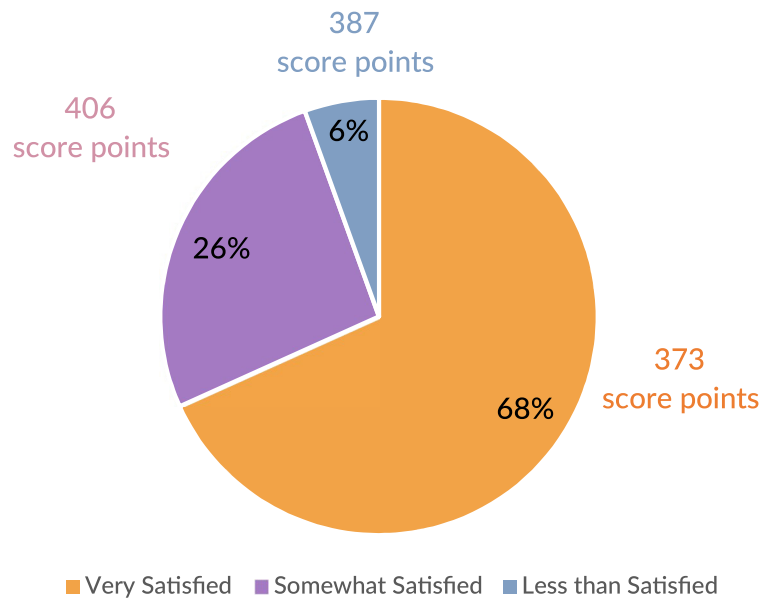


Figure 4.31 Percentage of Grade 6 learners' whose teachers were satisfied with their job

Six percent of learners whose teachers were not satisfied with their jobs obtained a lower score (387 score points, SE=50,8) than those whose teachers were somewhat satisfied with their jobs (406 score points, SE=13,2).

4.10 Grade 6 school safety

This section deals with school discipline, safe and orderly schools, and bullying amongst Grade 6 learners.

4.10.1 School discipline

More than half (53%) of the Grade 6 learners' school principals indicated minor problems at the school. These learners obtained a mean score of 377 points (SE=7,9).

Figure 4.32 depicts the mean achievement scores of learners when compared to school discipline.

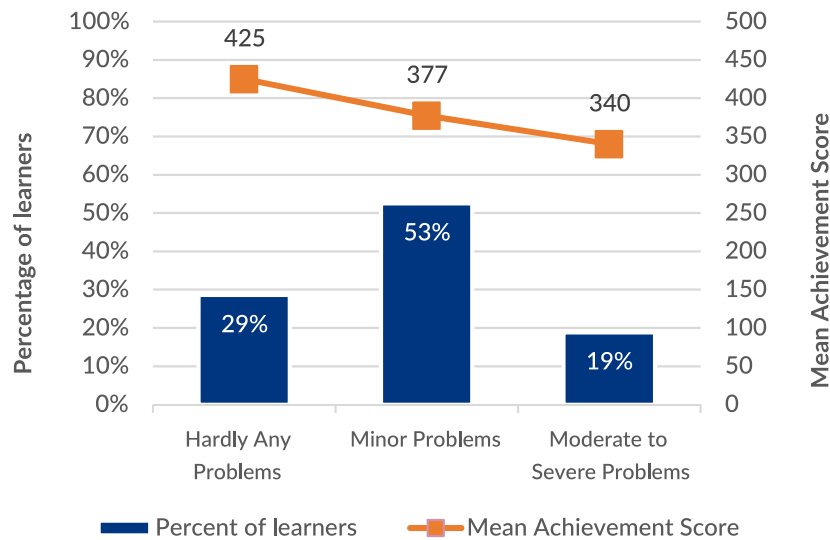


Figure 4.32 Mean achievement scores of Grade 6 learners when compared to school discipline

Almost one-third (29%) of the learners' school principals indicated hardly any problems with these learners obtaining the highest scores (425 score points, SE=12,3) among the three categories. There was an 85-point score difference between hardly any problems and moderate to severe problems.

4.10.2 Safe and orderly school

Half (52%) of the South African Grade 6 learners were in classes where teachers indicated that their school was somewhat safe and orderly. In the current PIRLS cycle, 34% of learners were in classes viewed as very safe and orderly. Learners obtained the highest mean score where the schools were considered very safe and orderly (416 score points, SE=11,6).

Figure 4.33 presents the percentage of teacher and learner reports on school safety and orderliness.

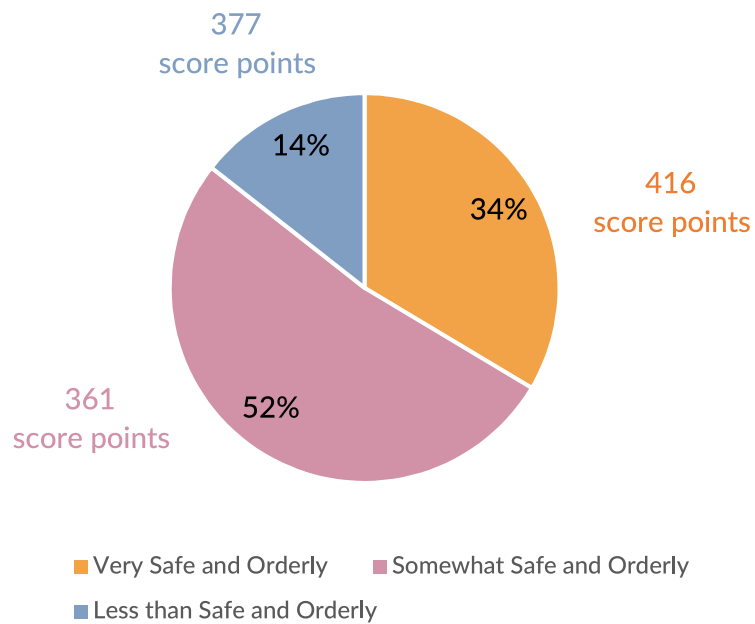


Figure 4.33 Grade 6 teacher and learner reports on school safety and orderliness

4.10.3 Learner bullying

A third (33%) of Grade 6 learners were bullied weekly. There appears to be a relationship between the frequency of bullying and the Grade 6 learners' reading literacy achievement.

Figure 4.34 shows the percentage of Grade 6 learners bullied at school and their achievement scores.

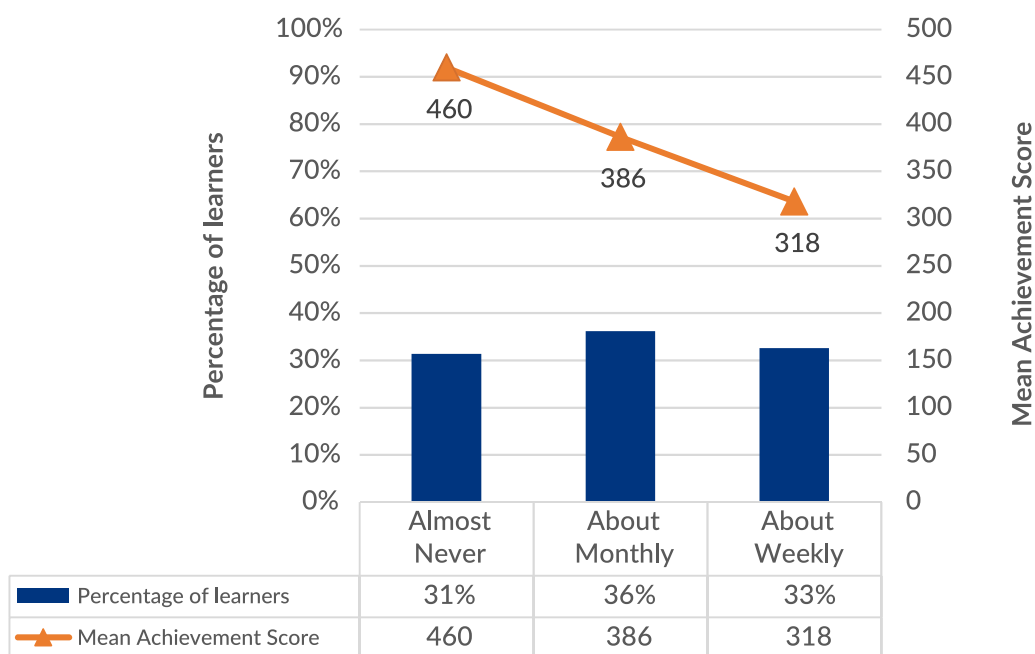


Figure 4.34 Grade 6 learners bullied at school and learner achievement

Grade 6 learners who indicated that they were being bullied weekly obtained the lowest mean score of 318 score points (SE=4,4). There was a 142-score point difference between learners who were almost never bullied and those who experienced bullying weekly.

4.11 Grade 6 teachers' preparation

Teachers were asked to complete the Teacher Questionnaire about their preparedness inside the classroom.

4.11.1 Teachers' formal education

Half (50,8%) of the Grade 6 learners were taught by teachers with bachelor's degrees; these learners obtained a mean score of 383 (SE=9,4).

Table 4.2 depicts the highest level of teachers' formal education in South Africa in conjunction with Grade 6 learner reading literacy achievement.

Table 4.2 Highest level of Grade 6 teachers' formal education

	Percent	Percent (s.e)	Mean	Mean (s.e)
Did not complete Grade 12/Standard 10	1,6%	1,3	367	46,4
Grade 12/Standard 10	3,7%	1,2	393	30,8
Post-secondary training	17,4%	2,7	390	14,2
Technikon diploma	3,8%	1,8	374	21,3
Bachelor's (first) degree	50,8%	3,9	383	9,4
Honours degree	21,4%	3,0	376	12,9
Master's degree	1,2%	0,9	410	131,6

Almost 2% (1,6%) of learners were taught by teachers who had not completed Grade 12. These students obtained an average of 367 score points (SE=46,4). Very few learners were taught by a teacher with a master's (1,2%) degree, and these learners obtained the highest mean score across the categories.

4.11.2 Teachers' years of experience

Over one-third (36%) of learners were taught by teachers with 20 years or more of teaching experience, and another 36% were taught by those with less than 10 years of teaching experience. This pattern showed that most learners had either very experienced teachers or teachers who recently entered the profession. Learners taught by those with 20 years or more experience obtained the lowest mean score (380 score points, SE=11,7) across the different categories.

Figure 4.35 depicts teachers' experience and Grade 6 learner reading literacy achievement.

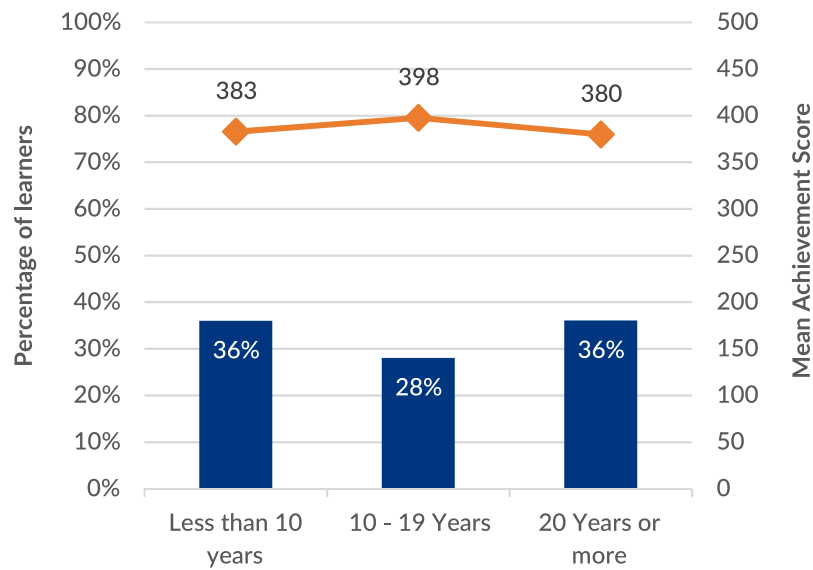


Figure 4.35 Teacher experience and Grade 6 learner achievement scores

4.11.3 Teachers' professional development

Three-quarters (75%) of Grade 6 learners' teachers attended professional development sessions specifically for teaching reading comprehension skills or strategies, followed by 73% who attended sessions about assessing learners' reading. Very few teachers (35%) attended professional development sessions on digital literacies. This finding might be linked to the current need for digital literacy in South Africa, as few schools have working computers or digital devices for teaching and learning.

Figure 4.36 presents the percentage of Grade 6 learners whose teachers participated in formal professional development in reading.

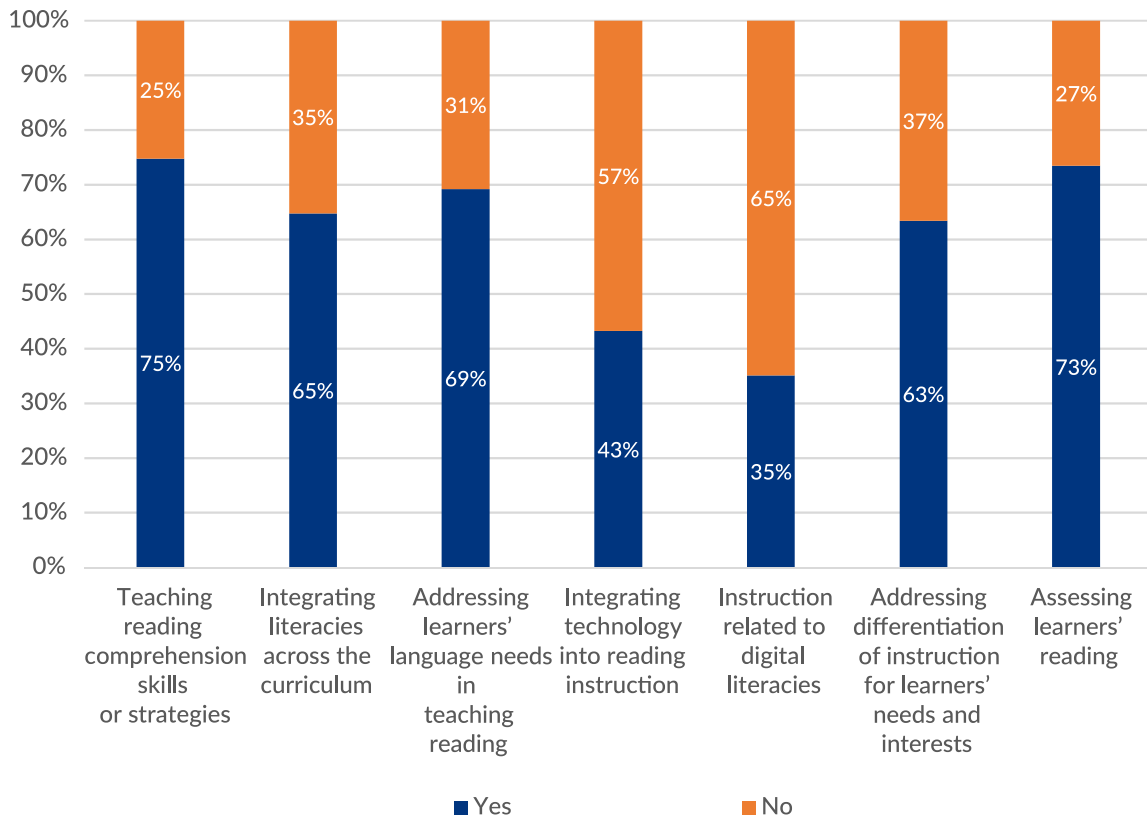


Figure 4.36 Grade 6 teachers who attended professional development in reading

The following figure presents the teachers' professional development priorities.

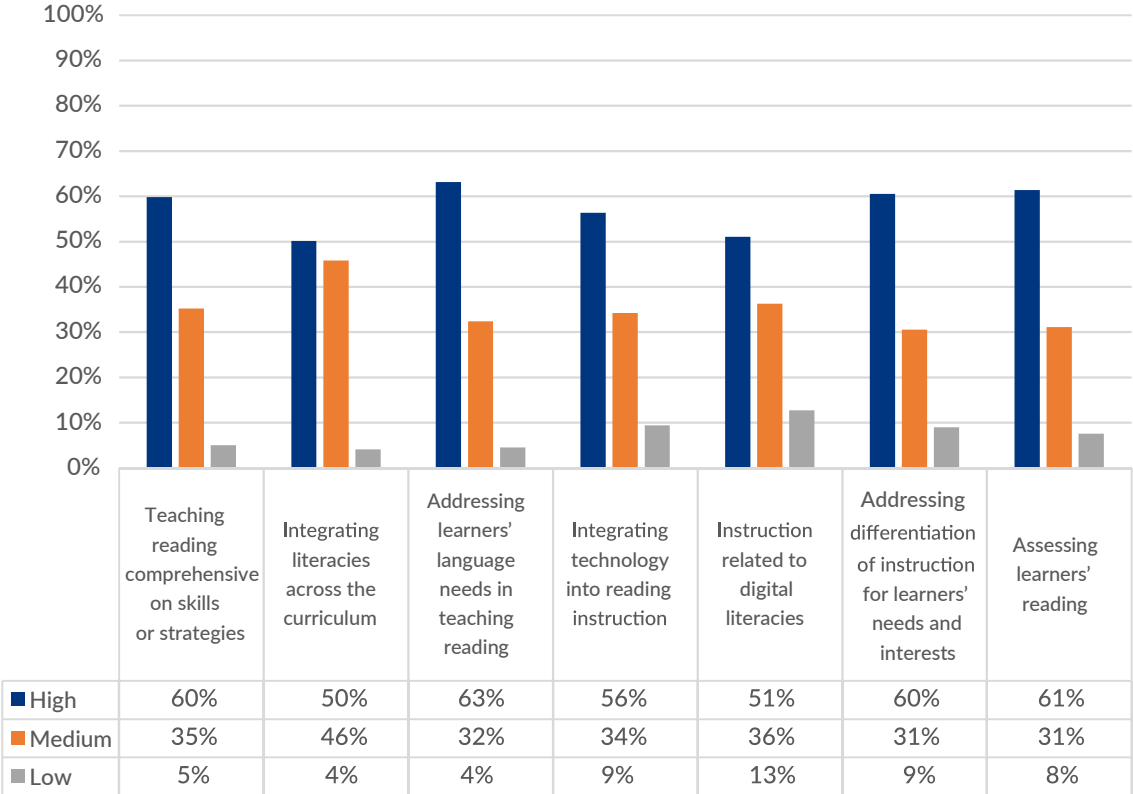


Figure 4.37 Grade 6 teachers' professional development priorities according to level of importance

Even though most learners' teachers did not attend digital literacies professional development sessions, it appeared to be a high priority (51%) for future professional development endeavours. More than half (63%) of learners' teachers indicated that addressing learners' language needs in teaching reading was critical. Only half (50%) of the learners' teachers indicated that they required more professional development sessions for integrating literacies across the curriculum.

4.12 Grade 6 learner engagement and attitudes

As part of the PIRLS contexts, information about the learner's own attitudes and behaviour towards reading is collected. This section focuses on learners' engagement in reading lessons, whether they like reading, and their confidence in their own reading.

4.12.1 Learners engaged in reading lessons

Most (56%) of the teachers indicated that the learners were very engaged compared to seven percent who were less engaged. These learners also obtained the lowest mean score with only 313 (SE = 10,8), while those who were somewhat engaged obtained 363 score points (SE = 6,0) and very engaged obtained 414 score points (SE = 3,8). There was a 100-score point difference between those learners who were very engaged and those who were less than engaged.

Figure 4.38 shows the percentage and mean scores of Grade 6 learners who were engaged in reading activities in the classroom.

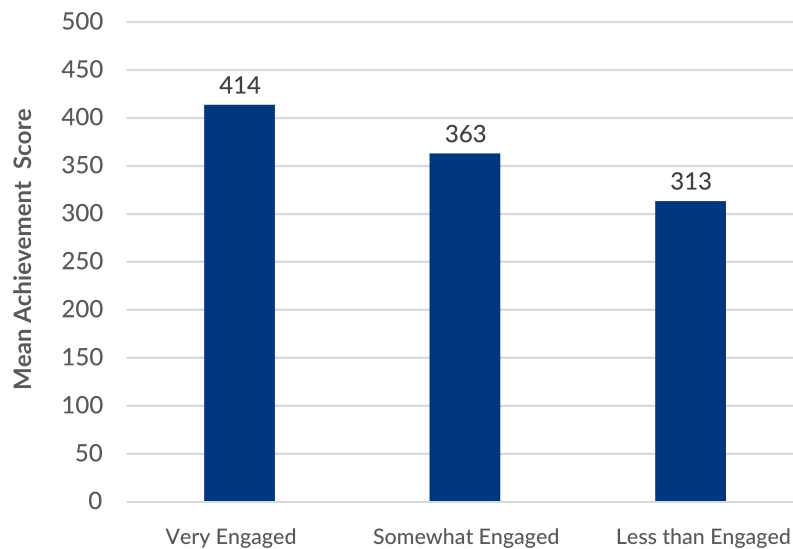


Figure 4.38 Grade 6 Learners engaged in reading instruction

4.12.2 Learners like reading

Almost half (47%) of the Grade 6 learners indicated that they very much liked reading, closely followed by 42% of learners who only somewhat liked reading. Few (11%) learners stated that they did not like reading. The mean scores between these three groups varied from those who very much liked reading, with an achievement score of 413 (SE = 3,7), compared to those who did not like reading, with a mean score of 360 (SE=11,3). There was a 53-point difference between these two groups of learners.

Figure 4.39 shows the percentage of learners who enjoyed reading in conjunction with their reading literacy scores.

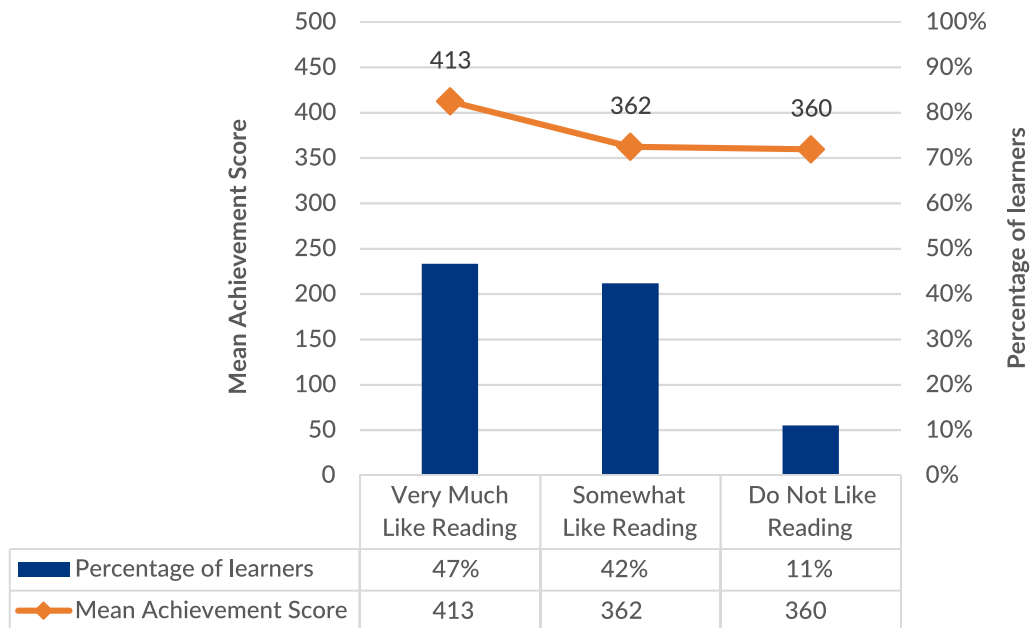


Figure 4.39 Grade 6 learners like reading and reading achievement scores

4.12.3 Learners confident in reading

Over a third (37%) of learners indicated they were not confident in their reading skills and abilities. There was a 168-score point difference between those who were very confident in their reading abilities and those who were not.

Figure 4.40 depicts the percentage of learners confident in their reading and reading literacy achievement scores.

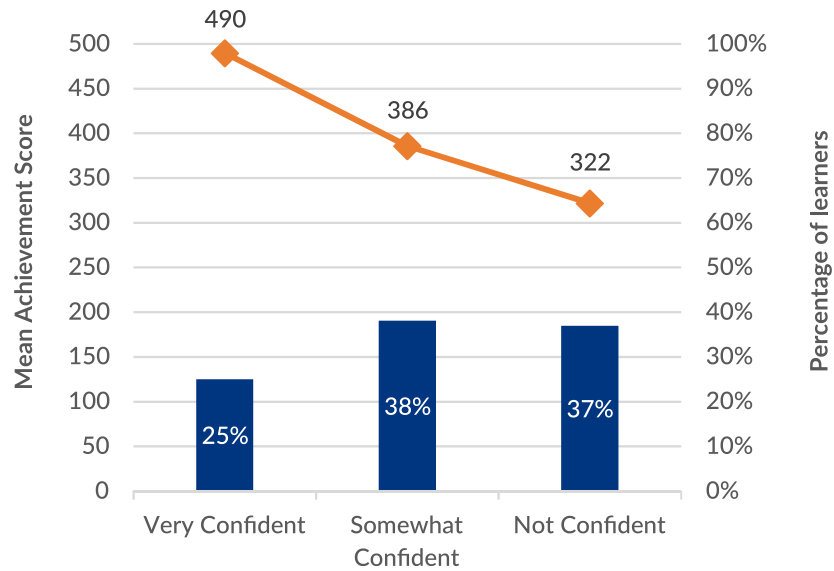
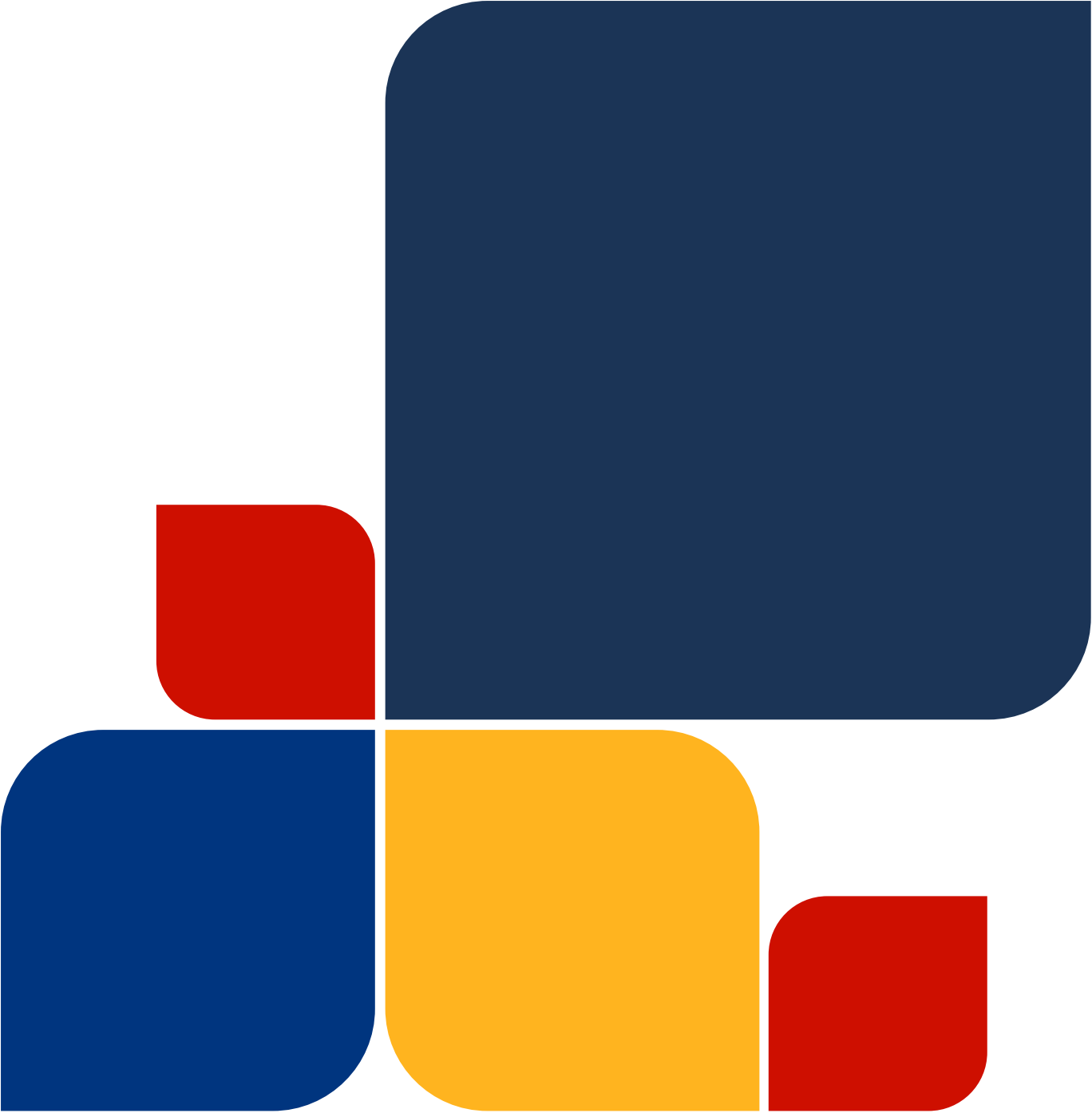


Figure 4.40 Grade 6 learner confidence in reading and reading achievement scores

CONCLUSION & RECOMMENDATIONS





CONCLUSION & RECOMMENDATIONS

CONCLUSION

According to the IEA, the PIRLS 2021 assessment appears to be too difficult for a high percentage of South African Grade 4 learners and recommends that South Africa participate in the IEA's Literacy and Numeracy Assessment (LANA) study, which is targeted to learners in low- and middle-income countries. The international report also highlights reservations about South African Grade 4 results, noting that the percentage of learners with achievement scores too low to be estimated exceeded 25%. However, South Africa is conducting a verification of these results; therefore, the reported scores should be treated with **caution**. The outcome of the verification process will be made available at a later stage. Hence, this report is considered preliminary.

The Grade 6 learners achieved a higher overall score than the Grade 4 learners. There is **no significant difference** between the **English Grade 4** (382) and the **English Grade 6** (377) scores. A difference of **69 score points** between **Afrikaans Grade 4** (387) and **Afrikaans Grade 6** (456) is **significantly** different. Almost all the African language speaking Grade 6 learners were tested in English.

Previous rounds of PIRLS have evidenced the high achievement outcomes of the English-speaking and Afrikaans-speaking groups compared with the others. Where these languages were spoken at home, the test results were even higher and therefore the gaps bigger across the African languages.

RECOMMENDATIONS

Upscale the teaching of reading literacy in schools - this could be in the form of professional development for language teachers to enhance their pedagogical content knowledge. Teachers should start with the basics such as building vocabulary, how to decode, phonological awareness and phonics but should also extend their teaching strategies towards language comprehension (being able to understand the meaning of the words and sentences). Readers who have a strong understanding of this can then draw conclusions after reading a text.

Revising the relevant policies - the current curriculum policy in terms of time and content. The time available for reading and writing should be revised as the curriculum currently provides six hours for home language per week, but this period of six hours is divided among the different skills the learners must be competent in, leaving the skill of reading with only five hours per two-week cycle. This time could be extended considering the stages of reading. The content of the language curriculum needs to be closely aligned with the requirements of reading literacy education in South Africa. This alignment will ensure that learners receive targeted instruction and practice in areas essential for enhancing reading proficiency. By incorporating research-based methodologies and evidence-based approaches into the curriculum, educators can better support learners' reading development. To foster a safe and inclusive

learning environment, it is essential to enforce the anti-bullying policy in all schools. This policy should be rigorously implemented, with clear consequences for any acts of bullying or violence. By addressing bullying incidents promptly and proactively, schools can create a conducive atmosphere for learning and reduce the negative impact on learners' well-being. Training teachers and staff on how to recognise and address bullying behaviour can contribute significantly to its prevention.

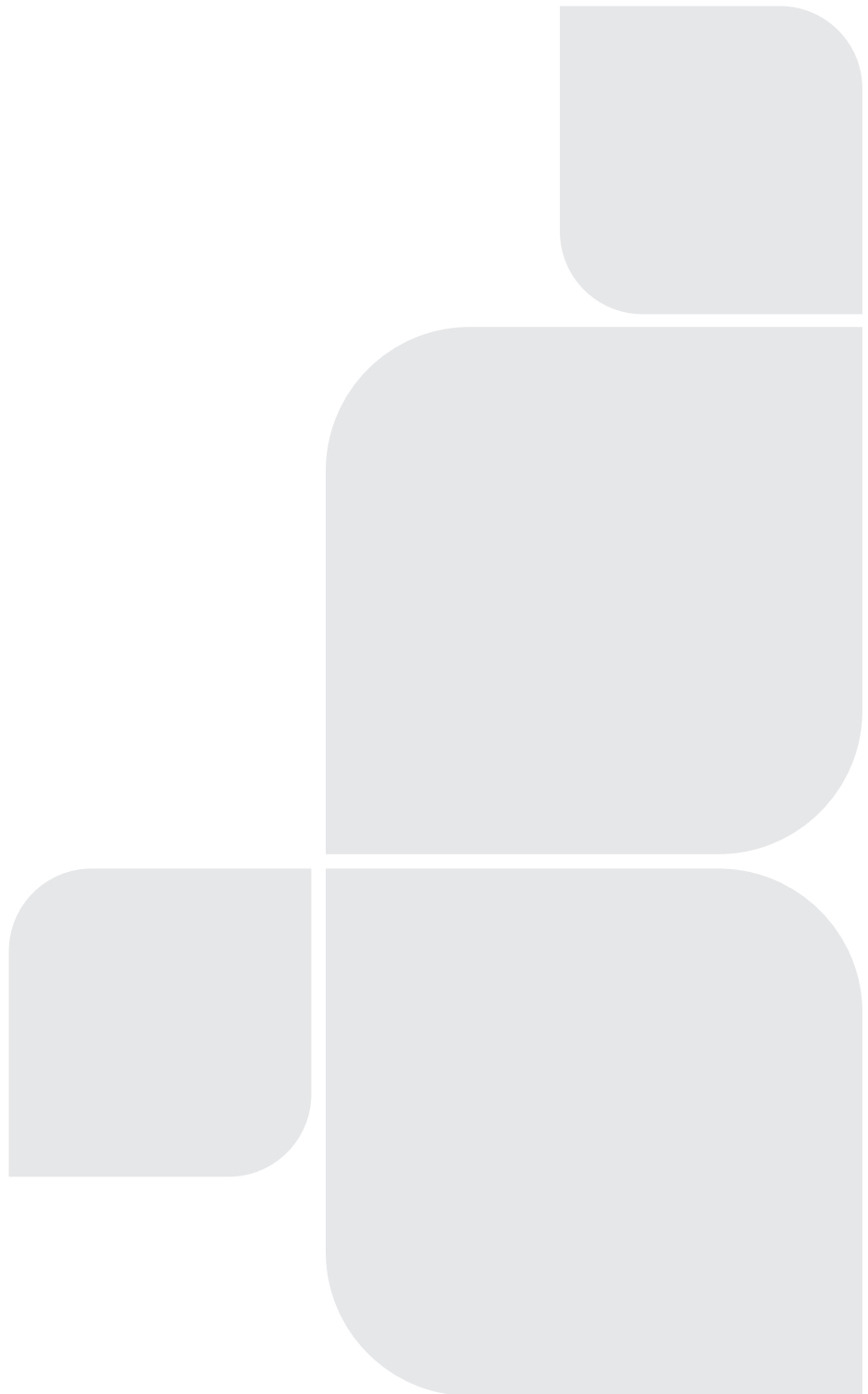
Equitable provision of reading resources in schools - there are Non-Governmental Organisations (NGOs) that run book donations, but the NGOs do not cover all schools between Quintiles 1 - 3. The Department of Basic Education (DBE) should allocate funding specifically for these schools to have classroom libraries with books that are grade appropriate. The DBE could look into the supply of a specific teaching reading manual that teachers can easily access.

Partnerships to build teaching capacity - work with organisations, provincial education departments and teacher unions to bolster teaching and motivate teachers to strengthen their school based assessment.

Investigating the role of HEI in teacher training - the importance of teacher training should be stressed. An exploration of how pre-service teachers are taught should be considered; having a look at aspects such as the methodology of languages. Partnerships with HEIs are important to build and support capacity building programmes for training teachers and officials on effective reading literacy strategies.

Targeted focus on indigenous language development - expand on all relevant material available, including graded readers, to schools to promote reading in African languages. Having a panel of African language experts and, more importantly, storytellers develop reading materials for school-going children may boost learners' appetite for reading.

Present a series of workshops and seminars - focusing on both staff from the Assessment Directorates, other education directorates as well as key stakeholders, on the effective utilisation of the assessment data, highlighting the PIRLS results as well as results from the systemic evaluations and Early Learning National Assessment studies, for improving evidence-based decision making at the national and provincial level.



REFERENCES





References

- Bruns, B., Macdonald, I. H., & Schneider, B. R. (2019). The politics of quality reforms and the challenges for SDGs in education. *World Development*, 118, 27-38.
- Coleman, J., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfeld, F., & York, R. (1966). *Equality of Opportunity*. Washington: National Center for Educational Statistics.
- Combrinck, C., van Staden, S., & Roux, K. (2014). Developing early readers: Patterns in introducing critical reading skills and strategies to South African children. *Reading & Writing*, 5(1), 9 pages. doi:<https://doi.org/10.4102/rw.v5i1.45>
- Deci, E.L., & Ryan, R.M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum Press.
- English, L. M., & Carlsen, A. (2019). Lifelong learning and the Sustainable Development Goals (SDGs): Probing the implications and the effects. *International Review of Education*, 65(2), 205-211.
- Foy, P., & Joncas, M. (2003). PIRLS Sampling Design. In M. O. Martin, I. V. S. Mullis, & A. M. Kennedy (Eds.). *PIRLS 2001 Technical Report*. Retrieved from Boston College, TIMSS & PIRLS International Study Center. https://timssandpirls.bc.edu/pirls2001i/PIRLS2001_Pubs_TR.html
- Howie, S.J., Combrinck, C., Roux, K., Tshele, M., Mokoena, G.M., & McLeod Palane, N. (2017). *PIRLS Literacy 2016 Progress in International Reading Literacy Study 2016: South African children's reading literacy achievement*. Pretoria: Centre for Evaluation and Assessment.
- Howie, S.J., Venter, E., van Staden, S., Zimmerman, L., Long, C., Scherman, V. and Archer, E. (2009). *PIRLS 2006 Summary Report: South African children's reading literacy achievement*. Pretoria: Centre of Evaluation and Assessment.
- Howie, S.J., van Staden, S, Tshele, M, Dowse, C. & Zimmerman, L. (2012). *South African Children's Reading Literacy Achievement Summary Report*. Pretoria: Centre for Evaluation and Assessment.
- IEA's Progress in International Reading Literacy Study (2021). <https://pirls2021.org/download>
- LaRoche, S., Joncas, M., & Foy, P. (2017). Sample Design in PIRLS 2016. In M. O. Martin, I. V.S. Mullis, & M. Hooper (Eds.), *Methods and Procedures in PIRLS 2016* (pp. 3.1-3.34). Retrieved from Boston College, TIMSS & PIRLS International Study Center. <https://timssandpirls.bc.edu/publications/pirls/2016-methods/chapter-3.html>
- Majorano, M., Bastianello, T., Bodea-Hategan, C. et al. Early Literacy Skills and Later Reading and Writing Performance Across Countries: The Effects of Orthographic Consistency and Preschool Curriculum. *Child Youth Care Forum* 50, 1063–1085 (2021). <https://doi.org/10.1007/s10566-021-09611-7>
- Marsh, H.W., & Craven, R.G. (2006). Reciprocal effects of self-concept and performance from a multidimensional perspective: Beyond seductive pleasure and unidimensional perspectives. *Perspectives on Psychological Science*, 1(2), 133–163.

- Martin, M. O., Mullis, I. V. S., & Hooper, M. (Eds.) (2017). *Methods and Procedures in PIRLS 2016*. Retrieved from Boston College, TIMSS & PIRLS Study Center. <https://timssandpirls.bc.edu/publications/pirls/2016-methods.html>
- Meinck, S. (2020). Sampling, Weighting and Variance Estimation. In H. Wagemaker (Ed.), *Reliability and Validity of International Large-Scale Assessment: Understanding IEA's Comparative Studies of Student Achievement* (pp.113-131). Springer. https://doi.org/10.1007/978-3-030-53081-5_7
- Mullis, I. V., Martin, M. O., Kennedy, A. M., Trong, K. L., & Sainsbury, M. (2012). *PIRLS 2011. International Report*. Boston: TIMSS & PIRLS International Study Center.
- Mullis, I. V., & Martin, M. O. (2019). *PIRLS 2021 Assessment Frameworks*. Boston: TIMSS & PIRLS International Study Center.
- Robitaille, D. F. (1993). *Curriculum Frameworks for Mathematics and Science. TIMSS Monograph No. 1*. Pacific Educational Press, Faculty of Education, University of British Columbia, Vancouver, British Columbia V6T 1Z4, Canada.
- Unterhalter, E. (2019). The many meanings of quality education: Politics of targets and indicators in SDG 4. *Global Policy*, 10, 39-51.
- Victor J. Pitsoe (2013) Teacher Attrition in South Africa: Trends, Challenges and Prospects, *Journal of Social Sciences*, 36:3, 309-318, DOI: 10.1080/09718923.2013.11893197
- Visser, M., Juan, A., & Feza, N. (2015). Home and school resources as predictors of mathematics performance in South Africa. *South African Journal of Education*, 35(1), 1-10.
- Wagemaker, H. (Ed.) (2020). *Reliability and Validity of International Large-Scale Assessment: Understanding IEA's Comparative Studies of Student Achievement*. Springer. <https://doi.org/10.1007/978-3-030-53081-5>
- Walshaw, M. Teacher knowledge as fundamental to effective teaching practice. *J Math Teacher Educ* 15, 181–185 (2012). <https://doi.org/10.1007/s10857-012-9217-0>
- Van Staden, S., & Roux, K. (2022). South Africa. In K.A. Reynolds, E. Wry, I.V.S. Mullis & M. von Davier, *PIRLS 2021 Encyclopedia*. <https://pirls2021.org/south-africa>



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