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Advisory Note

02



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COVID-19 and increased inequality in Grade 4 reading outcomes in South Africa

The impact of the COVID-19 pandemic on learning outcomes has been a subject of considerable concern globally. Previous regional and provincial studies in South Africa revealed that students experienced substantial learning loss in reading, language and mathematics in 2020 and 2021 (Ardington et al., 2021; Van der Berg et al., 2022; Wills & Van der Berg, 2022). However, only the 2021 Progress in International Reading Literacy Study (PIRLS) provides a nationally representative view of how the pandemic affected academic achievement.

Initial reports on PIRLS 2021 revealed a decline in reading achievement at the Grade 4 level in South Africa from 320 PIRLS points in 2016 to 288 in 2021 (Department of Basic Education, 2023; Mullis et al., 2023). This is equivalent to a loss of about 50% to 60% of a year of learning² (Böhmer & Wills, 2023). The percentage of students reaching the low international benchmark decreased from 22% in 2016 to 19% in 2021. This decline comes after a period of improvement in reading, evidenced by rising PIRLS performance from 2006 to 2016 (Van Staden & Gustafsson, 2022).

Inequality in reading achievement increased between 2016 and 2021

A new report presents five findings describing how the pandemic exacerbated learning inequalities in reading achievement in South Africa (Böhmer & Wills, 2023).

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² A year of learning in South Africa in PIRLS points is about 55-60 points.

1. Overall distribution of Grade 4 reading achievement widened from 2016 to 2021

Figure 1: Grade 4 PIRLS reading benchmarks reached in 2016 and 2021, South Africa



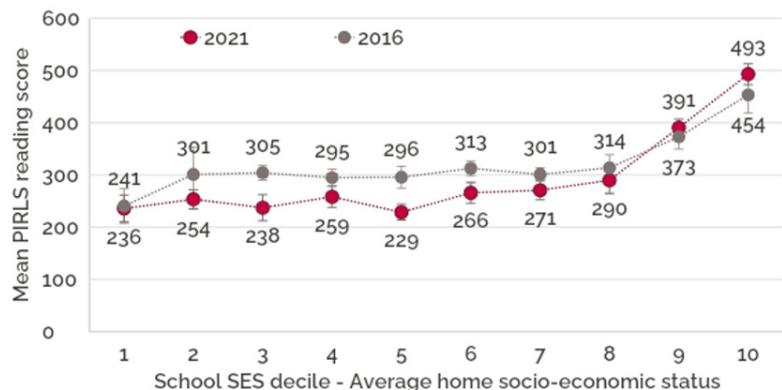
There was a substantial increase in the percentage of students who were struggling readers in 2021 compared to 2016 (see Figure 1). **The percentage of students unable to reach the low international benchmark (400 points) only increased from 78% to 81%, but the percentage of students unable to achieve a very low threshold of 200 PIRLS points doubled from 13.4% in 2016 to 26.5% in 2021.** This represents a marked rise in Grade 4 students who may need to develop foundational reading skills such as decoding or oral reading fluency further. At the other end of the performance distribution, there was a slight rise in the percentage of students reaching the high international PIRLS benchmark from 1.9% (2016) to 3.0% (2021).

Source: South African Grade 4 PIRLS Literacy 2016 and PIRLS 2021 datasets. The “Very low” threshold is set at 200 points.

2. Inequality in reading achievement increased across socioeconomic status and language dimensions

While the PIRLS reading scores of English and Afrikaans students showed no significant changes from 2016 to 2021³, significant declines were observed among students tested in African languages, widening achievement gaps across language groups. This correlates with larger learning losses among students in the poorest 70-80% of schools but limited losses seen among students in the wealthiest 20% of schools (deciles 9 & 10) (See Figure 2). Compared to a child in the wealthiest 10% of schools, a child in the poorest 70% of schools was 5 times less likely to reach the low benchmark in 2016 but was 10 times less likely to reach this benchmark in 2021.

Figure 2: Mean Grade 4 PIRLS scores in 2016 and 2021 by school SES deciles



Source: South African Grade 4 PIRLS Literacy 2016 and PIRLS 2021 datasets, own calculations using plausible values for the overall reading score. Means are student-weighted. 95% Confidence intervals shown from standard errors calculated using jackknifing performed at up to 250 sample schools with 125 zones, using the repeat command.

³ Much higher pooled SES scores for Afrikaans schools in 2021, suggest the 2021 Afrikaans sample of schools was much wealthier than the 2016 sample, which could skew scores upward for this group.

3. Pro-girl reading gaps were affected

Girls outperformed boys in reading by 52 PIRLS points in 2016, a gap that increased slightly to 57 points in 2021. This increasing gap is entirely driven by differential learning losses across boys and girls tested in African languages and in the poorest 80% of schools, with boys experiencing greater learning losses than girls (see Table 1). The pro-girl gender gap in African languages **increased** from 51 to 60 PIRLS points from 2016 to 2021. By contrast, in English and Afrikaans schools, the pro-girl gender gap **decreased** from 51 PIRLS points in 2016 to 41 PIRLS points in 2021.

Boys in lower SES schools –the lowest-achieving group before the pandemic–experienced the most significant learning losses.

Table 1: Mean reading scores by gender, language group and school SES deciles in 2016 & 2021

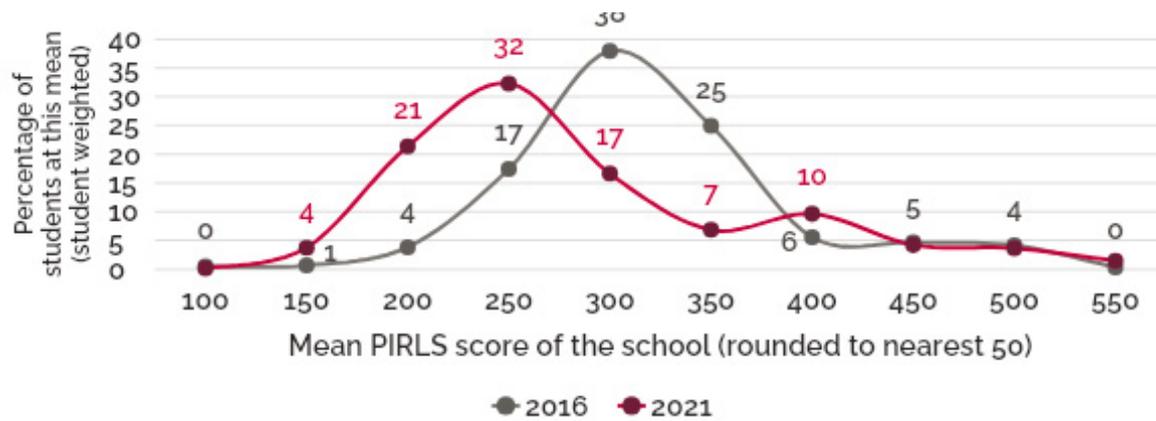
	Girls			Boys			All			Pro-girl gap	
	2016	2021	Diff.	2016	2021	Diff.	2016	2021	Diff.	2016	2021
Language											
English & Afrikaans	397	404	7	346	363	17	371	384	12	51	41
9 African Languages*	322	277	-44	271	217	-54	295	247	-49	51	60
School SES deciles											
9 and 10	432	450	18	389	419	30	410	435	25	42	31
1 to 8**	329	287	-42	276	227	-49	301	256	-45	53	60
Total	347	317	-30	295	260	-34	320	288	-31	52	57

Source: South African Gr 4 PIRLS Literacy 2016 and PIRLS 2021 datasets, calculations use plausible values for overall reading score. Means are student-weighted. *The 9 African languages are: isiNdebele, isiXhosa, isiZulu, Sepedi, Sesotho, Setswana, Siswati, Tshivenda and Xitsonga. **School SES is set to missing for schools where fewer than three parents responded to the four relevant questions on the home environment questionnaire. Schools with missing SES are included in category 1-8.

4. Inequality in reading achievement increased between schools.

The achievement gap between the average performance of the best- and worst-performing schools has increased (see Figure 3). The proportion of students in top-achieving schools, with an average score of 400 or above, remained similar between 2016 and 2021. However, for the majority of schools, the average score declined substantially. The proportion of schools with lower average achievement between 175 and 275 PIRLS points more than doubled, increasing by about 150%.

Figure 3: Distribution of mean reading scores at a school level in 2016 and 2021



Source: South African Grade 4 PIRLS Literacy 2016 and PIRLS 2021 datasets, own calculations using plausible values for the overall reading score. A mean score was calculated for each school and then rounded to the nearest 50.

5. Inequality in reading achievement has increased within schools, with wider gaps between the best and worst-performing students in the same school.

The range of Grade 4 PIRLS scores within schools widened from 2016 to 2021, presenting instructional challenges for teachers. The average school achievement differences between students at the 10th and 90th percentile increased from 199 points in 2016 to 221 points in 2021. As a result, the average Grade 4 teacher in 2021 faces a class with students whose reading abilities span almost four grade levels (up from about three-and-a-half grade levels in 2016). This has negative implications for classroom management and available support for struggling students.

Large reading losses in PIRLS were confirmed through an item-level analysis

An analysis was undertaken on items related to seven comprehension passages that were included in both the 2016 PIRLS Literacy and the 2021 PIRLS assessment (Böhmer & Wills, 2023). Four key findings emerged:

1. The percentage of students who were able to answer items correctly decreased, often significantly, between 2016 and 2021 for almost every one of the 107 common items.
2. The percentage of students achieving zero on every item of the passage increased by between 2 and 5 times from 2016 to 2021 (see an example in Figure 4).
3. The non-attempt⁴ rate increased sharply, with 2 to 3 times as many items left out per passage in 2021 relative to 2016, and is most pronounced for multiple-choice items.
4. Compared to 2016, students took much longer to answer questions in 2021, struggling to complete and even to start answering the items. For one of the passages, “How we learned to Fly”, many more students did not attempt to answer any item in 2021 compared to 2016 (almost 3% in 2021 vs. less than 0.5% in 2016) and fewer students managed to finish (only 67% of students answered the last item in 2021, down from 85% in 2016).

⁴ A ‘non-attempted’ item is one where a student left it out and did not provide any answer.

All these findings point to the fact that many more Grade 4s in 2021 compared to 2016 were struggling to make meaning of the texts and answer related questions on those passages. Many more students in 2021 were not attempting items, giving up or taking a very long time to complete assessments. School disruptions clearly impeded the development of reading skills, but PIRLS scores may also have deteriorated due to deficits in other skills taught and practised at school. These include concentrating on a single task, writing and familiarity with test-taking (including familiarity with multiple-choice question formats) due to less time spent at school.

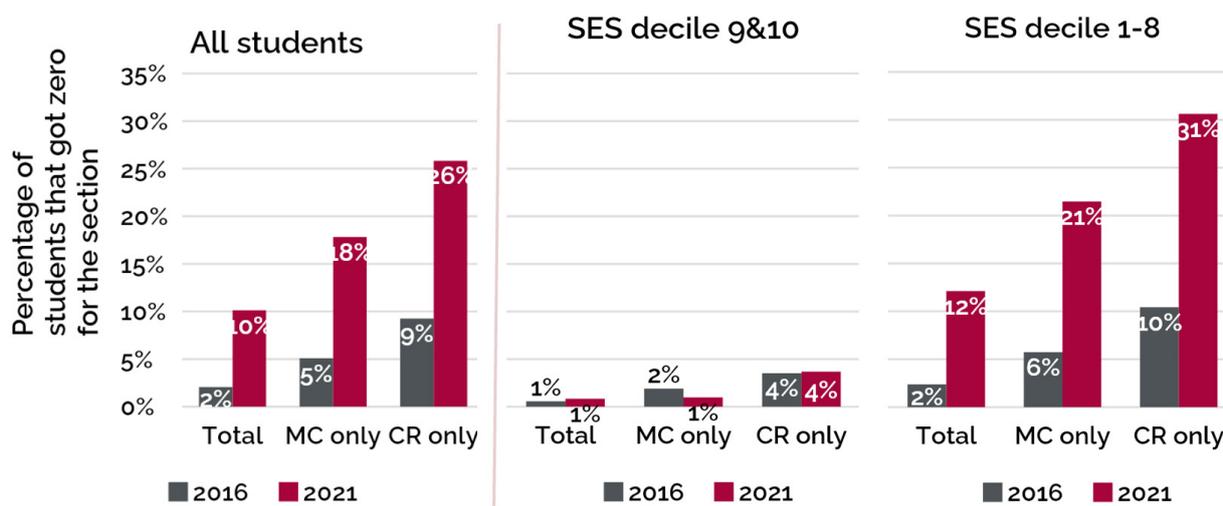


Figure 4: Percentage of students that scored zero for “How did we learn to Fly?” in 2016 and 2021

Source: South African Grade 4 PIRLS Literacy 2016 and PIRLS 2021 datasets. All averages are student-weighted. MC include all the multiple-choice items, and CR are all the constructed response items. Schools where insufficient parents responded to calculate an SES decile are included in the Decile 1 to 8 group.

Conclusion and recommendations

The COVID-19 pandemic has deepened the learning crisis in South Africa and worsened inequalities in what was already a very unequal system. The majority of grade 4 students attending poorer schools have seen significant decreases in reading outcomes, particularly boys at such schools.

Taking decisive action to make up for lost learning time during the pandemic through remediation could still help to mitigate or even reverse some of the learning losses. This requires a large-scale recovery programme that includes additional instructional time or resources allocated to foundational skills and provides wholistic support to students and teachers. The Presidential Youth Employment Initiative, which has recently been extended, presents an added opportunity to deploy teaching assistants who could provide additional support for a remediation programme

Recommendations for accelerating learning recovery include curriculum consolidation, extending instructional time, and improving learning efficiencies. Only the Western Cape has initiated a coordinated recovery plan to maximise instructional time, prioritise foundational subjects, and provide additional out-of-school support for students and educators.

Tracking the progress of COVID-19 affected cohorts, particularly the Grade 4s of 2021, will also be important to examine the extent of recovery and the persistence of learning backlogs. Implementing a standardised national reading assessment would support such an effort.

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