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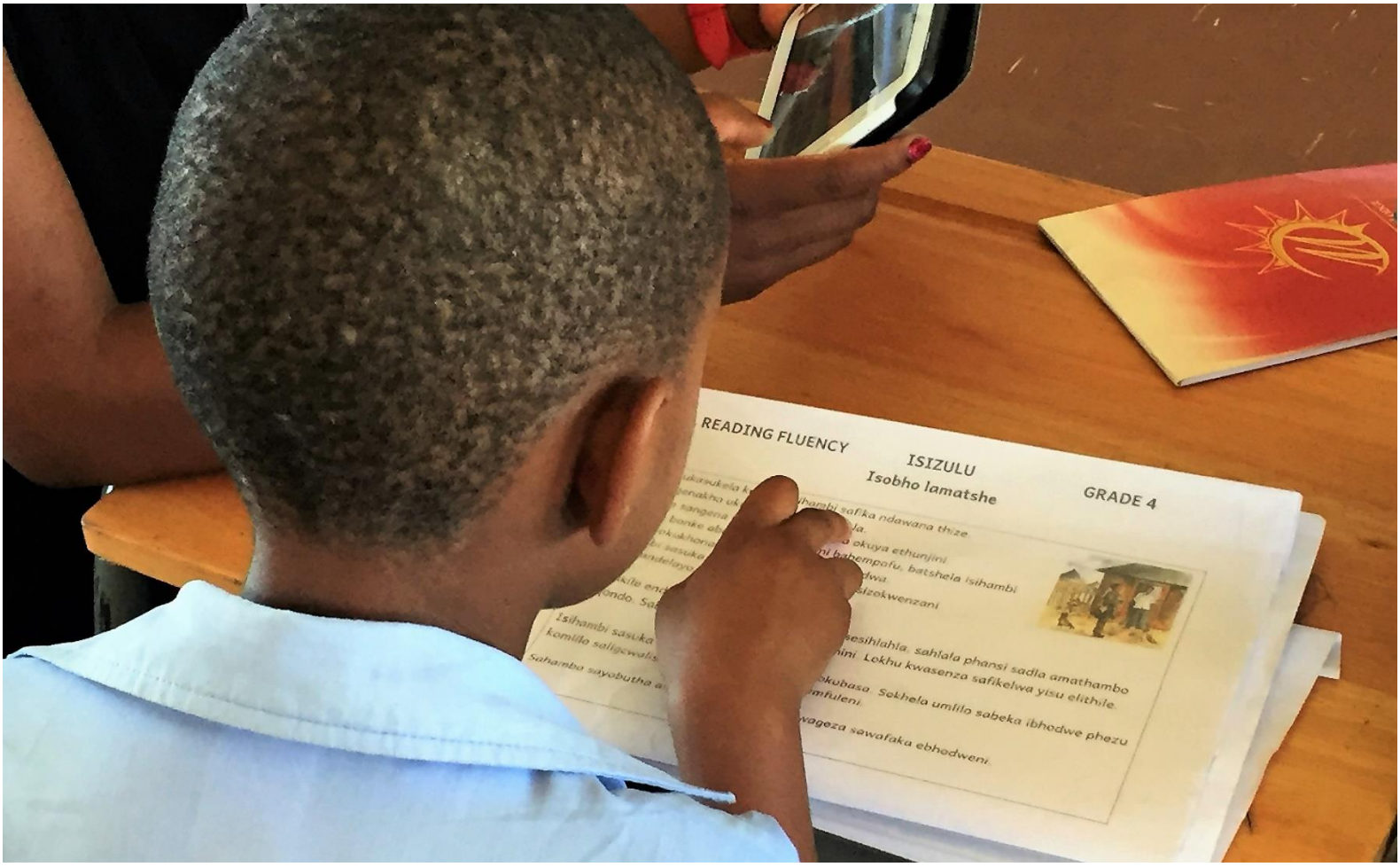

Impact Evaluation of USAID/South Africa Story Powered School Program - Baseline

August 2018

This publication was produced at the request of the United States Agency for International Development. It was prepared independently by Dr. Alicia Menendez and Dr. Cally Ardington.

USAID/SOUTH AFRICA STORY POWERED SCHOOL PROGRAM IMPACT EVALUATION:

August 2018

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DISCLAIMER

This publication was produced at the request of the United States Agency for International Development. It was prepared independently by Dr. Alicia Menendez and Dr. Cally Ardington.

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ACRONYMS

DBE	Department of Basic Education
EC	Eastern Cape
EDR	Evaluation Design Report
EGRA	Early Grade Reading Assessment
ICC	Intra-Cluster Correlation
IE	Impact Evaluation
KZN	KwaZulu-Natal
LOLT	Language of learning and teaching
MDES	Minimum Detectable Effect Size
ORF	Oral Reading Fluency
RCT	Randomized Control Trial
RFE	Reading for Enjoyment
SPS	Story Powered Schools: A South African Reading Revolution

EXECUTIVE SUMMARY

NORC at the University of Chicago, through the USAID Reading and Access Evaluation Contract, has been charged with conducting the external impact evaluation (IE) of Story Powered Schools: A South African Reading Revolution (SPS). The main purpose of the evaluation will be to assess the causal impact of SPS on reading outcomes of primary school children.

This report focuses on the baseline findings of the evaluation.

PROJECT BACKGROUND

SPS aims to develop and sustain a culture of reading for enjoyment in 720 primary schools in the Eastern Cape (EC) and KwaZulu-Natal (KZN) provinces of South Africa. The program focuses on nurturing a love of reading, in mother tongue and English, to spark children's potential and unlock their capacity to learn. The project is run by South African non-profit organization, Nal'ibali, in partnership with the United States Agency for International Development (USAID), the DG Murry Trust, and national, provincial and local Departments of Education.

The following activities take place at each SPS school:

- **"Big 5" training** – 5 teachers trained in reading for enjoyment (2 days).
- **Community training** for 10 community volunteers in reading for enjoyment (1 day).
- Providing **five hanging libraries** – bags with pockets to display the reading materials – and **15 editions per year of the bilingual Nal'ibali reading newspaper supplement.**
- Supporting schools to **register reading clubs.**
- **Weekly visits from Story Sparkers** – Nal'ibali mentors. These are high school graduates from the community that receive training and support in the field by SPS Literacy Mentors and Provincial Coordinators. On their weekly visit, Story Sparkers assist schools in creating a culture of reading for enjoyment with activities scheduled before, during, and after the school day.
- **Holiday programs** in June/July that include multiple reading activities for learners.
- **Events, campaigns, and competitions**, which engage the broader school community.
- **Reading club showcases** – competitions where reading clubs are adjudicated according to established criteria and where children from reading clubs share and perform their achievements.

These SPS activities aim to increase: 1) awareness about the importance of reading for enjoyment to contribute to children's literacy development, and learning; 2) motivation to read, write, and share stories; 3) positive behaviors and habits that support reading development; 4) access to reading materials; 5) children's skills and confidence relating to reading, writing, and storytelling; and 6) parents' and communities' involvement in promoting reading.

EVALUATION METHODOLOGY OVERVIEW

The methodology for this evaluation is a randomized-controlled trial (RCT), with communities of schools randomly assigned to treatment and control groups. This data will be complemented with qualitative data from classroom observations in a sub-sample of treatment and control schools and with in-depth case studies in four treatment schools.

A total of 360 schools were included in the baseline data collection that was conducted over two years – 2017 and 2018 – due to programmatic reasons. In each school selected for data collection, NORC randomly sampled one teacher from each of grades 2, 3, and 4. Learners were randomly selected from

the classes of the sampled teachers. In total, NORC randomly selected 30 learners from each school (10 each from grades 2, 3, and 4, comprised of five girls and five boys whenever possible).

The evaluation measures reading outcomes using subtasks of the Early Grade Reading Assessment (EGRA), a widely used tool to measure various aspects of reading proficiency. The EGRA assessments were conducted in mother tongue (isiXhosa or isiZulu) for all learners. English EGRA assessments were administered only to Grade 3 and 4 learners. NORC used an existing version of EGRA and added six receptive vocabulary items where the learner was asked to identify the correct picture to match a particular word.

In addition to the EGRA tool, the baseline data collection included: (1) a short student background questionnaire administered immediately following the EGRA to every student sampled; (2) a teacher questionnaire administered to the teacher of each sampled class; and (3) a school inventory completed by the enumerators.

FINDINGS

Reading skills: Average scores in the EGRA subtasks are very low in both provinces. **One in four learners are non-readers in mother tongue** – they cannot read a single word from a short, grade-level paragraph.

There is clear progress from grade to grade, but by Grade 4, 13% of learners are still unable to read one word and the average oral reading fluency is 23 words per minute. In the table below, we show the proportion of learners that are not readers in mother tongue and average oral reading fluency for each grade, separately by province

Oral Reading Fluency (ORF)	Eastern Cape			KwaZulu-Natal		
	Grade 2	Grade 3	Grade 4	Grade 2	Grade 3	Grade 4
ORF = 0	41.9%	28.4%	15.1%	32.1%	19.5%	10.6%
ORF average number of words	5.90	13.07	19.57	8.66	19.55	25.29

Excluding non-readers, the average oral reading fluency of the rest of the learners is, on average, 20 words per minute and 24% of them cannot correctly answer one comprehension question about the passage read.

The very poor foundation in mother tongue literacy at the beginning of Grade 4 is particularly concerning, as learners transition to English as the language of learning and teaching (LOLT) in this grade. English EGRA results are similar those for mother tongue, with **32% of Grade 4 learners unable to answer one English comprehension question.**

Many factors are associated with learners' reading performance:

- On average, girls tend to out–perform boys.
- Better socio-economic status, as proxied by household possessions and child height, is associated with better reading outcomes.
- Learners who are behind for their age and those repeating the grade also have poorer reading skills.

Attitudes and behavior: 90% of learners report they like to read. However, 20% of learners never read at home on their own and only one in four learners reads at home daily.

Absenteeism is a major challenge for both learners and teachers. SPS activities are scheduled to take place in school and absenteeism could reduce the potential impact of the intervention.

Learners' reading resources: Access to reading resources is clearly an issue. Half of learners have no books other than schoolbooks to read at home. Only 15% of learners can take a library book home. While the vast majority of schools have class readers, learners typically have to share them, cannot choose their own reader, and are not allowed to take readers home.

Teachers' reading behavior: 60% read outside work requirements often or very often, but less than half are reading books (fiction or non-fiction). Only 47% of teachers have more than ten books in their homes.

Classroom instruction practices: Teachers report using a range of activities in literacy lessons. Rote learning and chanting remains a dominant pedagogy with 47% of teachers saying that their learners repeat sentences they have said first on a daily basis. Playing games related to the literacy lesson is much less common with only 8% of teachers reporting this as a daily activity. There is clearly room to incorporate more activities focused on reading for enjoyment.

Teachers' assessment of their learners: On average, teachers report that 41-50% of their learners are reading with fluency and comprehension in mother tongue. Matching this to learners' EGRA outcomes would imply a fluency of 19 words per minute, far from the levels needed to be able to comprehend the text read. Teachers are not only overly optimistic, their assessment of their own learners' reading levels does not correlate highly with the measured EGRA outcomes.

INTRODUCTION

CONTEXT AND PROJECT BACKGROUND

In 2016, almost 80 percent of South African Grade 4 learners fell below the lowest international level of reading proficiency, which means they could not locate explicit information or reproduce information from text. This effectively means they cannot read for meaning. Grade 4 learners living in remote rural areas or townships are at a particular disadvantage; they have lower reading scores than learners in other locations.[1] The ability to read for meaning by Grade 4 is considered crucial by education experts, since students are expected to utilize their reading skills to learn other subjects from Grade 4 onward.

To tackle this challenge, the SPS project aims to develop and sustain a culture of reading for enjoyment in 720 primary schools in the Eastern Cape and KwaZulu-Natal provinces of South Africa. The SPS program is part of the broader Nal'ibali (isiXhosa for "here's the story") campaign, which is a national reading-for-enjoyment campaign to spark children's potential by making reading and storytelling part of their daily lives.

The SPS project focuses on nurturing a love of reading, in mother tongue and English, to spark children's potential and unlock their capacity to learn. The project is run by South African non-profit organization Nal'ibali in partnership with USAID, the DG Murry Trust, and national, provincial, and local Departments of Education.

The campaign is based on research on the link between reading for pleasure and improved education outcomes, and identifies the necessary conditions to support children's literacy development.[2] The degree to which children acquire language skills and become motivated, habitual readers, is a strong predictor of future academic success, educational attainment, employment, and income.[3]

To support children's development as readers, the SPS project seeks to create the following conditions:

- Increase **awareness** that reading for enjoyment is important and powerful, and **knowledge** of how to do it;
- Create more **opportunities** for children to read**,** write, and share stories – alone and with others;
- Inspire, equip, and encourage adults to be reading **role models** who share stories with children, encourage them to read, and model that reading matters; and
- Increase **access to quality reading material**, especially in children's mother tongues.

The SPS project seeks to give children new opportunities to experience books and stories; to create the conditions where children's literacy development can flourish; and to equip, inspire, and nurture teachers on how motivation, confidence, and linking reading and writing to children's lived experiences can support curriculum objectives, accelerate children's literacy development, and enable school

[1] PIRLS Literacy 2016: South African Highlights Report http://www.up.ac.za/media/shared/164/ZP_Files/pirls-literacy-2016-hl-report-3.zp136320.pdf

[2] For example, Krashen, S. (2004). *The power of reading: insights from the research*. Libraries Unlimited: Westport; Evans, M.D.R. et al. (2010) Family scholarly culture and educational success: books and schooling in 27 nations. Research in Social Stratification and Mobility 28: 171-197; United Kingdom Department of Education (2012). Research evidence for reading for pleasure (available from www.gov.uk).

[3] Needu (2013). NEEDU reading study 2013: the state of reading in Grade 5 in selected rural primary schools. National Education Evaluation and Development Unit. Available at https://nicspaull.files.wordpress.com/2014/12/needu-reading-study-2013_28oct14.pdf

success. Ultimately, it wants schools to embrace and take ownership of a strong culture of reading for enjoyment.

The following activities take place at each SPS school:

- **"Big 5" training** – 5 teachers[4] trained in reading for enjoyment Nal'ibali approach.
- **Community training** for 10 community volunteers in reading for enjoyment Nal'ibali approach.
- Providing **five hanging libraries** – large hanging bags with book pockets to display the reading materials and **15 editions per year of the bilingual Nal'ibali reading supplement**, a bilingual newspaper supplement with stories, literacy activities, featuring people working with Nal'ibali, reading tips and support to inspire and guide caregivers, teachers and others to make reading and storytelling meaningful, enjoyable and accessible.
- Supporting schools to **register reading clubs.**
- **Weekly school visits** from **Story Sparkers** – Nal'ibali mentors. Story Sparkers are young high school graduates from the community in which the school is located[5]. They are recruited and employed by Nal'ibali. They receive training and are supported in the field by SPS Literacy Mentors and Provincial Coordinators. On their weekly visit, Story Sparkers assist schools in creating a culture of reading for enjoyment with activities scheduled before, during and after the school day. Typically, their weekly activities include assisting in setting up and running reading clubs, running reading for enjoyment activities in school assembly, demonstrating creative use of reading resources, and demonstrating how to effectively use the mandated "Drop Everything and Read" (DEAR)[6] periods.
- **Holiday programs** in June/July that include multiple reading activities for learners while they are on school holidays.
- **Coordinating and supporting events, campaigns, and competitions** which engage the broader school community. These began with World Read Aloud Day in February and continue with various drives throughout the year.
- **Reading club showcases** – a competition endorsed by the Department of Basic Education (DBE) where reading clubs are adjudicated according to established criteria and where children from reading clubs share and perform their achievements – taking place at multiple levels (school, circuit, and district).

Through these activities, Nal'ibali expects each school to:

- **Support Story Sparkers** by identifying appropriate space for literacy activities – library, empty classroom, etc. – and enabling Story Sparkers to carry out their daily plans rather than asking them to substitute teach or fill in for missing teachers.
- **Establish at least 3 reading clubs**, which may be run Story Sparkers, teachers and/or community volunteers.
- **Actively implement what has been learned in training** – for example, by consistently observing the mandatory **DEAR reading period**, and using classroom time to give children meaningful, personally satisfying opportunities to read, write, and hear stories.

[4]In 2017, Nal'ibali trained 3 teachers and 2 community volunteers per school at the "Big 5" training. It was found that a critical mass of trained teachers is needed, so in 2018 they shifted to train 5 teachers per school.
[5] Because story sparkers work with a number of schools which may cut across different communities, they may be community member of one school but not the others.
[6] The DEAR period is part of the DBE's Read to Lead campaign. All schools should observe at least 30 minutes per week of mandatory reading.

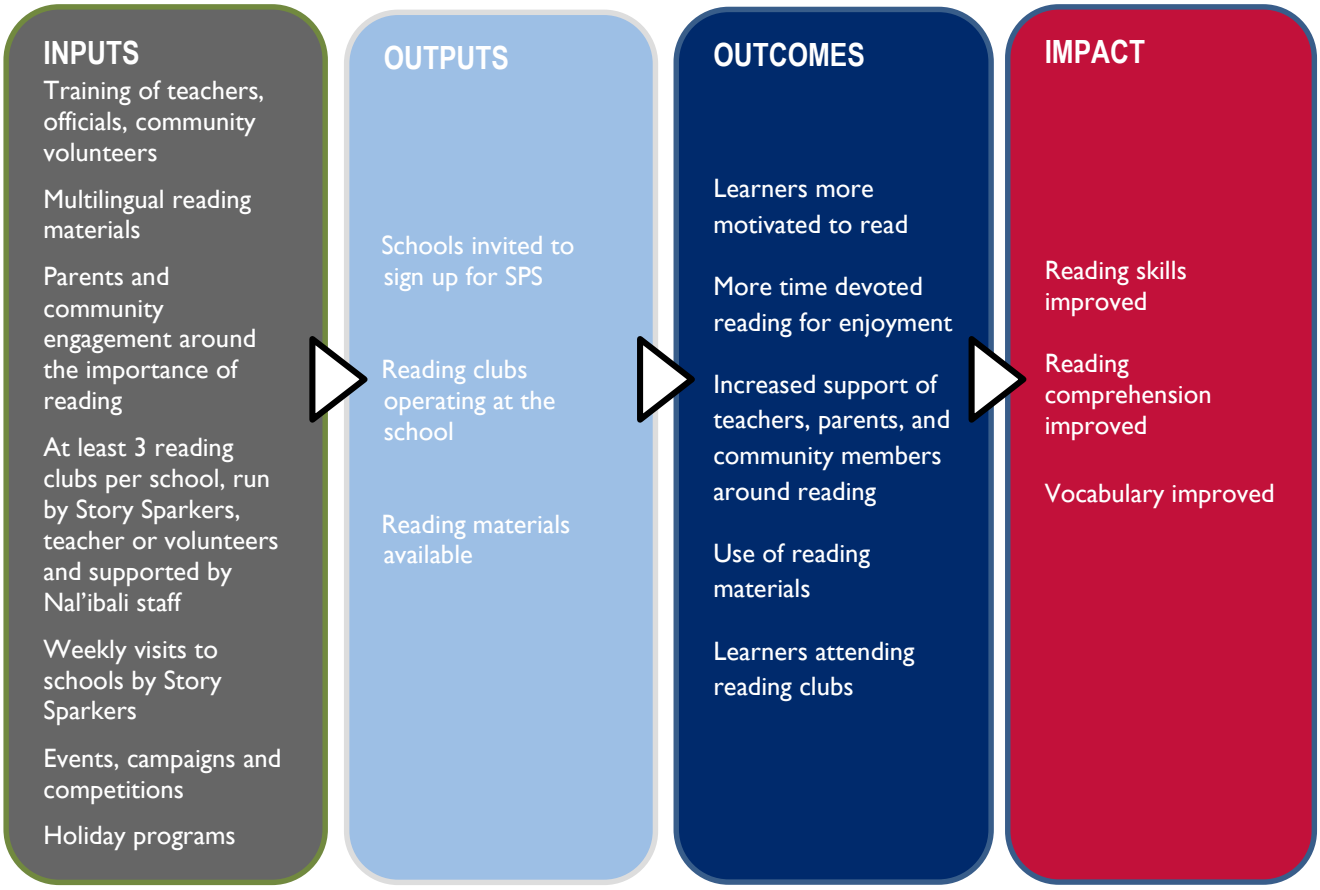
- **Organize and participate in competitions**, including an annual **reading club showcase**, to motivate children and teachers.
- **Participate in national Nal'ibali flagship events**, including World Read Aloud Day and the Story Bosso storytelling competition.
- **Engage parents and the community around the importance of reading**, by sharing information about reading for enjoyment at parents' meetings, sending reading materials home with children, inviting parents and community members to Nal'ibali events, and involving them in Nal'ibali reading clubs and activities as volunteers.

Ultimately, the changes the SPS project expects to see at schools include:

- Increased *awareness that* reading for enjoyment (RFE) is important and contributes to children's literacy development, and *knowledge/understanding of how* RFE helps children learn;
- Shifts in *attitudes*: children who are more excited/motivated to read, write and share stories; teachers who view reading for enjoyment as central to learning; parents who are more invested in reading and education;
- Positive *behaviors and habits* that support reading development, such as children attending reading clubs, reading voluntarily in their free time, choosing what they want to read, taking books and supplements home, and reading a wide variety of books and stories;
- Improved *access* to reading materials, with reading materials accessible to children in schools, and children taking books and supplements home;
- Improvements in children's *skills and confidence* relating to reading, writing and storytelling;
- Parents and communities more involved in promoting reading.

The program's theory of change is as follows:

Table 1: Theory of change



EVALUATION PURPOSE AND AUDIENCE

NORC at the University of Chicago, through the USAID Reading and Access Evaluation Contract, has been charged with conducting the IE of SPS.

The main purpose of the evaluation will be to assess the causal impact of SPS on reading outcomes of primary school children. The evaluation will measure reading outcomes using subtasks of the EGRA, a widely used tool to measure various aspects of reading proficiency.

Additionally, the IE will assess SPS's impact on other intermediate outcomes such as participation of children in reading activities at school and in the community/home, time spent reading independently, children's attitude toward reading, and teacher attitudes and behavior toward RFE and storytelling. To measure these outcomes, the evaluation will use survey instruments to collect data at the level of the learner, teacher, and school. The IE will be implemented in the provinces of Eastern Cape and Kwazulu-Natal, and focus on isiXhosa and isiZulu languages, as well as English. It will assess the impact of SPS over a period of two years.

The findings, conclusions and recommendations generated by this evaluation and research study will contribute toward understanding how activities devoted to RFE contribute to create a culture of reading and to improve reading, comprehension, and vocabulary.

The audiences for this evaluation and research study comprise USAID Operating Units, notably, USAID/South Africa, the Africa Bureau, and the E3/Education Office. Other important audiences are the Government of South Africa, primarily, the Department of Basic Education, donors committed to improving learners reading skills around the world, and the implementing partner, Nal'ibali.

EVALUATION QUESTIONS AND METHODOLOGY OVERVIEW

EVALUATION QUESTIONS

In April 2016, representatives from USAID/South Africa, USAID/E3/Education Office, Nal'ibali SPS team, and NORC met in South Africa to jointly discuss the SPS program and the evaluation objectives. The evaluation approach and evaluation questions in Table 2 below are an outcome of those discussions

Table 2: Evaluation questions

#	Outcomes	Questions
1	Student reading skills	Q1. What is the impact of the SPS project on learners': A. reading and writing skills in their mother tongue (including letter recognition, word recognition, fluency, comprehension, vocabulary, phonemic awareness, orientation to print)? B. reading and writing skills in English?
2	Student Motivation and Behavior	Q2. What is the impact of the SPS intervention on: A. the time or frequency that students spend reading independently? B. students' motivation to seek out, listen to, read, write, and tell stories?
3	Teachers Attitude and Behavior	Q3. What is the impact of the SPS intervention on: A. teachers' attitudes towards a. reading for enjoyment in the classroom? b. story telling in the classroom? c. reading clubs? B. teachers' language and literacy instruction practices in the classroom (both those trained by Nal'ibali and those not trained by Nal'ibali but teaching in SPS schools)?
4	Student reading skills	Q4. What is the impact of attending a Nal'ibali reading club (in a SPS) on learners': A. reading and writing skills in their mother tongue? B. reading and writing skills in English?
5	Student Motivation and Behavior	Q5. What is the impact of attending a Nal'ibali reading club (in a SPS) on: A. the time or frequency that students spend reading independently? B. Students' motivation to seek out, listen to, read, write, and tell stories?
6	Student reading skills	Q6. What is the association between teacher practices and learners': A. reading and writing skills in their mother tongue? B. reading and writing skills in English?
7	Student Motivation and Behavior	Q7. What is the association between teacher practices and: A. the time or frequency that students spend reading independently? B. students' motivation to seek out, listen to, read, write, and tell stories?
8	Program take-up (participation in reading activities and use of reading materials/ trainings)	Q8. What is take-up of and adherence to the SPS intervention? This will include a range of indicators. For example: A. number and characteristics of invited schools signing up for SPS B. number and characteristics of teachers trained C. number of community members trained D. implementation of reading for enjoyment sessions before, during, and after school day E. number of reading clubs operating at the school, number of children in the reading clubs F. attendance at reading clubs G. other events (competitions, etc.) H. use of mini libraries

METHODOLOGY OVERVIEW

The methodology for this evaluation is a randomized-controlled trial, with communities of schools randomly assigned to treatment and control groups. This data will be complemented with qualitative data from classroom observations in a sub-sample of treatment and control schools and with in-depth case studies in four treatment schools.

Data will be collected in two rounds: a baseline prior to program implementation, and an endline two to three years later. Ideally, we will collect student-level panel data by administering assessments to the same individual students at both baseline and endline. The main advantage of a student-level panel is that it would allow for student-level fixed effects, which can improve the power and precision of the analysis if baseline outcomes are highly correlated with endline outcomes. However, absenteeism and attrition may make it difficult to re-interview the same students at endline. While we will continue to explore this possibility, the alternative would be a repeated cross-section at the school level, in which one random sample of students would be drawn from each school at baseline and a second random sample at endline.

Estimating the effect of attending Nal'ibali reading clubs in the SPS schools is somewhat challenging. Participating in the clubs is not a random event, but rather a choice made by each learner. Learners that choose to attend reading clubs and learners that do not cannot be directly compared as they might differ, not only in terms of their club participation but also in taste for reading, reading skills, family support, etc. Therefore, the effect of attending a Nal'ibali reading club in a SPS school will be estimated using statistical techniques (propensity score matching) to construct a comparison group of learners from control schools that is very similar to the group of learners who attend reading clubs. More details on data sources and data analysis methods can be found in Annex II.

Sample Selection and Experimental Design

Community randomization and school selection: While SPS is a school based intervention, the Nal'ibali approach involves the community around the school in a number of ways. Randomization was, therefore, done at the community level, with all schools in a community assigned to either treatment or control. The design considerations and process of creating appropriate communities of schools is described in detail in Annex II. Within each community, between two and four schools were randomly selected to be part of the evaluation.

Teacher selection: In each school selected for data collection, we randomly sampled one teacher each from grades 2, 3 and 4. Where the school was a multi-grade schools with learners from different grades taught by the same teacher, we selected one teacher from each grade combination in the Grade 2 to 4 range.

Learner selection: Learners were randomly selected from the classes of the sampled teachers. We randomly selected 30 learners from each school (10 each from grades 2, 3, and 4, comprising of five girls and five boys whenever possible). Learners were only selected if they were present at the school on the day that the field team arrived to complete the assessments[7].

Sample Size

Due to programmatic considerations, the baseline was conducted over two years with 192 schools included in each of cohort I (2017) and cohort II (2018). See Annex II for more details. The planned and achieved sample sizes for the baseline are summarized in Table 3.

[7] The absenteeism rate is approximately 11% in all grades, and it is the same in treatment and control schools.

Table 3: Baseline sample size by province – schools and learners

	Eastern Cape		KwaZulu-Natal	
	Planned	Completed	Planned	Completed
Schools	192	172	192	188
Learners:				
Grade 2 learners	1920	1676	1920	1780
Grade 3 learners	1920	1671	1920	1784
Grade 4 learners	1920	1685	1920	1808

The number of schools in the sample is slightly lower than planned, particularly in the Eastern Cape. This is largely due to language issues as several selected schools turned out to have Sesotho rather than isiXhosa as the medium of instruction in the foundation phase. Table 1 in Annex II provides full details of schools that were not included in the final sample. The number of learners in the sample is also slightly lower than planned, partly due to the schools that were not included in the study, but also due to very low enrollment in some schools. There were also a handful of schools that did not offer all grades from 2 to 4.

Although our sample is slightly smaller than anticipated, Nal'ibali's change in the number of schools per community for the second cohort (2018) allowed us to include more communities in our sample and strengthened the statistical power of our study.[8] Overall, this means we have a sufficient number of schools and learners in our sample to conduct the IE as planned.

Table 4 below summarizes the planned and achieved sample sizes for the teacher sample. The planned sample included one teacher each from grades 2, 3 and 4. Overall, 32% of schools in the sample had at least some learners of different grades taught in the same classroom. In these schools, there were not necessarily three different teachers across the three grades. The planned sample of 192 teachers for each grade in each province was based on the planned sample of 384 schools. Of the 360 schools that were included in the final sample, we have at least one teacher for each grade in 95% of cases. There are a small number of learners (4%) for whom we do not have a matching teacher. This is due to the teacher for their grade being unavailable for the interview.

Table 4: Teacher sample size by province and grade(s) taught

	Eastern Cape		KwaZulu-Natal	
	Planned	Completed	Planned	Completed
Grade 2	192	163	192	180
Grade 3	192	167	192	180
Grade 4	192	164	192	171
Individual teachers		495		506
Percentage of learners with a matched teacher		96.0%		96.0%

Baseline Instruments

Early Grade Reading Assessment: The evaluation measures reading outcomes using subtasks of the Early Grade Reading Assessment (EGRA), a widely used tool to measure various aspects of reading proficiency. The skills tested with the EGRA tool and their corresponding subtask are indicated in Table

[8] See Annex II for full details.

5. EGRA assessments were conducted in mother tongue (isiXhosa or isiZulu) for all learners. English EGRA assessments were administered only to Grade 3 and 4 learners. NORC used an existing version of EGRA, created by Lili Pretorius, a professor of linguistics at the University of South Africa (UNISA) for the Zenex Foundation in 2015. NORC also added six receptive vocabulary items where the learner was asked to identify the correct picture to match a particular word.

Table 5: Skills and corresponding subtasks included in baseline EGRA tool

Skill	Subtask & Measurement	isiXhosa/isiZulu	English
Orientation to print	Awareness of text direction, where to start reading, how to read down a page	Grade 2	
Phonetic awareness	Number of letters sounds identified in 60 seconds	Grades 2, 3 & 4	Grades 3 & 4
Phonological awareness	Identify and manipulate phonemes (starting and ending sounds of words, segmenting words)	Grades 2, 3 & 4	Grade 4
Word recognition	Familiar word reading, number of correct words read in 60 seconds	Grades 2, 3 & 4	Grades 3 & 4
Oral reading fluency	Oral passage reading, number of words fluently read (with accuracy) from a reading passage in 60 seconds	Grades 2, 3 & 4 (different passages for each grade)	Grade 4
Reading comprehension	Number of questions answered correctly about the passage read aloud by the student	Grades 2, 3 & 4 (different questions for each grade)	Grade 4
Receptive vocabulary	Identify correct picture to match word	Grades 2, 3 & 4	Grade 4

Additional instruments: In addition to the EGRA tool, the baseline data collection included: (1) a short student background questionnaire administered immediately following the EGRA to every student sampled, (2) a teacher questionnaire administered to the teacher of each sampled class, and (3) a school inventory completed by the enumerators. NORC drew on questionnaires that had previously been used in South African schools in designing the learner and teacher questionnaires. Draft instruments were shared with USAID/South Africa, USAID/3E/Education Office and Nal'ibali for comments.

BASELINE DATA COLLECTION

The baseline data collection for the first cohort of schools took place in the first term of the 2017 school year (February/March). Baseline data collection for the second cohort was completed in February and March 2018. NORC plans to re-assess and interview the same learners in the final term of the following school year. Cohort I will be revisited in October 2018 and cohort II in October 2019. NORC will also re-interview the same teachers.

NORC worked closely with subcontractors Pearson (2017 baseline) and Ikapadata (2018 baseline) to conduct all data collection activities. This study and all associated data collection activities gained approval from both the NORC IRB and the University of Cape Town Ethics Committee. NORC has worked in close collaboration with the Department of Basic Education and the Provincial Education Departments to conduct the data collection necessary for the evaluation.

NORC provided ethics training to all team members from the local data collection firm and all team members committed to comply with child protection policies.

There were no significant challenges identified during baseline data collection. The data collection schedule for this evaluation is summarized in Table 6.

Table 6: Data collection activities

Survey Type	Instruments	Date
Baseline (quantitative)	EGRA assessment & Learner interview Teacher interview & School inventory	Cohort I: Feb/Mar 2017 Cohort II: Feb/Mar 2018
Midline (qualitative)	Classroom observation & Case studies Learner assessments	Aug/Sep 2018
Endline (quantitative)	EGRA assessment & Learner interview Teacher interview	Cohort I: Aug/Sep 2018 Cohort II: Aug/Sep 2019

FINDINGS

SAMPLE DESCRIPTION

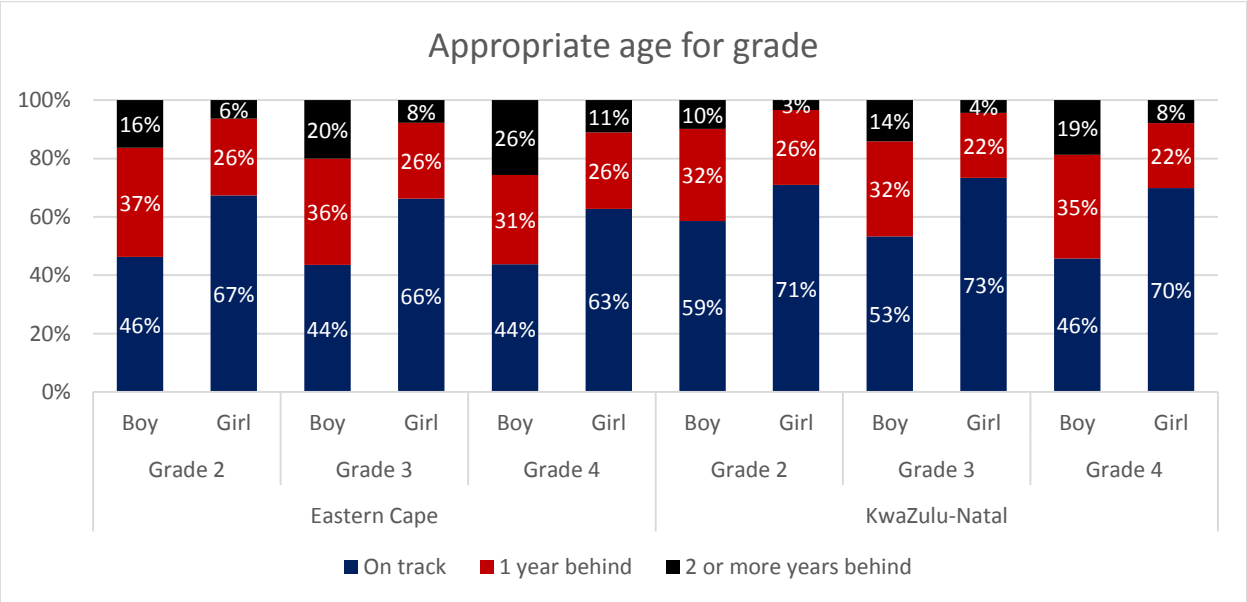
By design, the learner sample comprises roughly equal numbers of boys and girls, and equal numbers of grade 2, 3, and 4 learners. Table 7 shows the average age by grade, gender, and province. If learners start school on time and advance one year per additional year of age, they should be 7 years old in Grade 2, 8 years old in Grade 3 and 9 years old in Grade 4. The averages in Table 7 suggest that a fair number of learners are older than the appropriate age for their grade, with boys being slightly older than girls and learners in the Eastern Cape being slightly older than those in KwaZulu-Natal.

Table 7: Age of learner sample by gender, grade and province

	Overall	Eastern Cape		KwaZulu-Natal	
		Boys	Girls	Boys	Girls
Grade 2	7.67	7.28	7.45	7.20	7.67
Grade 3	8.75	8.27	8.55	8.16	8.75
Grade 4	9.86	9.31	9.71	9.25	9.86
Observations	2,536	2,469	2,723	2,649	2,536

Figure 1 shows, separately by province, grade, and gender, the percentage of learners who are in the correct grade for their age, the percentage who are one year behind and the percentage who are two or more years behind. Overall, 41% of learners are not in the correct grade for their age, with 12% being two or more years behind. This is due to a combination of delayed enrollment and grade repetition. In every grade, girls are significantly more likely to be on-track than boys, and a higher percentage of learners are in the correct grade for their age in KwaZulu-Natal than in the Eastern Cape. Overall, one in five boys in the Eastern Cape is at least two years behind.

Figure 1: Percentage of learners at correct grade for age by grade, gender and province



LANGUAGE

The South African government follows a policy of additive multilingualism, beginning with mother tongue in the first three years of primary school and then transitioning to English as the language of learning and teaching (LOLT) in Grade 4. The LOLT in early grades is isiXhosa for all sample schools in the Eastern Cape and isiZulu for those in KwaZulu-Natal. Table 8 below shows, separated by province, the mother tongue or home language of the learners and teachers in the sample. Almost all (97%) Eastern Cape learners report isiXhosa as the language they speak most frequently at home and a similarly high percentage of teachers report isiXhosa as their mother tongue. The alignment between the LOLT of the school in the early grades and learner and teacher home language is even closer in KwaZulu-Natal with 98% of learners reporting isiZulu as their home language[9].

Table 8: Home language of learners and teachers by province

	Eastern Cape		KwaZulu-Natal	
	Learners	Teachers	Learners	Teachers
isiXhosa	96.9%	96.2%	0.6%	0.2%
isiZulu	1.1%	2.3%	98.4%	99.9%
Other	2.0%	1.5%	0.1%	0.8%
Observations	4754	475	5151	497

Teachers reported overwhelmingly (96%) that they used the LOLT most of the time in the classroom. In addition to asking what language they used most of the time, NORC for all languages that were used for teaching. We also asked the learners what languages their teachers used in the classroom. The results are presented in Table 9. In all grades, the vast majority of teachers report using a combination of English and mother tongue. One in ten Grade 2 teachers use only mother tongue. This decreases to 5% in Grade 3, and by Grade 4 all teachers report using either English only or a combination of English and mother tongue. Learners are much more likely than teachers to report that their teacher only uses mother tongue which may indicate some social desirability bias in the teachers' responses aligning more closely with official policy. Nevertheless, the transition from mother tongue to English as the medium of instruction is clearly apparent in comparing learner answers across the grades.

Table 9: Languages used by teacher in class, as reported by learners and teachers

	Learners			Teachers		
	Grade 2	Grade 3	Grade 4	Grade 2	Grade 3	Grade 4
isiXhosa/isiZulu	59.8%	28.2%	15.2%	10.2%	4.5%	0%
English	3.7%	2.7%	9.5%	0%	0%	5.9%
Both	36.5%	69.1%	75.3%	89.8%	95.5%	94.1%

EGRA SCORES

The different subtasks included in the assessment are described in Table *5*. Our focus is on the main impact indicators – correct familiar words per minute (CWPM), oral reading fluency (ORF), and reading comprehension (RC) – but we also analyze the rest of the subtasks assessed – Correct Letter Sounds per Minute (CLSPM), Orientation to Print, Phonemic Awareness, and Receptive Vocabulary. The

[9] Given this alignment, for the remainder of this report mother tongue and home language will be considered synonymous with isiXhosa in the Eastern Cape and isiZulu in KwaZulu-Natal.

aggregated results of the different EGRA subtasks in mother tongue are presented in Table 10 by grade and province.[10]

Table 10: Summary of EGRA scores by province and grade – home language

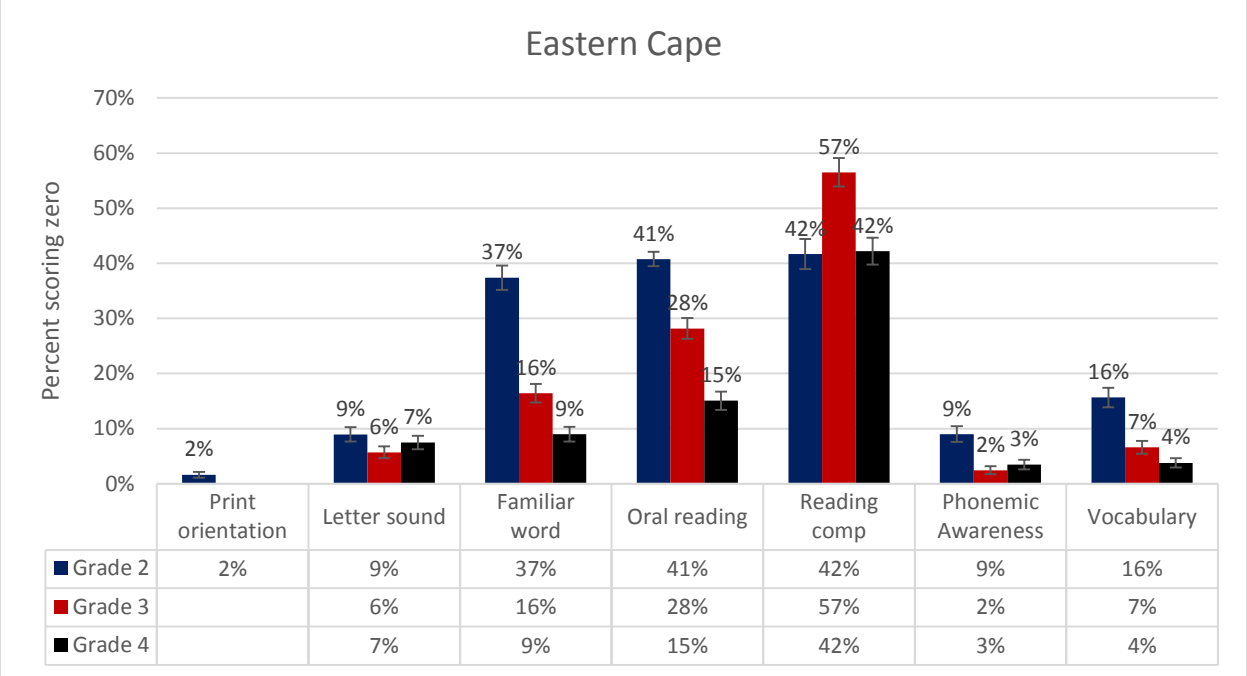
	Eastern Cape			KwaZulu-Natal		
	Grade 2	Grade 3	Grade 4	Grade 2	Grade 3	Grade 4
Print orientation [max=10]						
Mean	6.94	--	--	7.90	--	--
Std dev.	2.46	--	--	2.16	--	--
Correct Letter Sounds per Minute (CLSPM)						
Mean	19.81	31.24	33.90	15.07	18.63	19.18
Std dev.	15.59	18.88	20.56	13.88	15.75	15.40
Correct Words Per Minute (CWPM)						
Mean	6.59	16.00	22.97	8.99	18.02	24.09
Std dev.	8.45	12.46	14.00	8.85	11.69	12.12
Oral Reading Fluency (ORF)						
Mean	5.90	13.07	19.57	8.66	19.55	25.29
Std dev.	8.42	12.14	13.84	9.99	14.58	15.21
Read comprehension [max Gr2=10, max Gr3=7, Gr4=8]						
Mean	1.19	0.83	0.98	1.31	2.24	1.34
Std dev.	1.45	1.21	1.06	1.48	1.81	1.15
Phonemic awareness [max=8]						
Mean	2.66	3.66	4.12	2.74	3.46	4.15
Std dev.	1.68	1.97	2.08	2.09	2.34	2.32
Vocabulary [max=6]						
Mean	2.93	4.30	4.83	3.68	4.86	5.30
Std dev.	2.10	1.94	1.69	2.15	1.76	1.43

On average, Eastern Cape Grade 2 learners can correctly answer 6.9 of the 10 print orientation questions, 2.7 of the 8 phonemic awareness questions, and 2.9 of the 6 vocabulary questions. They can identify 19.8 letter sounds (CLSPM), correctly read 6.6 familiar words per minute (CWPM), and read 5.9 words per minute from a paragraph (ORF). This improves to 34 CLSPM, 23 CWPM, and an ORF of 19.6

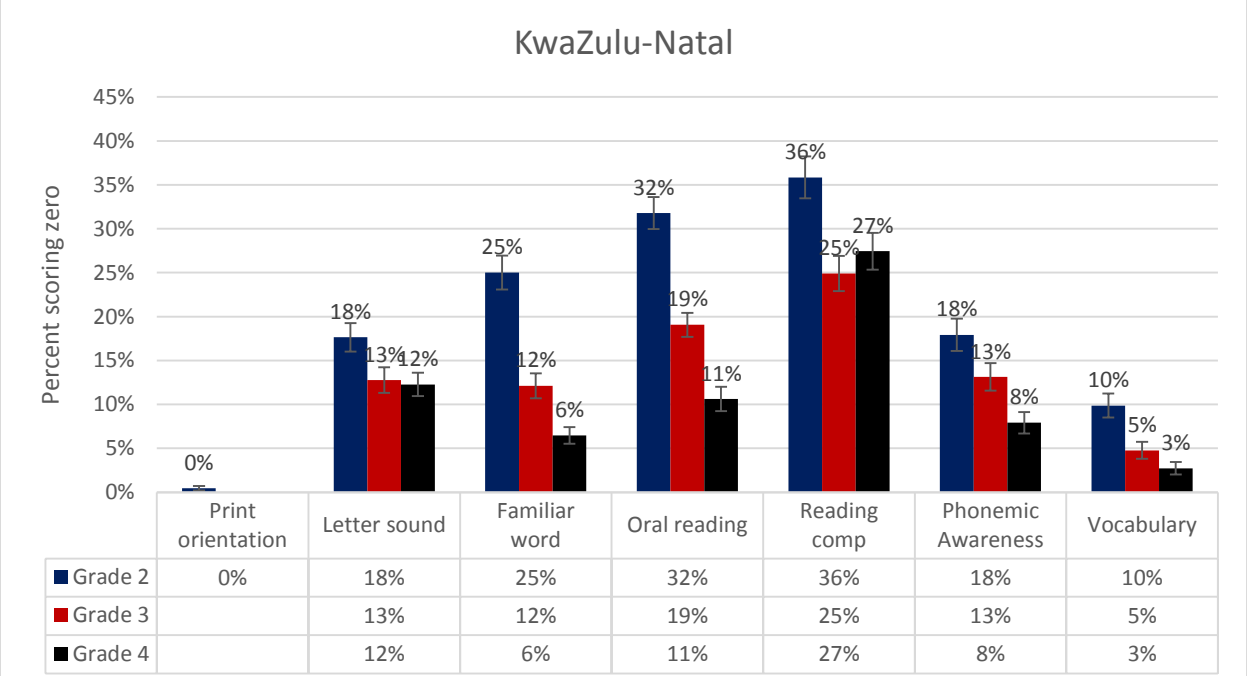
[10] For the full distribution of scores please see Table A1 and Figures A1 to A4 in Annex IV. For the correlation between scores on the different EGRA subtasks please see Table A2 in Annex IV. For reliability statistics please see Table A3 in Annex IV. For means excluding learners scoring zero, please see Table A4 in Annex IV.

for Grade 4 learners. Grade 4 learners are able to answer just over half of the phonemic awareness questions (4.1 out of 8) and 4.83 of the 6 vocabulary questions. In KwaZulu-Natal, the progression from Grade 2 to Grade 4 across the subtasks is similar.

Figure 2: Percentage of learners scoring zero on EGRA subtasks by province and grade



	Print orientation	Letter sound	Familiar word	Oral reading	Reading comp	Phonemic Awareness	Vocabulary
Grade 2	2%	9%	37%	41%	42%	9%	16%
Grade 3		6%	16%	28%	57%	2%	7%
Grade 4		7%	9%	15%	42%	3%	4%



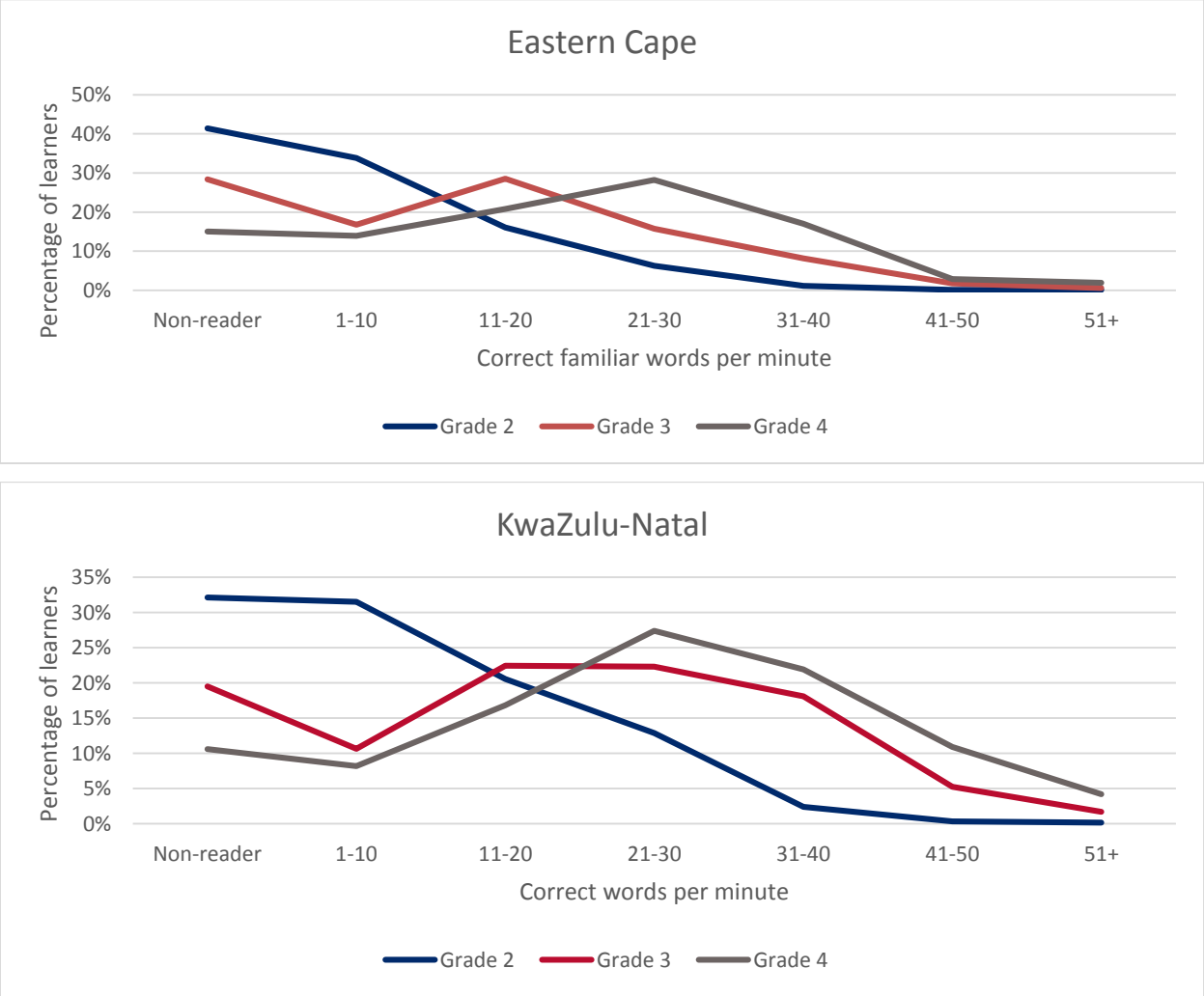
	Print orientation	Letter sound	Familiar word	Oral reading	Reading comp	Phonemic Awareness	Vocabulary
Grade 2	0%	18%	25%	32%	36%	18%	10%
Grade 3		13%	12%	19%	25%	13%	5%
Grade 4		12%	6%	11%	27%	8%	3%

Figure 2 shows the percentage of learners who scored zero on each subtask by province and grade. Focusing on Grade 2 learners in KwaZulu-Natal, we see that 2% are unable to answer any of the print

orientation questions correctly, 18% are unable to correctly identify even one letter sound, 25% cannot identify even one familiar word, 32% could not read even one word of connected text, 18% scored zero on the phonemic awareness questions and 10% could not correctly identify any of the vocabulary items. The percentage of learners scoring zero decreases as the grade level increases across all subtasks. Nevertheless, there are a substantial number of Grade 4 learners who still cannot correctly identify even one word (15% in the Eastern Cape and 11% in KwaZulu-Natal).

The progression between grades on the full distribution of CWPM can be seen clearly in Figure 3 which shows the percentage of learners in each grade reading at each level, separated by province. We see a sharp decline in the percentage of non-readers across the grades. Focusing on the children who can identify at least one word, the upwards shift in CWPM across grades is also evident. If we combine all the categories spanning 20 CWPM and higher, we see that the percentage of learners in the Eastern Cape reading at least 20 CWPM ranges from 11% in grade 2, to 41% in grade 3, and up to 64% in grade 4. The corresponding figures for KwaZulu-Natal are 15%, 51%, and 71%.

Figure 3: Distribution of correct words per minute for familiar word reading subtask by province and grade



This improvement across grades is an indicator of real, albeit slow, progression, rather than being an artifact of dropout or grade retention. Schooling in South Africa is compulsory until Grade 9 or age 15, whichever comes earlier. Figures from nationally representative household surveys consistently show that enrollment is almost universal (in the order of 98-99%) among children aged 7 to 10. Grade repetition is fairly common, but rates are fairly similar across the grades in our sample. Around 7% of the learners in our sample are repeating the grade. Absenteeism is also consistent across grades with 89% of enrolled learners present on the day of the assessments.

Each grade was administered a different and grade-appropriate oral reading passage and corresponding comprehension questions. The oral reading fluency rates are therefore not strictly comparable across grades as each a passage was designed for each grade level. This is also the case with the comprehension questions, with the Grade 2 subtask including more literal questions and the higher grades including more inferential questions. It is also important in analyzing the comprehension results to bear in mind that learners are only asked the questions corresponding to the part of the passage that they were able to read. The cut points for each question were different across the grades. Within a grade, those who were asked more questions had to have read further in the passage and therefore have higher ORF.

Looking back to Table 10, we see that, on average, Grade 2 learners in the Eastern Cape answered 1.2 comprehension questions out of 10 correctly. Grade 3 and 4 learners in the Eastern Cape, correctly answered 0.8 and 1 comprehension question on average, respectively. However, not all learners read far enough in the passage to attempt any of the comprehension questions. Table 11 shows the percentage of learners attempting at least one comprehension question for each grade and province. Only 56% of Grade 2 learners in the Eastern Cape attempted any of the comprehension questions. Table 11 also shows the percentage of attempted questions that were correctly answered. Of the comprehension questions actually attempted, Grade 2 learners in the Eastern Cape were able to answer 65% correctly. The percentage of attempted questions that were correctly answered were 47% for Grade 3 and 52% for Grade 4. The average number of correctly answered questions in KwaZulu-Natal was 1.3, 2.2, and 1.3 for Grade 2, 3, and 4 respectively (Table 10). Of comprehension questions actually attempted in KwaZulu-Natal, learners answered 60%, 66%, and 57% correctly in Grades 2, 3, and 4, respectively (Table 11).

Table 11: Percentage of learners attempting at least one comprehension question and percentage correct of comprehension questions attempted correct by province and grade

	Eastern Cape			KwaZulu-Natal		
	Grade 2	Grade 3	Grade 4	Grade 2	Grade 3	Grade 4
Percentage of learners attempting at least one comprehension question	55.9%	68.2%	81.9%	72.9%	84.7%	87.7%
Percentage correct of comprehension questions attempted	65.1%	46.5%	51.8%	59.7%	66.4%	56.6%

In South Africa, there are no official reading norms or benchmarks for English or for the nine South African indigenous languages. Neither the DBE nor USAID have proposed or endorsed particular reading targets. In the past years, several methodologies to create benchmarks using the EGRA subtasks have been proposed for different countries and contexts (see for example, Spaull et at. (2018), Room to Read (2018), RTI International (2017)). In a recent study, Spaull et al. (2018) argue that since comprehension is the ultimate goal of reading, it is logical to benchmark to comprehension outcomes. Their empirical investigation "suggests that there are minimum thresholds of accuracy and oral reading fluency in each language, below which it is virtually impossible to read for meaning." They propose a method for empirically establishing a minimum fluency threshold and a minimum comprehension

threshold. Following their methodology,[11] we identify a minimum fluency threshold of 20 words per minute in isiXhosa and 23 words per minute in isiZulu. The minimum comprehension thresholds are 38 words per minute and 35 words per minute in isiXhosa and isiZulu, respectively. See Figure A2 and the accompanying discussion in Annex IV for more details on the identification of these benchmarks.

Table 12 shows the percentage of learners reaching these minimum fluency and minimum comprehension thresholds by grade and province. We also show the proportion of learners with ORF greater than 0, 20, 30, 40, and 50. By Grade 4, just over half of the learners in both provinces are reaching the minimum fluency threshold, but only 7% of those in the Eastern Cape and 29% of those in KwaZulu-Natal are reaching the minimum comprehension threshold.

Table 12: Percentage of learners reaching ORF and constructed benchmarks by province and grade

	Eastern Cape			KwaZulu-Natal		
	Grade 2	Grade 3	Grade 4	Grade 2	Grade 3	Grade 4
ORF > 0	58.1%	71.6%	84.9%	67.9%	80.5%	89.4%
ORF >= 20	8.7%	29.3%	52.4%	17.9%	51.2%	67.2%
ORF >= 30	1.6%	11.2%	25.0%	3.5%	26.4%	41.7%
ORF >= 40	0.3%	2.4%	5.8%	0.6%	9.9%	16.1%
ORF >= 50	0.1%	0.7%	2.3%	0.2%	2.2%	5.0%
Minimum fluency threshold (EC=20, KZN=23)	8.7%	29.3%	52.4%	11.5%	41.5%	56.5%
Minimum comprehension threshold (EC=38, KZN=35)	0.6%	3.3%	7.3%	1.4%	16.3%	28.8%

Before turning to the English EGRA results, it is worth briefly considering the typological and orthographic differences between English and the home languages in our study. isiXhosa and isiZulu are part of the Nguni branch of the family of Southern African Bantu languages. They are agglutinating languages with a conjunctive orthography. In equivalent texts, English therefore presents readers with larger numbers of shorter words. A translation of the 82 word isiXhosa Grade 4 oral reading passage yields a 160 word English passage. The average word length is 7.5 letters for the isiXhosa passage and 4.2 for the English passage.

Grade 3 and 4 learners were assessed in English. Grade 3 learners attempted the letter sound and familiar word subtasks in English. Grade 4 learners were assessed on all English EGRA subtasks. A summary of English EGRA scores is presented in Table 13. We will focus on the Grade 4 learners for whom the LOLT is English.

On average, Grade 4 learners read 40 and 35 English words per minute in KwaZulu-Natal and the Eastern Cape respectively. This is in contrast to 25 words per minute in isiZulu and 20 words per minute in isiXhosa. In both provinces, around one in ten Grade 4 learners is unable to read even a single English word. Amongst those who are able to read at least one English word, the average words per minute is 44 in KwaZulu-Natal and 39 in the Eastern Cape, but 25% were unable to correctly answer any comprehension questions (see Table A5 in Annex IV, for means excluding zero-scores).

[11] USAID is not proposing that this methodology should be the one to follow, nor that the resulting benchmarks should be the reading targets.

Table 13: Summary of English EGRA scores by province and grade

		Eastern Cape		KwaZulu-Natal	
		Grade 3	Grade 4	Grade 3	Grade 4
Correct Letter Sounds per Minute (CLSPM)					
	Mean	26.04	29.60	18.52	20.07
	Std dev.	17.57	19.81	15.20	15.59
	% scoring zero	12.5%	14.0%	16.2%	15.6%
Correct Words per Minute (CWPM)					
	Mean	11.05	21.03	13.85	23.61
	Std dev.	12.75	16.86	13.55	16.83
	% scoring zero	31.2%	14.9%	21.6%	10.4%
Oral Reading Fluency (ORF)					
	Mean		34.01		39.67
	Std dev.		25.79		27.65
	% scoring zero		12.8%		10.0%
	% correct of attempted		68.0%		73.7%
Reading comprehension [max=10]					
	Mean		1.22		1.90
	Std dev.		1.59		2.01
	% scoring zero		39.0%		21.8%
	% correct of attempted		26.1%		36.1%
Phonemic awareness [max=8]					
	Mean		2.35		3.05
	Std dev.		2.39		2.46
	% scoring zero		37.0%		24.9%
Vocabulary [max=6]					
	Mean		3.27		3.67
	Std dev.		1.91		1.84
	% scoring zero		10.6%		8.0%

Table 14 below shows comprehension levels and the proportion of Grade 4 learners reaching various fluency benchmarks. Draper and Spaull (2015) suggest a benchmark of 90-100 English words per minute for Grade 5 second language learners, and consider learners reading below 40 words a minute as non-readers. Over half of the Grade 4 learners in our sample in both provinces would be classified as non-readers by this definition. Following Spaull et al. (2018), we establish a minimum fluency threshold of 46 words per minute and a minimum comprehension threshold of 82 words per minute. In Grade 4, only

5% of Eastern Cape learners and 9% of KwaZulu-Natal learners are reaching the minimum comprehension threshold, and over 60% in both provinces cannot even read at the minimum fluency threshold.

Table 14: Percentage of Grade 4 learners reaching English benchmarks by province

	Eastern Cape	KwaZulu-Natal
Comprehension categories:		
Unable to read one word	12.4%	8.5%
0% comprehension	28.8%	14.8%
10-29% comprehension	46.4%	52.3%
30-59% comprehension	9.3%	17.3%
60%+ comprehension	3.2%	7.2%
ORF = 0	14.8%	11.5%
ORF = 1-19	19.7%	16.6%
ORF = 20 - 39	24.4%	23.9%
ORF = 40 - 59	26.2%	25.8%
ORF = 60 - 79	10.3%	12.6%
ORF = 80 - 99	3.6%	6.5%
ORF >= 100	1.7%	3.5%
Minimum fluency threshold = 46	32.0%	39.6%
Minimum comprehension threshold = 83	4.9%	9.1%

READING ATTITUDES AND BEHAVIORS

In addition to reading skills, this IE is interested in the impact of the intervention on learners' reading attitudes and behaviors. Learners were shown a range of five smiley faces from very happy to very sad and then asked to point out which face most closely corresponded to how they felt about nine statements. The statements asked how much they liked to do a range of activities from playing to reading out loud in class. Figure 4 shows the distribution of answers.

Overall, 69% of learners selected the very happy face when asked if they liked to read and a further 20% selected the happy face. Responses were less positive for listening to stories and telling stories with 50% and 44% selecting the very happy face, respectively. In addition to asking whether they liked to read, NORC asked learners whether they liked to read on their own at home, on their own at school, and out loud in class. Responses were very similar to the simple question asking whether they liked to read.

Figure 4: Attitudes toward reading and stories

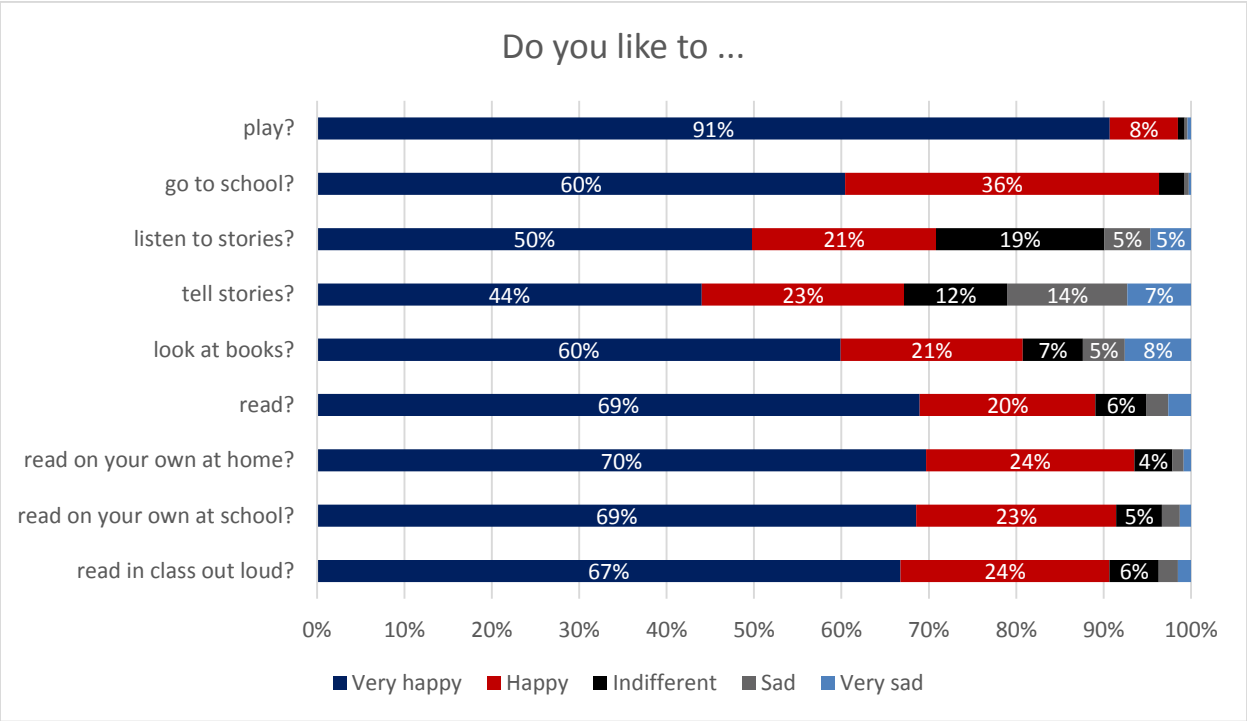
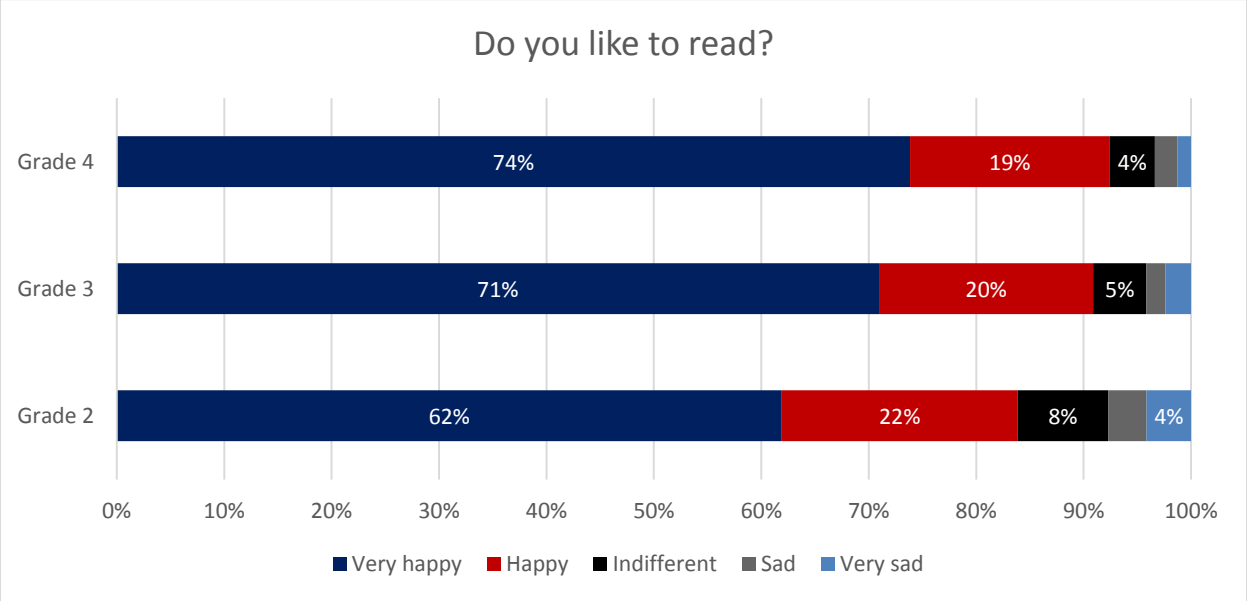


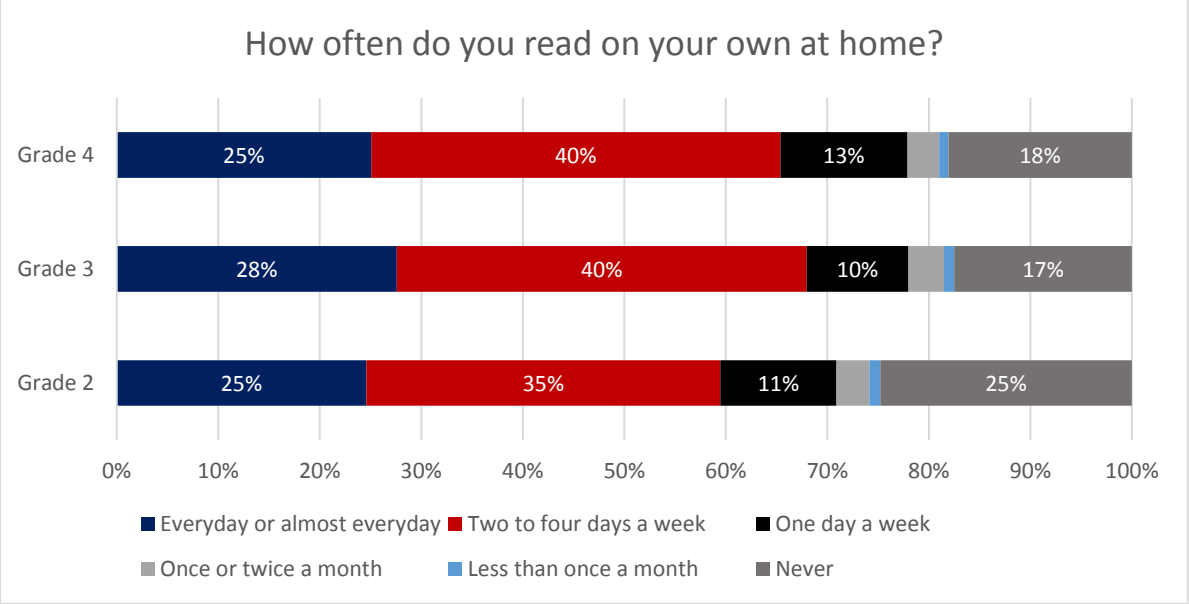
Figure 5 shows the attitude toward reading by grade. There is a slight increase in the percentage of learners who select the very happy face as grade increases.

Figure 5: Attitude toward reading by grade



Overall, three-quarters of learners say that they read at home on their own at least once a week, but only one in four learners reads daily. One in five learners never reads on their own at home. Figure 6 shows a slight increase in reading at home between Grade 2 and the next two grades.

Figure 6: Frequency of reading at home by grade



HOME ENVIRONMENT

The learner questionnaire included questions about the learners' home environment. Some of the key variables are summarized in Table 15 (additional variables are summarized in Table A8 in Annex IV). As is typical across South Africa, less than three in ten learners live with their father and one in four live with neither parent. The vast majority of learners have electricity at home but are unlikely to have a flush toilet or a computer. Learners in KwaZulu-Natal tend to come from households with more possessions (e.g., refrigerator, car, television) than those in the Eastern Cape.

The height of every learner was measured and compared against the World Health Organization's international child growth standard.[12] Children are considered stunted if their height-for-age standardized score is two or more standard deviations below the median child from the international "healthy" reference population. Around 17% of learners in the Eastern Cape and 12% of those in KwaZulu-Natal are classified as stunted. A number of families appear to be relying heavily on the school feeding program, with 14% of learners in the Eastern Cape and 19% in KwaZulu-Natal reporting that they did not eat before coming to school.

[12] The height of an individual depends on genetic potential, but also on the socioeconomic and epidemiological circumstances faced from conception until early adulthood (Deaton 2007, Case and Paxson 2008, Strauss and Thomas 2008). Children's height is considered a good indicator of underlying health, as it reflects cumulative linear growth, and deficiencies show the effects of past or chronic inadequacies in nutrition or exposure to disease. In our data, stunted children are more likely to come from households with fewer assets and books.

There is some exposure to English in the home. Only 15% of learners ever speak English at home, but 54% of learners in the Eastern Cape and 69% in KwaZulu-Natal watch TV or listen to the radio in English.

Table 15: Average learner characteristics by province

	Eastern Cape	KwaZulu-Natal
Lives with mother	68%	72%
Lives with father	31%	34%
Lives with both parents	27%	30%
Electricity	84%	85%
Radio	52%	72%
Television	69%	76%
Computer	11%	17%
Refrigerator	62%	77%
Toilet	10%	19%
Mobile phone	94%	94%
Bicycle	26%	28%
Car	38%	48%
Count of household possessions (max=8)	3.53	4.30
Stunted (height-for-age z-score less than -2)	17%	12%
Did not eat before coming to school	14%	19%
Ever speak English at home	15%	15%
Ever watch TV/listen to radio in English	54%	68%

Figure 7 shows how frequently learners read with someone at home. Just over a third of learners never read with someone at home. Around half of learners have someone read with them at home at least twice a week and over two-thirds of learners have someone at home who tells them stories. However, access to reading materials in the home is very limited, with 58% of learners in the Eastern Cape and 44% of learners in KwaZulu-Natal reporting that they have no books aside from schoolbooks to read at home (Figure 8). Only 13% and 20% of learners have more than 10 books at home in the Eastern Cape and KwaZulu-Natal respectively.

Figure 7: Frequency of reading with someone at home

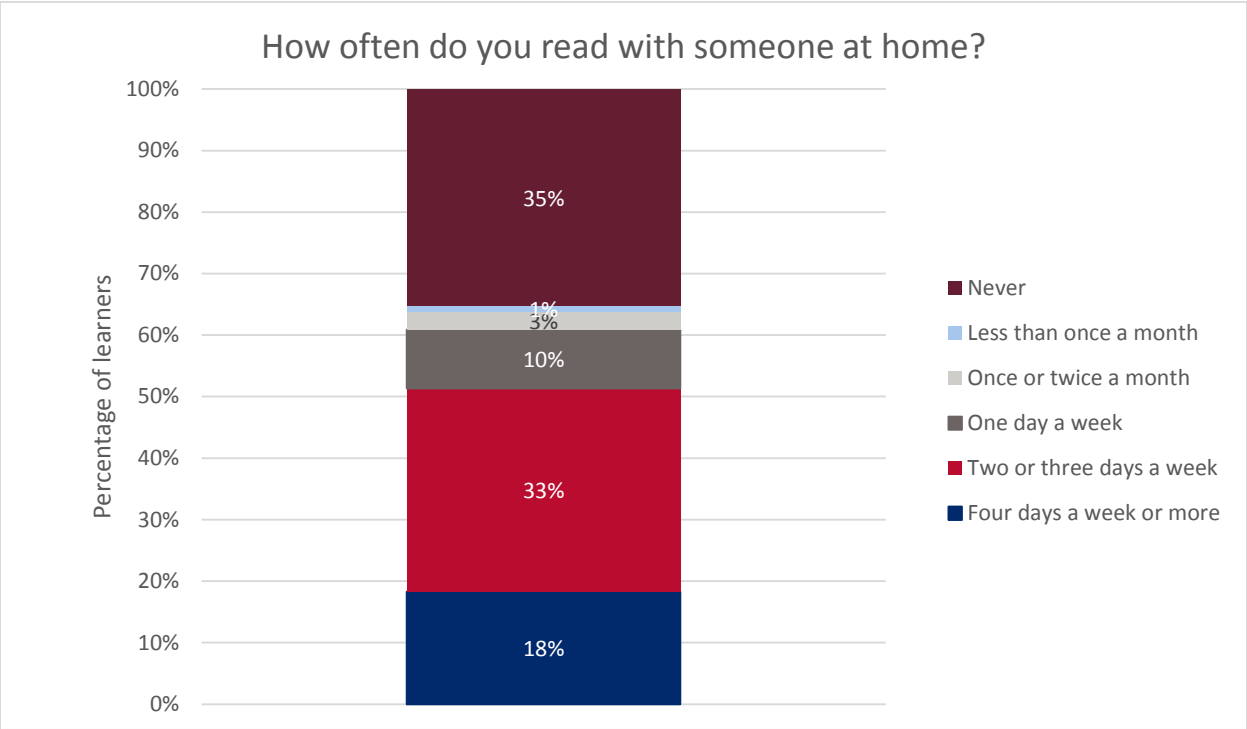
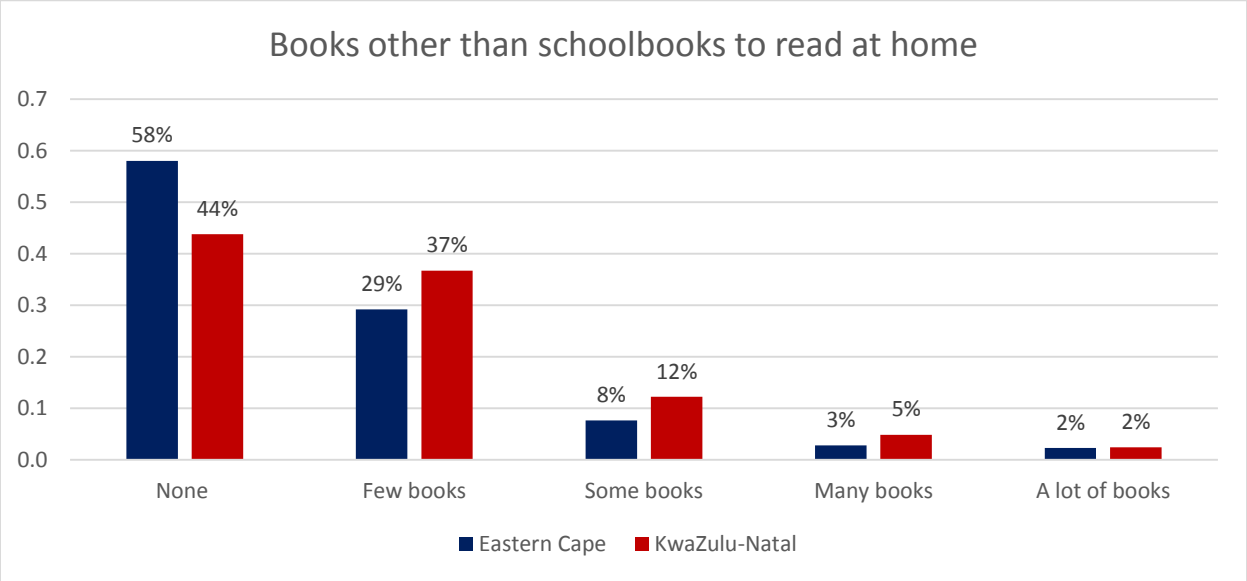


Figure 8: Books other than schoolbooks to read at home



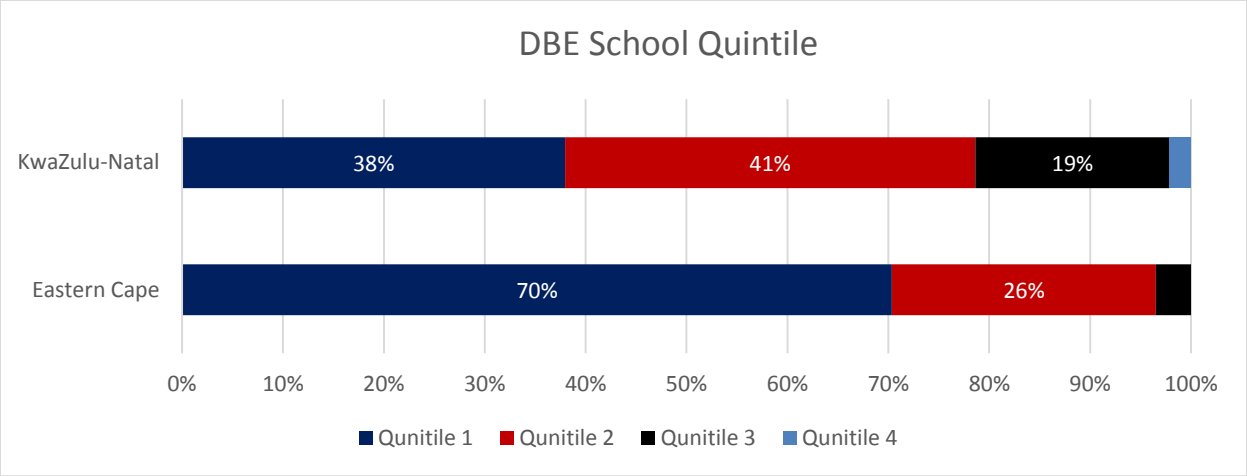
SCHOOL ENVIRONMENT

School characteristics

The Department of Basic Education has classified schools into socio-economic quintiles. The poorest (quintile 1) schools receive the largest allocation of government funding per learner, while quintile 5

schools receive the smallest. Schools in the bottom three quintiles are no-fee schools and may not charge school fees. The majority of schools in the Eastern Cape (70%) are classified as quintile 1 schools, the lowest socio-economic quintile of schools in the country (Figure 9). A further 26% are quintile two schools. In line with socio-economic differences across the two provinces, the proportion of schools in KwaZulu-Natal in quintile one (38%) is lower than that in the Eastern Cape. Table A9 in Annex IV summarizes the basic characteristics of the sample schools as captured by the school inventory instrument.

Figure 9: Department of Basic Education school quintile



Teachers

Table 16 below summarizes key teacher characteristics by province (further variables from the teacher questionnaire are summarized in Table A10 in Annex IV). The vast majority of teachers in both provinces are female. Teachers have, on average, 17 years of teaching experience and almost all have some professional qualification. In KwaZulu-Natal, 47% of teachers have a degree and 46% have a diploma or advanced diploma. Qualification levels in the Eastern Cape are slightly lower, with 36% of teachers having a degree and 43% having a diploma or advanced diploma.

Table 16: Teacher characteristics by province

	Eastern Cape	KwaZulu-Natal
Female	94%	93%
Years of teaching experience	17.7	16.6
Highest professional qualification in teaching:		
Diploma	31.5%	28.4%
Advanced diploma	12.4%	17.8%
Degree	35.6%	46.%6
Advanced certificate	18.7%	6.1%
None	1.8%	1.1%

The teacher questionnaire included a number of questions about the teachers' own reading habits. Figure 10 shows how often teachers read outside of work requirements. Just over half of the teachers report reading very often or often. Among those that do read, the most common reading materials are newspapers (69%), the Bible and religious texts (56%), and magazines (51%) (Figure 11). Only half report

reading any kind of book (fiction or non-fiction). Around 11% of teachers in the Eastern Cape and 6% in KwaZulu-Natal have no books to read in their home, and only 16% of all teachers have more than 25 books at home.

Figure 10: Frequency of teachers reading outside work requirements

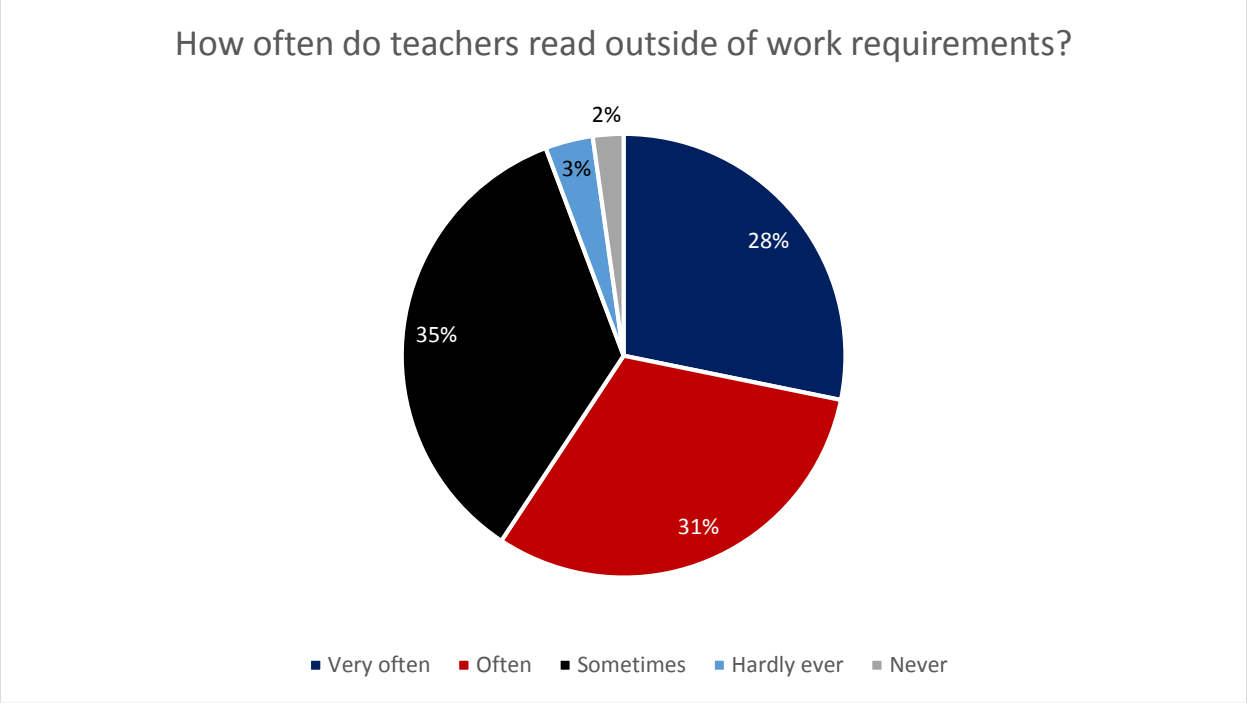


Figure 11: What do teachers read outside work requirements?

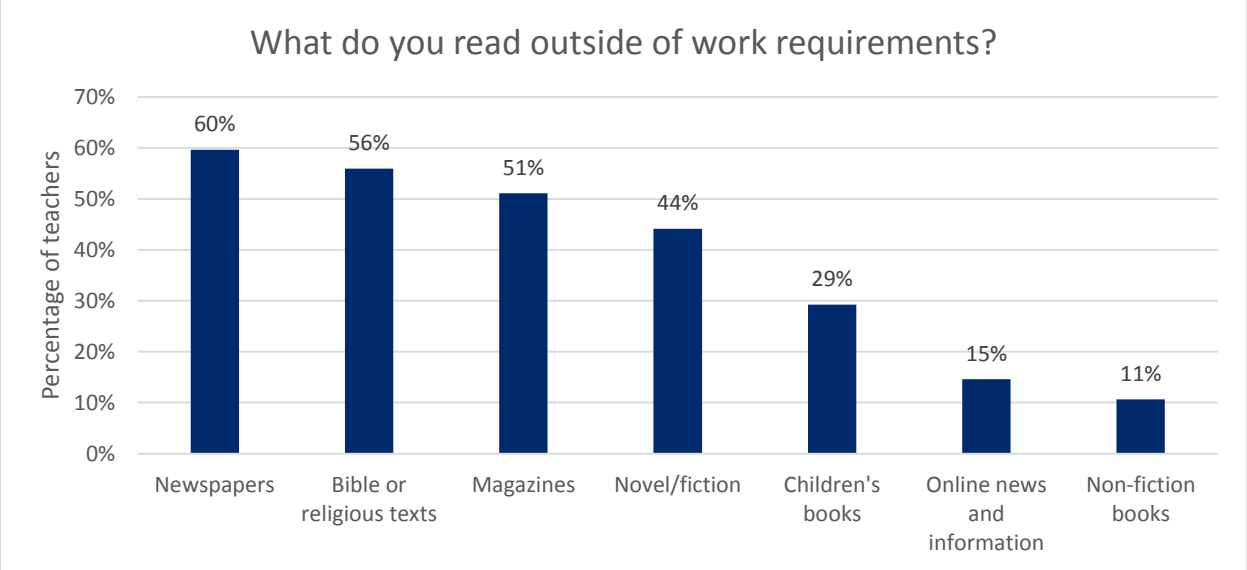
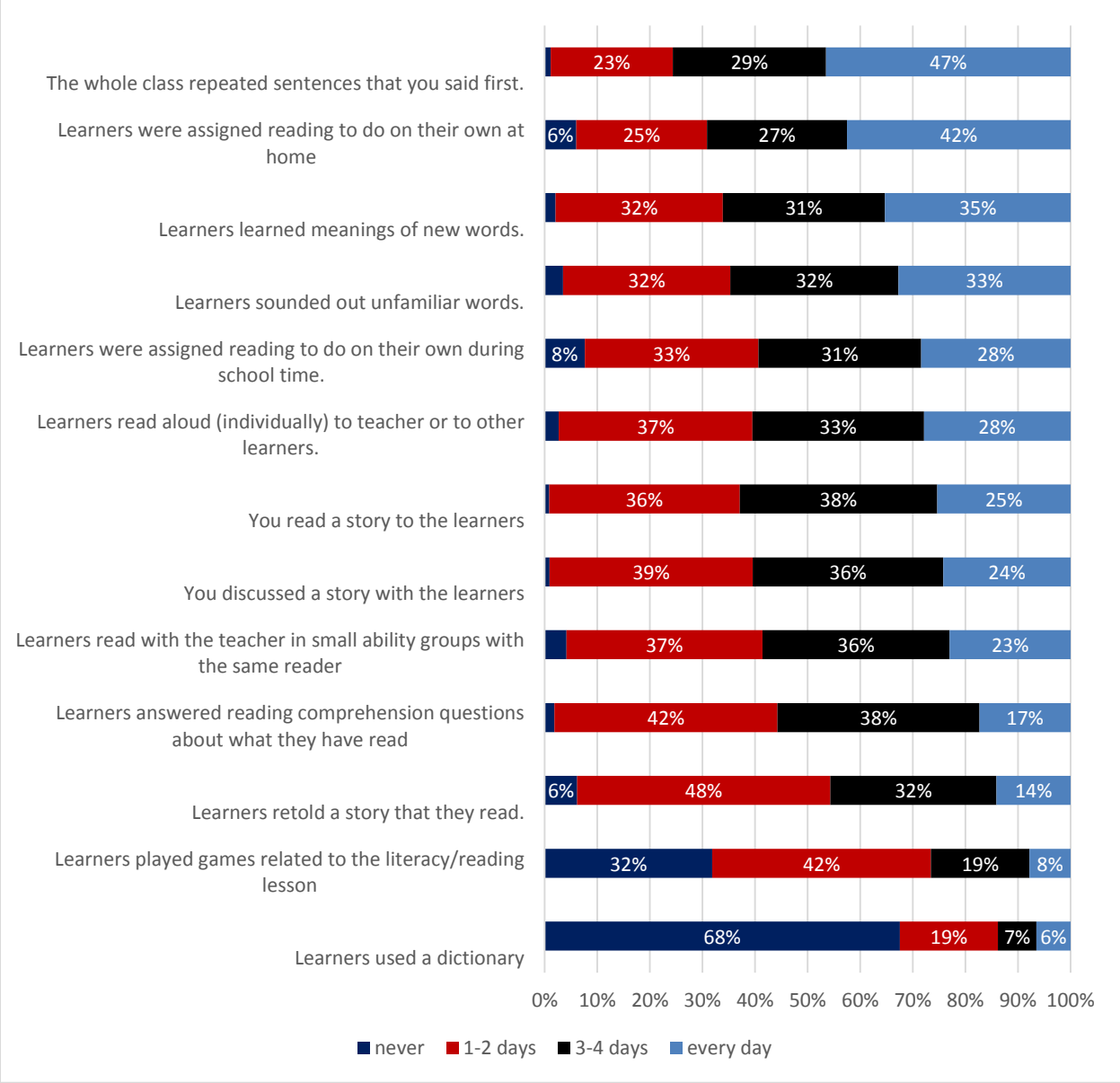


Figure 12 summarizes the literacy and language teaching practices for teachers in our sample. Teachers were asked how frequently a range of activities with learners took place in their class. The prevalence of rote learning is clear with almost half of teachers reporting that the whole class repeats sentences that

they say first on a daily basis. Only 1% of teachers reported that they never use chanting. While almost all teachers report reading a story to learners at least once a week, using games to teach literacy was much less common with around a third of teachers reporting that they never did such activities.

Figure 12: Teacher's practices



Access to reading materials

Stark differences between the two provinces in the access to reading resources are evident in Table 17. Bookshelves or small libraries in the classroom are very common in KwaZulu-Natal (81%) but only present in just over a third (38%) of Eastern Cape classrooms. While only two in five KwaZulu-Natal schools (43%) have a library, they are twice as likely to have one as Eastern Cape schools (22%). In schools with libraries, learners are also more likely to be allowed to take books home in KwaZulu-Natal

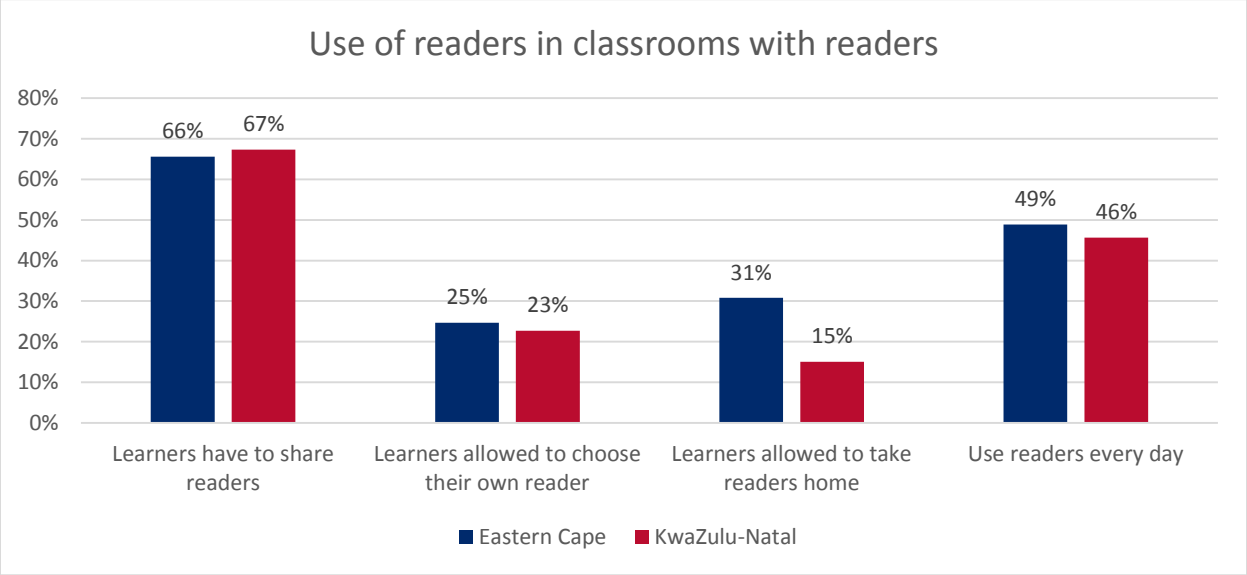
(52%) than in the Eastern Cape (39%). This means that only 8% of Eastern Cape learners and 23% of KwaZulu-Natal learners can take a library book home.

Table 17: Access to reading materials at school

	Eastern Cape	KwaZulu-Natal
Bookshelf or small library in the classroom for learners to use	38.1%	81.3%
School has library or mobile library	21.5%	43.3%
For schools with library, learners are allowed to take books home	39.2%	52.1%
Library has appropriate books	65.7%	77.5%

Although the vast majority of teachers report that their learners have readers to read from in class (87% in Eastern Cape and 95% in KwaZulu-Natal), in two-thirds of classrooms the learners have to share readers (Figure 13). Just less than a quarter of teachers allow learners to choose their own readers. Learners are also mostly not allowed to take readers home. In classes with readers, 31% learners in the Eastern Cape and 15% in KwaZulu-Natal are allowed to take the readers home.

Figure 13: Use of readers in classrooms with readers



Absenteeism

Learner absenteeism is a serious challenge in both provinces, with 35% of learners in the Eastern Cape and 42% of learners in KwaZulu-Natal reporting that they were absent at least one day in the previous week (Table 18). Learners also report very high rates of teacher absenteeism with around half of learners reporting that their teacher was absent at least one day in the previous week. Interestingly teachers report much lower rates of absenteeism, 25% in the Eastern Cape and 30% in KwaZulu-Natal. Even these rates, however, suggest that a lot of teaching time is lost over the school year.

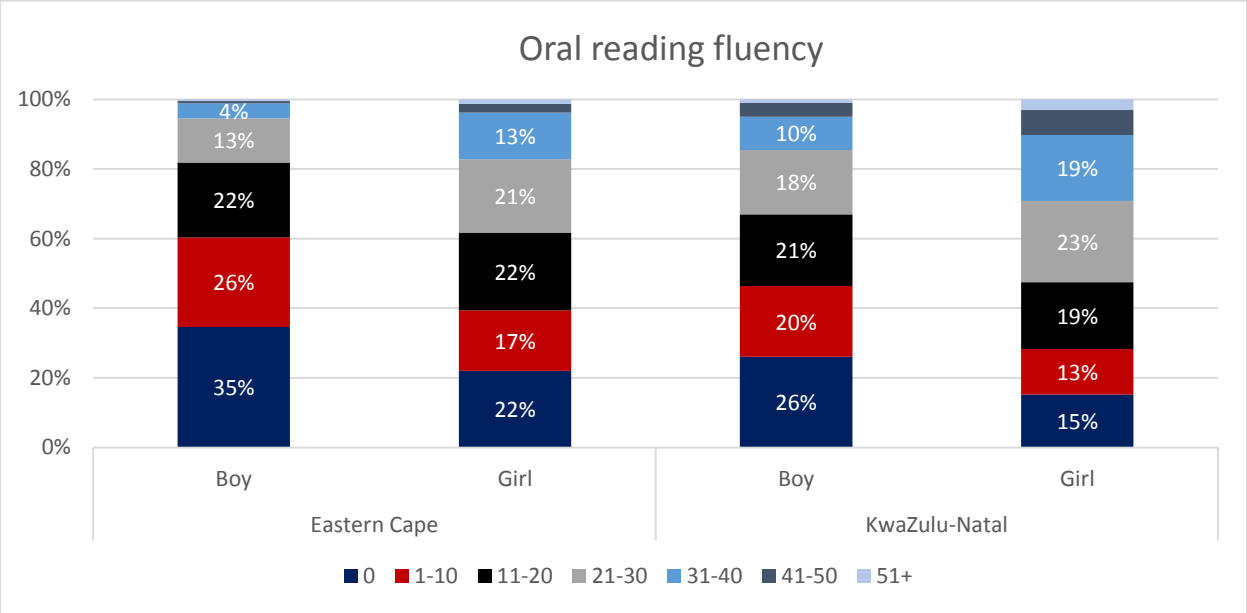
Table 18: Absenteeism by province

	Eastern Cape	KwaZulu-Natal
Learner absent in last week	34.7%	41.5%
Teacher absent in last week (learner report)	48.6%	54.0%
Teacher absent in last week (teacher report)	25.2%	29.8%

GENDER AND READING SKILLS, ATTITUDES AND BEHAVIORS

Girls tend to outperform boys in their reading skills, attitudes, and behaviors. On average, girls read around 6 words per minute faster than boys and are significantly less likely than boys to not be able to read one word (16% versus 30%). Figure 14 shows the distribution of oral reading frequency by gender and province.

Figure 14: Gender and reading skills



Girls are also more likely to report that they really like to read (Figure 15), read on their own at home more often (Figure 16), and someone reads with them at home (Figure 17).

Figure 15: Gender and reading attitudes – responses to the question "Do you like to read?"

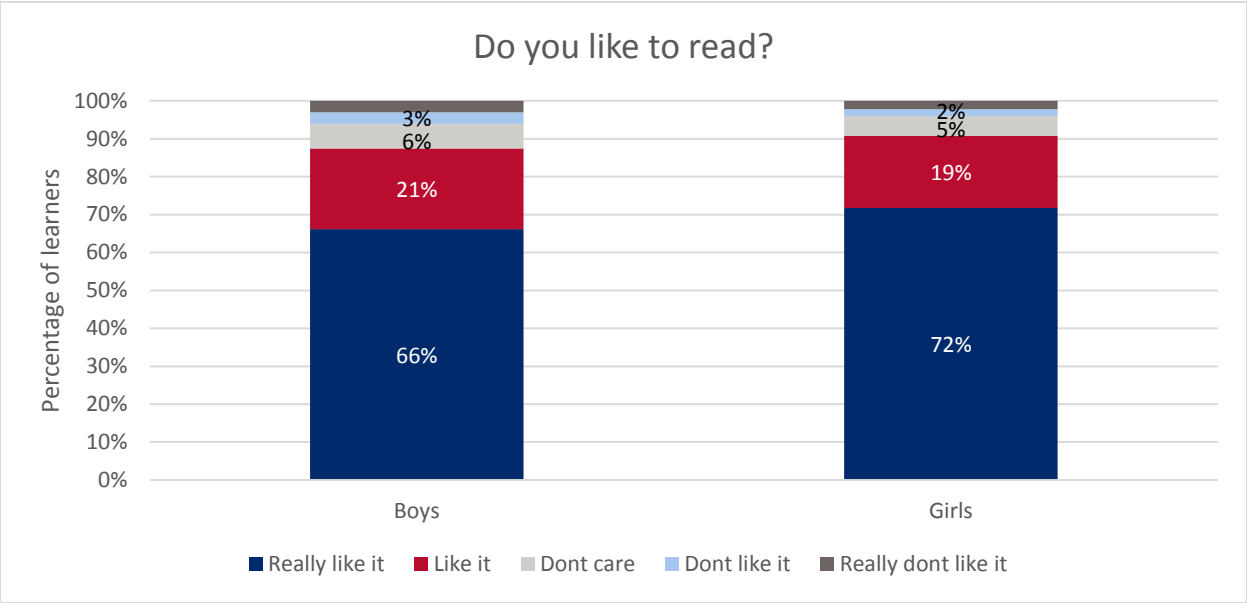


Figure 16: Gender and frequency of reading on your own at home

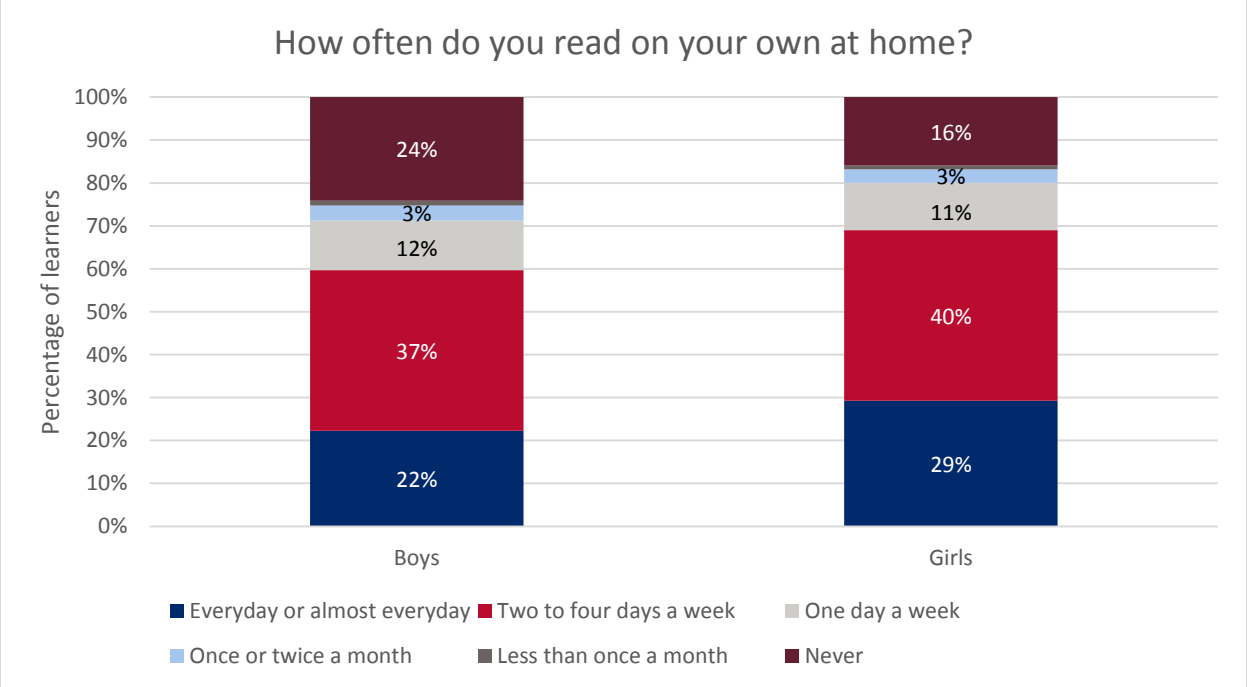
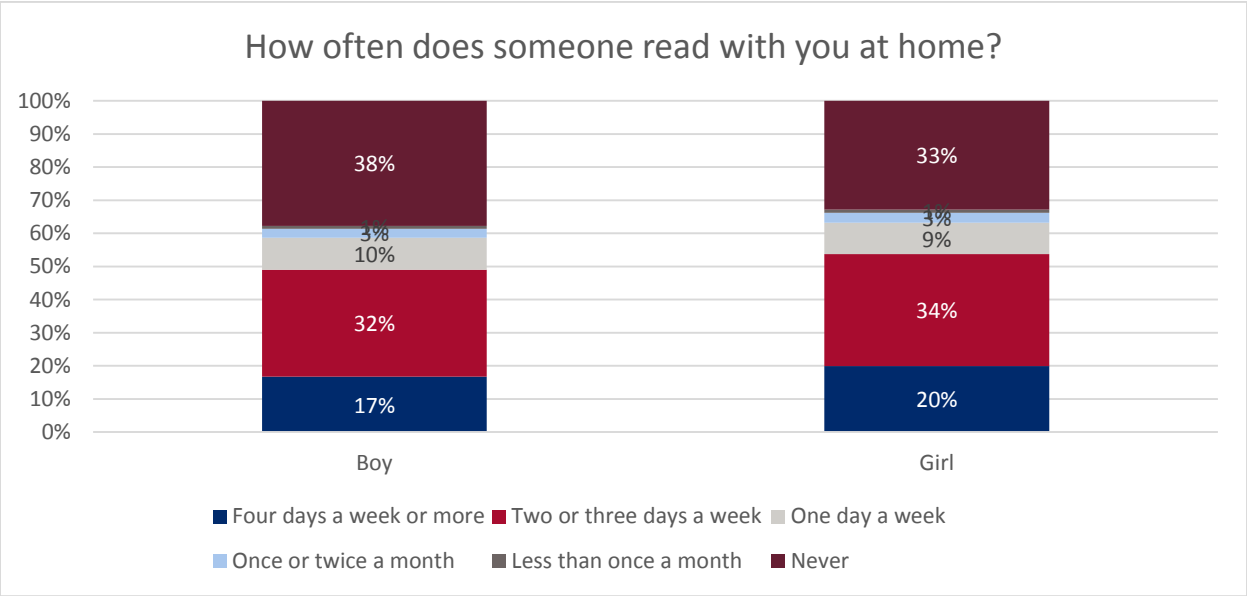


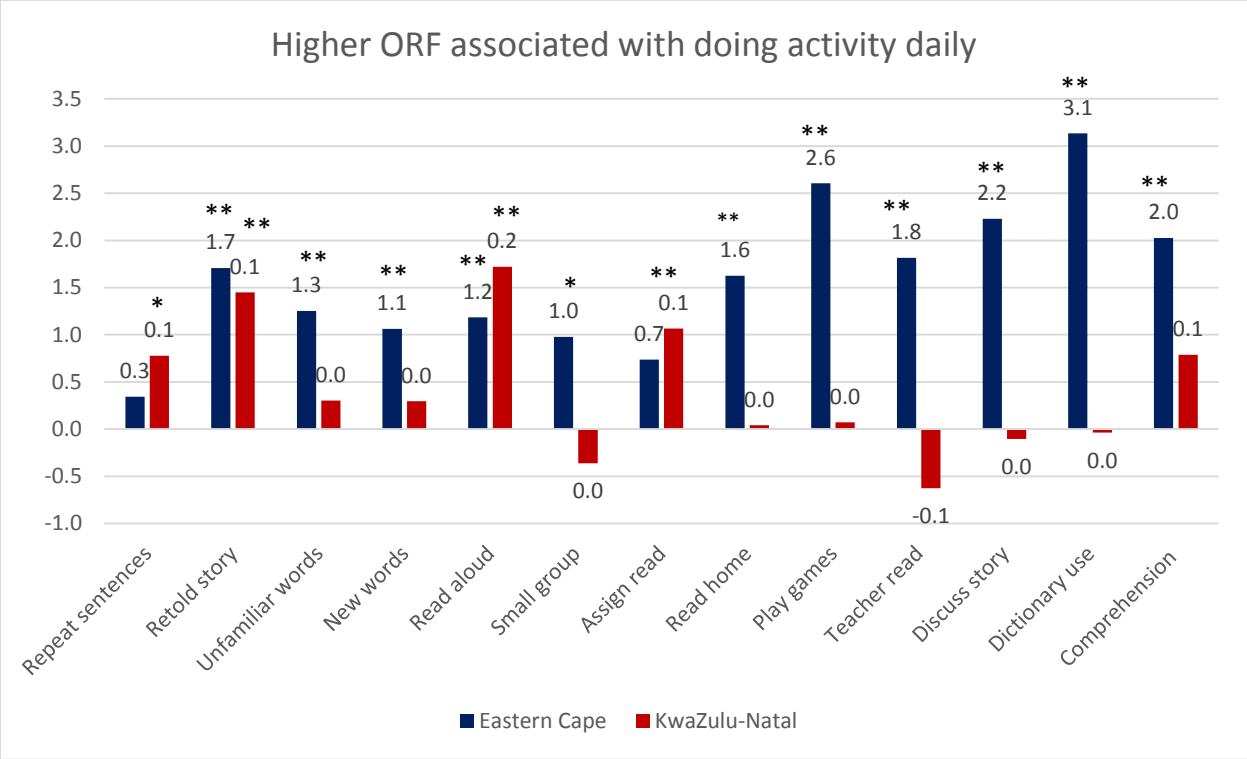
Figure 17: Gender and frequency of reading with someone at home



TEACHING ACTIVITIES AND READING FLUENCY

This section examines the association between ORF and teachers' reported practices in their literacy lessons. For each teaching activity shown in Figure 18 below, we compare the ORF of learners in classes where the activity occurs daily against learners in classes where the activity occurs less frequently. We make comparisons within grade as both teaching practices and oral reading fluency change with grade. For each activity, Figure 18 shows how many more (or less) words learners can correctly read in a minute when they do that activity daily as compared to those who do the activity less frequently. The asterisk indicates whether the difference is statistically significant, with ** representing the 1% level and * the 5% level.

Figure 18: Association between teaching practices and oral reading fluency



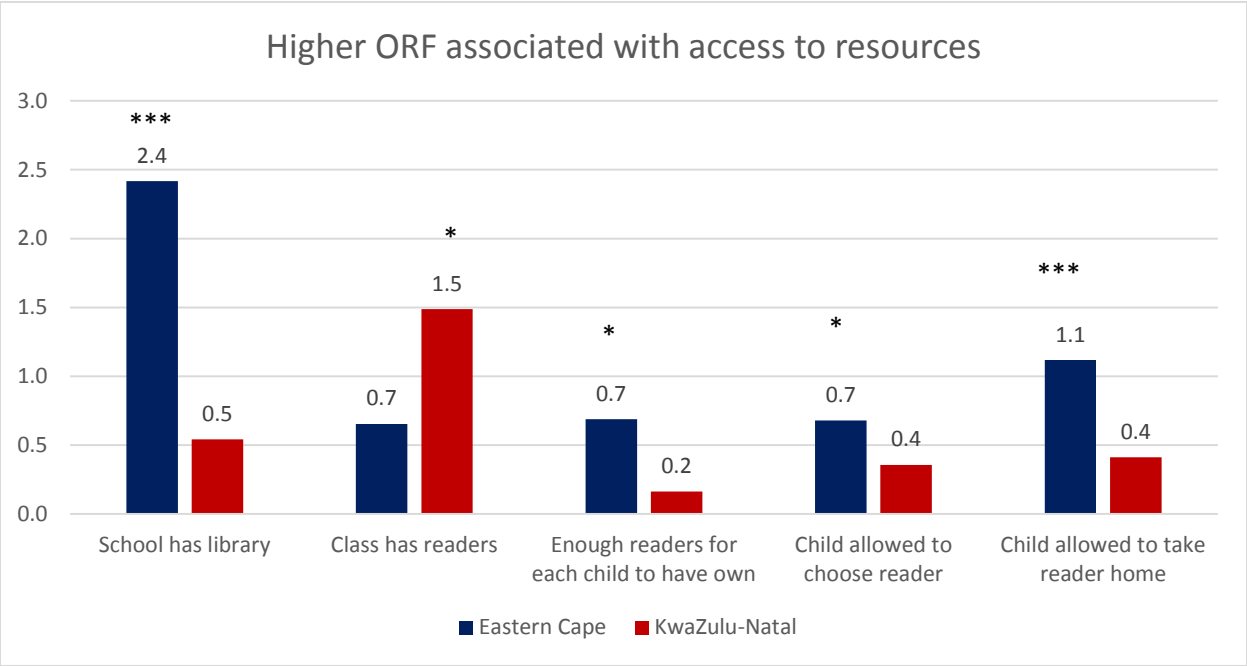
In the Eastern Cape, daily practice of almost all of the activities is associated with significantly higher ORF. For example, learners who play games in relation to the literacy/reading lesson can, on average, identify 2.6 more words per minute than other learners in their grade. In KwaZulu-Natal, only four of the activities appear to be associated with better reading outcomes (learners retelling a story, learners repeating sentences that the teacher said first, learners read aloud individually to the teacher or other learners, learners assigned to do reading on their own during school time).

It is important to note that these associations do not imply causality from teaching practices to better reading outcomes; reverse causality could be present. That is, it could be the case that teachers adapt their teaching activities to the reading levels of their learners.

READING RESOURCES AND READING FLUENCY

We also investigate the association between access to various reading resources and ORF. Figure 19 shows how many more words learners are able to read, on average, when they have access to various reading resources. In the Eastern Cape, learners in schools with a library are reading, on average, 2.4 words faster per minute than those in schools without a library. Being allowed to take a reader home is also associated with higher ORF. In KwaZulu-Natal, there does not appear to be any relationship between these reading resources and reading levels.

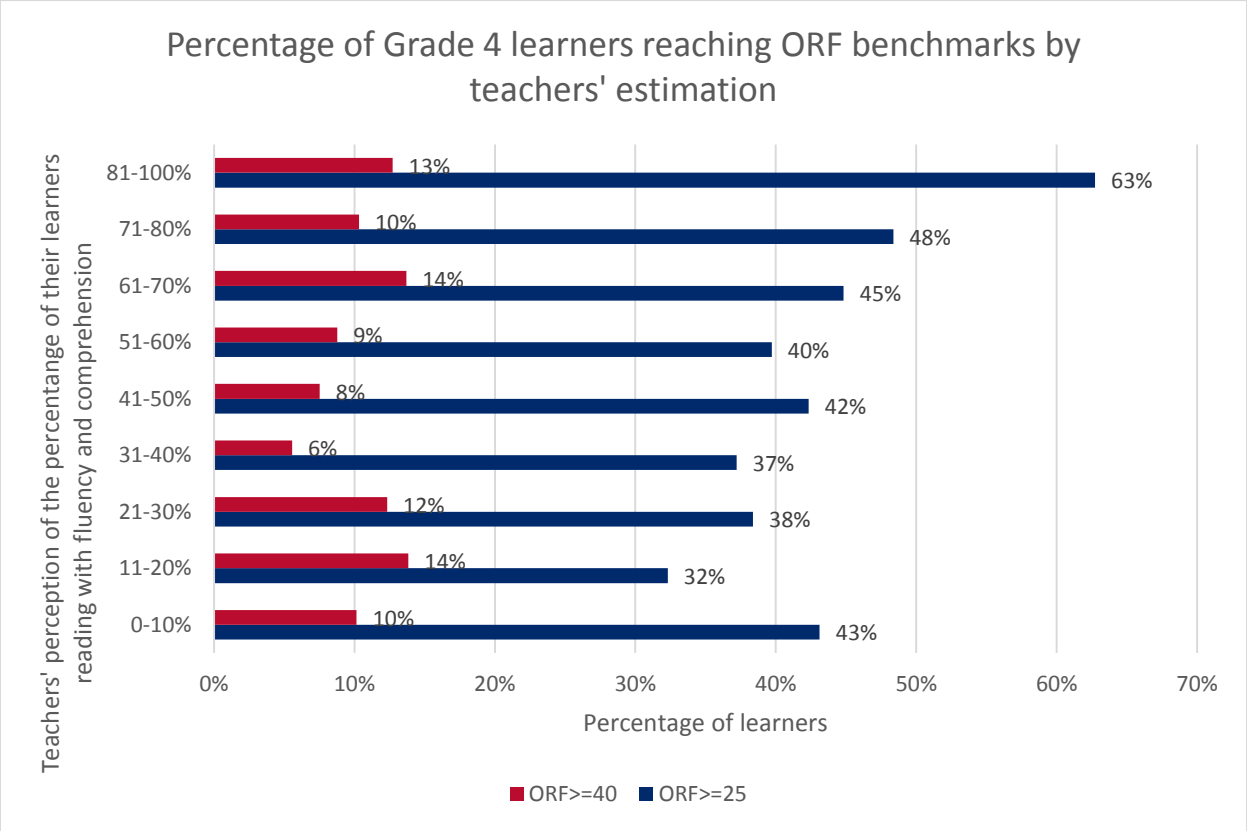
Figure 19: Association between reading resources and oral reading fluency



TEACHERS' ABILITY TO ASSESS LEARNER READING SKILLS

Teachers were asked what percentage of their class could read with fluency and comprehension in both mother tongue and in English. Overall, 43% of teachers thought at least half of their class was reading with fluency and comprehension in the mother tongue. Although there are no defined fluency benchmarks for African languages in South Africa, the teachers appear to overestimate their learners' reading skills by any standard. Not only are teachers underestimating the severity of the reading crisis in their own classrooms, there does not appear to be a strong relationship between teachers' perceptions and learners' measured skills. For each Grade 4 teacher, we calculated the proportion of learners that were able to read at least 25 CWPM and the proportion that were able to read at least 40 CWPM, both in mother tongue. We then asked the teacher to estimate of the proportion of his/her class could read with fluency and comprehension in mother tongue. Figure 20 compares actual learner performance on the EGRA assessment against teachers' perceptions. For each level of teachers' perception, we show the proportion of learners reaching the 25 CWPM threshold and 40 CWPM threshold. Among teachers that believe 80% to 100% of learners are reading with fluency and comprehension, only 63% and 13% are able to read at least 25 CWPM and 40 CWPM respectively. In general, learner performance tends to improve with teachers' estimations, but the association between teachers' perceptions and learner skill is not particularly strong. For example, there is a low degree of discrimination in the 21%-60% range.

Figure 20 : Proportion of learners achieving CWPM thresholds by teachers' report of the percentage of learners reading with fluency and comprehension



CHARACTERISTICS OF LEARNERS WHO CANNOT READ ONE WORD

As evident in Table 19, there are a substantial number of learners who are unable to correctly identify one word from a passage of connected text in their mother tongue. Overall, 24% of learners scored zero on the oral reading subtask. Table 19 shows the characteristics of these learners (low performing) compared to the 49% of learners who are able to read between one and 24 CWPM (middle performing) and the 27% learners who are able to read at least 25 CWPM (high performing). In a sample that is split evenly between girls and boys, 63% of those who cannot read one word are boys. Compared to either the middle or the top performing groups, learners scoring zero are significantly more likely to be old for their grade, and stunted. They live in households with fewer possessions and fewer books. They are less likely to read with someone at home. They are more likely to have been absent in the past week and repeating their grade at school.

Table 19: Characteristics of learners scoring zero compared to those with ORF between 1 and 24, and those with ORF >=25

	ORF=0	ORF = 1-24	ORF >= 25	Test for difference in means (p-value)		
	Low	Middle	High	Low vs High	Middle vs High	Low vs Middle
Female	37.5%	46.7%	62.9%	0.000	0.000	0.000
Age for grade:						
on track	50.1%	58.0%	66.7%	0.000	0.000	0.000
one year behind	31.1%	31.0%	25.3%	0.000	0.000	0.918
two or more years behind	18.8%	11.0%	8.0%	0.000	0.000	0.000
Stunted	18.6%	13.8%	11.5%	0.000	0.001	0.000
Count of household possessions	3.46	3.67	3.82	0.000	0.000	0.000
Learner absent	39.8%	38.9%	36.0%	0.001	0.002	0.472
No books in household	61.7%	50.7%	41.0%	0.000	0.000	0.000
Learner is repeating the grade	10.8%	6.0%	4.7%	0.000	0.078	0.000
Someone reads with the learner at home	60.8%	66.9%	67.1%	0.000	0.974	0.000

CHARACTERISTICS OF LEARNERS WHO READ AT LEAST 25 CWPM

We now consider the characteristics of learners whose reading skills are better than average. We focus on those learners who are able to read at least 25 CWPM. Looking at Table 19, we see that all the characteristics that are associated with not being able to read at all are inversely associated with better reading outcomes. For example, the percentage of females in the low, middle and high performing groups is 38%, 47%, and 63% respectively. Two thirds of those in the high performing group are in the correct grade for their age compared to only half of those who score zero. Learners able to read at least 25 CWPM are less likely to be stunted, come from households with more possessions, and are less likely to have been absent in the past week. Six in ten learners who score zero have no books to read in their home compared to four in ten learners who can read at least 25 CWPM.

VARIATION IN READING OUTCOMES ACROSS SCHOOLS

Overall, 28% of learners in the Eastern Cape and 21% of learners in KwaZulu-Natal are unable to correctly identify one word in the passage of connected text. We calculate the percentage of non-readers in each school to investigate how much diversity there is in poor reading outcomes across schools. If non-readers were spread evenly across schools, then we would expect 28% of learners in each school in the Eastern Cape to be non-readers. Similarly, 21% of learners in each KwaZulu-Natal school would be expected to be non-readers. Figure 21 depicts the distribution of the percentage of leaners in each school who are non-readers separately by province. The diversity across schools in the prevalence of non-readers is clear with the percentage of non-readers in schools ranging from 0% to 60%. In just under a quarter (24%) of schools in KwaZulu-Natal, all learners are able to identify at least one word. The corresponding figure for Eastern Cape schools is 15%. At the other end, over half the learners are non-readers in 7% of Eastern Cape schools and 2% of KwaZulu-Natal schools.

Figure 21: Distribution of percentage of learners in each school who are non-readers by province

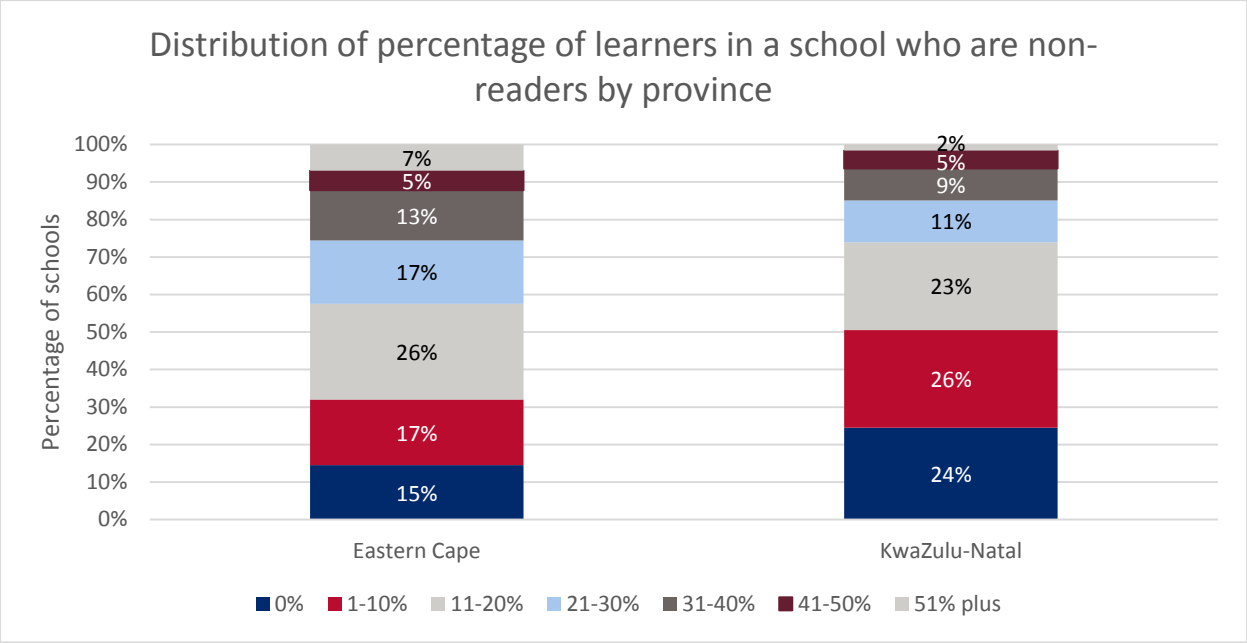
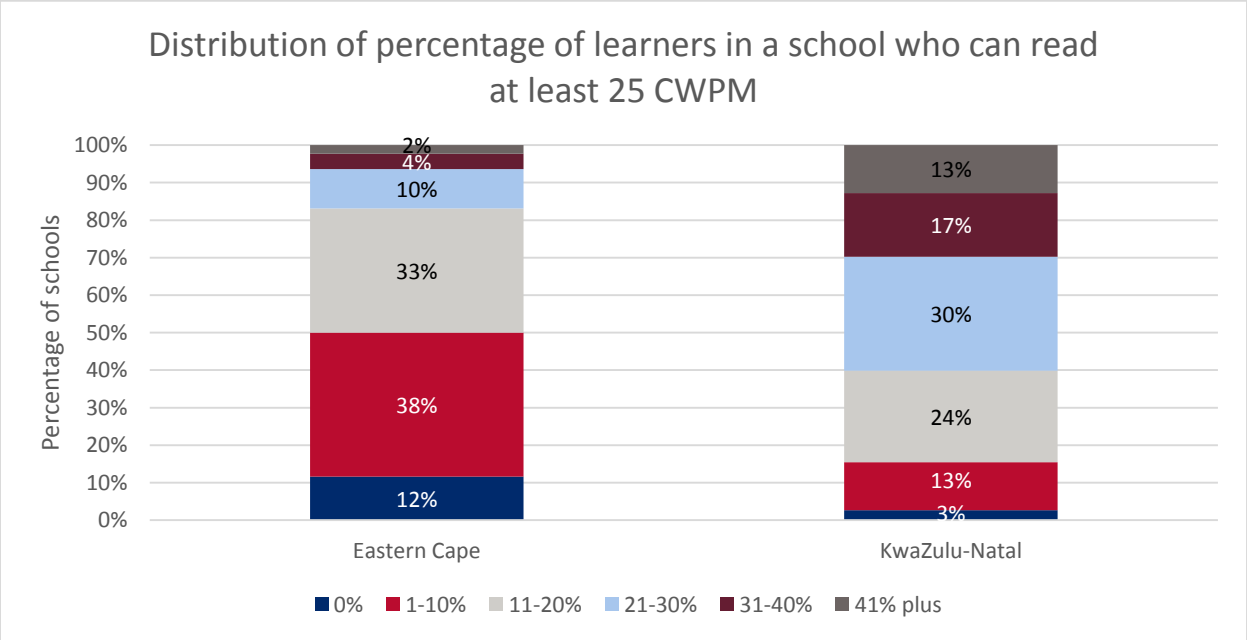


Figure 22 shows analogous distributions for the percentage of learners in each school who are able to read at least 25 CWPM. In the Eastern Cape, the vast majority (71%) of schools have between 1% and 20% of learners able to read at least 25 CWPM and in 12% of schools, no learners are reaching this fluency level. In KwaZulu-Natal there is more diversity across schools.

Figure 22: Distribution of percentage of learners in each school who can read at least 25 CWPM by province



DETERMINANTS OF EGRA SCORES

In addition to the descriptive analysis presented above, it is possible to use the baseline data to look into how student characteristics, household context, school, and teacher characteristics correlate with observed differences across EGRA scores. In this section, we present results for a series of statistical processes (regressions) for estimating the relationships among available variables and EGRA subtask scores.

A large number of variables could be related to EGRA scores. We experimented with a range of specifications that include student characteristics and behavior, household characteristics, proxies for socio-economic status of the household, teacher characteristics and classroom practices, and school characteristics. In particular, we have included:

1. Student' characteristics: age, sex, grade, learner height-for-age category
2. Home environment: count of household possessions, no books in the household, learner reads with someone at home
3. Teacher characteristics: years of experience, education degree, teacher has more than 100 books at home, teacher absent in the last week
4. School characteristics: has library, has computer lab

Regression analysis results for ORF and an indicator for learners not being able to read one word of connected text are included in Table A11 in Annex IV. Here we summarize the results.

Eastern Cape:

Being a girl has a positive correlation across scores when compared to boys. For instance, when all else is equal, girls correctly identify 5 more words from a paragraph than boys and are 10 percentage points less likely to score zero on this task. This result is consistent with previous findings from South Africa and many other countries (Gambell, T and D. Hunter (1999), Riordan (1999), Mullis et al., 2012, Zuze and Reddy, 2014, Taylor 2004, among many others).

Within grade, scores increase with age to a point and then begin to decrease which is consistent with poorer outcomes for learners who are behind in school. Learners who are classified as stunted read 1.2 words per minute slower than other learners and are 6 percentage points more likely to score zero. Learners with no books other than schoolbooks to read in the home correctly identify 2 less words per minute than learners with books in the home.

In general, teacher characteristics other than qualification are not significantly associated with learners' average ORF. Years of experience is associated with better performance at the bottom end of the distribution, with learners who have more experienced teachers slightly less likely to score zero.

Having a library and a computer laboratory are both associated with higher fluency of around 2 more words per minute.

KwaZulu-Natal:

Similar to the Eastern Cape, being a girl has a positive correlation across scores when compared to boys. Learners from homes with more household possessions and books other than schoolbooks to read tend to have better reading performance than those with lower socio-economic status and less reading resources.

In KwaZulu-Natal, both learner absenteeism and teacher absenteeism are significantly associated with poorer outcomes. There is no correlation with other teacher characteristics. In general, having a library

or computer laboratory in the school does not appear to be significantly associated with learner performance.

DETERMINANTS OF ENGLISH READING FLUENCY

For our Grade 4 learners, we investigate whether the correlates of English reading fluency are similar to those for mother tongue. We run regressions similar to those for mother tongue EGRA scores but include two proxies of exposure to English at home, specifically an indicator that the learner ever speaks English at home and an indicator that the learner ever watches TV or listens to the radio in English. The full regression results for English ORF are presented in Table A12 in Annex IV.

Eastern Cape:

Similar to the findings for mother tongue, girls are reading, on average, 9 more correct words per minute than boys, and stunted learners read 5 words slower per minute than their taller peers. Being absent in the past week is associated with lower ORF. Learners with no books other than schoolbooks to read in the home correctly identify 5 less words per minute than learners with books in the home. Though teachers' qualifications and experience are not significantly associated with learners' English ORF, learners with teachers who have at least 100 books at home read, on average, 7 more correct words per minute than those whose teachers have fewer books. Having a library in the school is also associated with higher fluency of around 7 words per minute.

Exposure to English at home tends to have a positive correlation with English reading fluency. For instance, when all else equal, learners who ever speak English at home read, on average, 15 more correct English words per minute compared to those who never speak English at home. Watching TV or listening to the radio in English is associated with a higher fluency of around 4 words per minute.

KwaZulu-Natal:

Once again, girls tend to outperform boys with a higher English reading fluency of around 13 words per minute. Learner absenteeism is associated with lower English ORF. Learners from homes with more household possessions have better reading performance than those from homes with less assets.

Similar to the Eastern Cape, English ORF is significantly associated with our proxies for exposure to English in the home. Ever speaking English at home is associated with a higher fluency of around 15 words per minute and learners who report that they consume English TV or radio read an average of 15 more words per minute.

DETERMINANTS OF READING ATTITUDES AND BEHAVIORS

We also investigate the correlates of reading behaviors and attitudes using regressions similar to those described for the EGRA scores. The results for regressions on an indicator for reading at home on your own daily and an indicator for liking reading very much are shown in Table A13 in Annex IV. Here we summarize the findings.

Eastern Cape:

Girls and learners from homes with more household possessions are more likely to report reading at home daily and liking to read very much. Learners with no books in the home are significantly less likely to read at home daily. Having someone who reads with the learner at home is significantly correlated with learners reporting higher affinity with reading. In general, teacher and school characteristics do not appear to be associated with these reading behaviors and attitudes.

KwaZulu-Natal:

Girls and learners from homes with more possessions and more books are more likely to read on their own daily. Learner absenteeism is associated with a lower probability of daily reading. Having someone who reads with the learner at home is significantly associated with more frequent home reading and a more favorable attitude towards reading.

BALANCE

The purpose of a sample balance check exercise is to verify that respondent characteristics, environmental context, and outcome measures of the study sample are similar across treatment groups at baseline. Demonstrating similarity across randomly assigned treatment groups at the start of the study establishes credibility that the untreated group will, indeed, be a viable counterfactual to the treated group at endline. It should be mentioned, however, that differences across groups do not necessary hurt the credibility of the counterfactual and are statistically expected to occur.[13]

Sample balance checks are not a verification of the randomization process itself; rather, they can verify that the implementation of the process was sound. This can be especially important for studies where randomization is conducted in the field. Given that our random assignment was carried out using statistical software and respected in the field, there is no reason to expect biases. Despite this, we conducted balance checks. The full details of the significance test results are presented in Tables A14 and A15 in Annex IV.

As expected, the sample balance checks of the survey data produced few indicators that show differences between the treatment and control groups. As stated earlier, some differences are expected and a natural outcome of a rigorously implemented randomization process. For the EGRA data, we tested a total of 26 variables for balance across the treatment and control arms, disaggregated by language group. This amounted to a total of 52 significance tests, since each variable was tested twice (two languages). Of the 52 significance tests run, 2 (roughly 4%) showed differences between the treatment and control groups, at the 5% significance level.

Tests using data from the learner and teacher questionnaires only found 3 differences between the treatment and control average out of 60 tests. Furthermore, corrections for multiple testing using conventional approaches (Bonferroni, Holm-Bonferroni and others) eliminate any significant difference between groups. We also calculated the absolute effect size difference between group means for each variable. All effect size differences were under the 0.25 threshold.

Summarizing, the randomization process had no challenges, the sample is properly balanced, and no changes to the evaluation approach are needed.

[13] Bruhn M. and D. McKenzie, "In Pursuit of Balance: Randomization in Practice in Development Field Experiments", *American Economic Journal: Applied Economics*, 2009, vol. 1, issue 4, 200-232

CONCLUSIONS

In this report, we present the findings from the baseline collected for the IE of the SPS intervention, which included EGRA assessments, learner interviews, teacher interviews, and a school inventory. The baseline data collection did not face any significant challenges.

Average scores in the EGRA subtasks are very low in both provinces. One in four learners are non-readers in their mother tongue – they cannot read a single word from a short, grade-level paragraph. Excluding non-readers, the average ORF of the rest of the learners is 20 words per minute and 24% of them cannot correctly answer one comprehension question about the passage read.

Though there is clear progress from grade to grade, by Grade 4 13% of learners are still unable to read one word and the average oral reading fluency is only 23 words per minute. The very poor foundation in mother tongue literacy at the beginning of Grade 4 is particularly concerning, as learners transition to English as the LOLT in this grade. English EGRA results are similar those for mother tongue, with 32% of Grade 4 learners unable to answer one English comprehension question.

On average, girls tend to outperform boys, and better socio-economic status, as proxied by household possessions and child height, is associated with better reading outcomes. Learners who are behind for their age and those repeating the grade also have poorer reading skills.

Attitudes to reading are encouraging with 90% of learners selecting the very happy or the happy face when asked whether they like to read. However, 20% of learners never read at home on their own and only one in four learners reads at home daily. Absenteeism is a major challenge for both learners and teachers. Since SPS activities are scheduled to take place in school, absenteeism could reduce the potential impact of the intervention.

Access to reading resources is clearly an issue, particularly in the Eastern Cape where only 8% of learners can take a library book home. The vast majority of schools have class readers but learners typically have to share, cannot choose their own reader, and are not allowed to take them home. Fifty percent of learners have no books other than schoolbooks to read at home. The resources that the SPS intervention brings have the potential to make a large difference to the quantity and quality of reading materials available to teachers and learners.

Focusing on teachers themselves as readers, 60% read outside of work requirements often or very often, but less than half are reading books (fiction or non-fiction). Only 47% of teachers have more than ten books in their homes.

Teachers report using a range of activities in their literacy lessons. Rote learning and chanting remains a dominant pedagogy with 47% of teachers saying that their learners repeat sentences they have said first on a daily basis. Playing games related to the literacy lesson is much less common with only 8% of teacher report this as a daily activity. There is clearly room to incorporate more activities focused on reading for enjoyment.

Teachers, on average, feel that 41-50% of their learners are reading with fluency and comprehension in mother tongue. Matching this to learners' EGRA outcomes would imply a fluency benchmark of 19 words per minute, far from the levels needed to be able to comprehend the text read. Teachers are not only overly optimistic, their assessment of their own learners' reading levels does not correlate highly with the measured EGRA outcomes.

LIMITATIONS

The Evaluation Team encountered some limitations inherent to the design of this evaluation. We list some of the more relevant limitations below:

Representativeness of the sample. The sample is representative of the areas where SPS is currently working and corresponds to two of the eleven official languages in South Africa – isiZulu and isiXhosa. Therefore, results are not generalizable at the national level or to other geographical areas or other languages. The sample is representative of the children that were in school during the assessment, therefore it does not include the 11% of learners that were absent.

Longitudinal attrition and absenteeism. The evaluation employs a longitudinal design where we will interview the same learners and teachers at baseline and endline. All learners will still be in primary school and are unlikely to move schools between term one of the baseline year and term four of the endline year. Absenteeism rates are, however, high and could present a problem. We plan to visit each school ahead of the team of assessors to confirm that all 30 learners are still at the school and to specially request that those learners attend school on the day of the assessments.

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