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## 2016 Malawi National Reading Assessment

**October 2016**

This publication was produced at the request of the United States Agency for International Development. It was prepared independently by Social Impact, Inc. through Dr. Geetha Nagarajan, Erika Keaveney, and Emily Gonzales with support from Dr. Pedro Carneiro and Aaron Mapondera. This publication was made possible by the support of the American people through the United States Agency for International Development (USAID).

# **2016 MALAWI NATIONAL READING ASSESSMENT**

**RESULTS OF A NATIONAL READING ASSESSMENT OF  
STANDARD 2 AND 4 LEARNERS IN PUBLIC SCHOOLS IN  
MALAWI**

October 2016

Cover photo featuring a Malawian classroom, courtesy of Melissa Chiapetta, Social Impact. Taken with consent, May 2014.

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# ACRONYMS

CSPM	Correct Syllables per Minute
CLPM	Correct Letters per Minute
CWPM	Correct Words per Minute
DEC	Development Experience Clearinghouse
EGRA	Early Grade Reading Activity
EMIS	Education Management Information System
GoM	Government of Malawi
ICC	Intra-Cluster Correlation
IE	Impact Evaluation
IKI	Invest in Knowledge Initiative
MDES	Minimum Detectable Effect Size
MERIT	Malawi Early Grade Reading Improvement Activity
MoEST	Ministry of Education, Science and Technology
NRA	National Reading Assessment
ODK	Open Data Kit
OLS	Ordinary Least Squares
PCA	Principal Component Analysis
RA	Reading Assessment
SI	Social Impact
SOW	Statement of Work
USAID	U.S. Agency for International Development

# EXECUTIVE SUMMARY

USAID has partnered with the Government of Malawi (GoM) to improve the quality of teaching in schools, get communities more involved in schools, and improve learner reading scores. To better understand how USAID interventions are working and how changes in GoM educational policies are affecting learner outcomes, such as reading scores, USAID and the GoM are also partnering on a series of ongoing National Reading Assessments (NRAs).

By providing a national level snapshot of early grade reading outcomes in Malawi, the NRA will set the basis for learning and adaptive programming decisions by USAID and the Ministry of Education, Science, and Technology (MoEST) to ensure that intended results in improving early grade reading skills are realized. The NRA will also help MoEST better understand Malawi's progress in improving early grade reading skills for Malawian primary students in line with Malawi Global Partnership for Education targets and objectives, as well as identify which groups of learners are most in need of support and what type of support they need. Specifically, the NRA examines reading assessment results disaggregated by gender, urban vs. rural location, and education divisions.

This report presents the methodology, limitations, and findings for the 2016 NRA and makes recommendations to USAID, MoEST, and other stakeholders on possible ways to improve the quality of reading among primary school learners in Malawi. The first NRA was conducted in 2014 and focused on Standards 1 and 3 and the 2016 NRA focused on Standards 2 and 4. Both NRAs were conducted by Social Impact, Inc. (SI), an Arlington, Virginia-based development consulting firm, following USAID/Malawi awarding SI a contract in April 2013.

## ASSESSMENT QUESTIONS

This NRA, focused on Standards 2 and 4, assesses how Malawian primary students are progressing toward reaching MoEST benchmarks in reading. The assessment reports on the proportion of primary school students meeting reading benchmarks and mean scores by reading subtasks—disaggregated by gender, education subdivision, and rural and urban location—for the respective classes assessed. Specifically, the assessment focuses on the following higher level indicators using reading benchmarks set for Malawi by MoEST (as of December 2014) as well as the EGRA Coordinating Committee-recommended benchmarks for some subtasks:

- (i) The proportion of students who, by Standard 2 of primary school, demonstrate against credible national systems that they can read and understand the meaning of grade-level text per the national curriculum:
  - a. The proportion of students who by the end of the second school year (Standard 2) are able to read grade-level text, as measured by the number of correct words per minute;
  - b. The proportion of students who by the end of the second school year (Standard 2) are able to answer comprehension questions after reading grade-level text, as measured by the number of correct comprehension questions answered correctly.
- (ii) The proportion of students who, by Standard 4 of primary school, demonstrate against credible national systems that they can read and understand the meaning of grade-level text per the national curriculum:

- a. The proportion of students who by the end of fourth school year (Standard 4) are able to read grade-level text, as measured by the number of correct words per minute;
- b. The proportion of students who by the end of fourth school year (Standard 4) are able to answer comprehension questions after reading grade-level text, as measured by the number of correct comprehension questions answered correctly.

## **ASSESSMENT METHODOLOGY**

SI partnered with the MoEST and Invest in Knowledge Initiative (IKI), a Malawian data collection firm, to gather data in May and June of 2016 from a nationally representative sample of 7,200 Standard 2 and 4 learners at 360 schools located across twelve districts within the six education divisions in Malawi. The random sample of learners was drawn using a multi-stage cluster sampling approach. Prior to data collection, SI conducted power calculations to verify the sample size to provide a nationally representative snapshot of early reading skills for Standard 2 and 4 learners. The calculations showed a total of 7,200 learners equally split between girls and boys from Standard 2 and 4 and drawn from 720 classrooms in 360 schools located within 12 districts across the six Malawian education divisions was adequate to examine variations in reading scores by sex, education division, and rural and urban location. About 96 percent of the sampled schools in 2016 were also sampled for the 2014 NRA although the learner sample was cross-sectional.

Enumerators assessed learners using the Chichewa reading assessment (RA) refined by the Early Grade Reading Activity (EGRA) Coordinating Committee in 2012. Chichewa was the primary language of instruction for Standard 1 through 4 learners in Malawi in 2016. The RA tested learners on their ability to read and understand basic Chichewa text. Specifically, it assessed learners' pre-reading abilities, initial reading skills, and comprehension and fluency capabilities through nine reading subtasks, including: Letter Name Knowledge, Syllable Segmentation, Initial Sound Identification, Syllable Reading, Familiar-Word Reading, Unfamiliar-Word (Non-Word) Reading, Oral Reading Fluency, Reading Comprehension, and Listening Comprehension.

In addition to assessing learner reading abilities, enumerators also collected data on general school conditions through a head teacher interview and a school climate protocol, classroom conditions and teaching practices through a classroom observation protocol and teacher interview, and learner and household characteristics through a learner questionnaire. To reduce errors in data collection and entry, this study primarily used electronic data collection methods. After adequate cleaning, the assessment team analyzed the data using the STATA 14 statistical software package. The first step in this process was appropriately weighting the data in order to make the sample representative at the national level. Results are presented below.

## **FINDINGS**

At the time of this study in 2016, Malawian public school Standard 2 and 4 learners are generally performing well at the pre-reading level: more than half are reaching benchmarks in listening comprehension and syllable segmentation. By the end of Standard 4, however, over 90 percent of public school learners are not able to read and comprehend a grade-appropriate passage. A summary of results by reading subtasks and major indicators are shown in Table 1, and results that address the assessment questions are discussed below.

## **ORAL READING FLUENCY: READING ASSESSMENT RESULTS**

### **Standard 2**

The average reading fluency score was 2.74 correct words per minute (cwpm) with only 1 percent of learners meeting the MoEST benchmark meaning that 99 percent of learners could not read fluently according to the benchmark. Furthermore, only eight Standard 2 learners could be considered “readers.”<sup>1</sup> The difference in average oral reading fluency scores by learner sex was significant in that girls performed better than boys. No statistically significant difference was noted across subdivisions.

Standard 2 learners in Malawi still have a long way to go before they are able to read independently, with nearly 82 percent of learners scoring zero on the oral reading fluency subtask. The learners’ difficulty with reading fluency may be due to a lack of decoding skills and alphabetic understanding, as indicated by low scores on initial reading subtasks. Classroom observations provided a possible reason by showing that over half of teachers are still teaching the whole-word method rather than using phonics.

### **Standard 4**

For Standard 4 learners, the average reading fluency score was 25.37 cwpm with only 9 percent meeting the MoEST benchmark meaning that 91 percent of learners could not read fluently according to the benchmark. Further, only 226 Standard 4 learners (6.3 percent) can be considered “readers.” The difference in average oral reading fluency scores by learner sex was significant in that girls performed better than boys. No statistically significant difference was noted across subdivisions. Over 77 percent of Standard 4 learners in 2016 scored above zero. But, this also indicates that 23 percent still could not read a single word after four years of primary education.

## **READING COMPREHENSION: READING ASSESSMENT RESULTS**

### **Standard 2**

In 2016, the average reading comprehension score for Standard 2 learners was 2 percent, with only 0.2 percent of learners meeting the MoEST reading comprehension benchmark meaning that 99.8 percent of learners could not comprehend the text and answer the questions correctly as per the benchmark. There was no statistically significant difference noted by learner sex in average reading comprehension scores. By subdivisions, scores were low across all education divisions and ranged from 0 to 0.6 percent with CWED and SEED scoring the highest. Ninety-one percent of learners scored zero and the percent of students who scored zero was similar across education divisions, but ranged between 88 percent in SEED and 96 percent in CEED. Standard 2 learners in Malawi still have a long way to go, given that nearly 91 percent of learners in 2016 scored zero in reading comprehension.

### **Standard 4**

In 2016, the average reading comprehension score for Standard 4 learners was 26 percent, with only 6.7 percent of learners meeting the MoEST reading comprehension benchmarks used for Standard 4 meaning that nearly 93 percent of Standard 4 learners could not read fluently with comprehension according to

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<sup>1</sup> In accordance with the EGRA design, learners are “readers” if they score above zero on the reading fluency subtask and are able to answer 80 percent (four out of five) of the comprehension questions correctly.

the MoEST's benchmarks. There was no statistically significant difference noted by learner sex in average reading comprehension scores. By subdivisions, scores were low across all education divisions and ranged from 2.5 to 10.4 percent, with CWED and SEED scoring the highest. Zero scores were much lower with a national average of 35 percent and ranged from just 28 percent in CWED and SEED to 48 percent in NED. Standard 4 learners in Malawi still have room to improve before they are able to read independently, as nearly 35 percent of learners in 2016 scored zero in reading comprehension.

## **FACTORS ASSOCIATED WITH ORAL READING FLUENCY**

For Standard 2, oral reading scores increased with learners being read to often at home and with effective classroom management, for all learners and when disaggregated by sex.<sup>2</sup> Overall, Standard 2 learners read 2.75 more correct words per minute (cwpm) when they reported being regularly read to at home and 1.47 more cwpm when their teachers were observed effectively managing the classroom. Learner age was positively associated for Standard 2 boys, with boys scoring 0.28 cwpm higher for each additional year of age. Finally, Standard 2 girls who reported feeling tired at school scored 1.3 cwpm lower than those who did not report feeling tired.

For Standard 4, oral reading fluency scores increased with learners being read to often at home and taking books home from school. Standard 4 learners who reported being read to at home often scored 3.8 cwpm higher than those who did not report being read to often. Similarly, Standard 4 learners who reported taking books home from school scored 1.75 points higher than learners who did not take books home. Similar results were also found in NRA 2014 among Standard 3 learners and the impact evaluation baseline study in 2013 among Standard 4 learners, emphasizing the importance of motivating households to read to learners and making reading materials accessible for learners to take home. Repeating a class was negatively associated with reading scores, with repeaters scoring 4.9 cwpm less than non-repeaters. Repeaters were more likely to miss school due to illness, less likely to have help with homework or be read to frequently at home, and less likely to report enjoying reading. Age of learners was negatively correlated with reading scores in that scores were lower as learner age increased. Nearly half of Standard 4 learners (48.8 percent) were over age and it is likely that older children are less able to attend lessons regularly, as they may face more demands outside of school such as helping with household chores and engaging in labor or farming.

For both Standards 2 and 4, the presence of school feeding was not found to be a significant predictor of learning achievement and this result was similar for Standard 2 and 4 outcomes during the impact evaluation baseline in 2013. This may be due to limited learner participation in school feeding programs: over half of learners in schools with a feeding program do not participate in it. Furthermore, schools that participate in feeding programs are often targeted based on regional food insecurity and may therefore be more likely to serve struggling learners in general, limiting the extent to which a positive association can be identified between learner scores and school feeding. It is worth noting, however, that children who report eating fortified porridge, or *phala*—which 83.6 percent of learners report eating at school—score 0.87 cwpm higher on the oral reading subtask than those who do not eat *phala*.

For both Standards 2 and 4, there was no apparent relationship found between class size and oral reading fluency.

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<sup>2</sup> Both the 2014 NRA and the impact evaluation baseline in 2013 also showed that learners reporting being read to at home was one of the significant factors that was most consistently correlated with higher predicted value of learner reading outcomes.

## Proportion of Learners Taking Books Home from School

Overall, approximately 65 percent of sampled teachers reported that learners from their class take textbooks and/or library books home from school. Learners taking books home from school was highly associated with higher oral reading fluency scores for Standard 4 learners. Despite this positive relationship, many children do not have access to books for home use. Of the 34.6 percent of classrooms that reported children not taking books home, two-thirds did not have library books available at the school. Access to library books was found to be highly associated with whether children report being read to at home as well as whether they report reading independently at home.

## Proportion of Schools Receiving at Least One External Coaching Visit

Overall, 86 percent of teachers reported receiving at least one hour of external coaching in the past three years from any one of the following: MoEST inspector, PEAs, Divisional Inspector, Mentor Teacher, or other providers with an average of 8.1 hours. The proportion of teachers receiving the coaching differed between the six divisions in that the teachers in CEED were the least likely to receive coaching, at 78 percent, and teachers in SHED and were the most likely to receive external coaching at 91 percent. Of the teachers who reported having received the EGRA intervention (276 teachers), 70 reported receiving coaching from the EGRA project.

## Proportion of Teachers Demonstrating Essential Skills in Teaching Reading

Only 2.7 percent of teachers used all of the 13 essential practices in the observed classes. However, about 48 percent of teachers demonstrated 67 percent adherence to the best practices on any one day.<sup>3</sup> The teaching practices appear to have improved overall from 2014 to 2016. Specifically, teachers improved in use of essential teaching practices from 2014 to 2016 as evidenced by 48 percent of teachers in 2016 utilizing at least 67 percent of essential practices (8 of the 13 essential teaching practices), up from 30 percent of teachers meeting this mark in 2014. Many of these practices are applicable to the reading-related subtasks, and can influence how well learners absorb material. However, the data showed that teachers still need to improve on encouraging learners to “sound it out” when they don’t know a word as well as asking learners to recognize letters and say letter names and/or sounds, which can improve learners’ phonemic awareness and decoding skills.

## RECOMMENDATIONS FOR USAID AND MOEST

***Build up community programs that work to get parents and household members involved in learner reading.*** These programs should encourage households to read to learners often by explaining the benefits of doing so. Learners tend to repeat classes when they are less likely to have help from family with homework or be read to frequently at home, among other factors. Reading materials should be made more readily available for children and their family to use at home through access to checking out books from school libraries, community reading centers, or community libraries.

***Consider other ways of ensuring learners are read to more often.*** This can possibly be done by creating afterschool peer mentoring programs. This method has been tried in many other education interventions and has been shown to be beneficial both for the mentors and mentees. In areas where

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<sup>3</sup> EGRA has set a standard of 67 percent adherence to best practices on any one day as a cut off for determining adherence to best practices.

parent / caretaker literacy is low, after-school reading clinics staffed by community volunteers may offer an alternative option for ensuring children are given the opportunity to more regularly practice reading outside of the classroom.

**Work with schools to ensure they have enough textbooks or a system of protecting textbooks to allow learners to take books home from school with them,** and encourage learners to do so—possibly through reading incentive programs such as those often used in the U.S. that provide small rewards for learners who read multiple books over school break periods (or even throughout the academic year).

**Continue to work with teachers through targeted capacity-building and coaching interventions to improve teacher use of essential reading practices.** During such capacity building efforts, emphasize also the importance of effective class room management by teachers - through non-corporal punishment methods - to ensure learners are behaving well since it can facilitate teachers' use of essential practices by providing a more productive learning environment. Learner reading performance is positively associated with them behaving well in the classrooms.

**Ensure learner participation in school feeding when such programs exist.** After identifying schools with high levels of food insecurity and implementing programs in such schools either through partnerships with other donor organizations or scaling up of USAID Feed-the-Future Program, efforts should also be made to increase learner participation in the program, especially among those learners that need it. To that end, explore reasons for low learner participation in schools with the program and address them: the study found that in schools with the feeding program, more than one half of the learners do not participate in it and a quarter of learners report feeling hungry at school. Learners that participate in the program tend to be less likely to report feeling hungry every day. Also, reading scores were higher for learners that report eating *Phala* (fortified porridge) for breakfast than those that did not. School feeding programs could consider including *Phala* for breakfast to improve reading scores.

**Table 1: Summary of Findings: National Reading Assessment, 2016**

Reading Subtask	Standard 2			Standard 4		
	Mean Score	Percent (%) of Learners Reaching Proposed Benchmarks	Percent (%) of Learners Scoring Zero	Mean Score	Percent (%) of Learners Reaching Proposed Benchmarks	Percent (%) of Learners Scoring Zero
Listening Comprehension	58%	61%	4%	75%	63%	1%
Syllable Segmentation	40%	38%	40%	60%	52%	20%
Initial Sound Identification	5%	2%	85%	7%	1%	78%
Letter Name Knowledge	9.25 clpm	12%	35%	32.69 clpm	23%	7%
Syllable Reading	5.06 cspm	1%	64%	35 cspm	13%	13%
Familiar Word Reading	2.71 cwpm	1%	77%	23.5 cwpm	11%	17%
Non-Word Reading	1.86 cwpm	4%	81%	14.44 cwpm	2%	21%
Reading Fluency	2.74 cwpm	1%	82%	25.37 cwpm	9%	23%
Reading Comprehension	2%	0.19%	91%	26%	6.67%	35%
<b>Indicators</b>					<b>Percent</b>	
Proportion of teachers demonstrating “essential” skills in teaching reading					47.7%	
Proportion of teachers in targeted classrooms that report learners taking textbooks and/or library books to their home from school					65.4%	
<b>Head Teacher-Reported Basic School Statistics</b>					<b>Average</b>	
Enrollment in primary Schools (1-4 standards)					520 learners	
Girl-to-boy ratio in Standards 2 and 4					1.1 to 1	
Average class size for Standard 2					114.3 learners	
Average class size for Standard 4					89.7 learners	
Number of teachers per school for Standards 1 to 4					6.2	
Length of school day for Standard 2					4.4 hours	
Length of school day for Standard 4					5.5 hours	
Dropout rate in Standard 2					6.6 percent	
Dropout rate in Standard 4					5.7 percent	
Repeat rate in Standard 2					18.3 percent	
Repeat rate in Standard 4					14.1 percent	

# I. INTRODUCTION

Access to education in Malawi has improved greatly in recent years but quality of education in the country continues to lag behind. Following the abolition of school fees in 1994, primary school enrollment doubled in the country. According to the World Bank, primary school enrolment jumped from 2.6 million in 1996 to nearly 4.1 million in 2014, and gross primary school enrollment reached 147 percent in 2014.<sup>4</sup> Further, with Government of Malawi (GoM) efforts to improve the quality of education in the country's schools, nearly 91 percent of primary school teachers in 2015 were found to have received at least minimum training required to teach at primary levels.<sup>5</sup> Class sizes still remain very high, with the average learner-to-teacher ratio standing at 69 to 1 in 2015, although this figure is down from 74 to 1 in 2012.<sup>6</sup> Furthermore, Malawi still places well below average on worldwide education indices, having declined slightly in ranking on the United Nations' Human Development Report Education Index from 170th in 2013 to 173rd in 2015 (out of 188). Malawi thus ranks in the bottom 10 percent of countries on quality of education, trailing countries such as Zimbabwe, South Sudan, Afghanistan, and Pakistan. A 2015 midline study for the Early Grade Reading Activity (EGRA) impact evaluation conducted among learners in Standard 2 and Standard 4, and a National Reading Assessment (NRA) conducted in 2014 among Standard 1 and Standard 3 learners found that about 92, 79, 47, and 23 percent, respectively, of learners in Standards 1, 2, 3, and 4 could not read a single word of a prompted story. In addition, nearly 98, 97, 62, and 60 percent, respectively, of Standards 1, 2, 3, and 4 could not answer a single reading comprehension question.<sup>7</sup>

In an effort to address this educational quality gap, USAID has partnered with the GoM on interventions focused on improving the quality of teaching in schools, getting communities more involved in schools, and improving learner reading scores through several projects including EGRA and the recent Malawi Early Grade Reading Improvement Activity (MERIT). Scheduled to launch from 2015 to 2020, MERIT will provide technical assistance to the GoM to sustainably improve reading performance through enhanced instructional techniques, greater parental and community engagement, and providing a safe environment for students to practice reading. In addition, MERIT will work to align reading interventions within the education sector as well as with cross-sector initiatives.<sup>8</sup>

To better understand how these projects as well as how changes to GoM educational policies are affecting learner outcomes such as reading scores, USAID and the GoM are also partnering on a series of ongoing National Reading Assessments (NRAs). The first NRA was conducted in 2014 and this is the second in

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<sup>4</sup> See World Bank, World Development Indicators, Country Data, <http://data.worldbank.org/country/malawi>. Downloaded in August, 2016. The net enrolment ratio (ratio of children of official school age who are enrolled in school to the population of the corresponding official school age) was 97 percent in 2009 and no latest data were available.

<sup>5</sup> Human Development Report, UNDP, 2015. Ibid.

<sup>6</sup> Human Development Report, UNDP, 2015. Downloaded in August, 2016.

[http://hdr.undp.org/sites/default/files/2015\\_human\\_development\\_report.pdf](http://hdr.undp.org/sites/default/files/2015_human_development_report.pdf)

<sup>7</sup> Social Impact, 2015, "Early Grade Reading Impact Evaluation Midline Report," December, 2015. Available at

[http://pdf.usaid.gov/pdf\\_docs/pa00kvbp.pdf](http://pdf.usaid.gov/pdf_docs/pa00kvbp.pdf). Social Impact, 2014, "National Reading Assessment Report", December 2014.

Available at [http://pdf.usaid.gov/pdf\\_docs/pa00khck.pdf](http://pdf.usaid.gov/pdf_docs/pa00khck.pdf). The sample used in these studies are not the same although they were weighted to make them nationally representative.

<sup>8</sup> <http://lilongwe.usembassy.gov/pressreleases5/us-and-uk-award-us64m-to-malawi.html>

the series, conducted in May 2016. These assessments are conducted by Social Impact, Inc. (SI), an Arlington, Virginia–based development consulting firm.<sup>9</sup> The NRAs are intended to provide valuable data on learner reading performance across Malawi in order to facilitate greater accountability and evidence-based decision-making within Malawi’s education sector.

This report discusses the methodology, limitations, and findings for the 2016 NRA and makes recommendations to USAID, the Ministry of Education, Science, and Technology (MoEST), and other stakeholders on possible ways to improve the quality of reading among primary school learners in Malawi in the future.

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<sup>9</sup> USAID/Malawi awarded SI in April 2013 with a contract to conduct an impact evaluation of EGRA with three rounds of data collection (baseline in 2013, midline in 2015 and endline in 2017), and two National Reading Assessments - one in 2014 with focus on Standard 1 and 3 Learners and another in 2016 with focus on Standard 2 and 4 learners.

# II. ASSESSMENT PURPOSE, QUESTIONS & INDICATORS

## ASSESSMENT PURPOSE

As USAID and the GoM seek to improve education in Malawi, the NRA will allow both parties (as well as other donors) to track progress toward improved quality of education and improved success in meeting early grade reading benchmarks. Moreover, while the impact evaluation (IE) that SI is performing to track the progress of the EGRA and complimentary projects (a Global Health Initiative Project and a Feed the Future Project), the NRA intends to provide a national level snapshot of early grade reading outcomes in Malawi rather than just of the primary education in the ten districts affected by the EGRA intervention. Together, the EGRA impact evaluation and NRA will provide the basis for learning and adaptive programming decisions by USAID and MoEST to ensure that intended results in improving early grade reading skills are realized. The NRA will also help the MoEST to better understand Malawi's progress in improving early grade reading skills for Malawian primary students in line with Malawi Global Partnership for Education targets and objectives, and to identify which groups of learners are most in need of support and what type of support they need. Specifically, the NRA examines reading assessment results disaggregated by gender, urban vs. rural location, and education divisions. In addition, the NRA also aims to build the capacity of Ministry of Education in Malawi by training and employing ministry employees as supervisors and enumerators to gather the data for the assessment, and in data compilation, preparation for analysis, and basic analysis.

In addition to the reading assessment results, the NRA links reading achievement data with information on teaching practices, school climate, and other school data obtained from head teachers, teachers, and learners. USAID and MoEST will use these results to determine what conditions are associated with learner performance in Malawi and to develop policies to help boost learner reading outcomes nationwide. SI will also use the data from this assessment to produce school- and district-level reports that USAID and MoEST can use to inform more localized educational policies.

## ASSESSMENT QUESTIONS & INDICATORS

This NRA, focused on Standards 2 and 4, assesses how Malawian primary students are progressing toward reaching MoEST benchmarks in reading. The assessment reports on the proportion of primary school students meeting reading benchmarks and mean scores by reading subtasks, disaggregated by gender, for the respective classes assessed. Specifically, the assessment focuses on the following higher level indicators using reading benchmarks set for Malawi by MoEST (new as of December 2014) as well as EGRA Coordinating Committee-recommended benchmarks (for some subtasks):

- (i) The proportion of students who, by Standard 2 of primary school, demonstrate against credible national systems that they can read and understand the meaning of grade-level text per the national curriculum:
  - a. The proportion of students who by the end of the second school year (Standard 2) are able to read grade-level text, as measured by the number of correct words per minute;
  - b. The proportion of students who by the end of the second school year (Standard 2) are able to answer comprehension questions after reading grade-level text, as measured by the number of correct comprehension questions answered correctly.

- (ii) The proportion of students who, by Standard 4 of primary school, demonstrate against credible national systems they can read and understand the meaning of grade-level text per the national curriculum:
  - a. The proportion of students who by the end of fourth school year (Standard 4) are able to read grade-level text, as measured by the number of correct words per minute;
  - b. The proportion of students who by the end of fourth school year (Standard 4) are able to answer comprehension questions after reading grade-level text, as measured by the number of correct comprehension questions answered correctly.

The NRA also provides data for the above by subdivision, gender, and rural and urban location.

In addition, the following are also reported:

- (i) The relationship between learner reading skills and factors that relate to or predict achievement, including classroom size, school feeding, learner characteristics, and teacher practices;
- (ii) Proportion of learners that take home and use books and other reading materials;
- (iii) Proportion of teachers receiving at least one coaching/support visit in the past three years from anyone (a Head Teacher, Primary Education Advisor, District Education Manager, etc.);
- (iv) Proportion of teachers demonstrating all and at least two-thirds of “essential” skills in teaching reading.

# III. METHODOLOGY & LIMITATIONS

SI partnered with the MoEST and Invest in Knowledge Initiative (IKI), a Malawian data collection firm, to gather data in May and June of 2016 from a nationally representative sample of 7,200 Standard 2 and 4 learners at 360 schools located across twelve districts within the six education divisions in Malawi. The random sample of learners were drawn using a multi stage cluster sampling approach.

Enumerators assessed learners using the Chichewa reading assessment (RA) tool developed by the EGRA Coordinating Committee in 2012 that adapted the tool from other RAs used in many countries throughout the developing world. The assessment was conducted in Chichewa since that was the primary language of instruction for Standard 1 through 4 learners in Malawi in 2016. The RA tests learners on their ability to read and understand basic Chichewa text. Specifically, it assesses learners' pre-reading abilities, initial reading skills, and comprehension and fluency capabilities through nine reading subtasks, including: Letter Name Knowledge, Syllable Segmentation, Initial Sound Identification, Syllable Reading, Familiar-Word Reading, Unfamiliar (Non-Word) Reading, Oral Reading Fluency, Reading Comprehension, and Listening Comprehension.

In addition to assessing learner reading, enumerators also collected data on school conditions through a head teacher interview and a school climate protocol, classroom conditions and teaching practices through a classroom observation protocol and teacher interview instrument, and information on learner and limited amount of their household characteristics through a learner questionnaire.

## SAMPLING METHODOLOGY

The Ministry of Education, Science and Technology of Malawi identifies six education divisions in the country: Central Eastern (CEED), Central Western (CWED), Northern (NED), Shire Highlands (SHED), Southern Eastern (SEED), and Southern Western (SWED). As per the MoEST's Education Management Information System (EMIS) database in 2016, there are 34 total districts, with approximately six districts per educational division—though some divisions have more or less (NED has eight and Shire Highlands has four). Countrywide, the EMIS database in 2016 shows over 5,200 schools, including about 870 per education division and over 150 per district.

As detailed in Table 2, SI's contract with USAID/MoEST specified that the NRA would provide a nationally representative snapshot of early grade reading skills for Standard 2 and 4 learners by randomly selecting a minimum of two districts within each of the six educational divisions, a minimum of 30 schools within each district, and a minimum of ten learners, equally divided between girls and boys, each in Standards 2 and 4. USAID also expects the sample to allow for disaggregation by sex, urban versus rural location, and educational division.

**Table 2: USAID Sampling Requirements for the NRA**

Factor	Sample
Education Divisions	6
Districts per Division	2
Schools per District	30
Classes per school (one Standard 2 class and one Standard 4 class)	2
Learners per standard	10
Boys/Girls per standard	5

The study used the EMIS data as the sample frame from which to select the sample of schools based on the numbers in Table 2. From the data, the assessment team randomly selected two educational districts in each of the six divisions shown in Table 3 using a randomization function in Excel.<sup>10</sup> In each of these districts, the study team then randomly selected 30 schools, replacing any randomly selected single-sex, private, or junior primary schools that did not include Standard 4. The EMIS data that the MoEST provided to the study team did not include rural versus urban designation of the schools. As such, to obtain this data, the local data collection firm, IKI, directly called the MoEST District Education Managers (DEMs) to verify the status of the selected schools and they are included in Table 3 below.

**Table 3: Number of Sampled Rural and Urban Schools by Sampled Districts**

Education Division	District	No. Schools	Rural	No. Schools	Urban
Central Eastern (CEED)	Dowa	30		0	
	Kasungu	30		0	
Central Western (CWED)	Ntcheu	29		1	
	Mchinji	30		0	
Northern (NED)	Karonga	29		1	
	Mzimba	30		0	
Shire Highlands (SHED)	Thyolo	30		0	
	Mulanje	29		1	
Southern Eastern (SEED)	Machinga	29		1	
	Zomba Rural	30		0	
Southern Western (SWED)	Mwanza	19		11	
	Nsanje	30		0	
<b>Total:</b>		<b>345</b>		<b>15</b>	

Once enumerators arrived at schools, they randomly selected one Standard 2 classroom and one Standard 4 classroom from which to test learners. This was done by having the head teacher draw a class number out of a hat. After the classroom was selected, the enumerators asked the head teacher whether the teacher who teaches reading in that class was present that day and whether he/she had been teaching learners in that school for at least the entire year. If both of those conditions were met, the enumerators then asked if that teacher would be teaching learners a reading lesson that day. If any one of those conditions were not met, the enumerators had the head teacher select another classroom out of the hat and then repeated the steps.

<sup>10</sup> The NRA in 2016 used the same sample used in 2014 NRA but only replaced some 2014 schools that did not have Standard 4.

Once the enumerators found a teacher that met all three conditions, they selected him/her for the sample teacher that would be interviewed for that standard and observed teaching up to three lessons (in the order of importance of reading Chichewa, reading English, and a third lesson). If no teacher met the conditions for one of the standards, enumerators sought to find the teacher from each standard that met as many of those conditions as possible. The study only selected one class per standard to ensure that learner results could be directly linked to their teachers’ teaching practices as well as teacher and classroom-specific characteristics.

Once in the classroom, enumerators selected learners randomly using one of two method discussed below:

- (i) Using classroom attendance lists, they added up the number of boys (and later girls) present that day, divided by five (the sample size needed), and then used the result as a sampling interval. Before starting counting, they had the teacher randomly select a number between one and five and then began counting down the list by that interval.
- (ii) If no attendance list was available, the enumerators asked all of the boys (and later girls) to stand in a line and then used the same interval and start-point selection methodology described in step one.

After selecting five boys and five girls from each standard, the enumerators used the same methodology to select a list of alternate learners for the assessment in case any of the original sample opted out of the study or otherwise could not complete their assessment. If fewer than five boys or five girls per standard were present at the school, the study selected all learners present, and then followed the same protocol in another randomly selected Standard 2 or 4 class until the full sample of 10 learners per class were selected.<sup>11</sup>

Enumerators administered the head teacher questionnaire to the head teacher, or, if he/she was not present, to the deputy head teacher. If the deputy head teacher was also not present, enumerators administered the head teacher questionnaire to whichever teacher had been delegated authority for the school for that day. As shown in Table 4, overall, enumerators interviewed 264 head teachers, 76 deputy head teachers, and 20 alternates for the head teacher.

**Table 4: Head Teacher Questionnaire Sample**

Division	Head Teacher	Deputy Head Teacher	Acting Head Teacher	Total
CEED	43	11	6	60
CWED	52	8	0	60
NED	44	11	5	60
SEED	51	8	1	60
SWED	33	21	6	60
SHED	41	17	2	60
<b>Total</b>	<b>264</b>	<b>76</b>	<b>20</b>	<b>360</b>

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<sup>11</sup> These learners from an additional class were marked in the data as “replacement” and their unique learner ID also reflected this with the use of an “r” on the end of their numeric ID. This happened for 38 of the 720 classrooms (two classrooms—one Standard 2 and one Standard 4—were selected for each of the 360 sampled schools).

## SAMPLE SIZE

The USAID sample size specifications (see Table 2) required a minimum of 7,200 learners drawn from 720 classrooms in 360 schools located within the six Malawian education divisions. Prior to data collection, SI conducted power calculations to verify the adequacy of the sample size to provide a nationally representative snapshot of early grade reading skills for Standard 2 and 4 learners. The assessment team derived intra-cluster correlations (ICCs) for sex and education division from data on all reading sub-task scores for Standards 2 and 4 from the IE midline assessment conducted by SI in 2015. The team took the ICCs for rural and urban comparisons from the first round of NRA conducted by SI in 2014 as the IE midline did not contain information on rural and urban demographics. The assessment team used industry standard specifications for selecting the appropriate power and significance levels for the calculations—80 percent and 5 percent, respectively. These data were used to calculate the Minimal Detectable Effect Sizes (MDES) for this NRA as shown in Tables 5, 6, and 7.<sup>12</sup> In addition, we provide the minimal average percentage meeting EGRA Coordinating Committee benchmarks that could be detected under the ICC, sample size, confidence intervals, and power (80 percent) considered in each calculation. The results showed that the sample of 7,200 learners across 360 schools was adequate to measure the minimum detectable effect sizes (MDESs).

**Table 5: Minimum Detectable Effect Sizes for Learner Sex, by Standard**

Subtask	Standard 2				Standard 4			
	ICC	MDES	Percent Achieving Benchmark	Standard Deviation	ICC	MDES	Percent Achieving Benchmark	Standard Deviation
Listening Comprehension	0.1334	0.043443	0.4992	0.5000	0.1219	0.043655	0.4707	0.4991
Letter Name Knowledge	0.1737	0.029666	0.1426	0.3497	0.13	0.03264	0.1692	0.3749
Syllable Segmentation	0.141	0.042944	0.4405	0.4964	0.0787	0.044775	0.5141	0.4998
Initial Sound Identification	0.0873	0.013423	0.0232	0.1505	0.0461	0.010207	0.0127	0.1120
Syllable Reading	0.0381	0.008053	0.0078	0.0880	0.0457	0.018016	0.0407	0.1976
Familiar Word Reading	0.0247	0.007519	0.0067	0.0816	0.0532	0.025807	0.0886	0.2842
Unfamiliar Word Reading	0.1024	0.017554	0.0411	0.1985	0.0232	0.010409	0.0129	0.1128
Oral Reading	0.0064	0.00759	0.0067	0.0816	0.0287	0.019856	0.049	0.2159
Oral Reading Comprehension	0	0.00132	0.0002	0.0141	0.0326	0.009661	0.0112	0.1052

ICC = Intra-Cluster Correlation; MDES = Minimum Detectable Effect Size in Standard Deviations;  
Number of schools = 360; Number of (girls / boys) learners per school = 5

The above calculations show that the sample size of five girls and five boys in each Standard in each of the 360 schools will be adequate to detect any difference above 0.04 in Standards 2 and 4 for listening

<sup>12</sup> MDES is the smallest estimated difference that SI will be able to measure for each subtask between groups (such as boys and girls; sub-divisions) at any given point in time. MDES is very important, since if the true difference is smaller than the calculated MDES, this study may not be adequately powered statistically to detect it.

comprehension and 0.001 and 0.009 for Standards 2 and 4, respectively, for Oral Reading Comprehension between the sex of the learners. Also, the sample size is adequate for detecting an average percentage achieving benchmarks above 0.0002 and 0.0112 respectively, in oral reading comprehension for Standards 2 and 4, respectively.

**Table 6: Minimum Detectable Effect Sizes for Divisions, by Standard**

Subtask	Standard 2				Standard 4			
	ICC	MDES	Percent Achieving Benchmark	Standard Deviation	ICC	MDES	Percent Achieving Benchmark	Standard Deviation
Listening Comprehension	0.1334	0.119905	0.4992	0.5000	0.1219	0.11685	0.4707	0.4991
Letter Name Knowledge	0.1737	0.0905	0.1426	0.3497	0.13	0.089284	0.1692	0.3749
Syllable Segmentation	0.141	0.120889	0.4405	0.4964	0.0787	0.105603	0.5141	0.4998
Initial Sound Identification	0.0873	0.03252	0.0232	0.1505	0.0461	0.021532	0.0127	0.1120
Syllable Reading	0.0381	0.01648	0.0078	0.0880	0.0457	0.037947	0.0407	0.1976
Familiar Word Reading	0.0247	0.01458	0.0067	0.0816	0.0532	0.055863	0.0886	0.2842
Unfamiliar Word Reading	0.1024	0.044487	0.0411	0.1985	0.0232	0.020056	0.0129	0.1128
Oral Reading	0.0064	0.013562	0.0067	0.0816	0.0287	0.039145	0.049	0.2159
Oral Reading Comprehension	0	0.002286	0.0002	0.0141	0.0326	0.019348	0.0112	0.1052

ICC = Intra-Cluster Correlation; MDES = Minimum Detectable Effect Size in Standard Deviations;  
Number of schools / division = 60; Number of learners / school = 10

The above calculations show that the sample size considered for NRA 2016, the 60 schools per division for a total of 360 schools and 10 learners per Standard per school, will be adequate to detect any difference above 0.11 between divisions in Standards 2 and 4 for listening comprehension, and 0.002 and 0.019 for Standards 2 and 4, respectively, for Oral Reading Comprehension. Also, the sample size is adequate for detecting an average percentage achieving benchmarks above 0.0002 and 0.0112 in oral reading for Standards 2 and 4, respectively.

The calculations below in Table 7 show that the sample size considered for NRA 2016 in rural and urban locations will be adequate to detect any difference between locations above 0.21 in Standards 2 and 4 for listening comprehension, and 0.004 and 0.03 for Standards 2 and 4, respectively, for Oral Reading Comprehension. Also, the sample size is adequate for detecting an average percentage achieving benchmarks above 0.0002 and 0.0112 respectively, in oral reading for Standards 2 and 4, respectively.

**Table 7: Minimum Detectable Effect Sizes for Standards, by Rural and Urban Locations**

Subtask	Standard 2					Standard 4				
	ICC Rural	ICC Urban	MDES	Percent Achieving Benchmark	Standard Deviation	ICC Rural	ICC Urban	MDES	Percent Achieving Benchmark	Standard Deviation
Listening Comprehension	0.1334	0.1334	0.21083	0.4992	0.5000	0.1219	0.1219	0.205459	0.4707	0.4991
Letter Name Knowledge	0.1737	0.1737	0.159127	0.1426	0.3497	0.13	0.13	0.156989	0.1692	0.3749
Syllable Segmentation	0.141	0.141	0.21256	0.4405	0.4964	0.0787	0.0787	0.185683	0.5141	0.4998
Initial Sound Identification	0.0873	0.0873	0.05718	0.0232	0.1505	0.0461	0.0461	0.03786	0.0127	0.1120
Syllable Reading	0.0381	0.0381	0.028978	0.0078	0.0880	0.0457	0.0457	0.066723	0.0407	0.1976
Familiar Word Reading	0.0247	0.0247	0.025637	0.0067	0.0816	0.0532	0.0532	0.098224	0.0886	0.2842
Unfamiliar Word Reading	0.1024	0.1024	0.078222	0.0411	0.1985	0.0232	0.0232	0.035265	0.0129	0.1128
Oral Reading	0.0064	0.0064	0.023847	0.0067	0.0816	0.0287	0.0287	0.068829	0.049	0.2159
Oral Reading Comprehension	0	0	0.004019	0.0002	0.0141	0.0326	0.0326	0.034019	0.0112	0.1052

ICC = Intra-Cluster Correlation; MDES = Minimum Detectable Effect Size in Standard Deviations;  
 Number of schools for rural = 346; Number of schools for urban = 14; Number learners per school = 10.  
 Composition of schools in rural and urban locations was based on NRA conducted in 2014.

## SAMPLE REALIZED

The final sample composition realized for the assessment is presented in Tables 8 and 9, below. Generally, the final sample size realized was very close to what was planned for in terms of number of schools and learners by division and rural and urban composition. Therefore, the power calculations above remained valid even with the very slight revisions in sample size in number of learners – a reduction by about 26 learners. There was some slight variation due to data collection challenges in the sample size for classroom observations but that did not affect the power of the study.

**Table 8: Final NRA Sample – Number of Schools and Classes**

Divisions	Districts	Rural Schools	Urban Schools	Head Teachers	Std 2 Teachers	Std 4 Teachers	Std 2 Class Obs	Std 4 Class Obs
CEED	2	60	0	60	64	64	174	174
CWED	2	59	1	60	68	71	178	175
NED	2	59	1	60	59	64	177	174
SEED	2	59	1	60	61	62	179	177
SHED	2	59	1	60	60	63	175	178
SWED	2	49	11	60	61	65	181	172
<b>Total</b>	<b>12</b>	<b>345</b>	<b>15</b>	<b>360</b>	<b>373</b>	<b>389</b>	<b>1,064</b>	<b>1,050</b>

**Table 9: Final Sample – Learners**

Divisions	No. schools	Std 2 Girls	Std 2 Boys	Std 4 Girls	Std 4 Boys	Total Std 2 Learners	Total Std 4 Learners	Total Learners
CEED	60	294	302	301	299	596	600	1,196
CWED	60	299	301	299	301	600	600	1,200
NED	60	295	300	301	298	595	599	1,194
SEED	60	301	299	292	304	600	596	1,196
SHED	60	297	296	299	298	593	597	1,190
SWED	60	296	302	297	303	598	600	1,198
<b>Total</b>	<b>360</b>	<b>1,782</b>	<b>1,800</b>	<b>1,789</b>	<b>1,803</b>	<b>3,582</b>	<b>3,592</b>	<b>7,174</b>

## DATA COLLECTION INSTRUMENTS

For the 2016 NRA, the study team slightly revised the following five data collection instruments used in 2014 NRA: the head teacher interview instrument, the teacher interview protocol, the classroom observation protocol, the school climate protocol, and the learner questionnaire. The Chichewa RA remained the same in both NRAs. SI's Internal Review Board approved the instruments, and USAID and MoEST provided their feedback and approval prior to the start of enumerator training and instrument piloting in May 2016.

In order to reduce errors in data collection and entry, the study team used electronic data collection to gather data for each of the instruments—with the exception of the classroom observation protocol. For the latter, enumerators found it easier to capture information on paper versions of the protocol, so they could easily and quickly scroll back and forth through the list of practices and check those that are relevant, prior to entering information into the tablets.

The study team pilot tested all six data collection instruments with all managers and enumerators. The instruments were then modified to ensure instructions and questions were clear and questions included all-

inclusive yet mutually exclusive response choices. Each of the data collection instruments is described in more detail below.

### Chichewa Reading Assessment Instrument

The primary source of outcome data (reading performance) for the NRA was the standardized reading assessment (RA) tool. In 2012, the Research Triangle Institute (RTI) International and the EGRA Coordinating Committee adapted the RA tool into Chichewa—the national language of instruction for learners in Standard 4 and below in Malawi—from other languages. It was developed based on guidelines<sup>13</sup> provided by the originators of the EGRA model, RTI, and has been widely used in Malawi.

### Other In-School Data Collection Instruments

In addition to RA, the assessment team used the five instruments described below to capture additional relevant information during in-school data collection:

- **Classroom observation protocol** was used to observe up to three lessons—one Chichewa reading lesson, one English lesson, and one third lesson—for one Standard 2 and one Standard 4 teacher at each sampled school. This instrument requires enumerators to look for generally recognized best teaching practices in lessons as well as behavior representing the equal treatment of all learners, the number of classroom resources, and the extent to which the classroom is a supportive learning environment. SI designated career MoEST personal who regularly conduct classroom observations in schools in Malawi to conduct the observations to ensure their solid understanding of the best practices sought by the protocol. Enumerators sit in the back of classrooms and quietly observe and complete this protocol during observed lessons and later enter that information into the electronic data collection tablets.
- **Head teacher interview protocol** was administered to head teachers by an enumerator and contained a range of relevant questions, including questions geared toward gathering information on the qualifications of the head teachers; types and numbers of teacher trainings offered to teachers in their schools; general school environment including availability of resources; school operations; and the level of involvement of the community in the school. Enumerators collected information using this instrument through hour-long, face-to-face interviews with head teachers, deputy head teachers, or acting head teachers at each school.
- **Teacher interview protocol** was administered to the teachers from whose classes learners were selected for the reading assessment. It included topics such as teacher qualifications, learner attendance, learner repetition, and perceived barriers to learning. Enumerators collected information using this instrument through hour-long, face-to-face interviews with teachers.
- **Learner interview** protocol was administered to each learner participating in the NRA assessment by enumerators, following the learner’s completion of the assessment. This instrument included questions that addressed factors such as learners’ attitudes toward school, reasons for not attending school regularly, how often and what they eat, at-home activities, housing conditions, family assets, and whether they are read to at home.

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<sup>13</sup> RTI International and International Rescue Committee (2011). Guidance Notes for Planning and Implementing EGRA, Research Triangle, NC.

- **School climate checklist** was used by enumerators in structured observations of the school grounds to rate factors such as cleanliness of the school and classrooms; whether there are latrines and how clean they are; whether the school has electricity, access to clean water, and a library; and other items related to the physical and environmental condition of the school.

## DATA COLLECTION PROCEDURES

### Survey Manager and Enumerator Training

Each data collection team consisted of four members: one Survey and Logistics Manager from IKI (who oversaw sampling in the schools, ensured proper completion and uploading of data, produced weekly field reports, and managed the team’s time and resources), one MoEST Technical Manager (who managed all of the technical aspects and supervision for the survey and acted as the key liaison between the team and the head teacher at each school), and two MoEST enumerators. SI, IKI management, and MoEST officials trained the IKI Survey and Logistics Managers in Zomba from April 27 – April 29, 2016. Training focused on the data collection schedule, the purpose of the study, the role of the Survey and Logistics Managers, selection of survey and assessment participants, assignment of unique identifiers for all surveys/assessments, general best practices in data collection and working with youth subjects, a detailed technical review of all of the data collection instruments, a review of data collection using tablets, and guidance on preparing and submitting weekly progress reports for the NRA.

Following the training of Survey Managers, the USAID, MoEST, IKI, and SI hosted an enumerator and Technical Manager training at the Riverside Hotel in Lilongwe from May 2 – May 6, 2016. This training covered all of the same topics as the Survey Manager training, and included an inter-rater reliability test to ensure enumerators were marking assessments consistently, as well as a one-day field test to pilot the instruments and protocols and allow enumerators and managers the opportunity to practice live data collection with real respondents. The pilot was used to inform final instrument revisions, including reprogramming of the survey forms on the tablets to ensure ease of use. It also informed the last two days of enumerator training, allowing trainers to hone in on persistent challenges in data collection.

### Data Collection using Electronic Devices

As in the 2014 NRA and IE, the 2016 NRA equipped enumerators with tablets pre-loaded with all of the survey instruments. The study team programmed the tools into the tablets using Tangerine software II for the RA tool and Open Data Kit (ODK) software<sup>14</sup> for the others and tested each of the instruments repeatedly in the months, weeks, and days leading up to data collection.

The tablets performed well in the field, and enumerators handled them well following their training. The ability to constrain surveys to allow only logically possible answers made the responses more reliable (e.g there cannot be 1,000,000 girls in a class), as did the inclusion of drop-down menus to ensure accuracy of certain key fields. In addition, skip logics were programmed into the forms so that questions would only be posted to respondents when deemed relevant based on earlier responses. The tablets also helped avoid the need for extensive data entry—another possible source of delay and error—since the data were uploaded to servers directly from each tablet.

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<sup>14</sup> ODK is a free, open source set of tools that can be used to author, field, and manage mobile data collection. SI uses ODK in conjunction with SurveyCTO, an online server and survey platform for electronic data-collection.

## DATA ANALYSIS

The local data collection team, IKI, delivered the raw data to the study team in June 2016, and both IKI and SI teams worked together to ensure the datasets included the right number of observations, including the correct number of observations for each school and each learner, and that any missing observations had an adequate explanation. The teams then worked to identify outliers and any important missing values, and IKI called back MoEST officials and study respondents, where necessary, to verify or correct these data. The data were prepared for analysis in July and SI submitted a draft report to USAID on August 31, 2016.

### Weighting the Data

The learners tested for the evaluation were randomly selected and were clustered within schools, and the selected schools were located within districts and districts within education divisions. Since every district, school and learner did not have an equal chance of selection, statistical procedures were needed to weight the data appropriately to make the sample nationally representative in order to ensure results are comparable to other nationally representative studies. Weights were constructed based on the probability of selection of each district, school, and learner in the sample. Sampling weights were constructed by SI at the division, district, and the school/standard level using latest EMIS data and as well as the school-level data used in analysis for this report. The weights were applied to the dataset as probability weights, or *pweights*, using STATA version 14's set of survey commands.

### Benchmarks

SI used benchmarks developed by USAID, RTI, and MoEST for each subtask to compare learner reading scores.

**Table 10: 2014 Benchmarks for Reading Comprehension, Oral Reading Fluency, Familiar Word Reading, and Syllable Reading**

Items	Std. 3	Std. 2	Std. 1
<b>Reading Comprehension</b>			
Recommended benchmark	80%	80%	60%
Recommended objective: % at benchmark in 5 years	50%	40%	35%
Recommended objective: % of zero scores in 5 years	10%	20%	30%
<b>Oral Reading Fluency</b>			
Recommended benchmark	50	40	30
Recommended objective: % at benchmark in 5 years	50%	50%	40%
Recommended objective: % of zero scores in 5 years	5%	10%	20%
<b>Familiar Word Reading</b>			
Recommended benchmark	45	40	30
Recommended objective: % at benchmark in 5 years	50%	50%	40%
Recommended objective: % of zero scores in 5 years	5%	10%	20%
<b>Syllable Reading</b>			
Recommended benchmark	65	60	50
Recommended objective: % at benchmark in 5 years	60%	55%	50%
Recommended objective: % of zero scores in 5 years	5%	10%	15%

Source: MoEST and USAID/Malawi, December 2014: Proposing Benchmarks for EGRA in Malawi

For oral reading fluency, reading comprehension, familiar word reading, and syllable reading, SI used the new benchmarks developed by MoEST, USAID, and RTI in December 2014 (Table 10). The new benchmarks in

2014, however, were only developed for four of the nine sub-tasks. Therefore, SI used EGRA Coordinating Committee-recommended benchmarks from 2011 for listening comprehension, syllable segmentation, and initial sound identification; and MoEST benchmarks established in 2011 for letter name knowledge and non-word reading when comparing learner reading scores against benchmarks. These benchmarks from 2011 are shown below:

- **Listening Comprehension:** According to EGRA Coordinating Committee-recommended benchmarks, Standard 1 should be able to answer 3 out of the 5 questions correctly (60 percent) and Standard 3 should be able to answer 4 out of 5 correctly (80 percent).
- **Syllable Segmentation:** In order to meet the EGRA Coordinating Committee-recommended benchmarks, learners must correctly segment 7 of the 10 words in Standard 1 (or 70 percent) and 8 of the 10 words in Standard 3 (or 80 percent).
- **Initial Sound Identification:** The EGRA Coordinating Committee-recommended benchmarks for this subtask are 80 percent and 90 percent for Standards 1 and 3, respectively.
- **Letter Name Knowledge:** The MoEST benchmarks are 24 clpm for Standard 1 and 50 clpm for Standard 3.
- **Non-Word Reading:** The MoEST benchmarks are 15 cwpm in Standard 1 and 40 cwpm in Standard 3.

Since no benchmarks were available for Standard 4, SI compared all Standard 4 learner scores against benchmarks set for learner achievement by the end of Standard 3. In the case of Standard 2, SI used Standard 2 benchmarks for the four subtasks for which MoEST benchmarks were available and Standard 1 benchmarks for the other subtasks, as the EGRA Coordinating Committee only set benchmarks for Standards 1 and 3. Using the benchmarks, the study team compared overall reading scores and scores by subtask against benchmarks, using t-tests to determine whether actual scores were statistically different from benchmarks.

### **Analysis of Sample Characteristics and Reading Skills**

The assessment team used frequencies, averages, cross tabulations, and other descriptive statistic tests to discuss survey sample demographics and to produce summary and detailed statistics on learners' reading performance.

### **Analysis for Predictors of Reading Skills**

The assessment team also examined the factors that correlate with higher or lower learner reading scores. The analysis used Tobit regressions to identify factors correlated with oral reading fluency scores. Factors considered for inclusion in the regressions included learner sex, access to female lavatories at school, class size, school feeding, teacher use of best practices in the classroom, length of the school day, school resources, teacher and head teacher training and qualifications, education division, and several household factors including household assets and whether or not family members provide learners help with their homework, among many others. It is important to note, however, that if a factor was found not to be correlated with outcomes, it is not included in the findings section despite the team having looked into the possible effects of that particular factor. For factors such as school resources and household assets, the study combined several related survey items into one index score via principle component analysis (PCA). These index scores were then included in the regressions alongside single question items (i.e. age, sex, learner-to-teacher ratio, etc.). Each PCA index and its components is described in detail below.

## Principal Component Analysis

The NRA produced a large dataset, including hundreds of variables. Having a large number of variables was necessary in order to capture complex concepts such as school resources or quality of teaching practices. However, it was not practical to use all these variables in an unrestricted way during data analysis, for many reasons.<sup>15</sup> When a regression model incorporates several correlated variables, the problem of multi-collinearity could emerge (see footnote).

In such cases above, it is usually much more informative to aggregate these variables into indices, which then convey the main information contained in a group of variables. One way to construct these indices is to use a method called “principal component analysis” (PCA). This method decomposes a set of correlated variables into another set of linearly unrelated components. The single component that is found through statistical analysis to have the most explanatory power, the one that explains the highest amount of variance of the index as a whole, is chosen as the principal component. In a sense, it is then taken to represent all of the other components of the index, but using it in place of the others avoids the problems outlined above related to large numbers of correlated variables. One advantage of using this method over other ways of constructing an index (such as adding or averaging all variables in a group) is that it allows the data itself to guide the construction of the index rather than some external determinant. In selecting the principal component, PCA also produces a number by which learners, or schools, can be ranked, allowing for classification of units according to an independent variable of interest. This study used PCA to group some variables together and used it in regression analysis along with other variables. The grouping of variables conducted using PCA includes the following:

**Household Wealth.** For most studies, SI tries to collect multiple indicators of wealth—such as income, consumption, and assets—to triangulate results. However, given the lack of resources for a household survey to be paired with the NRA, the only source of information about household wealth for the NRA was learner knowledge. The study team decided that the only set of indicators that learners are likely to be able to reliably report on are household assets. As such, this specific study used assets as a proxy indicator for household wealth. The study compiled the asset (wealth) index using the household variables that correlated with a higher PCA score, indicating that all of these assets were individually indicators of higher wealth and that the PCA score effectively captures relative wealth within the sampled population. These variables are listed in Table 11, which were reported by learners.

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<sup>15</sup> Multi-collinearity can cause large standard errors for the coefficients on the correlated variables, sometimes even resulting in a situation where two variables that are correlated and that should have the same signs actually end up with opposite signs. It can also cause two different but related independent variables that have been shown to have an effect on a dependent variable appear to have no significant effect whatsoever. This is because each one diminishes the effects of the other. These kinds of unanticipated results also contribute to a second problem, which is that regression models with large numbers of variables are difficult to interpret. The sheer number of variables leads to complex and unwieldy findings statements, and if the standard errors are large, the regression results often become more confusing to explain.

**Table 11: Household Assets of Learners Included in Wealth PCA**

Asset	Observations	Percent who report their household owns	Standard deviation
Toilet facility	7,174	98.61%	0.12
Radio	7,174	60.65%	0.49
Bicycle	7,174	64.52%	0.48
Cell phone	7,174	64.08%	0.48
Lamp	7,174	50.39%	0.50
Table	7,174	55.03%	0.50
Bed with a mattress	7,174	37.76%	0.48
Sofa	7,174	20.73%	0.41
Television	7,174	16.41%	0.37
Piped water	7,174	10.76%	0.31
Ox plow	7,174	6.58%	0.25
Refrigerator	7,174	4.03%	0.20
Motorcycle or motorized scooter	7,174	8.29%	0.28
Electricity	7,174	4.46%	0.21
Car or truck	7,174	3.25%	0.18
Tractor	7,174	0.54%	0.07
Average number of rooms	7,174	2.85	1.12

Note: The number of observations vary by asset because some learners reported that they didn't know whether or not they had the indicated asset. The numbers reported in the table are only those for which learners were able to report results.

National Reading Assessment Learner Survey 2016

**School resources.** The assessment team created a PCA score for school resources using data from the school climate protocol and head teacher questionnaire. Out of the many factors examined, the study compiled the school resources index using the school variables that correlated with a higher PCA score, indicating that all of these factors were individually indicators of better school resources and that the PCA score effectively captures relative resource levels within the sampled schools. These variables are listed in Table 12.

**Table 12: School Resources included in PCA**

School Resource	Observations	Percent reporting presence of the item	Standard deviation
Teacher latrine	7,174	87.05%	0.33
Sufficient class space	7,174	81.49%	0.38
Sufficient ventilation	7,174	95.40%	0.21
Sufficient security (locks)	7,174	62.24%	0.50
No broken windows	7,174	54.50%	0.50
Well-groomed grounds	7,174	68.99%	0.46

Electricity	7,174	8.89%	0.28
Clean water	7,174	75.15%	0.43
A range of learning materials	7,174	54.50%	0.50
Desks for most/all students	7,174	26.62%	0.44
Teachers/head teachers are interested in development of learners	7,174	86.62%	0.34
School library	7,174	13.90%	0.35
Girls have equal access to resources	7,174	56.50%	0.50

*National Reading Assessment Head Teacher Survey and School Climate Observation 2016*

**Teacher use of best practices in teaching reading.** The final PCAs used by SI were teacher use of best practices in teaching reading and teacher use of essential practices in teaching reading. The use of best practices PCA was developed through analysis of all of the variables included in the classroom observation protocol, which can be found in Annex III.<sup>16</sup> The following variables constituted the index:

**Table 13: Teacher Best Practices Included in PCA**

Teacher Practice	Observations	Percent employing best practice	Standard deviation
Assesses student learning	7,174	74.49%	0.44
Introduces lesson by connecting to what learners have previously learned	7,174	68.29%	0.47
Uses a lesson plan	7,174	76.05%	0.43
Applies multiple methods	7,174	29.54%	0.46
Provides instructions on how to decode	7,174	24.70%	0.43
Provides structured opportunities to apply understanding	7,174	43.43%	0.5
Asks learners questions to assess their learning	7,174	65.42%	0.48
Asks learners questions to assess their understanding of stories	7,174	53.29%	0.50
Asks pre-reading questions before reading a story	7,174	36.10%	0.48
Encourages learners to sound words out	7,174	30.55%	0.46

<sup>16</sup> This should be distinguished from the essential teaching practices, which includes only twelve of the practices observed. The PCA includes all best practices instead of only the essential practices because including further practices paints a more complete picture in the context of a PCA.

Engages learners in reading activities appropriate to their level	7,174	67.55%	0.47
Asks learners to recognize letters and say letter names/sounds	7,174	12.14%	0.33
Has individual learners read aloud	7,174	76.82%	0.42

National Reading Assessment Classroom Observation 2016

## Comparison with Other Assessments

**Across the two NRAs (in 2014 and 2016):** The Scope of Work issued by USAID to SI requires the NRAs to provide a *snapshot* of reading skills in Malawi using a nationally representative cross-sectional sample. About 96 percent of the 360 schools used the 2014 NRA were also used in the 2016 NRA. While the reading assessment used was also the same across both years, the 2014 NRA targeted Standards 1 and 3 learners whereas the 2016 NRA targeted Standards 2 and 4. As such, it was not possible to survey a panel of teachers or learners.<sup>17</sup> Therefore, the ability to make comparisons over time on learner reading skills is limited albeit the majority of sampled schools are the same. As such, we only attempted a comparison across the two NRAs on the teacher use of best practices since many teachers tend to teach more than one primary grade and some also get promoted to higher standards over time. These results need to be interpreted with caution due to differences in the sample and the results only provide approximate estimates on the progress made in Malawi.

**Across NRA in 2016 and Impact Evaluation:** SI has been conducting an impact evaluation of EGRA in over 310 schools located in ten districts since 2013. Learners in Standards 2 and 4 are assessed for the impact evaluation, the same standards as in NRA 2016. Across both the NRAs and the impact evaluation, five districts<sup>18</sup> and about 32 schools are common (of which, 20 received the EGRA intervention, and 12 did not). A baseline for the impact evaluation was done in 2013, a midline in 2015, and an endline is scheduled for 2017. The impact evaluation reading assessment tool used in baseline IE in 2013 was similar to the tools used in both NRAs, but not the 2015 midline IE tool. Therefore, a direct comparison could not be made to understand progress made over the years in Malawi even though the Standards assessed were similar across NRA 2016 and the impact evaluation. Therefore, we attempted an approximate comparison in reading scores across the baseline in 2013 and NRA in 2016 whenever feasible and relevant. However, we recommend keeping the differences in the sample in mind when interpreting the data.

## QUALITY CONTROL

As mentioned above, the study team took several precautions to ensure quality data. First, it vetted, tested, and re-tested the data collection instruments. Next, it trained, tested, and gap-trained enumerators. Additionally, as described above, the study team programmed the tablets with internal quality checks to ensure that many questions could only be answered with possible or reasonable responses. Beyond its utility in cleaning, these constraints resulted in fewer dropped observations and a more complete and useful data set. Next, throughout the data collection process, SI, MoEST, and IKI monitoring teams visited enumerators in the field to oversee progress. These monitoring teams attended the trainings and, in the case of MoEST, used a checklist created by the study team to ensure the data collection protocol was being followed closely. SI also required that each Survey and Logistics Manager complete a standardized weekly report, tabulating schools visited, instruments administered, and documenting any challenges with respect to school access,

<sup>17</sup> Standard 1 and 3 learners targeted by the 2014 NRA would have progressed to Standards 3 and 5 by 2016.

<sup>18</sup> Ntcheu, Machinga, Mzimba North, Thyolo, and Zomba Rural

respondent access, sampling procedures, devices, and survey forms. These weekly reports allowed for real-time monitoring of field work as well as ensured ease of data cleaning, merging, and cross-checking the field work plan against incoming data. Finally, the head teacher, teacher, and learner survey instruments were programmed to audio record short segments of interviews for a randomly selected 10 percent of respondents, allowing the team to audit the survey in the event of suspected data falsification. In addition, the local data collection team contacted several respondents (head teachers and teachers) by phone to clarify unclear responses.

## THREATS AND LIMITATIONS

### Comparability of Contexts: Internal Validity

A threat typical in assessments of all types is the lack of internal validity, meaning that the study does not adequately measure what it was intended to measure. This can happen for a number of reasons, including if data collection instruments are not well designed, enumerators introduce bias (as discussed below), or the sample is not representative of the population for which it is meant to measure results. The latter is the greatest concern in this study because the assessment team took several precautions to avoid the former and because of the simple nature of the education system in Malawi.

Because studies that use probability samples rely on measures of outcomes from only a sample of the population, there is always the potential that the sample might somehow be biased. The team attempted to avoid this possibility by randomly selecting the sample. However, it did so using clusters, which could be cost effective but also effectively reduces the sample size. A reduction in sample size could reduce the study's ability to be confident in identifying very small changes in key outcomes.

Other factors affecting the internal validity of the study include absenteeism and dropouts. The simple nature of the NRA study—that it is conducted at schools—means that some learners will not be present at school that day. This is okay if the absent population is random and does not represent learners who do statistically better or worse on reading tests. However, the assessment team does not believe that the absentee population for this study was the same as the present population. On the contrary, it appears that the absentee population may be over-representative of the lower-performing population of learners. The reason for this is that the GoM reports absenteeism rates averaging more than 25 percent of the learner population in the lower standard levels.<sup>19</sup> And, the study found through qualitative data collection that some of the population tends to miss school more often than others. These learners tend to perform worse on tests and in school because of this, and they often drop out. This means that the results of the NRA study are likely skewed slightly toward the positive when considering all enrolled learners throughout Malawi and likely even more positive when considering all school-aged children in Malawi.

Finally, as described in the 'Generalizability at School Level' section below, the NRA seeks to identify key predictors of learner reading performance including at the teacher-level (through classroom observations and teacher interviews). As such, the sampling process required only selecting classrooms with teachers who (a) had been teaching at the school for the past year and (b) learners were present on the day of the assessment. Learners in classrooms that did not meet these criteria are thus not reflected in the sample. If teacher absenteeism and turnover is negatively correlated with learner performance, this may further skew NRA results toward the positive.

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<sup>19</sup> USAID Malawi. "2010 Early Grade Mathematics Assessment (EGMA): National Baseline Report," 2010. [http://mtpds.org/images/stories/pdfs/baseline\\_reports/malawi\\_national\\_egma\\_2010\\_baseline\\_report.pdf](http://mtpds.org/images/stories/pdfs/baseline_reports/malawi_national_egma_2010_baseline_report.pdf), accessed August 26, 2013.

## Comparability of Contexts: External Validity

The conclusions in this report are designed to be valid for Malawi as a whole. As such, readers should not assume that conclusions described herein hold true for contexts outside Malawi. Similarly, there may be smaller regions or sub-populations within Malawi that could differ significantly from the general norms and trends of Malawi as a whole. NRA conclusions should only be taken to hold true in contexts that resemble the characteristics of the nationally representative sample.

This limitation is not unique to this assessment. It is a potential weakness that generally exists for all evaluations and assessments. Having extensive data about the learners, their schools, their households, and their communities will help users of this study to assess how similar the context of the learners sampled is to other contexts into which these results may be extrapolated. This will allow USAID and other stakeholders to make an informed determination about how appropriate it would be to apply the findings of this assessment to other contexts.

## Sample Size

The sample size satisfied the specific requirements laid out in SI's contract with USAID/Malawi vis-à-vis total size and key sub groups. While it is possible to detect differences in reading performance along each of these subgroups, some subgroups such as by sub-divisions will require relatively large real-world differences between groups or over time in order for the assessment team to be able to identify statistically significant differences over time. Also, since there are very few urban schools in Malawi compared with rural schools (only 16 percent of the population lives in urban areas),<sup>20</sup> the fact that the study used random sampling meant that the overall sample was skewed towards rural schools, limiting rigorous comparisons between rural and urban schools.

## Use of Government Employees as Supervisors and Enumerators

Another potential threat to the accuracy and reliability of the data is the use of MoEST staff and other GoM employees as enumerators. The study recognizes the value of involving the MoEST in this process: it capitalizes on existing experience and expertise, especially of those individuals who were involved in the EGRA baseline study; it increases ownership of the MoEST for study results; and it builds the capacity of the MoEST. However, there is always a risk when the same actors who are responsible for overseeing or implementing a project are asked to evaluate the project. It may be in the interest of some individuals or groups within the MoEST to show improved reading outcomes over time or to show no change or a negative trend. In any case, when individuals who may have conflicting interests are involved directly in assessment activities, there is always a risk that they may somehow inappropriately influence the results of the assessment. On the other hand, GoM personnel, and in particular, MoEST staff, have been involved in data collection activities for other projects in the past and have conducted themselves in a professional and objective manner. Also, these data serve an important purpose for the GoM and especially the MoEST. As such, to help inform their decisions related to reading teaching and learning, these bodies have a vested interest in obtaining accurate information from these assessments. Finally, to help avoid issues of potential

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<sup>20</sup> World Bank 2013 Data <http://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS/countries/MW?display=graph>.

enumerator bias, SI made sure enumerators were not assigned to gather data in the region in which they work.<sup>21</sup> Therefore, there is reason to believe that the risk of MoEST enumerator bias is relatively low.<sup>22</sup>

### **Generalizability at School Level**

During school visits enumerators sampled learners from one class per standard only (implementing the RA tool and learner questionnaire with those learners) along with one teacher for that class (who was observed up to three times using the class observation protocol and was interviewed using the teacher survey). Since this approach was limited to one class per standard, two classes per school, the responses and results potentially have a limited ability to generalize or reach conclusions for the school as a whole. However, to mitigate any potential bias from this approach, each class was chosen by enumerators at random so no particular profile of class or teacher was sought (other than targeting classes where the teacher was present that day and had been at the school for at least a year).

The advantage to this approach is that it gave the study team the ability to establish links between teaching practices and learner reading outcomes. Measuring these links would not be feasible between a given teacher and a wider, representative sample of learners in his/her standard as a whole. Limiting the survey group to one class per standard ensures that a teacher's choices and behaviors are direct inputs into learner outcomes. As one important goal of this study is to identify and report on effective teaching practices, the study team and USAID decided that this advantage outweighed the limitations related to overall school generalizability.

### **Response Bias**

Response bias is a common issue with in-person surveys. This bias includes several types of false or adjusted responses where respondents react to stimuli other than that of the question itself (e.g. environment, presence of others nearby, etc.). Among these is a bias that occurs when interviewees favor responses they judge to be more pleasing or acceptable to the interviewer. In the context of the NRA this may skew the reported school data to suggest better teaching practices, more diligent study habits, or higher attendance rates than are actually the case. The risk of response bias was especially high for the learner survey as learners in Standards 2 and 4 were asked to report on several household characteristics, and their knowledge of those household characteristics may not be quite as accurate as an adults' knowledge. Nonetheless, the responses from these surveys were generally consistent with the data from the household survey conducted in the EGRA IE base- and mid-line; so the study considered the data reliable for use in this analysis. Further, it is difficult to measure the extent of this bias at work in this situation without more costly follow-up procedures. Fortunately, there is no reason to suspect that any response biases would not be uniform across respondents, so comparisons between subgroups should remain valid even if a bias were detected. Further, the study took several precautions to reduce such biases by carefully training enumerators on appropriate reactions to learner correct/incorrect answers and general attitude when interviewing respondents. The assessment team also made sure not to notify schools too far in advance (just calling the head teacher only the night before the visit) of the team's visit to avoid them only sending the best teachers to school that day or changing lesson plans/practices.

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<sup>21</sup> Except in cases where the ability to speak the learners' native language was restricted to MoEST staff from that region.

<sup>22</sup> GoM staff have been involved in data collection activities for the Southern and Eastern Africa Consortium for Monitoring Education Quality, Paralegal Advisory Service, and Monitoring Learning in Africa, as well as the EGRA Evaluation Baseline and midline Study (2013 and 2015), NRA I in 2014 and the Malawi Teacher Professional Development Support (MTPDS) Project in 2012.

## Benchmarks

It is to be noted that the 2014 benchmarks for oral reading fluency, reading comprehension, familiar word reading, and syllable reading are set to be reached in five years - in 2018. Ideally, intermediate targets should have been set by year to indicate whether students are on their way to reaching the benchmarks set for year 5. Since no intermediate targets were provided in the MoEST benchmarks issued in December 2014, SI did not apply any prorated benchmarks for 2016. Approximate allocation of benchmark result by years using the final benchmark assumes a linear change and SI considers such linear change to be unlikely in reality, as shown in some EGRA evaluations. Therefore, benchmarking learner scores for these tasks at a fifth-year benchmark levels could underestimate the results.

In addition, since no benchmarks currently exist for Standard 4, SI compared all Standard 4 learner scores against benchmarks set for learner achievement by the end of Standard 3. Also, in the case of Standard 2, SI used Standard 2 benchmarks for the four subtasks for which 2014 MoEST benchmarks were available and Standard 1 benchmarks for the other subtasks, as the EGRA Coordinating Committee only set benchmarks for Standards 1 and 3. Therefore, the results could overestimate the reading skills appropriate for that grade.

## IV. SAMPLE CHARACTERISTICS

This section discusses school, teacher, and learner sample characteristics<sup>23</sup> using the data that were gathered in May 2016. Wherever relevant, the sample characteristics are compared with NRA in 2014 to discuss similarities and divergences over time.

### SCHOOL CHARACTERISTICS

Enumerators gathered school-specific data at each of the 360 sampled schools using the head-teacher survey instrument and the school climate protocol. The assessment team also triangulated many of the school-level findings with data from teacher interviews to verify the results. The team presents selected results from these surveys below both at the national level and also disaggregated by education division, sex, and rural-urban location. The data were weighted appropriately to make them nationally representative so the results presented below are weighted statistics.

#### Enrollment

The average enrollment per school, according to head teacher surveys, in the first four standards (Standards 1 to 4) combined was 520 learners per school. This tracks well with national statistics reported in the EMIS data in 2016 which show an average of 789 learners per school (note that the EMIS data is for all standards; so, if the school has eight standards, the data are for all eight standards).

The average enrollment per standard, according to data reported by head teachers, was about 130 learners. However, as shown in Figure 1, learner enrollment per standard appears to slowly dwindle as the standard-level increases in that it was an average of 174 and 134 learners in Standard 1 and Standard 2, respectively, and only 103 in Standard 4. As shown in Figure 2, enrollment also varied by education division - schools in SHED and SEED had the highest enrollment numbers for all four standards while NED had the lowest enrollment numbers.

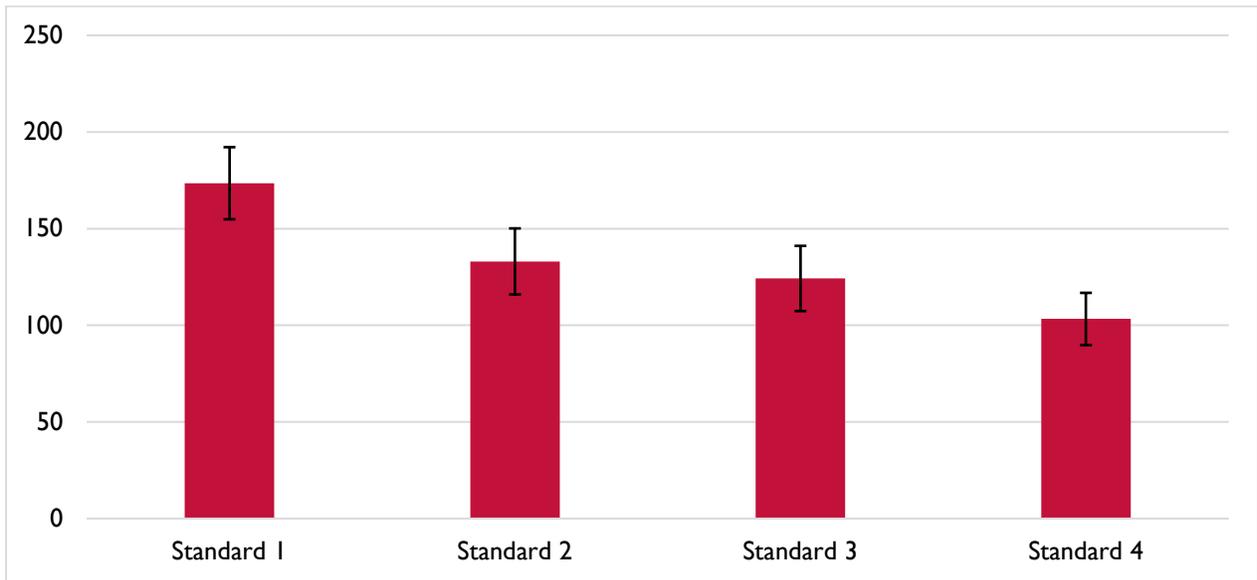
Comparing the results between NRA 1 and 2, the enrollment was similar across the years. Note that about 96 percent of the schools sampled for both the NRAs were the same.<sup>24</sup> In 2014, the average enrollment in the first four standards (Standards 1 to 4) combined was 527 learners per school, and the average enrollment was about 132 learners per standard with learner enrollment per standard slowly dwindling as the standard-level increased in that the average was 174 and 131 learners in Standard 1 and Standard 2, respectively, and only 101 in Standard 4. Also, enrollment considerably varied by education division similarly in both 2014 and 2016 in that schools in SHED and SEED had the highest enrollment numbers for all four standards while NED had the lowest enrollment numbers.

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<sup>23</sup> The sample data were weighted wherever relevant and appropriate to account for sample and design effects and make them nationally representative.

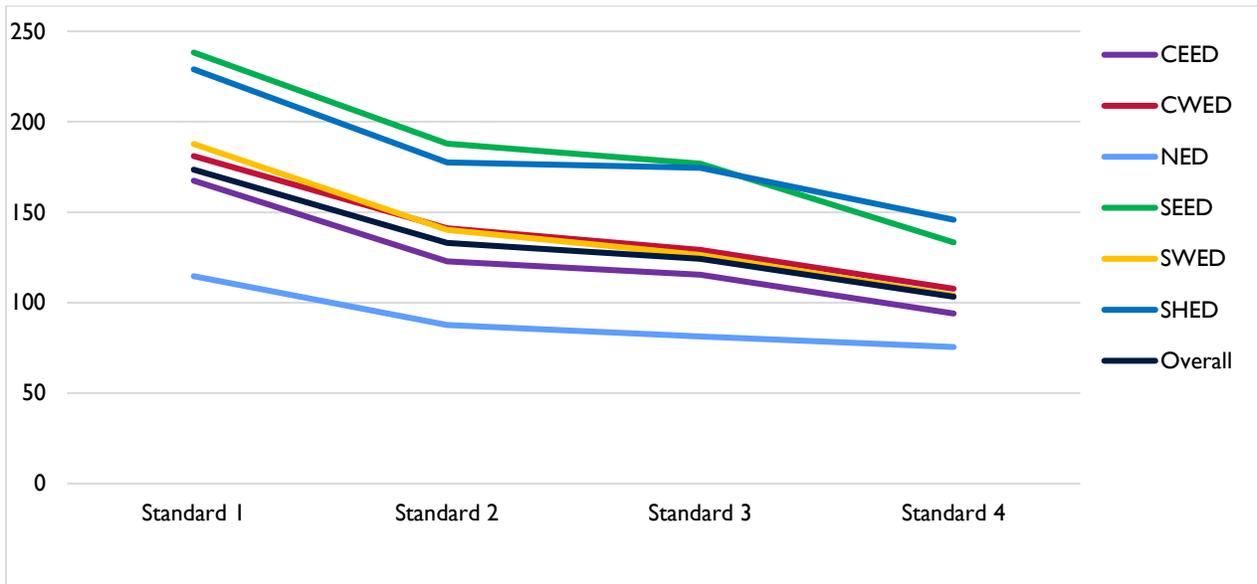
<sup>24</sup> The 2016 NRA sought to revisit the same schools sampled in 2014, nine schools sampled in 2014 had to be replaced as these schools only included up to Standard 3. In addition, two private schools were inadvertently selected and thus had to be replaced with randomly selected public schools from within the same district. Finally, two schools were determined by the field team to be inaccessible in 2016 due to extensive flooding in Karonga and thus were replaced with randomly selected public schools from the same district.

**Figure 1: Average Number of Learners Enrolled by Standard**



Ranges display 95% confidence interval around each estimate.  
National Reading Assessment Head Teacher Questionnaire 2016

**Figure 2: Average Number of Learners Enrolled by Division and Standard**



National Reading Assessment Head Teacher Questionnaire 2016

### Number of Teachers

Data gathered from interviews with sampled head teachers for Standards 1 to 4 showed an average of 6.2 teachers for these lower standards. However, the number of teachers in Standards 1 to 4 tended to be fewer in rural schools relative to urban schools: urban schools had an average of 9.3 teachers compared to 6.1 teachers at rural schools. Head teachers reported the lowest average number of teachers for the NED and CEED divisions (4.8 and 5.2 teachers, respectively) and the highest for the SHED division (8.3 teachers).

The national average calculated from EMIS data in 2016 (including all teachers up to Standard 8) is 10.5 teachers per school. Therefore, the NRA finding of an average of 6.2 teachers in Standards 1 to 4 appears consistent with the national EMIS average. Relative to NRA in 2014, NRA 2016 findings reveal a slight decrease in the number of teachers per school: in 2014, head teachers reported an average of 6.7 teachers per school (9.7 urban and 6.7 rural). The reasons underlying the decrease in teachers between 2014 and 2016 is unknown to SI and is an area for further investigation.

The number of teachers per standard per school also appear to be highly correlated with the number of streams per standard per school. However, as discussed below, some educational divisions have lower learner-to-teacher ratios than others.

### Class Size

Class size differed between the standards. According to teacher reports, the SI team found there were, on average, 110.6 learners in Standard 2 classes and 87.1 in Standard 4 classes. As shown in Table 15, class size also differed between the six education divisions and was lowest in NED at 72.1 learners in a classroom and highest in SEED at nearly 137 learners per classroom.

### Class Composition: Girl-to-Boy Ratio

The team calculated the girl-to-boy ratio by dividing teacher-reported number of girls enrolled by teacher-reported number of boys enrolled. On average, teachers reported that there were more girls than boys enrolled in classes in both standards. As shown in Table 15, the average girl-to-boy ratio was 1.1 to 1 in both Standards 2 and 4, meaning there were 11 girls enrolled per 10 boys. There was a difference by division in the girl-to-boy ratio, although girls outnumbered boys in all divisions except CWED and SWED where teachers reported parity between the sexes. The results were similar to that found in impact evaluation baseline survey in 2013.

**Table 14: Class Size and Composition by Standard**

	Standard 2			Standard 4			Total		
	N1	Weighted Mean	SE	N2	Weighted Mean	SE	N	Weighted Mean	SE
Number Learners per Class	326	110.6	6.2	319	87.1	5.2	645	99	5.7
Girl-to-Boy Ratio	320	1.02 to 1	0.0	314	1.1 to 1	0.0	634	1.1 to 1	0.0

*National Reading Assessment Teacher Questionnaire 2016*

**Table 15: Class Size and Composition in Standards 2 and 4 by Division**

	CEED	CWED	NED	SEED	SWED	SHED
Number Learners per Class	95.3	103.2	72.1	136.6	99.7	116.7
Girl-to-Boy Ratio	1.1 to 1	1 to 1	1.1 to 1	1.1 to 1	1 to 1	1.1 to 1

*National Reading Assessment Teacher Questionnaire 2016*

## Learner-to-Teacher Ratio

As shown in Table 16, comparing head teacher-reported learner enrollment with the number of teachers they reported for Standards 1 to 4, and with an assumption of one teacher per class, the study found an average of 91.9 learners per teacher in the overall study sample. Most divisions fell within the range of 94 to 101 learners per teacher with the exception of NED, which reported a much lower figure of 77.4 learners per teacher.

According to EMIS data in 2016, the national average is 77.9 learners per teacher in Standards 1 to 8, likely suggesting that the learner-to-teacher ratio drops in higher standards. As per NRA in 2014, the head teacher-reported learner-to-teacher ratio was 83 learners per teacher, which suggests that the learner-to-teacher ratio has increased since 2014. Comparative data presented in the preceding sections suggests this is due to the drop in the number of teachers per school rather than an increase in the number of learners.

**Table 16: Average School Enrollment and Teachers, by Division**

Division	Average Enrollment	SE	Average Number of Teachers	SE	Average Learner:Teacher Ratio	SE
CEED	501.2	-65.6	5.2	-0.8	100.6	-0.5
CWED	552.1	-1.4	6.6	-0.3	94	-8.4
NED	359.1	-30.6	4.8	-0.4	77.4	-0.4
SEED	703.6	-48.3	7.9	-0.5	101	-9.7
SWED	536	-8.9	6.3	-0.1	96.3	-4.0
SHED	694	-59.5	8.3	-0.9	93.7	-0.3
Overall	520.2	-24.4	6.2	-0.3	91.9	-2.2

*National Reading Assessment Head Teacher Questionnaire 2016*

The above data on learner-to-teacher ratio should be read with caution because of co-teaching. There is often more than one teacher per class reported in Malawi although they may teach different subjects. As a result, there may be only one person teaching at a time, meaning class size is unaffected by the additional teacher(s). During class observations, for example, only one teacher was observed teaching in 77.8 percent of classes. Head teacher reports suggest that approximately 38 percent of classes have more than one teacher.

## Length of the School Day

In general, a regular school day for Standard 2 learners in Malawi is 4.4 hours, according to head teachers, usually lasting from about 7:30 a.m. to 11:55 a.m. For Standard 4 learners, it is approximately 5.5 hours from about 7:30 a.m. to 1:00 p.m. As shown in Table 17, the average school day reported by head teachers in the sample was 4 hours and 26 minutes for Standard 2 and 5 hours and 33 minutes for Standard 4. Relative to figures reported in NRA 2014, the overall length of school day increased by an average of 6 minutes for both Standards 2 and 4 in 2016.

The greatest improvement between 2014 and 2016 was on the percent of schools reporting school days of 3 hours or less. As shown in Table 17, in 2014, nearly 55.3 and 27.1 percent of Standards 1 and 2, respectively, reported school days that were less than 3 hours. In 2016, these figures dropped to 6.6 percent for Standard 1 and 0.6 percent for Standard 2.

**Table 17: Length of School Day by Standard**

Standard	CEED	CWED	NED	SEED	SWED	SHED	Overall	Overall 2014
<b>Average Length of School Day</b>								
Standard 1	3.8	3.9	4.1	4.3	3.8	4.1	4.0	3.8
Standard 2	4.3	4.5	4.5	4.5	4.2	4.6	4.4	4.3
Standard 3	5.3	5.2	5.3	5.4	5.2	5.5	5.3	5.3
Standard 4	5.5	5.6	5.5	5.7	5.5	5.7	5.5	5.4
<b>Percent of Schools with 3 or Less Hours</b>								
Standard 1	8.1%	13.8%	0.0%	4.5%	4.7%	9.5%	6.6%	55.3%
Standard 2	2.0%	0.0%	0.0%	0.0%	2.3%	0.0%	0.6%	27.1%
Standard 3	0.0%	0.0%	0.0%	0.0%	1.0%	0.0%	0.1%	0.8%
Standard 4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%
<b>Percent of Schools with 7 or More Hours</b>								
Standard 1	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	0.2%	1.9%
Standard 2	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	0.2%	1.9%
Standard 3	6.1%	1.8%	0.0%	3.3%	2.3%	5.4%	3.0%	4.5%
Standard 4	7.5%	1.8%	0.0%	5.2%	2.3%	7.2%	3.8%	5.0%

*National Reading Assessment Head Teacher Questionnaire 2016*

### **Extended School Day**

For the 2016 NRA, head teachers were asked to report whether or not their school has extended the school day and for which standards it applies. Overall, the greatest proportion of head teachers reported that the school day had been extended for Standard 3, with Standards 1 and 2 closely behind at 19 percent each. As shown in Table 18, Standard 4 had the lowest figure for extended day at 16.4 percent. Over 47 percent of sampled head teachers reported extending the school day for at least one standard. Of these head teachers, 100 percent reported benefits from the extended school day, such as improved literacy, higher pass rates, and better engagement with struggling learners.

According to head teachers, the proportion of schools reporting extended school day varied greatly across divisions. Overall, SHED had the greatest proportion of schools reporting extended school day, with

approximately 28 percent of Standard 1-3 classes receiving the extended day and only 17 percent of Standard 4 classes receiving the same. SWED had the lowest proportion of schools receiving extended days, with no Standard 1 classes receiving the extended day and only 9.3 percent of Standard 4 classes reporting extended days.

**Table 18: Proportion of Schools Reporting Extended School Day by Standard and Division**

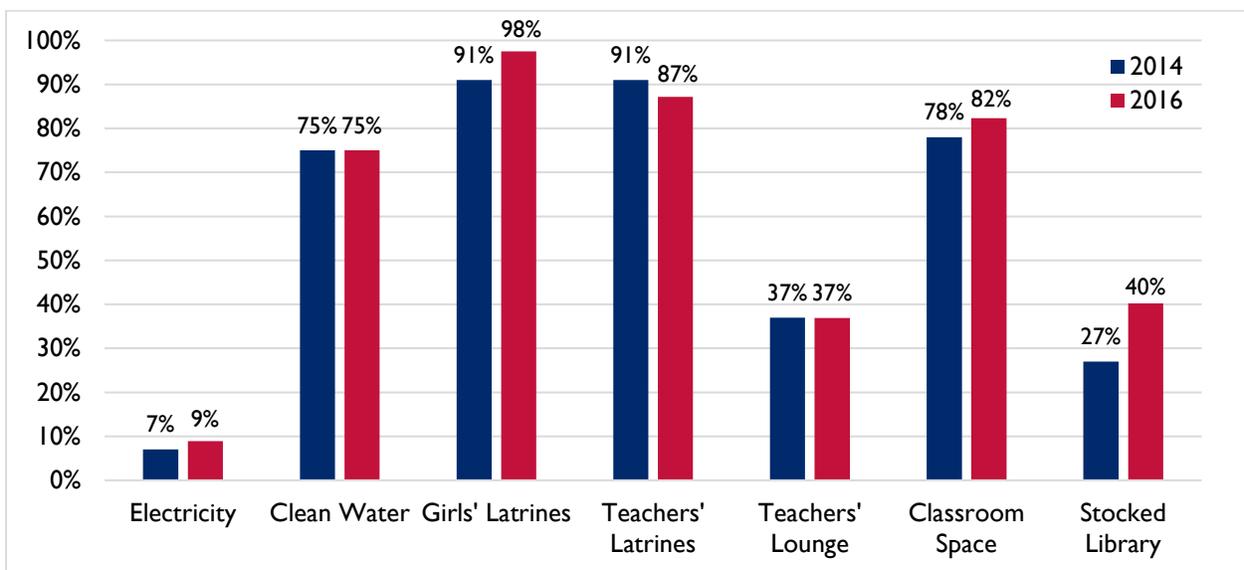
Standard	CEED	CWED	NED	SEED	SWED	SHED	Overall
Standard 1	4.7%	23.5%	27.1%	23.3%	0.0%	27.5%	19.0%
Standard 2	4.7%	25.0%	27.1%	19.6%	4.0%	27.8%	19.1%
Standard 3	11.4%	23.9%	25.6%	15.2%	6.3%	27.8%	19.5%
Standard 4	14.1%	16.2%	22.8%	11.8%	9.3%	16.9%	16.4%

National Reading Assessment Head Teacher Questionnaire 2016

### Physical Infrastructure

Data gathered from the 2016 school climate survey showed that almost all sampled schools had dedicated latrines for girls and three quarters of schools had access to clean water. However, fewer than nine percent of sampled schools reported having electricity. Schools generally had sufficient classroom space to move around in, as judged by the enumerators, but many lacked a well-stocked library and a teachers' lounge (Figure 3). Despite room for improvement, physical infrastructure improved considerably since 2014 with a 2 percentage point increase in electricity access, 7 percentage point increase in prevalence of girls' latrines, 4 percentage point increase in adequate classroom space, and 13 percentage point increase in schools with a well-stocked library, as shown in Figure 3 below.

**Figure 3: Percent of Schools Surveyed with Various Types of Resources**



National Reading Assessment School Climate Protocol 2014 and 2016

## Community Support

All sampled schools reported some level of community involvement. As shown in Table 19, all sampled schools had a school committee and 51 percent of head teachers reported that their school committees met at least on a monthly basis during the 2016 academic year. According to head teachers, the majority of school committees are responsible for school management, pupil learning challenges and solutions, physical school improvement, infrastructure maintenance, financial issues, and procurement or distribution of textbooks. Only 27 percent of head teachers reported school committee involvement in curriculum development.

Similarly, all head teachers except one reported that their school had a PTA, and, as shown in Figure 4, about 44.5 percent of those PTA groups met at least monthly in the 2016 academic year, according to head teachers. According to head teachers, PTAs had fewer responsibilities than school committees but still maintained many of the same responsibilities. Head teachers reported that the majority of PTAs are responsible for school management, pupil learning challenges and solutions, physical school improvement, infrastructure maintenance, financial issues or fund raising, and procurement and distribution of textbooks. Similar to school committees, fewer than one quarter of schools reported PTA involvement in curriculum development.

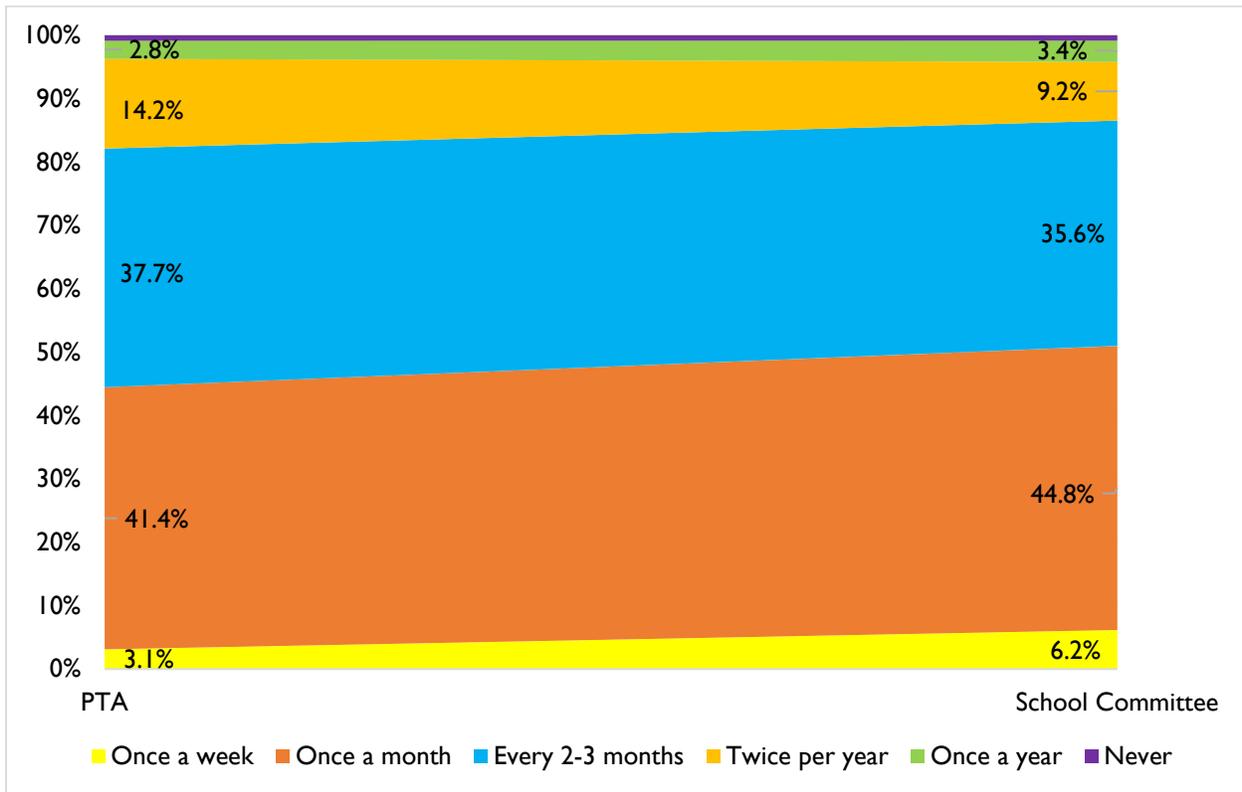
Overall, when responsibilities of school committees and PTAs are looked at together, most of these community organizations have decision making ability or responsibility for many physical, logistic, and learning related aspects of schools, as is shown in Table 20. In particular, they have input on school management in 93.6 percent of schools, addressing pupil learning challenges in 87.8 percent of schools, and play a role in textbook procurement and distribution in over two-thirds of schools (68.1 percent). Despite this high level of involvement in many parts of school decision making, community organizations only held responsibility for curriculum in 29.7 percent of schools.

**Table 19: Head Teacher-Reported Community Involvement in Schools**

Community Involvement	Observations	Percent of Schools	SD
PTA	360	99.7%	0.05
School Committee	360	100%	0.0
Parents Invited to Class	358	64.8%	0.48
Other Community Involvement	357	71.2%	0.45

*National Reading Assessment Head Teacher Questionnaire 2014*

**Figure 4: Frequency of PTA Meetings and School Committee Meetings**



National Reading Assessment Head Teacher Questionnaire 2016

**Table 20: Percent of PTAs/School Committee with Various Responsibilities**

PTA/School Committee Responsibilities	Observations	Percent of Schools
School management	360	93.6%
Maintenance of infrastructure/equipment	360	96.4%
Financial issues/fund raising	360	87.2%
Physical school improvement efforts	360	84.2%
Identifying learner learning challenges and solutions	360	87.8%
Procurement and/or distribution of textbooks	360	68.1%
Curriculum development or oversight	360	29.7%

National Reading Assessment Head Teacher Questionnaire 2016

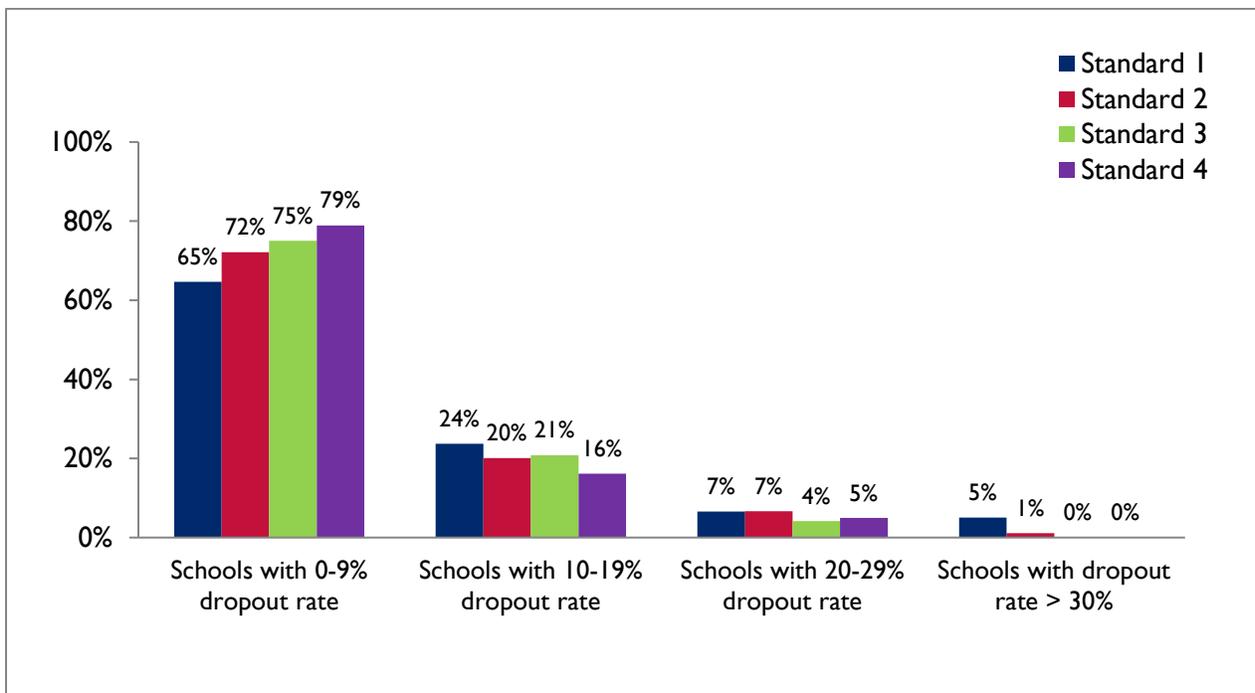
Overall, NRA 2016 findings on Community Support are similar to what was reported in the 2014 NRA with a few exceptions. First, head teachers were less likely to report parents being invited to class in 2016, with a 4.2 percentage point decline from NRA I. Second, schools with PTAs reported to meet at least on a monthly basis increased from about 40 percent in 2014 to 44.5 percent in 2016. Finally, in 2016 PTAs/School Committees were more likely to be involved in maintenance and identifying learner challenges and solutions

(5.3 and 4.1 percentage point increases, respectively) and less likely to be involved in finance, physical improvement, procurement, and curriculum development (2.8, 2.5, 11.7, and 6.6 percentage point declines, respectively).

### Dropout Rates

The average dropout rate across Standards 1 to 4 was 6.8 percent. Head teachers reported a dropout rate of 8 percent for Standard 1, 6.6 percent for Standard 2, 5.9 percent for Standard 3, and 5.7 percent for Standard 4. As shown in Figure 5, few schools reported a dropout rate exceeding 20 percent. Approximately 8 percent of schools experienced a dropout rate above 20 percent for Standard 2 with that dropping to 5 percent for Standard 4. As shown in Figure 6, enrollment also significantly varied by education division; schools in SHED and SEED had the highest enrollment numbers for all four standards while NED had the lowest enrollment numbers.

**Figure 5: Average Dropout Rates by Standard**

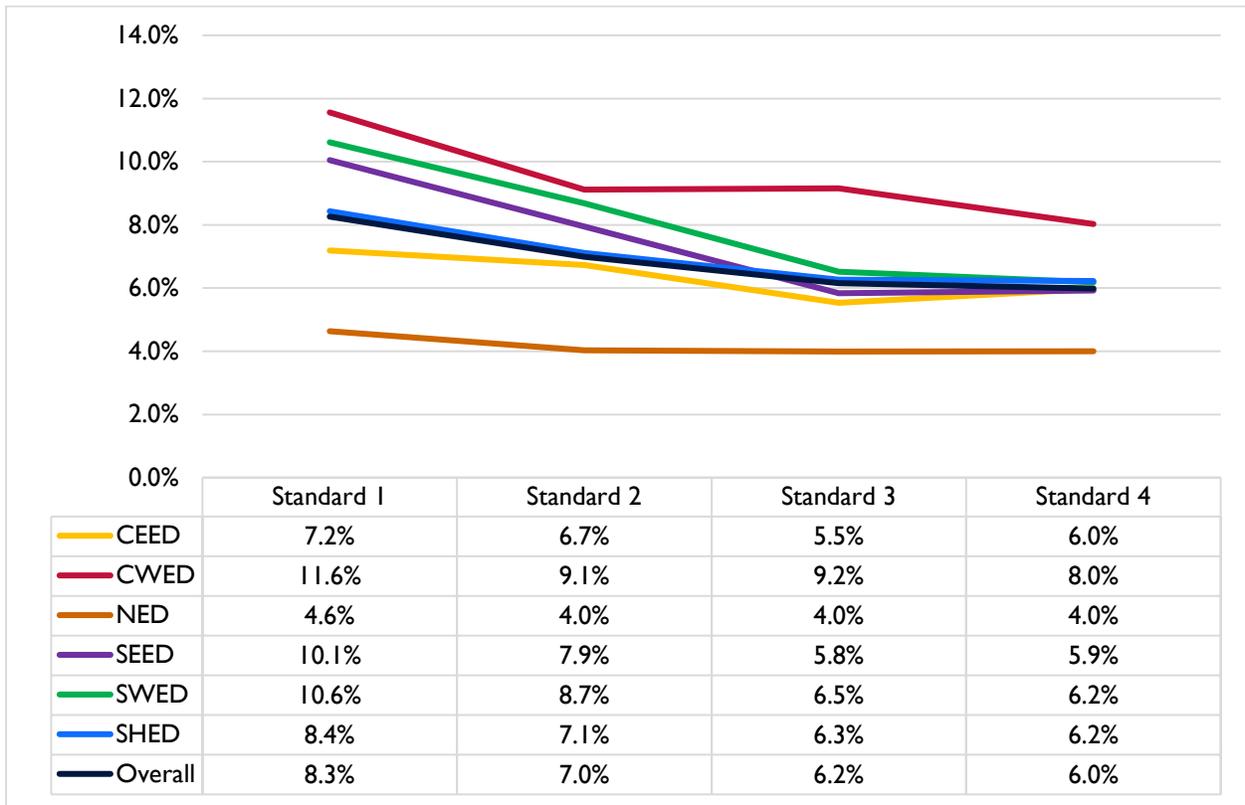


*National Reading Assessment Head Teacher Questionnaire 2016*

As shown in Figure 6, the assessment team found differences in dropout rates by division. For instance, head teachers from NED reported significantly fewer dropouts across all standards than did head teachers elsewhere. Dropout rates were highest in CWED for all standards, with 11.6 percent of learners dropping out in Standard 1 and 8 percent of learners dropping out in Standard 4. While dropout rates in other divisions are variable for Standards 1 and 2, they converge toward the overall average in Standards 3 and 4. The largest decrease in dropouts reported by head teachers among standards was between Standards 1 and 2 in CWED, where there was a 2.5 percentage point drop.

Head teachers also reported lower dropout rates in urban areas than they did in rural areas for all standards, however the difference was only statistically significant for Standard 4 learners: Standard 4 learners in rural areas had a dropout rate that was 3.1 percentage points higher than their urban counterparts (p-value=0.02).

**Figure 6: Average Dropout Rates by Standard and Division**



*National Reading Assessment Head Teacher Questionnaire 2016*

As shown in Table 21, the most common reasons that head teachers identified for Standard 2 learners dropping out of school were lack of learner motivation, a need for learners to work, and learners having to take care of siblings or other relatives, and learners having to walk long distances to school. As shown in Table 22, Standard 4 learners had similar reports from head teachers, however employment and marriage were more commonly cited as primary causes for Standard 4 dropouts relative to Standard 2. Approximately 16.4 percent of head teacher rankings for Standard 2 and 13.2 percent for Standard 4 fell into the “other” category, with hunger, poverty, and lack of parental support most commonly cited for both standards. Less commonly cited reasons include religion and culture, migration, shyness, and lack of role models for learners.

**Table 21: Main Reasons Cited by Head Teachers for Standard 2 Dropouts**

Reasons	Ranking			
	1	2	3	Top 3
Not motivated / don't see importance of education	20.6%	15.8%	20.3%	56.7%
Employment / helping with family work	24.7%	11.9%	11.9%	48.6%
Taking care of siblings or other relatives	8.3%	16.4%	13.3%	38.1%
Long travel distances	12.5%	13.3%	11.4%	37.2%
Limited availability of teachers	7.5%	5.6%	6.9%	20%
Sickness or Injury	2.5%	8.1%	7.8%	18.3%
Poor school facilities	1.9%	5.6%	9.7%	17.2%
Difficulty understanding curriculum / poor performance	1.1%	4.2%	8.6%	13.9%
Marriage	0.6%	0.3%	5%	5.8%
Pregnancy	0.3%	0.8%	4.4%	5.6%
Violence	0.3%	0.3%	4.7%	5.3%
Fees	0%	0.6%	4.2%	4.7%

*National Reading Assessment Head Teacher Questionnaire 2016*

**Table 22: Main Reasons Cited by Head Teachers for Standard 4 Dropouts**

Reasons	Ranking			
	1	2	3	Top 3
Not motivated / don't see importance of education	16.1%	18.1%	22.5%	56.7%
Employment / helping with family work	27.5%	17.2%	12.2%	56.9%
Taking care of siblings or other relatives	6.4%	19.2%	12.2%	37.8%
Long travel distances	10%	11.7%	9.7%	31.4%
Limited availability of teachers	10.6%	4.4%	7.5%	22.5%
Sickness or Injury	1.9%	4.4%	7.8%	14.2%
Poor school facilities	2.5%	5.3%	8.1%	15.8%

Difficulty understanding curriculum / poor performance	2.2%	3.6%	6.7%	12.5%
Marriage	4.2%	2.8%	8.3%	15.3%
Pregnancy	0.3%	1.7%	3.6%	5.6%
Violence	0.3%	0%	4.2%	4.4%
Fees	0.3%	0%	3.6%	3.9%

National Reading Assessment Head Teacher Questionnaire 2016

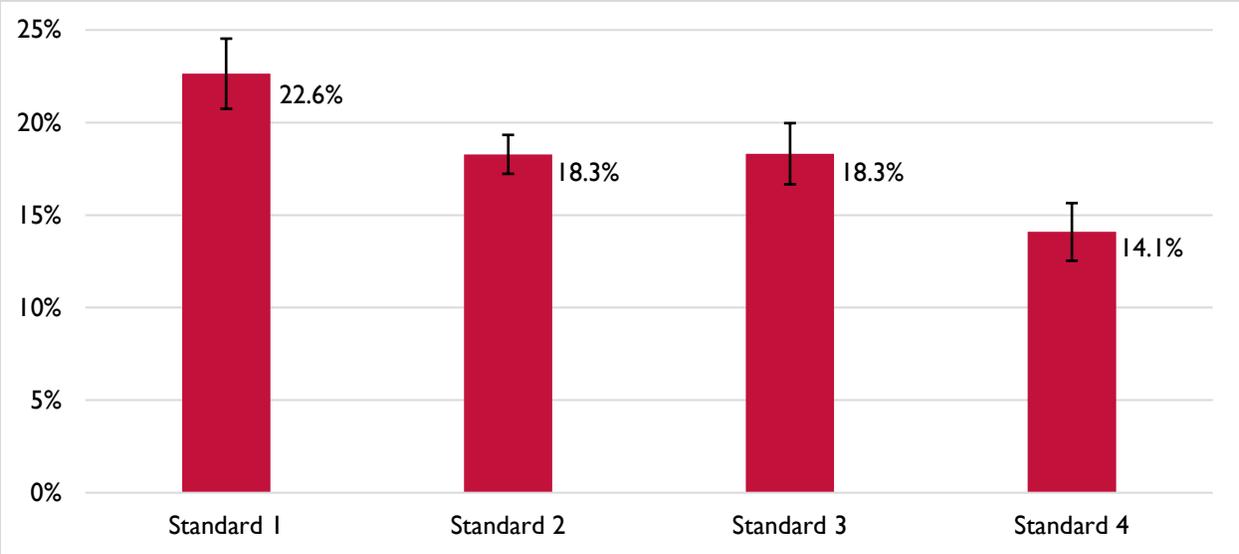
When compared to data captured during the 2014 NRA, dropout rates showed signs of improvement in 2016. According to head teacher reported data, the dropout rate decreased by 1.5 percentage points for Standard 2 learners and 0.8 percentage points for Standard 4 learners. For Standard 1 and 3 learners, the dropout rate declines were 2.5 and 1.3, respectively.

**Repetition**

As shown in Figure 7, the average from 2016 NRA data gathered from head teachers at sampled schools indicated that 22.6 percent of all Standard 1 learners, 18.3 percent of all Standard 2 and Standard 3 learners, and 14.1 percent of all Standard 4 learners had repeated their respective standards. Teachers reported similar data during interviews with them, confirming the data provided by the head teacher. Specifically, the teachers reported that for their classes (as opposed to the standard as a whole), approximately 18.2 percent of learners in Standard 2 and 15.1 percent of learners in Standard 4 were repeating the standard in the 2016 academic year.

In terms of differences by standard, head teachers at 68.5 percent of the sampled schools reported higher repetition rates in Standard 2 than in Standard 4.

**Figure 7: Head Teacher Reported Average Percent of Learners Repeating per Standard**



National Reading Assessment Head Teacher Questionnaire 2016

Relative to NRA 2014, repetition rates have increased very slightly for Standards 2 and 3 since 2014, by 0.6 and 0.9 percentage points, respectively. This may be explained by the reduction in dropouts observed over the same time period, as learners who are no longer dropping out may be more likely to repeat. In contrast, repetition has decreased by 1.4 percentage points for Standard 1 and 0.2 percentage points for Standard 4 since 2014.

As shown in Table 23, the most common reason head teachers cited for Standard 2 and Standard 4 learners failing to meet requirements to move to the next standard, and thus being held back, is that they frequently miss class. This was reported as the primary cause of learner retention by approximately 45 percent of sampled head teachers. The second most common reason reported was that when they do attend, learners from both standards fail to pay attention in class. Classroom overcrowding was the third and fourth most commonly reported reason for learner retention for Standard 2 and 4 learners respectively. Students failing to study was more commonly cited for Standard 4 than Standard 2 learners, at 7.8 and 4.2 percent respectively. Approximately 17 percent of head teachers reported the primary cause of learner repetition as “other.” Among these head teachers, frequently cited reasons were lack of parental engagement, migration and mobility, teacher disengagement, and lack of learner preparation in the preceding grade.

**Table 23: Main Reasons Cited by Head Teachers for Learners Failing to Meet Requirements to Advance to the Next Standard and, therefore, having to Repeat**

Main Reason	Percent of Head Teachers	
	Standard 2	Standard 4
They miss class	45.3%	44.4%
They don't pay attention	10%	13.3%
There are too many learners in the class	7.5%	5.6%
They don't have textbooks	5.8%	4.2%
Inadequate staffing and/or resources at the school	4.4%	3.3%
They don't study	4.2%	7.8%
Some of the learners are too young	2.2%	0.3%
They can't study at home because they don't have any materials to take home	2.2%	1.9%
I can't effectively teach this many learners	0.9%	0.6%
They can't study at home because there is no electricity	0%	0.3%

*National Reading Assessment Head Teacher Questionnaire 2016*

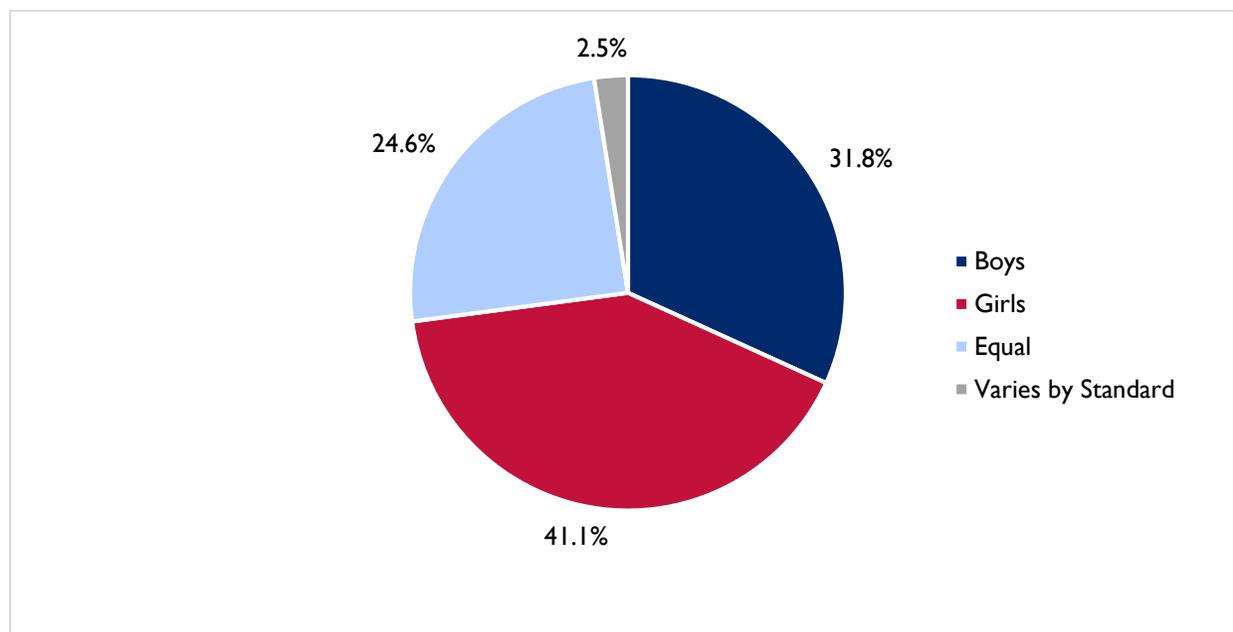
Approximately two-fifths of the head teachers interviewed said that, in general, girls were more likely than boys to repeat a standard (See Figure 8 for more details). Approximately 61 percent of head teachers who reported believing that girls were more likely to repeat a standard than boys spontaneously cited household chores and caring for siblings as the principal reason. Other reasons cited by head teachers

who reported girls being more likely to repeat include lack of interest in school (4 percent), parental care (4 percent), early marriage (3.4 percent), and shyness or a sense of inferiority (3.4 percent).

In comparison, work or chores were only spontaneously cited as a reason for higher male repetition by three of the head teachers who thought that boys repeated more often. Most common reasons cited among those who stated boys were more likely to repeat were that boys were focused on playing (24.6 percent) or had to engage in some form of labor (24.6 percent). In addition, 12.3 percent cited laziness or lack of interest as a reason for boys' repetition.

The reason for head teachers' perception that girls repeat more often than boys is not clear, as this finding does not correspond with repetition rates reported by sampled learners or national statistics on repetition. In fact, the sampled boy and girl learners for the study reported almost the same repetition rates for Standard 2, and boys reported higher repetition rates for Standard 4.

**Figure 8: Head Teacher Perceptions of whether Boys or Girls are more likely to Repeat**



*National Reading Assessment Head Teacher Questionnaire 2016*

## HEAD TEACHER DEMOGRAPHICS

As described in the Sampling Section above, enumerators were able to interview head teachers at 264 (73.3 percent) of the 360 sampled schools due to head teacher absences. At the other 96 schools, enumerators interviewed the deputy head teachers or acting head teacher instead. This section presents data on those respondents who filled out the head teacher survey instrument, rather than (necessarily) the actual head teacher, unless otherwise noted.

### Gender of Head Teachers

This was one question asked specifically about head teachers—whether present or not. Overall, respondents reported that 10 percent of head teachers were women. In each education division, gender data was collected on 60 head teachers, and between one and 11 of them were female. Of the 15 urban

schools, 20 percent of head teachers were female, while only 9.6 percent of the 345 head teachers were female in rural areas (this difference, however, is not statistically significant).

## Training

All but one head teacher or acting head teacher reported having received teachers' training, and 82.2 percent reported having received a Malawi School Certificate of Education (MSCE), while 15.3 percent reported having received a Junior Certificate of Education (JCE), although qualifications varied slightly by education division.<sup>25</sup> Approximately 90 percent of head teachers or acting head teachers in SHED reported having an MSCE, and between 81 and 85 percent reported having the same in CWED, SEED, and SWED. The figure drops to 75 and 78.3 percent for NED and CEED, respectively. Only six of the 360 head teachers or acting head teachers (1.7 percent) reported that they had a diploma, half of which were concentrated in SHED and all of whom taught in rural areas. The assessment team also found that qualifications did not significantly differ by gender of the teacher.

## TEACHER DEMOGRAPHICS

Enumerators interviewed a total of 764 teachers using the teacher interview protocol. Of these teachers, 103 (13.5 percent) were not the core teachers for the selected classroom but were rather interviewed because they serve as the primary Chichewa teacher for the selected classroom and thus their responses and classroom observations will be used for the section on factors predicting reading achievement. The remainder of this section thus focuses on the 661 teachers that were identified as the core teacher of the selected classroom. The average teacher age was 33.3 years, which is similar to the 2014 NRA where the average teacher age was 34.

## Education and Training

As shown in Figure 9, the majority (85.8 percent) of teachers reported that they had earned an MSCE, and most of the rest (12.9 percent) reported that they had earned their JCE. A small minority (1.2 percent) reported "other" training as their highest academic qualification and only 1 teacher reported having received a diploma. This is very similar to the 2014 NRA sample of teachers, where 82 percent and 17.7 percent reported earning an MSCE or JCE, respectively. The educational background of teachers differed between rural and urban regions, but the difference was not significant (chi-squared=0.79).

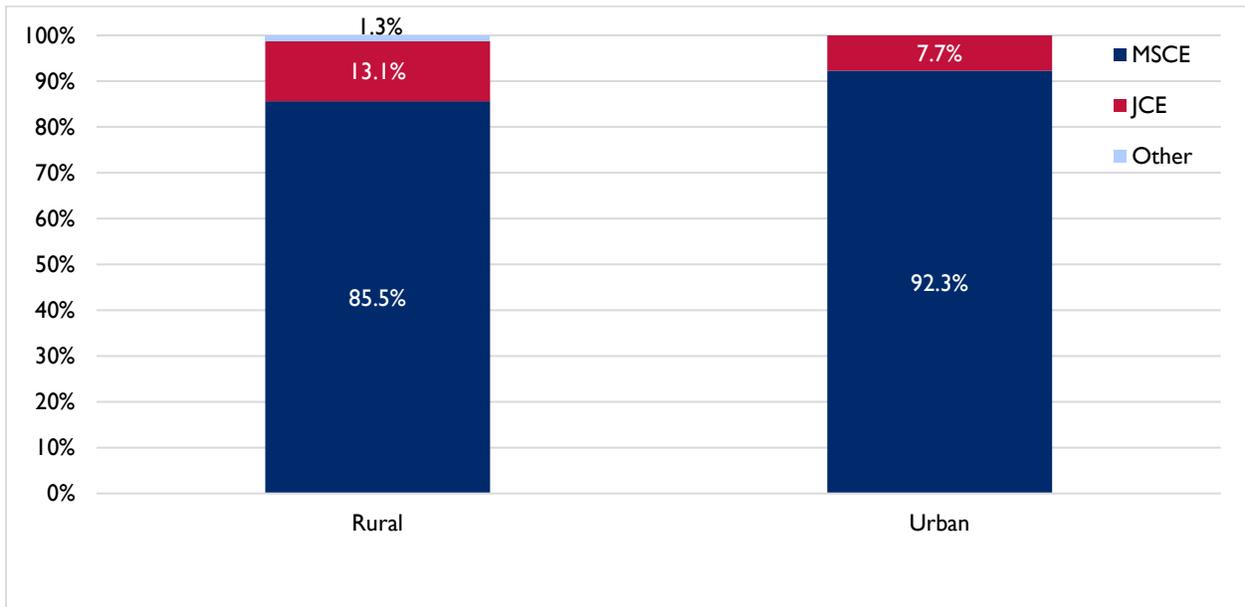
As shown in Figure 10, among those surveyed, 94 percent of teachers reported that they were trained teachers,<sup>26</sup> although this varied significantly by standard (p-value<0.001). In the 2014 NRA, only 83 percent of teachers reported being trained. In the sample, 98.8 percent of Standard 2 teachers were trained, while only 88.9 percent of Standard 4 teachers were trained. As shown in Table 24, the percent who reported being trained also varied significantly by division (chi-2=0.002). While at least 95 percent of teachers reported that they had been trained in CWED, SEED, SWED and SHED, CEED and NED had fewer than 90 percent of teachers reporting the same.

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<sup>25</sup> The MSCE is awarded after four years of secondary school study and passing of a national examination. The JCE is awarded upon passing national examinations after only two years of secondary school. Until recently, teachers could teach lower standard-levels with only a JCE. But, now, they must have an MSCE to qualify as a teacher.

<sup>26</sup> The wording of the question used for this qualification is "Are you a trained teacher?" According to MoEST officials "trained teachers" are those who hold their MSCE.

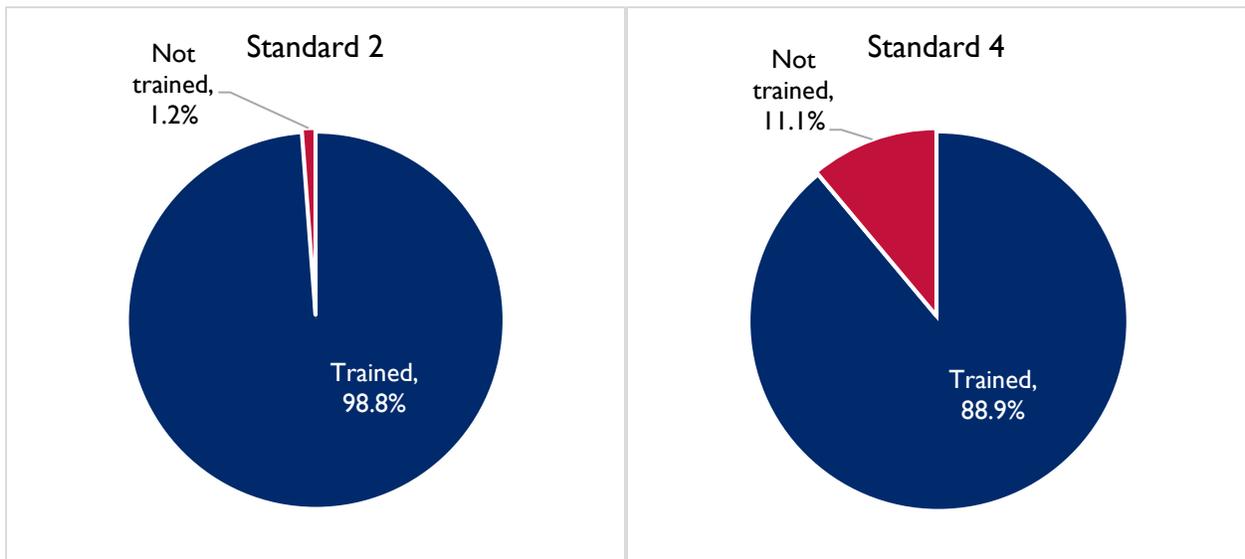
**Figure 9: Percent of Teachers Reporting Various Qualifications**



Chi-squared  $p$ -value=0.79

National Reading Assessment Teacher Questionnaire 2016

**Figure 10: Percent of Trained and Untrained Teachers in Standards 2 and 4**



National Reading Assessment Teacher Questionnaire 2016

**Table 24: Percent of Teachers Reporting they are Trained, by Division**

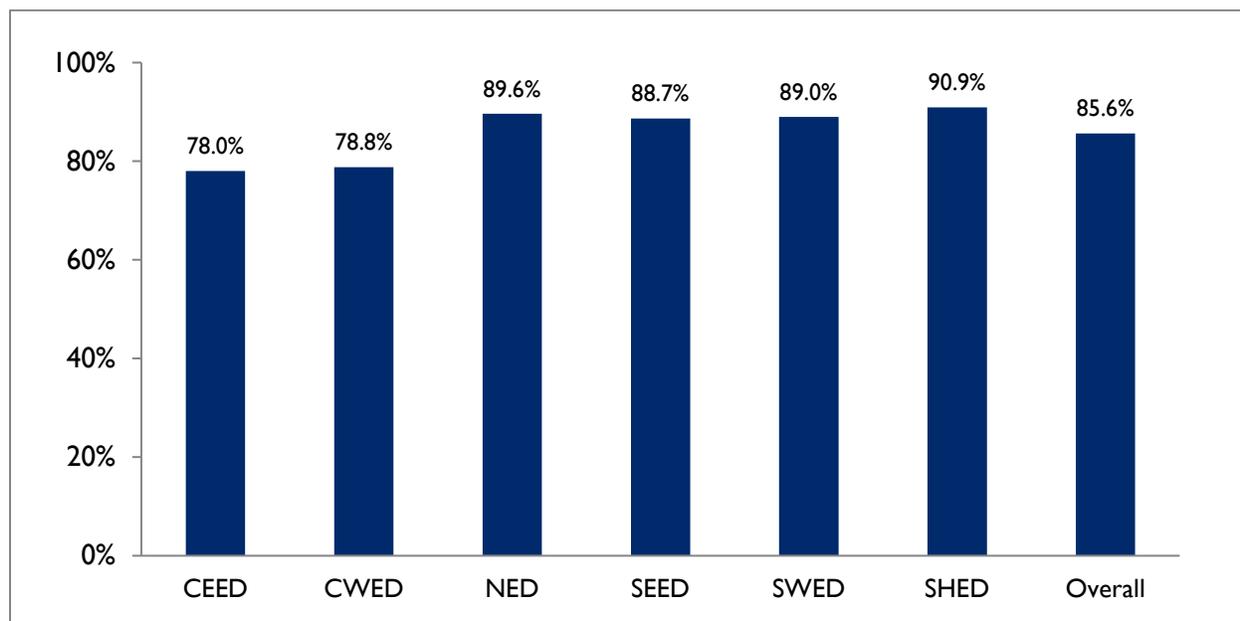
Standard	CEED	CWED	NED	SEED	SWED	SHED	Overall
% Trained	88%	97.3%	89.4%	94.7%	96%	99.1%	94%
% Not Trained	12%	2.8%	10.6%	5.3%	4%	0.9%	6%

Chi-squared  $p$ -value=0.002

National Reading Assessment Teacher Questionnaire 2016

As shown in Figure 11, overall, 85.6 percent of teachers reported receiving at least one hour of external coaching<sup>27</sup> in the past three years. The NRA 2014 sample of teachers reported similar results, with 87.2 percent of teachers receiving this coaching. Of those reporting receiving external coaching in the past three years, average number of hours received over this time period was 8.1. The proportion of teachers receiving some sort of coaching differed significantly between the six divisions. Teachers in CEED were the least likely to receive a coaching, at 78 percent, and teachers in SHED and were the most likely to receive external coaching. In addition, of teachers who reported having received the EGRA intervention (276 teachers), 70 reported receiving coaching from the EGRA project.

**Figure 11: Proportion of Teachers Receiving External Coaching Visit in the Past Three Years, by Division**



Chi-squared  $p$ -value=0.022

National Reading Assessment Teacher Questionnaire 2016

### Proportion of Teachers Demonstrating “Essential” Skills in Teaching Reading

The study identified 13 teaching practices from the classroom observations tool that, based on a review of literature and the USAID-approved RTI-International EGRA curriculum and classroom observation protocol, embody what should be considered “essential” teaching practices. The assessment team then conducted frequency analysis to determine what percentage of sampled teachers used these practices in any of the up to three classes they were observed teaching.

Based on the observations, the study found that only 2.7 percent of teachers used all of the essential practices in the observed classes. However, given that lesson content can vary significantly by day, EGRA has set a standard of 67 percent adherence to best practices on any one day as a cut off for determining adherence to best practices. The study used the same cut-off point for this analysis and found that, as

<sup>27</sup> External coaching is defined as coaching from any one of the following: MoEST inspector, PEAs, Divisional Inspector, Mentor Teacher, or other providers. It does not include school-based coaching from the Head Teacher.

shown in Table 25 below, about 47.7 percent of teachers achieved this target, demonstrating adherence to best practices in teaching reading.

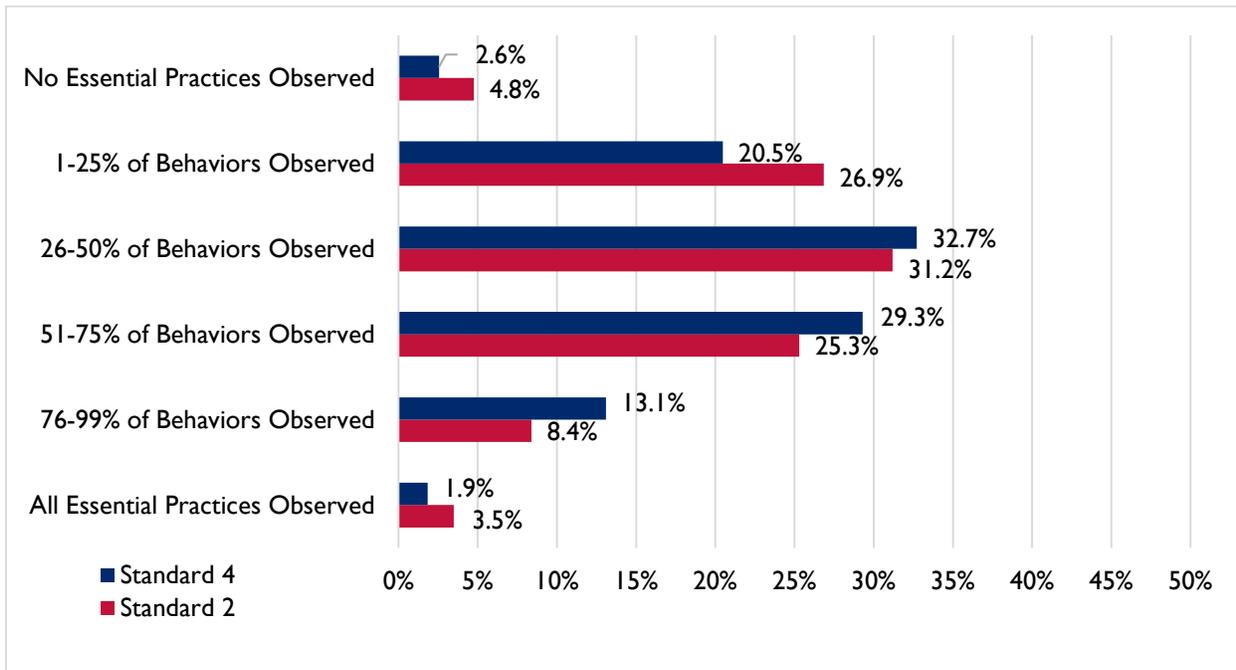
**Table 25: Use of Essential Practices by Observed Teachers, by Division**

Essential Practice	CEED	CWED	NED	SEED	SWED	SHED	Overall
Assesses learner learning	62.5%	72.2%	69.1%	76.5%	57.0%	66.1%	67.3%
Introduces lesson by connecting to what learners have learned previously	45.9%	66.7%	68.3%	74.8%	47.2%	83.3%	64.5%
Uses a lesson plan	60.7%	71.4%	82.7%	81.5%	64.3%	83.7%	74.2%
Has individual learners read aloud	61.8%	66.0%	82.8%	79.0%	63.7%	75.1%	71.5%
Engages learners in reading activities or games appropriate to reading level	43.6%	66.7%	54.5%	78.7%	68.8%	69.2%	63.5%
Asks learners questions to assess their understanding of something they learn	45.6%	50.0%	63.6%	57.5%	55.7%	50.3%	54.0%
Provides learners with structured opportunities to apply understanding and skills to everyday life and problems	26.2%	38.9%	40.3%	47.1%	30.6%	32.6%	36.0%
Encourages learners to “sound it out” when they don’t know a word	26.2%	43.2%	43.5%	67.3%	34.6%	44.3%	43.4%
Asks learners questions to assess their understanding of stories they hear	34.8%	47.2%	53.2%	58.4%	40.8%	51.7%	47.6%
Asks learners to recognize letters and say letter names and/or sound	16.7%	23.1%	47.2%	41.4%	22.1%	20.8%	28.7%
Provides instructions on how to decode syllables and words	18.0%	42.1%	35.1%	50.3%	26.4%	38%	35.2%
Applies multiple methods to support comprehension, including games, group work, etc.	16.0%	17.7%	37.1%	36.3%	23.8%	29.4%	26.8%
Asks learners pre-reading questions	27.3%	35.4%	48.3%	45.2%	27.5%	28.6%	35.5%
Met at least 67% of practices	22.9%	42.2%	47.3%	60.7%	46.6%	64.9%	47.7%
Met all essential practices	2.6%	0.9%	10.3%	1.7%	0.4%	0.0%	2.7%

*National Reading Assessment Classroom Observation 2016*

On average enumerators observed that teachers used 5.8 of the essential practices in teaching in their classes. Teachers in Standard 4 used an average of 0.5 more essential teaching practices than Standard 2 teachers ( $p$ -value<0.001).

**Figure 12: Percent of Practices Teachers Were Observed Using by Standard**

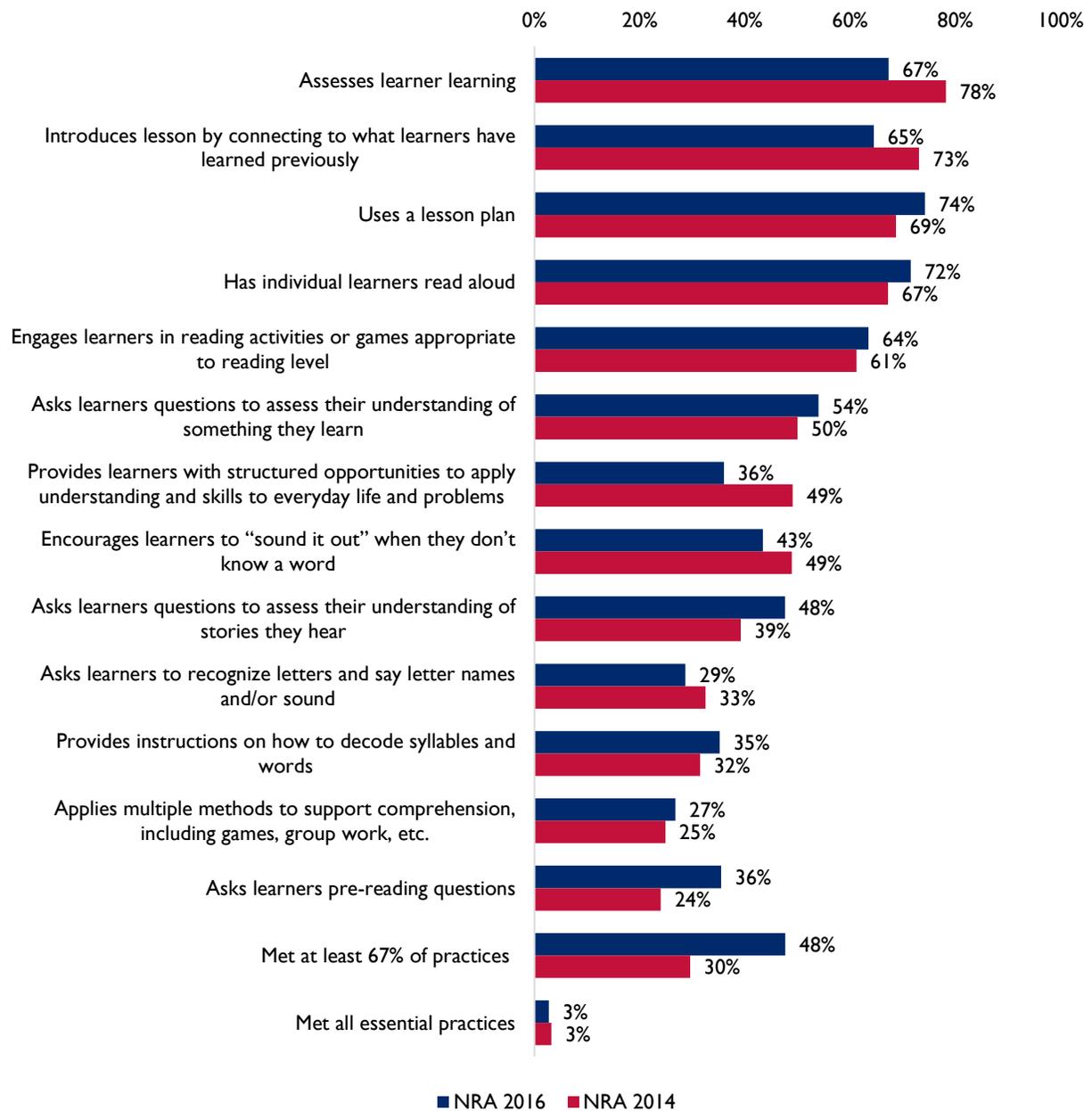


*National Reading Assessment Classroom Observation 2016*

As seen throughout the teacher demographics section, the sample between the 2014 NRA and 2016 NRA are very similar. Therefore, as shown in Figure 13 we compared teaching practices between the two NRAs, and teaching practices appear to have improved overall from 2014 to 2016.<sup>28</sup> Specifically, teachers have improved in 8 out of the 13 essential teaching practices from 2014 to 2016, while improvements have not been seen in 5 of the practices. Most notably, teachers are using more of the essential practices now than they were in 2014, as evidenced by 48 percent of teachers in 2016 utilizing at least 8 of the 13 essential teaching practices (or 67 percent), which is up from only 30 percent of teachers meeting this mark in 2014. Many of these practices are applicable to the reading related subtasks, and can influence how well learners absorb material. For example, teachers have improved in asking learners questions to assess their understanding of stories they hear as well as asking learners pre-reading questions, which can improve learners’ fluency and comprehension. However, teachers can work to improve on encouraging learners to “sound it out” when they don’t know a word as well as asking learners to recognize letters and say letter names and/or sound, which can improve learners’ phonemic awareness and decoding skills.

<sup>28</sup> Recall that the teachers and classes observed in these two NRAs are not the same - The 2014 figures reflect Standard 1 and 3 teachers whereas 2016 reflects Standard 2 and 4 teachers. But, major characteristics of teachers observed in the two NRAs did not differ much.

**Figure 13: Teachers Using Essential Practices, 2014 and 2016 Comparison**



## CLASSROOM CHARACTERISTICS

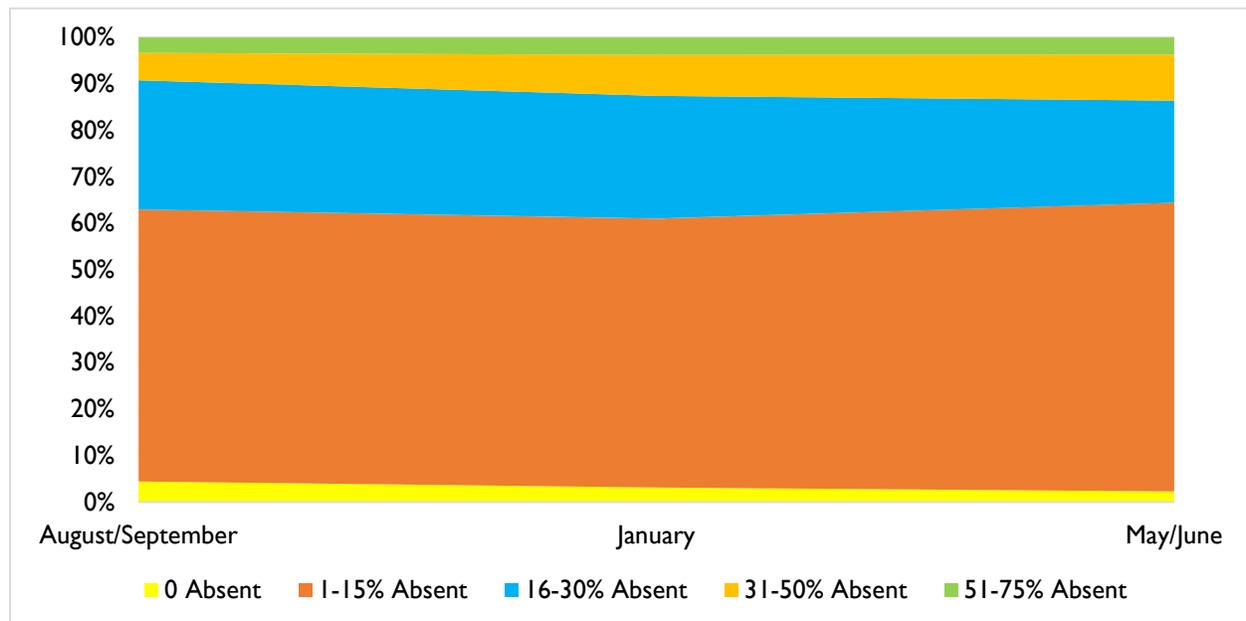
### Attendance Rates

The teacher questionnaire asked enumerators to record attendance from the attendance register for Standards 2 and 4 for the following: (i) Wednesday of the third week of the school year, (ii) Wednesday of the third week of January, and (iii) Wednesday of the most recent full week. This was done in an effort to identify any differences in attendance that may occur due to seasonal changes—such as decreased accessibility of food in the lean season, which according to the World Food Program (WFP) typically

begins as early as December and can last up to March or April. Food prices usually rise during this time period before the March/April harvest; thus, maize is scarce and often unaffordable on the market, and people have often consumed their own reserves prior to this point. It is likely that absentee rates could be higher in January than in August or September (during the third week of school) and May or June (during the most recent week).

In general, absenteeism among Standard 2 learners was higher than among learners in Standard 4. Overall, as shown in Figure 14, the weighted averages of student absenteeism slightly dropped from September to January and either leveled or increased slightly from January to May/June, showing no distinct effect due to lean season.

**Figure 14: Teacher Reported Absentee Rates for Standard 2 and Standard 4 Learners**



*National Reading Assessment Teacher Questionnaire 2016*

Interestingly, there appears to be a statistically significant relationship between absenteeism and school feeding. Classrooms without access to school feeding are significantly more likely to report high absenteeism rates (i.e., greater than 15 percent) than those with access to school feeding, with slight seasonal variations as reported in Table 26 below.

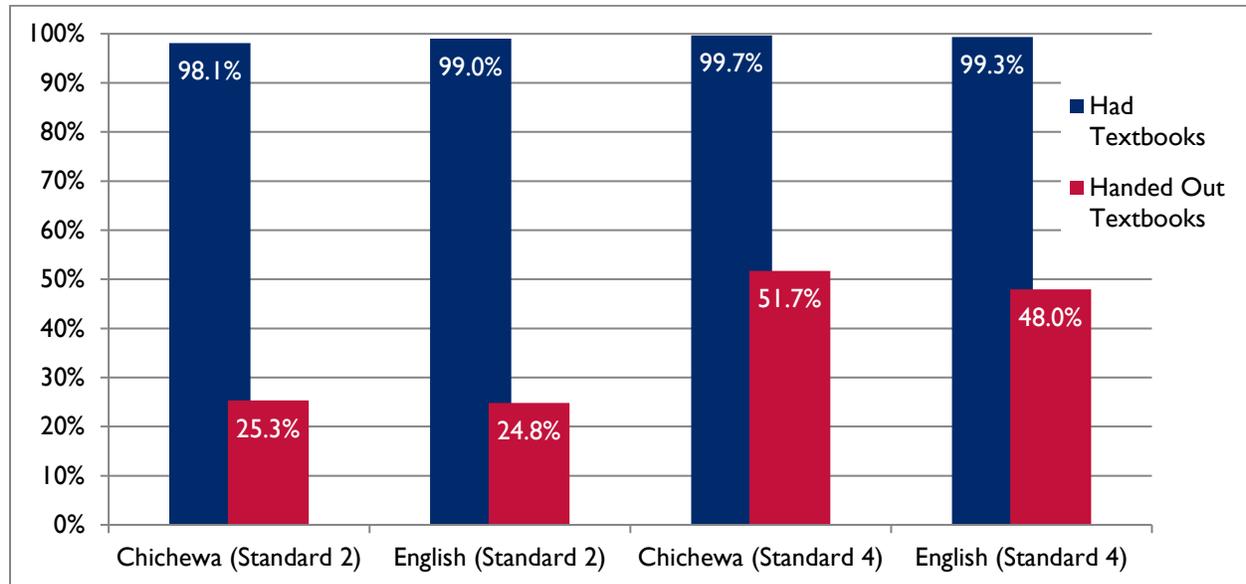
**Table 26: Absenteeism Frequency, by School Feeding Program and Season**

	School Feeding	No School Feeding
	% Classes with High Absenteeism (> 15 percent)	% Classes with High Absenteeism (> 15 percent)
August/September (Third Week of School Year)	27.8%	35.7%
January (Third Week)	35.2%	39.4%
May/June (Most Recent Full Week)	30.2%	36.8%

## Access to Textbooks

Of the 615 teachers interviewed, 608 (98.9 percent) said they had at least one Chichewa textbook, and 99.2 percent said they had at least one English textbook in their class. However, only 38.1 percent of teachers reported that they hand out all of the Chichewa textbooks they have, and only 36.2 percent of teachers reported handing out all of the English textbooks they have during class. The most commonly cited reasons for not handing out all the textbooks was that learners do not take good care of the books (38.8 percent) followed by there are not enough for each learner to have one (24.8 percent).

**Figure 15: Textbook Accessibility and Use by Class and Standard**

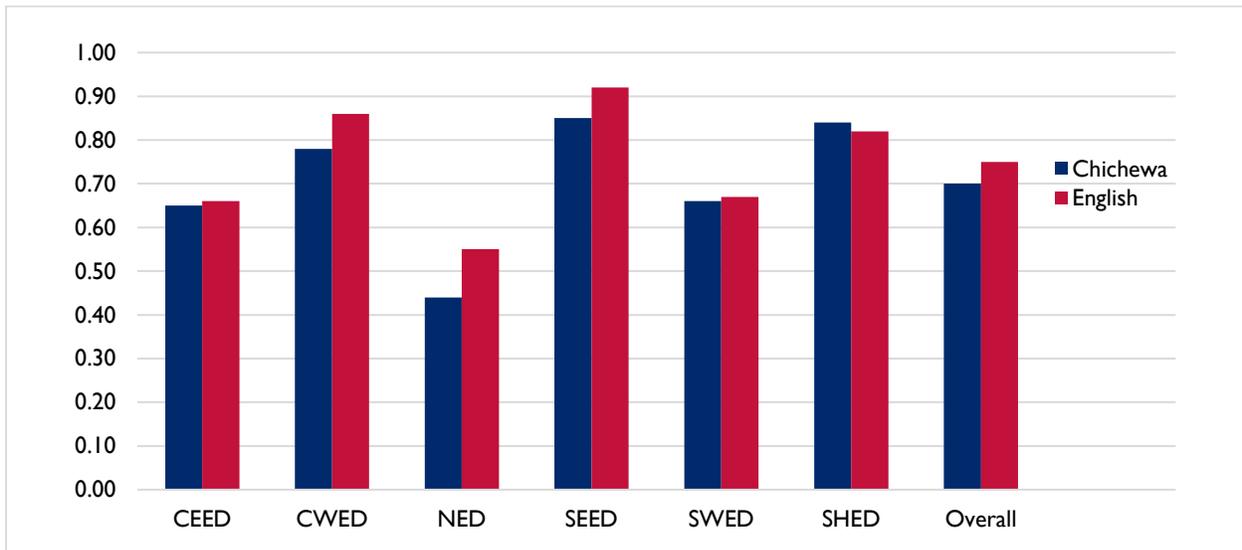


*National Reading Assessment Teacher Questionnaire 2016*

As shown in Figure 15, Standard 4 teachers were significantly more likely to hand out English and Chichewa textbooks than their Standard 2 counterparts. The assessment team cross-verified this information with data on teachers handing out textbooks during classroom observations conducted for the assessment. In approximately 35.7 percent of the lessons, the enumerators observed teachers handing out textbooks to learners (34.5 percent in Standard 2 classes and 36.9 percent in Standard 4 classes).

The assessment team did not identify any statistically significant differences between divisions in whether Chichewa books and English books are used in the classroom (Figure 16) however they did note significant differences by division in the number of textbooks available per learner. SEED reported the highest number of English books per learner at 0.92 books per learner, with NED reporting the lowest at just 0.55 per learner. Both SEED and SHED reported the highest number of Chichewa books per learner, at 0.85 and 0.84 respectively, while NED again reported the lowest number of Chichewa books per learner at just 0.44.

**Figure 16: Number of Chichewa and English Textbooks per Learner, by Division**

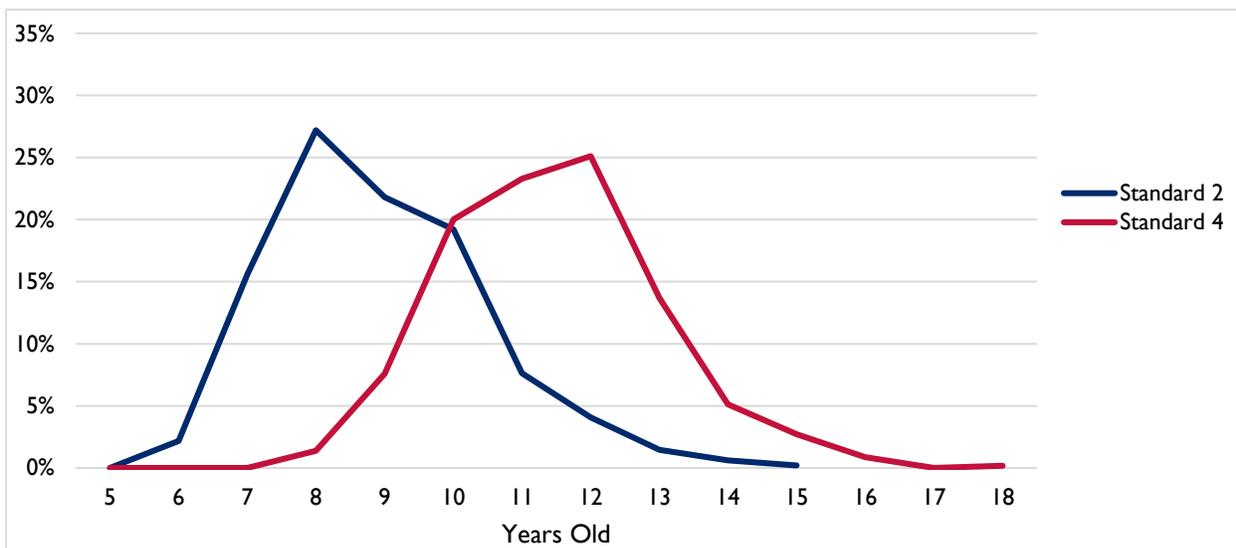


National Reading Assessment Teacher Questionnaire 2016

## LEARNER CHARACTERISTICS

Learners in Malawi are eligible to begin school in Standard 1 at age six to seven. If learners were to progress through one standard per year, as is intended, Standard 2 learners would be age seven to eight and Standard 4 learners would be nine to ten. The weighted average age of both Standard 2 and Standard 4 learners in Malawi, as per this assessment, was higher at 8.9 and 11.5, respectively. The average age of Standard 2 boys was 9.1 and for girls it was 8.7, but the gap expanded slightly in Standard 4, where boys were 11.7 on average, while girls were 11.2. This did not vary significantly by division. This also does not differ from impact evaluation midline in 2015 and NRA 2014 results, where the average age of learners in Standard 2 was 9 and in Standard 3 was 11.

**Figure 17: Age of Learners by Standard**

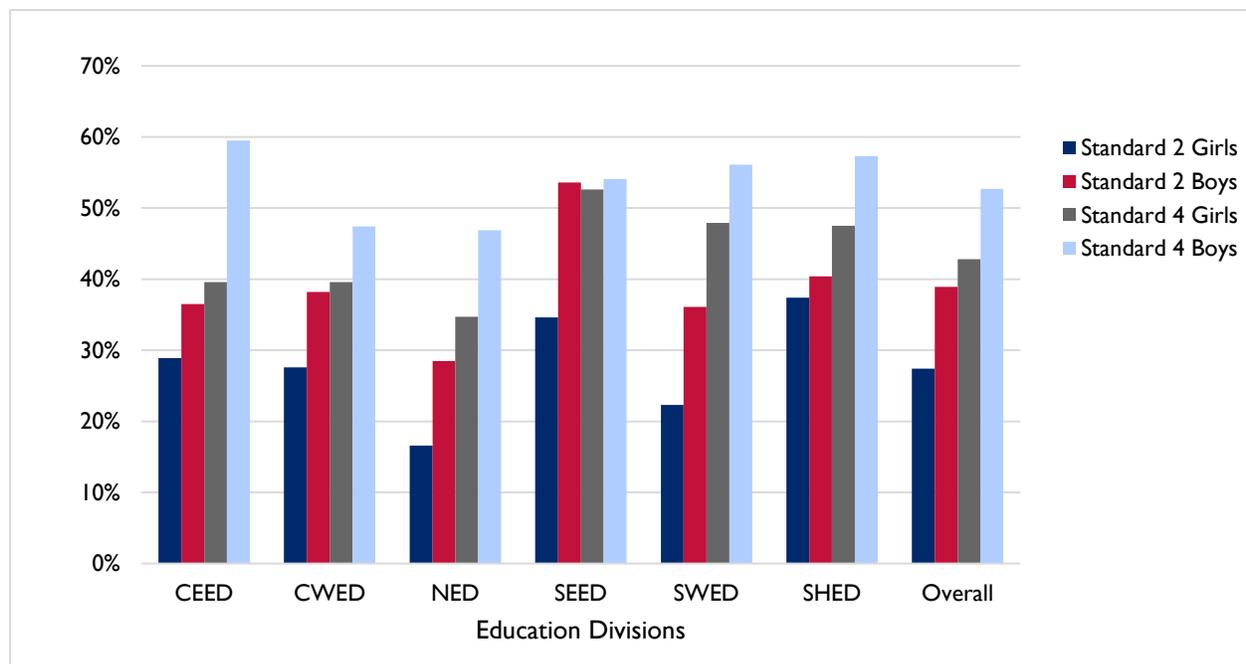


National Reading Assessment Learner Questionnaire 2016

The assessment team also looked at the percentage of learners that were above the expected age for their standard level (Figure 18). The team considered learners to be over age if they were two years older than the expected age for their standard. Based on national norms, the team expected Standard 2 learners to be between 7 and 8 and Standard 4 learners to be between 9 and 10; so, over age Standard 2 learners were 10 or older and over-age Standard 4 learners were 12 or older.

By weighted average, 33.2 percent of Standard 2 learners were over age, while 47.7 percent of Standard 4 learners were, suggesting high rates of learners repeating standards (as discussed above) or leaving school for a period of time and then returning. These rates are roughly comparable to the 2015 IE midline, which found 38 percent of Standard 2 and 46 percent of Standard 4 learners to be over age. There were statistical differences in the percentage of learners who reported being above the normal age for a given standard by division for both Standards 2 and 4, however these were only significant for Standard 4 learners at the 10 percent level ( $p\text{-value} < 0.1$ ). NED had particularly low rates of over age learners for both standards in comparison to the other divisions, at 31.4 percent of learners overall. The study team found that while urban learners were less likely to be overage than their rural counterparts, the difference was not statistically significant.

**Figure 18: Percent of Learners above the Expected Age by Standard, Education Division, and Sex**



*National Reading Assessment Learner Questionnaire 2016*

# V. FINDINGS: READING ASSESSMENT

## STAGES OF READING AND HOW THESE ARE MEASURED BY RA SUBTASKS

Teaching learners the essential reading skills to become successful and independent readers in early primary school is required for achieving lifelong literacy. This section of the NRA findings presents data on the extent to which learners in Malawi have proven to be independent readers.

In 2000, the United States National Reading Panel, a group of leading literacy and reading experts, identified five key skills in early phases of reading skills development: phonemic awareness, phonics, fluency, vocabulary, and comprehension (Coyne, Simons, Edwards, 2005). Phonemic awareness is the ability to hear and manipulate sounds in spoken words (Yopp, 1992). It is the understanding that spoken words and syllables are made up of sequences of speech sounds, and that the placement of the sounds varies (e.g., the /sssss/ in sit has the same sound as the /sssss/ in miss). One of the most compelling findings in beginning reading research is that phonemic awareness is a strong predictor of early reading success (University of Oregon Center on Teaching and Learning, 2009; Edwards, Simon, Coyne, 2005). Phonics is the ability to actually use phonetics to sound out words. Although learners learn these skills and the more advanced skills of fluency, vocabulary, and comprehension at different paces, they can generally be categorized into three stages: (i) pre-reading, (ii) initial reading, and (iii) fluency and comprehension (see ‘Stages of Reading’ in Annex VIII for more details). The Chichewa RA tool used in NRA is aligned with the foundational key skills and measures children’s abilities according to the three stages of reading. The definitions for each subtask in the RA used in the NRA and what they measure is shown in Table 30.

**Table 30: Description of Subtasks in the Reading Assessment Tool Used in NRA (Stages of Reading Shown in Parenthesis in Bold)**

Description of Subtasks <sup>29</sup>		
Subtask	Early reading skill	Skill demonstrated by learners’ ability to:
Letter name knowledge <b>(Initial reading)</b>	Letter recognition	Provide name of upper- and lowercase letters in random order
Syllable segmentation <b>(Pre-reading)</b>	Phonemic awareness	Segment words into phonemes (oral test)
Initial sound identification <b>(Pre-reading)</b>	Phonemic awareness	Identify initial sounds of words (oral test)
Syllable reading <b>(Initial reading)</b>	Alphabetic principle	Identify legal syllables in random order
Familiar-word reading <b>(Initial reading)</b>	Automatic word reading	Read simple and common words

<sup>29</sup> RTI & IRC. (2011). “Guidance Notes for Planning and Implementing the EGRA.”

Unfamiliar (non-word) reading <b>(Initial reading)</b>	Alphabetic principle	Use knowledge of letter sound correspondence to read non-words (decode the sounds of the letters to create words)
Oral reading fluency and paragraph reading with comprehension <b>(Fluency and comprehension)</b>	Oral reading fluency and comprehension	Read a story with accuracy, little effort, and at a sufficient rate and respond to literal and inferential questions about the text they have read
Listening comprehension <b>(Pre-reading)</b>	Oral comprehension	Respond correctly to literal and inferential questions about a text read to a learner

**SUMMARY OF NATIONAL READING ASSESSMENT RESULTS**

NRA 2016 data were weighted appropriately and analyzed and the results show the following:

- Malawian public school Standard 2 and 4 learners are generally performing well at the pre-reading level; more than half are reaching benchmarks in listening comprehension, and in syllable segmentation over half passed the benchmark in Standard 4 while nearly half reached it in Standard 2 (Fig. 19).
- But, the majority of learners could not read letters, syllables, or words fluently – the skills necessary for initial reading. This suggests that learners are not being taught/not learning basic reading skills, such as alphabetic understanding and decoding skills required for oral reading fluency.
- Also, by the end of Standard 4, the majority of public school learners are not fluent readers, or even initial readers (see Table 27: less than one percent of Standard 2 and less than ten percent of Standard 4 learners are able to read and comprehend standard-level text, as measured against Malawi’s benchmarks).
- Given that most learners do not have critical initial reading skills, it is not surprising that barely any learners were able to read standard-level text at either standard, nor answer comprehension questions after reading the text.

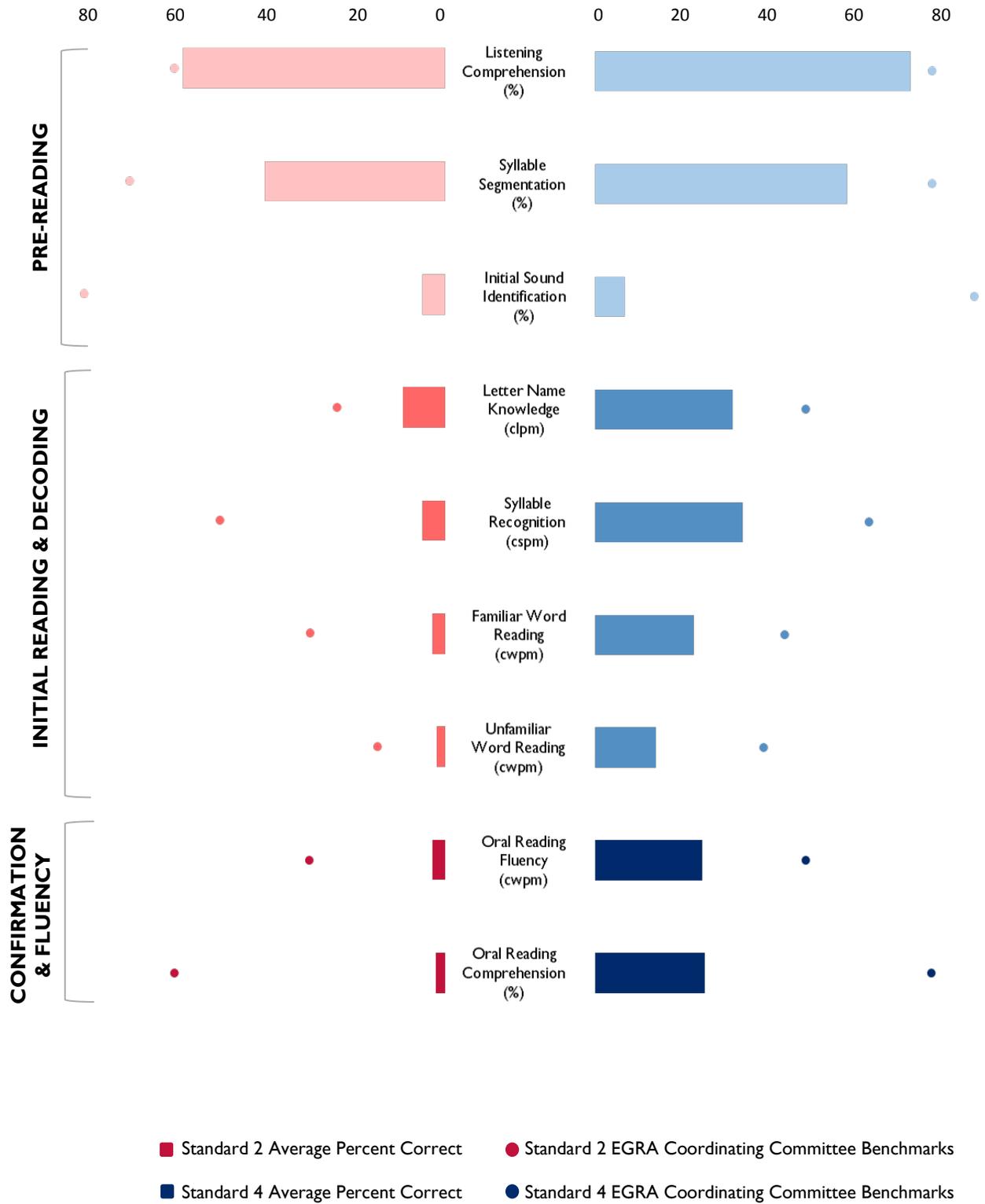
**Table 27: Percent of Learners who can read per Benchmarks<sup>30</sup>**

<b>% of Learners that are:</b>	<b>Standard 2</b>	<b>Standard 4</b>
Able to read letters	12.27%	22.64%
Able to read words	0.55%	10.83%
Able to read a passage and comprehend it	0.19%	6.67%

*Early Grade Reading Assessment 2016*

<sup>30</sup> This table has been added in order to explain the meaning of the subtasks in a more direct way so it could be more accessible to those not as familiar with EGRA tools. This table includes the percent of learners meeting benchmarks for letter name knowledge, familiar word reading, and oral reading comprehension, respectively.

**Figure 19: Average Percent Correct against Benchmarks, Standards 2 and 4**



## NATIONAL READING ASSESSMENT FINDINGS BY SUBTASK

This section reports results of the NRA by subtask, organized based on the three stages of reading development. Each section includes a brief description of the subtask(s), and the average weighted scores and the percentage of learners achieving the benchmarks, for Standards 2 and 4.

### Stage 1: Pre-Reading Skills

Pre-reading skills are comprised of listening comprehension, syllable segmentation, and initial sound identification. Results for each of the individual subtasks are presented below.

**Listening Comprehension:** This subtask assesses whether a learner can listen to a passage read aloud and answers several inferential and factual questions correctly with a word or simple statement. During the listening comprehension subtask, the enumerators read an unfamiliar fable approximately 30 words long aloud to the learner and then asked five comprehension questions. The assessment team calculated scores for this subtask according to the percentage of questions that the learner answered correctly. According to EGRA Coordinating Committee-recommended benchmarks, Standard 2 learners should be able to answer three out of the five questions correctly (60 percent) and Standard 4 learners should be able to answer 4 (80 percent).

As shown in Table 28, over half of learners in both Standards 2 and 4 are meeting the recommended benchmarks for listening comprehension. Based on the average percent correct for each standard (58 percent and 75 percent for Standards 2 and 4, respectively), Standard 2 learners were able to answer an average of 2.9 questions correct out of the total 5 questions asked, while Standard 4 learners answered an average of 3.75 out of 5. Zero scores were very low for this pre-reading subtask. Only 4 percent of learners in Standard 2 and 1 percent in Standard 4 were not able to correctly answer any listening comprehension questions correctly.

**Table 28: Percent of Learners Meeting EGRA Coordinating Committee-Recommended Listening Comprehension Benchmarks**

Standard	No. of Items	Mean Score (%)	EGRA Coordinating Committee-Recommended Benchmarks	% Reaching Benchmarks	% Scoring Zero
2	5	58%	60%	61%	4%
4	5	75%	80%	63%	1%

*Early Grade Reading Assessment 2016*

Findings indicate that for the pre-reading skill of listening comprehension, most learners could answer questions at their reading level, with over half of Standard 2 and Standard 4 learners meeting the benchmark for oral listening comprehension skills in the Chichewa language.

**Syllable Segmentation:** The syllable segmentation subtask measures the learner’s ability to hear phonemes (syllables) and segment words into syllables. Enumerators administer the subtask orally, and it is untimed. The assessor reads aloud ten words, one at a time, and then asks learners to segment the words into syllables. In order to meet the EGRA Coordinating Committee-recommended benchmarks,

learners must correctly segment seven of the ten words in Standard 2 (or 70 percent) and eight of the ten words in Standard 4 (or 80 percent).

Table 29 shows that nearly half (38 percent) of learners in Standard 2 were able to meet the recommended benchmark of 70 percent. This accomplishment is notable; however, 40 percent of Standard 2 learners were not able to correctly answer any syllable segmentation questions, demonstrating a lack of phonemic awareness skills among nearly half of the standard. Further, learners in this standard correctly segmented an average of 4 of the 10 words provided, which is 3 words below the 7 word benchmark.

Learners in Standard 4, given that they had more exposure and instruction, performed comparatively better than Standard 2 learners, with half of learners (52 percent) meeting the recommended benchmark for their level. However, the average score among these learners was 60 percent, meaning the average Standard 4 learner scored well below the benchmark. The percentage of zero scores was only 20 percent, however.

**Table 29: Percent of Learners Meeting EGRA Coordinating Committee-Recommended Syllable Segmentation Benchmarks**

Standard	No. of Items	Mean Score (%)	EGRA Coordinating Committee-Recommended Benchmarks (%)	% Reaching Benchmarks	% Scoring Zero
2	10	40%	70%	38%	40%
4	10	60%	80%	52%	20%

*Early Grade Reading Assessment 2016*

**Initial Sound Identification:** This subtask measures learners’ ability to hear and isolate the first sound in a word. The test is administered orally in a similar manner to the syllable segmentation subtask. Enumerators read a word aloud to a learner, who is then asked to identify the first sound, or phoneme, in the word. This test is also untimed and includes ten words. The EGRA Coordinating Committee-recommended benchmarks for this subtask are 80 percent and 90 percent for Standards 2 and 4, respectively.

Learners in both standards performed poorly on this subtask, in relation to the other pre-reading subtasks. As shown in Table 30, only 2 percent and 1 percent of learners in Standards 2 and 4, respectively, met the recommended benchmarks. Mean scores were also very low, at only 5 percent in Standard 2 and 7 percent in Standard 4. The high percentage of zero scores highlights the difficulty of this subtask. These low numbers are surprising, given that learners scored relatively well on syllable segmentation, which also measures phonemic awareness and decoding.

**Table 30: Percent of Learners Meeting EGRA Coordinating Committee-Recommended Initial Sound Identification Benchmarks**

Standard	No. of Items	Mean Score (%)	EGRA Coordinating Committee-Recommended Benchmarks (%)	% Reaching Benchmarks	% Scoring Zero
2	10	5%	80%	2%	85%
4	10	7%	90%	1%	78%

Early Grade Reading Assessment 2016

### Stage 2: Initial Reading and Decoding Skills

The skills under initial reading stage include letter name knowledge, syllable recognition, familiar word reading and unfamiliar word reading. Results on the individual subtasks are presented below.

**Letter Name Knowledge:** The first initial-reading subtask measures the most basic reading skill of letter recognition. It assesses learners’ ability to read the names of the letters of the alphabet accurately. Automaticity and fluency of letter name knowledge is a predictive skill for later reading success. For this subtask, enumerators provided learners with a page of 100 randomly distributed upper- and lowercase letters and asked them to read the names of as many letters as possible within one minute. The subtask is scored by the number of letters that a learner correctly named in one minute (correct letters per minute—clpm) out of a total of 100 possible letters. The MoEST benchmarks are 24 clpm for Standard 2 and 50 clpm for Standard 4.

As shown in Table 31, the majority of learners did not meet the recommended benchmarks in either standards, though it should be noted that a portion did meet them in each standard (12 percent in Standard 2 and 23 percent in Standard 4). The mean scores were well below the proposed benchmarks, however. Learners in Standard 2 were able to read an average of 9.25 correct letters per minute, and 32.69 correct letters per minute for learners in Standard 4.

Zero scores were low for Standard 4 learners, with only 7 percent of learners not being able to read a single letter. In Standard 2, zero scores were higher at 35 percent.

As teachers move away from the whole-word approach of teaching (which was how learners were taught in Malawi prior to the MTPDS and EGRA interventions in 2010) to using phonics, it is likely that there will be improvements in these skills among the learners. As shown above in Figure 13 earlier in this report, teachers indeed appear to have improved their teaching methods in some areas such as providing instructions on how to decode syllables and words (an improvement of 3 percent from 2014 to 2016), although they need to work on asking learners to recognize letters and say letter names and/or sounds. When such essential practices are adopted more, the learner skills for letter name knowledge subtask could improve as well.

**Table 31: Percent of Learners Meeting MoEST Letter Name Knowledge Benchmarks**

Standard	No. of Letters	Mean Score	MoEST Proposed Benchmarks	% Reaching Proposed Benchmarks	% Scoring Zero
2	100	9.25 clpm	24+ clpm	12%	35%
4	100	32.69 clpm	50 clpm	23%	7%

Early Grade Reading Assessment 2016

**Syllable Reading:** This subtask measures learners’ ability to read syllables (e.g., “mi”, “po,” or “mle”). For this subtask, enumerators give learners a table of 100 randomly ordered common syllables and ask them to read as many syllables as possible within one minute. The test is scored according to the number of correct syllables read per minute (cspm). In order to achieve the proposed benchmark, learners had to read 60 cspm in Standard 2 and 65 cspm in Standard 4. Because the Chichewa language is syllabic in nature, consisting of complex multi-syllable words, syllable reading is taught in language classes.<sup>31</sup> It is believed that this method will facilitate language acquisition.

Learners scored low on this subtask, particularly in Standard 2 (as shown in Table 32). Only 1 percent of learners reached the recommended benchmark in Standard 2, and 64 percent were unable to read any syllables. Further, the average score among learners in this standard was only 5.06 correct syllables per minute compared to the recommended benchmark of 60 correct syllables per minute.

Those in Standard 4 performed considerably better, with 13 percent meeting the benchmark; though on average, learners read only 35 correct syllables per minute compared to the recommended benchmark of 65 correct syllables per minute. Zero scores were low, with only 13 percent of learners being unable to read a single syllable.

**Table 32: Percent of Learners Meeting MoEST Syllable Reading Benchmarks**

Standard	No. of Syllables	Mean Score	MoEST Proposed Benchmarks	% Reaching Benchmarks	% Scoring Zero
2	100	5.06 cspm	60 cspm	1%	64%
4	100	35.00 cspm	65 cspm	13%	13%

Early Grade Reading Assessment 2016

**Familiar Word Reading:** This test measures learners’ ability to read familiar words that can be read through decoding and/or sight recognition. In this subtask, learners were given a list of 50 common, simple words and asked to read as many words as possible in one minute (e.g. *atate, chiwala, zovala*). This assesses

<sup>31</sup> The syllable-reading subtask was added to the original EGRA instrument because the Malawian language experts advised that Chichewa is considered to be syllabic in nature and syllable reading is believed to be essential for language acquisition, although this theory has not been substantiated by research. The language experts reported that Chichewa-language instruction usually involves teaching learners to read groups of syllables (ma-me-mi-mo-mu) instead of letter sounds and then joining them together to form words. This is called the “syllabic method” of language teaching.

whether children can process familiar sight words with accuracy and minimal effort. This is an early reading skill that facilitates learning of decoding, which can then be applied to unfamiliar words. Reading familiar words with fluency and accuracy is necessary to achieve oral reading fluency - the ability to decode and comprehend text simultaneously. The subtask is a timed test that is measured by the number of correct words read per minute (cwpm). The MoEST benchmarks are 40 cwpm in Standard 2 and 45 cwpm in Standard 4.

Similar to syllable reading, learners scored low in familiar word reading particularly in Standard 2. Only 1 percent of Standard 2 learners met the recommended benchmark, and 77 percent could not read any familiar words correctly. On average, learners could only read 2.71 familiar words per minute. Learners performed better in Standard 4, with 11 percent of learners reaching the benchmark and only 17 percent scoring zero. Standard 4 learners were able to read an average of 23.5 familiar words per minute. Overall, these results indicate that the majority of learners in both standards, but more so in Standard 2, could not read familiar words fluently.

**Table 33: Percent of Learners Meeting MoEST Familiar-Word Reading Benchmarks**

Standard	No. of Non-Words	Mean Score	MoEST Proposed Benchmarks	% Reaching Proposed Benchmarks	% Scoring Zero
2	50	2.71 cwpm	40 cwpm	1%	77%
4	50	23.5 cwpm	45 cwpm	11%	17%

*Early Grade Reading Assessment 2016*

**Non-Word Reading:** This subtask measures learners’ ability to decipher “words” that do not actually exist in Chichewa. Non-word reading (also called “invented-word” reading or “nonsense word” reading) provides a pure measure of learners’ decoding skills because it moves beyond reading familiar words based on sight recognition or memorization and measures learners’ ability to decode each letter and syllable and produce a linguistically correct word that follows the grammatical structure of Chichewa. During administration of this subtask, enumerators showed learners a table of 50 made-up words and asked them to read as many words as possible in one minute. The non-word-reading test is a timed test measured by the number of correct non-words read per minute (cwpm). The MoEST benchmarks are 15 cwpm in Standard 2 and 40 cwpm in Standard 4.

Learner results for this subtask were much lower than familiar word reading. As shown in Table 34, only 4 percent and 2 percent of learners in Standard 2 and 4 reached the recommended benchmarks for their levels, respectively. The benchmark for Standard 2 was only 15 correct words per minute, but learners could only read 1.86 correct words per minute on average. In Standard 4, learners were able to read 14.44 words, but the benchmark was 40 correct words per minute.

Zero scores were high in Standard 2, with 81 percent of learners being unable to read a single correct word, and 21 percent in Standard 4.

**Table 34: Percent of Learners Meeting EGRA Coordinating Committee-Recommended Non-Word Reading Benchmarks**

Standard	No. of Items	Mean Score	EGRA Coordinating Committee-Recommended Benchmarks	% Reaching Benchmarks	% Scoring Zero
2	50	1.86 cwpm	15 cwpm	4%	81%
4	50	14.44 cwpm	40 cwpm	2%	21%

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### Stage 3: Confirmation and Fluency

The subtasks under this stage of reading include oral reading fluency and comprehension. Results for the individual subtasks are presented below.

**Oral Reading Fluency:** This subtask measures learners' ability to read with fluency, accuracy, and comprehension. In this subtask, enumerators ask learners to read an oral reading passage of 56 words. After one minute, the enumerator records the number of words read correctly (cwpm) and then asks learners to answer comprehension questions about the story. The number of questions that enumerators asked learners to assess their comprehension varies according to how much of the story the learner is able to read in the minute. There is a question for every two lines or so of text completed by the learner with a total of five possible questions. The MoEST reading fluency benchmarks are 40 cwpm for Standard 2, and 50 cwpm for Standard 4.

As shown in Table 35, very few learners can read with fluency according to the MoEST benchmarks. On average, learners in Standard 2 read 2.74 correct words per minute, and only 1 percent of learners reached the benchmark. In Standard 4, the average score was higher at 25.37 correct words per minute but still only 9 percent of learners met the benchmark. Zero scores were also high, with 82 percent and 23 percent of learners in Standards 2 and 4 being unable to read any words.

**Table 35: Percent of Learners Meeting MoEST Oral Reading Fluency Benchmarks**

Standard	No. of Words in Story	Mean Score	MoEST Proposed Benchmarks	% Reaching Benchmarks	% Scoring Zero
2	56	2.74 cwpm	40 cwpm	1%	82%
4	56	25.37 cwpm	50 cwpm	9%	23%

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Table 36 shows the distribution of reading fluency scores for Standards 2 and 4. The majority of Standard 2 scores (89.5 percent) were at least 75 percent below the benchmark. About 82 percent of Standard 2 scores were zero, while only 0.7 percent of learners fully met the benchmark. Learners in Standard 4 scored higher, with over half (53.4 percent) of learners reaching at least 50 percent of the benchmark or higher. Only 22.9 percent of learners scored zero, and 9.2 percent of learners met the benchmark.

**Table 36: Oral Reading Scores by Standard and Percent of MoEST Benchmark Met**

Standard	0% Correct	Less than 25% of Benchmark	Met 25% of Benchmark	Met 50% of Benchmark	Met 75% of Benchmark	Met 100% of Benchmark
2	0 words	1-9 words	10-19 words	20-29 words	30-39 words	40 or more words
	82.0%	7.5%	4.3%	3.8%	1.7%	0.7%
4	0 words	1-12 words	13-25 words	26-37 words	38-49 words	50 or more words
	22.9%	7.4%	16.5%	24.6%	19.6%	9.2%

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**Reading Comprehension:** The Reading Comprehension score reflects the percentage of questions answered correctly out of the total possible (five). The comprehension questions consisted of four direct, fact-based questions and one inferential question. The number of questions asked depended on the point at which the learner stopped reading within one minute. If the learner only read half of the passage, he or she was only asked two or three questions; if the learner did not read one word at all, he or she was not asked any questions; and, if the learner completed the passage within one minute, he or she was asked all five questions. The proposed reading comprehension benchmark for Standard 2 is 80 percent correct responses, and for Standard 4, it is 80 percent correct responses.

As shown in Table 37, learners in Standard 2 answered an average of 0 of the five questions correctly. The large majority (91 percent) could not answer one comprehension question correctly, either because they did not read far enough to be asked questions or because they did not comprehend what they read. Learners in Standard 4 also performed poorly, but 7 percent met the benchmark which shows they are beginning to acquire comprehension skills.

**Table 37: Percent of Learners Meeting MoEST Reading Comprehension Benchmarks**

Standard	No. of Comprehension Questions	Mean Score (%)	MoEST Proposed Benchmarks	% Reaching Benchmarks	% Scoring Zero
2	5	2%	80%	0.2%	91%
4	5	26%	80%	7%	35%

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**Summary of Reading Fluency and Comprehension:** Results for the oral reading fluency and reading comprehension subtasks are closely related. Overall scores on the reading comprehension test indicate ability to read fluently with comprehension. Only 0.2 percent and 7 percent of learners met the MoEST reading comprehension benchmarks by standard 2 and 4, respectively, meaning that 99.8 percent of Standard 2 and 93 percent of Standard 4 learners could not read fluently with comprehension according to the MoEST’s benchmarks.

Further, the designers of the Early Grade Reading Assessment consider learners “readers” if they score above zero on the reading fluency subtask and are able to answer 80 percent (four out of five) of the

comprehension questions correctly. Only 8 Standard 2 learners (0.2 percent) and 226 Standard 4 learners (6.3 percent) can be considered “readers” by these criteria.

Poor performance on reading fluency and comprehension suggests that learners may have trouble with decoding and with reading fluently enough to comprehend. It is likely that the lack of decoding skills and alphabetic understanding indicated by low scores on initial reading subtasks are contributing to poor results on the subtasks in this section.

### **Findings by Geographic Location**

This section reports findings for a sample of subtasks disaggregated by the six education divisions. To compare results between divisions, the assessment team analyzed one subtask per reading stage, selecting the subtasks that had the most variation in that reading stage to better enable the team to highlight differences in reading performance across the six education divisions. The three subtasks presented below are: listening comprehension (pre-reading skill), letter name knowledge (initial reading skill), and reading comprehension.

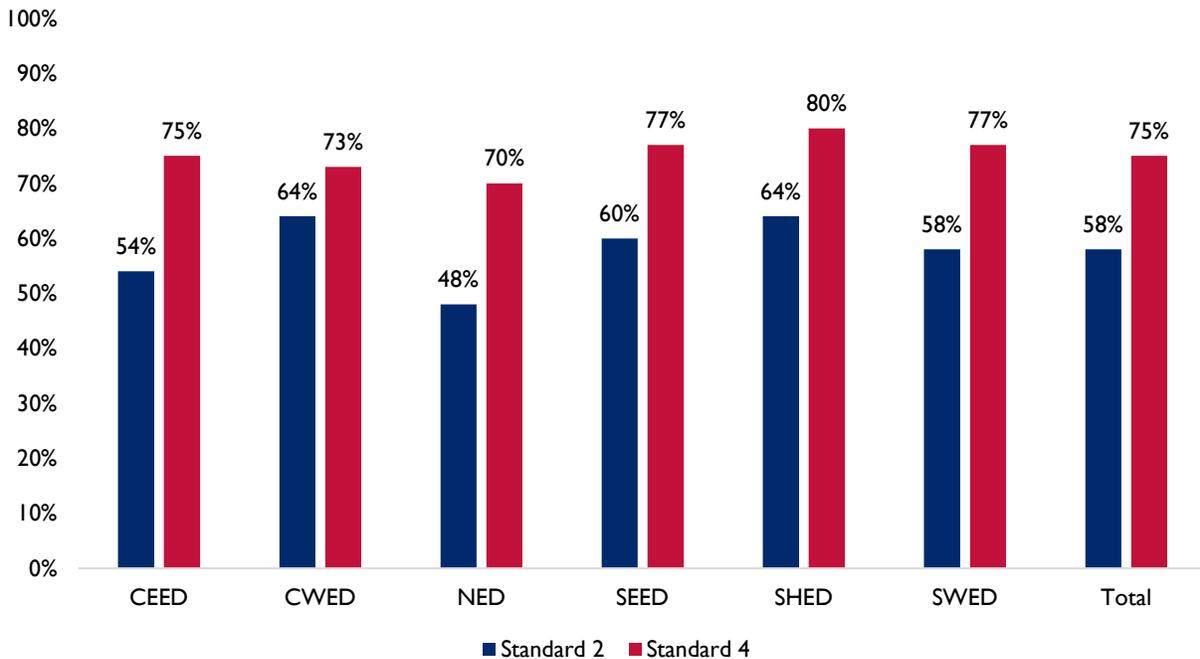
#### ***Listening Comprehension by Education Division***

As can be seen in Figure 20 and Table 38 the national average percent of learners meeting the benchmark was 61 percent for learners in Standard 2 and 63 percent for learners in Standard 4. The divisions with the highest proportion of learners meeting the benchmark was SHED for both standards, which scored 11 percentage points above the means for both standards. All of the education divisions had more than 50 percent of its learners meeting the benchmarks, except for Standard 2 in NED where 48% of learners met the benchmark. NED ranked the lowest overall, with 48 percent and 54 percent of learners meeting the benchmark in Standards 2 and 4, respectively. It is likely that NED ranked the lowest because Chichewa is not the first language of most people in this region.<sup>32</sup>

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<sup>32</sup> MoEST (2010), *Primary Achievement Sample Survey Report*. Likuni Press: Lilongwe, on primary school achievement levels confirmed the low levels of Chichewa use in the northern region. The study included a sample of 10,067 learners, including 2,523 (25 percent) from NED. It found that only 3 percent of learners in NED could speak Chichewa whereas 91 percent of those in CEED, 97 percent of those in CWED, 70 percent of those in SEED, 84 percent of those in SWED, and 98 percent of those in SHED could.

**Figure 20: Average Listening Comprehension Scores by Standard and Division**



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**Table 38: Percent Meeting MoEST Benchmarks and Deviation from Means, Listening Comprehension**

Division	Standard 2	Deviation from national average (+/-)	Standard 4	Deviation from national average (+/-)
CEED	55%	-6%	63%	0%
CWED	69%	8%	61%	-2%
NED	48%	-13%	54%	-9%
SEED	64%	3%	67%	4%
SHED	72%	11%	74%	11%
SWED	62%	1%	68%	5%
<b>National Average</b>	<b>61%</b>	<b>-</b>	<b>63%</b>	<b>-</b>

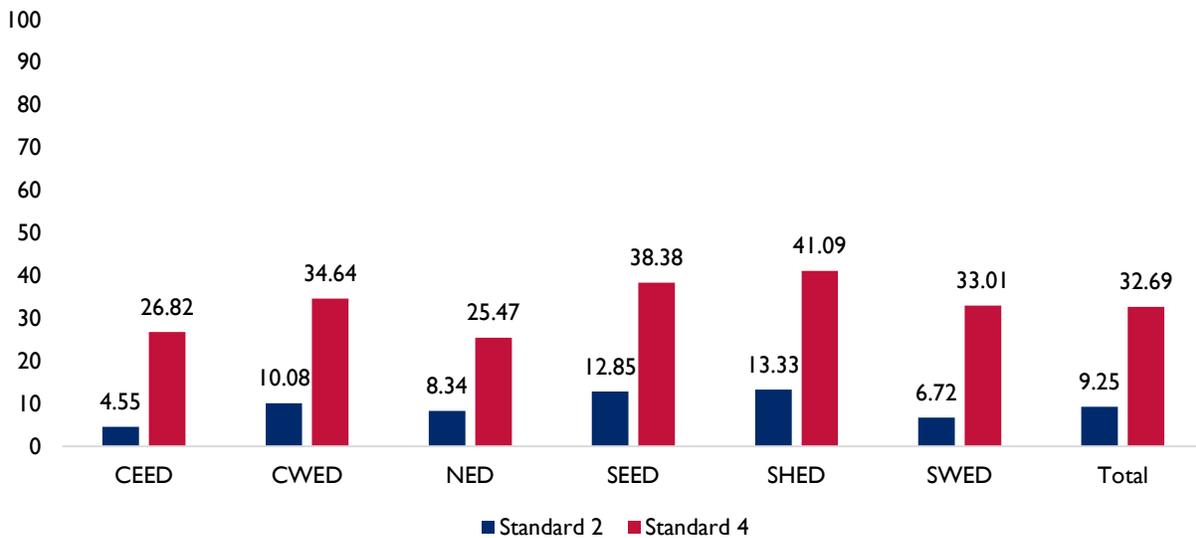
Early Grade Reading Assessment 2016; Deviation is a simple difference between the divisional and national average – it is positive when above national average and negative when below national average.

**Letter Name Knowledge by Education Division**

As shown in Figure 21 and Table 39, the national average percent of learners meeting the recommended benchmark for the letter name knowledge subtask was 12 percent in Standard 2 and 23 percent in Standard 4.

Similar to listening comprehension, learners in SHED division scored the highest with 19 percent and 41 percent of learners in Standard 2 and 4 meeting the benchmark, respectively. Learners in CEED scored the lowest, with only 4 percent and 12 percent meeting the benchmarks in Standards 2 and 4, respectively.

**Figure 21: Average Letter Name Knowledge Scores by Standard and Division**



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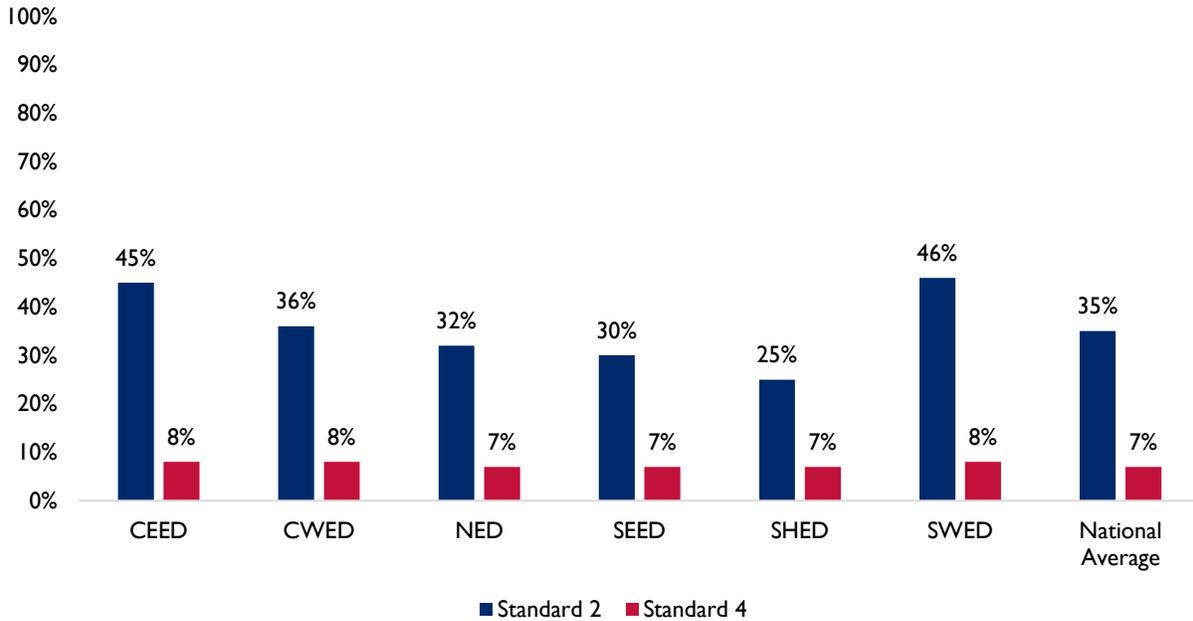
**Table 39: Percent Meeting Benchmarks and Deviation from the Means, Letter Name Knowledge**

Division	Standard 2	Deviation from mean (+/- mean)	Standard 4	Deviation from mean (+/- mean)
CEED	4%	-8%	12%	-11%
CWED	14%	2%	25%	2%
NED	10%	-2%	10%	-13%
SEED	19%	7%	32%	9%
SHED	19%	7%	41%	18%
SWED	8%	-4%	23%	0%
<b>National Average</b>	<b>12%</b>	<b>-</b>	<b>23%</b>	<b>-</b>

Early Grade Reading Assessment 2016; Deviation is a simple difference between the divisional and national average – it is positive when above national average and negative when below national average.

The assessment team presents the percentage of zero scores on the letter name knowledge subtask by division in Figure 22. SWED showed the highest percentage of zero scores in Standard 2 at 46 percent, followed closely by CEED which had 45 percent zero scores. In Standard 4, zero scores were similar among all of the divisions, at about 7-8 percent.

**Figure 22: Percent of Learners Receiving Zero Scores on Letter Name Knowledge by Division**



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**Reading Comprehension by Education Division**

As shown in Table 40, learner scores in the reading comprehension subtask were low across all education divisions. In Standard 2, scores ranged between 0 to 0.6 percent, and Standard 4 scores varied between 2.5 and 10.4 percent, with a national mean of 6.7 percent meeting the benchmark and CWED and SEED scoring the highest.

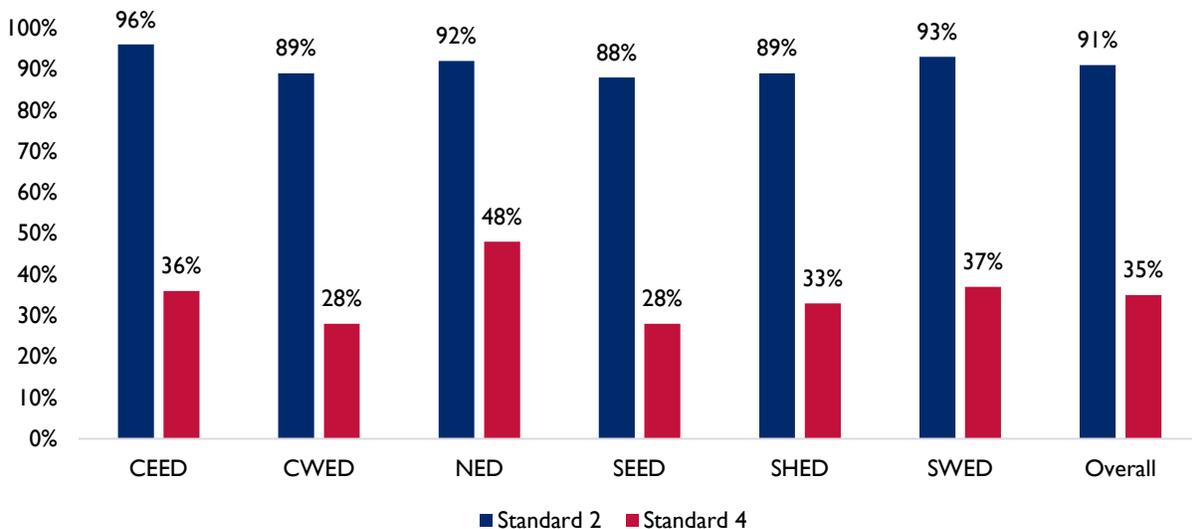
**Table 40: Percent Meeting Benchmarks and Deviation from the Means, Reading Comprehension**

Division	Standard 2	Deviation from mean (+/- mean)	Standard 4	Deviation from mean (+/- mean)
CEED	0%	-0.2%	5.1%	-1.6%
CWED	0.6%	0.4%	10.4%	3.7%
NED	0%	-0.2%	2.5%	-4.2%
SEED	0.4%	0.2%	10.1%	3.4%
SHED	0.1%	-0.1%	5.3%	-1.4%
SWED	0%	-0.2%	4.3%	-2.4%
National Average	0.2%	-	6.7%	-

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As displayed in Figure 23, there was a high proportion of learners in both standards who could not read and comprehend a standard appropriate short story fluently. More than 90 percent of learners in Standard 2 scored zero on this subtask. The percent of zero scores was similar across education divisions, but ranged between 88 percent in SEED and 96 percent in CEED. In Standard 4, zero scores were much lower with a national average of 35 percent. The zero scores ranged from just 28 percent in CWED and SEED to 48 percent in NED.

**Figure 23: Percent Receiving Zero Scores on Reading Comprehension by Education Division**



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### Findings by Sex

Table 41 illustrates scores for boys and girls across all subtasks. In both Standards 2 and 4, no difference between boys and girls were found for subtasks of listening comprehension, initial sound identification and reading comprehension. But, significant differences were noticed for other subtasks, especially for oral

reading fluency for both Standards in that girls out-performed boys. Indeed, generally, girls performed better than boys in most subtasks in both Standards.

**Table 41: Learner Scores by Sex, Standards and Subtasks**

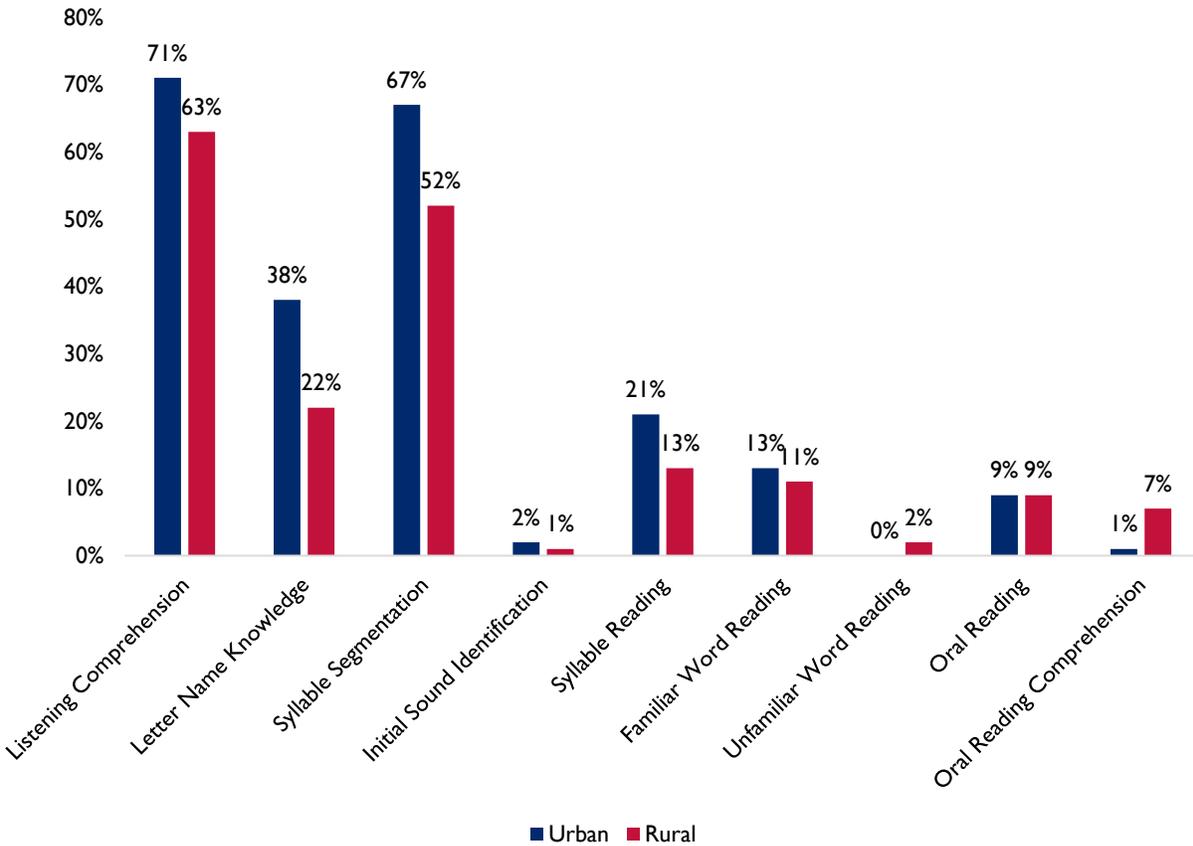
Subtask	Girls			Boys			T-Test		
	N	Mean	Std. Error	N	Mean	Std. Error	T-Statistic	p-value	Standard Error
<b>Standard 2</b>									
Listening Comprehension	1,782	57%	-0.01	1,800	59%	-0.01	-1.18	0.283	.0197375
Letter Name Knowledge**	1,782	10.08	-0.62	1,800	8.42	-0.5	2.61	0.040	.6347432
Syllable Segmentation**	1,782	42%	-0.02	1,800	38%	-0.01	2.49	0.047	.0142613
Initial Sound Identification	1,782	6%	-0.01	1,800	5%	-0.01	1.23	0.265	.0036905
Syllable Reading**	1,782	5.83	-0.48	1,799	4.3	-0.42	3.60	0.011	.4247936
Familiar Word Reading**	1,782	3.06	-0.29	1,799	2.36	-0.25	3.50	0.013	.2002969
Unfamiliar Word Reading***	1,782	2.12	-0.21	1,799	1.6	-0.16	4.12	0.006	.1254033
Oral Reading**	1,782	3.06	-0.32	1,800	2.41	-0.27	2.85	0.029	.2294083
Reading Comprehension	1,782	3%	0	1,800	2%	0	1.61	0.158	.0026642
<b>Standard 4</b>									
Listening Comprehension	1,789	73%	-0.01	1,803	76%	-0.01	-1.83	0.117	.0130824
Letter Name Knowledge	1,789	33.54	-0.74	1,801	31.79	-0.71	1.25	0.256	1.394393
Syllable Segmentation*	1,789	62%	-0.01	1,803	59%	-0.01	2.31	0.060	.0155197
Initial Sound Identification	1,789	7%	-0.01	1,803	7%	-0.01	0.46	0.663	.0066238
Syllable Reading**	1,789	37.39	-0.91	1,800	32.5	-0.82	2.97	0.025	1.645697
Familiar Word Reading**	1,788	25.2	-0.6	1,800	21.72	-0.59	3.29	0.017	1.057175
Unfamiliar Word Reading**	1,788	15.7	-0.45	1,800	13.11	-0.36	3.06	0.022	.8489518
Oral Reading**	1,789	27.01	-0.68	1,803	23.66	-0.63	2.89	0.028	1.159243
Reading Comprehension	1,788	27%	-0.01	1,803	26%	-0.01	0.83	0.438	.0159673

Asterisks indicate statistical significance: \*=p-value<0.1, \*\*= p-value<0.05, \*\*\*=p-value<0.01  
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## Findings by Type of Location (Urban Versus Rural)

The sample consists of 300 urban learners from 15 schools and 6,874 rural learners from 345 schools. Given the small number of urban learners to compare with rural learners, the statistical analysis below should be interpreted with caution.

**Figure 24: Percent of Standard 4 Learners Meeting Benchmarks: Urban vs. Rural**



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**Table 42: Comparison of Rural and Urban Learner Scores Across All Subtasks by Standard**

Subtask	Urban	Average % correct	Std. Dev.	Rural	Average % correct	Std. Dev.	T-test	p-value	Std. Error
	N			N					
<b>Standard 2</b>									
Listening Comprehension	150	63%	-0.02	3,432	58%	-0.02	1.77	0.13	0.03
Letter Name Knowledge	150	14.07	-2.79	3,432	9.18	-1.24	1.9	0.11	2.58
Syllable Segmentation	150	47%	-0.11	3,432	40%	-0.03	0.65	0.54	0.11
Initial Sound Identification	150	11%	-0.07	3,432	5%	-0.02	1.02	0.35	0.06
Syllable Reading	149	8.5	-2.21	3,432	5.01	-0.69	1.61	0.16	2.17
Familiar Word Reading	149	5.41	-1.69	3,432	2.67	-0.44	1.71	0.14	1.61
Unfamiliar Word Reading	149	3.5	-1.03	3,432	1.83	-0.26	1.65	0.15	1.01
Oral Reading	150	5.37	-1.65	3,432	2.7	-0.44	1.78	0.13	1.50
Reading Comprehension	150	5%	-0.01	3,432	2%	-0.01	1.68	0.14	0.01
<b>Standard 4</b>									
Listening Comprehension	150	78%	-0.02	3,442	74%	-0.01	1.59	0.16	0.02
Letter Name Knowledge**	150	40.45	-3.12	3,440	32.55	-2.13	2.46	0.05	3.21
Syllable Segmentation	150	70%	-0.07	3,442	60%	-0.02	1.21	0.27	0.08
Initial Sound Identification*	150	14%	-0.05	3,442	7%	-0.02	2.06	0.09	0.03
Syllable Reading*	150	42.75	-3.68	3,439	34.86	-1.04	2.14	0.08	3.69
Familiar Word Reading*	150	28.91	-2.52	3,438	23.4	-0.81	2.2	0.07	2.50
Unfamiliar Word Reading	150	17.4	-1.82	3,438	14.38	-0.47	1.64	0.15	1.85
Oral Reading	150	29.96	-2.57	3,442	25.29	-0.8	1.92	0.10	2.43
Reading Comprehension	150	32%	-0.05	3,442	26%	-0.01	1.21	0.27	0.04

Asterisks indicate statistical significance: \*= $p$ -value $<0.1$ , \*\*= $p$ -value $<0.05$ , \*\*\*= $p$ -value $<0.01$   
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Table 42 presents reading performance by learners in urban and rural schools, and Figure 24 compares this performance with benchmarks. As shown in Table 42, among Standard 2 learners no statistically significant difference was noticed for any of the subtasks by the locations. However, among Standard 4 learners, statistically significant differences were noted for letter name knowledge, initial sound identification, syllable reading, and familiar word reading. These are pre and initial reading skills indicating that locations may not likely affect learners' oral reading fluency and reading comprehension skills.

# VI. FINDINGS ON FACTORS PREDICTING READING ACHIEVEMENT

In order to draw policy relevant conclusions and recommendations, we examine the factors that are associated with learner reading skills. To that end, we conducted further examination of learner scores in oral reading fluency and results are presented below. Using statistical methods, we analyzed relationships between oral reading fluency and potential prediction variables from the head teacher, teacher, and learner questionnaires as well as the school climate and classroom observation protocols. Specifically, we specified multiple Tobit regression models, which allow results to be examined even when there is clustering around the lower and/or upper score bounds (ceiling and floor effects). The team found strong floor effects when using Ordinary Least Squares (OLS) regression models because there were many zero scores. However, it is not necessarily true that all zero scores are the same, meaning that learners who scored zero may have differing levels of capability that the assessment tool (the EGRA) simply cannot pick up. Tobit works to correct for this challenge by predicting the change in oral reading scores for learners whose scores fall above zero, weighting for the probability of scoring higher than zero. It then reveals the isolated effects of various factors on predicted values of reading scores while controlling for other factors.

Based on the literature review conducted for this assessment as well as findings from the 2014 National Reading Assessment, SI team postulated plausible factors that relate to oral reading fluency. The factors include learner, household, school, teacher, and community factors. The team analyzed the variables in various combinations in several different regression models that looked at the association of learner scores on oral reading fluency subtask of the RA. The following types of factors were tested on their effect on learner reading scores:

- Household Resources and Support
- Learner Health and Food Security
- Learner Attitudes toward School
- School and Classroom Resources
- Teacher Training and Use of Best Practices in Teaching
- Community Involvement in the School

The assessment team examined multiple variables that are conceptually plausible from each of the types of factors listed above and selected those that remained stable across various regression specifications. Below, the assessment team presents only those factors that were found to be (a) most consistently and robustly correlated with oral reading fluency, (b) of expressed interest to USAID (such as class size and teacher best practices), or (c) control variables that helped ensure accuracy and precision of the estimates (such as PCA for school resources). The assessment team additionally conducted regressions by standards and learner sex since summary statistics discussed earlier on this report on learner characteristics showed significant variations by standards and sex. This heterogeneity might be explained by the possibility that some factors differentially affect learners of different ages and sex or different levels of reading fluency. See Table 43 below for regression results overall, with results disaggregated by standard and sex reported in Table 44 and 45 followed by a discussion.

**Table 43: Regressions Results for Oral Reading Fluency (All Standards and Sexes)**

Independent Variable	Marginal Coefficient	Standard Error	z-Statistic	P-value
Learners are read to at home often (>2 times per week) (dummy)	3.02	0.40***	7.48	0.00
Learner takes books home from school (dummy)	0.61	0.50	1.22	0.22
Learner age (in years)	-0.56	0.12***	-4.71	0.00
Learner is a repeater (dummy)	-1.8	0.42***	-4.27	0.00
Learner has porridge (phala) for breakfast (dummy)	0.87	0.34**	2.57	0.01
Learner has tea for breakfast (dummy)	0.59	0.30*	1.99	0.05
Learner reports feeling tired at school (dummy)	-0.62	0.43	-1.45	0.15
PCA for learner household assets	0.06	0.09	0.61	0.54
Class size (number of learners)	0.00	0.00	0.34	0.74
PCA for essential teaching practices	0.17	0.16	1.06	0.29
Teacher demonstrates effective classroom management (dummy)	1.13	0.50**	2.26	0.02
PCA for school resources	0.06	0.15	0.38	0.71
Learner is in Standard 4 (dummy)	17.56	0.60***	29.23	0.00

Asterisks indicate statistical significance: \*= $p$ -value<0.1, \*\*= $p$ -value<0.05, \*\*\*= $p$ -value<0.01

**Table 44: Regressions Results for Oral Reading Fluency – Standard 2**

Independent Variable	Standard 2 (Girls + Boys)		Standard 2 Girls		Standard 2 Boys	
	Marginal Coefficient	Standard Error	Marginal Coefficient	Standard Error	Marginal Coefficient	Standard Error
Learners are read to at home often (>2 times per week) (dummy)	2.75	0.52***	2.97	0.68***	2.35	0.60***
Learner takes books home from school (dummy)	0.09	0.50	-0.55	0.64	0.67	0.57
Learner age (in years)	0.02	0.12	-0.29	0.18	0.28	0.13**
Learner is a repeater (dummy)	-0.56	0.44	-0.55	0.55	-0.55	0.57
Learner has porridge (phala) for breakfast (dummy)	0.53	0.34	0.78	0.49	0.27	0.42
Learner has tea for breakfast (dummy)	0.67	0.36*	0.67	0.48	0.67	0.52
Learner reports feeling tired at school (dummy)	-0.59	0.44	-1.33	0.62**	0.05	0.50
PCA for learner household assets	0.16	0.09*	0.16	0.13	0.18	0.11
Class size (number of learners)	0.00	0.00	-0.00	0.01	0.01	0.01
PCA for essential teaching practices	0.15	0.17	0.27	0.20	0.07	0.21
Teacher demonstrates effective classroom management (dummy)	1.47	0.51***	1.64	0.67**	1.19	0.61*
PCA for school resources	-0.14	0.15	-0.29	0.19	0.02	0.16

Asterisks indicate statistical significance: \*= $p$ -value<0.1, \*\*= $p$ -value<0.05, \*\*\*= $p$ -value<0.01

**Table 45: Regressions Results for Oral Reading Fluency – Standard 4**

Independent Variable	Standard 4 (Girls + Boys)		Standard 4 Girls		Standard 4 Boys	
	Marginal Coefficient	Standard Error	Marginal Coefficient	Standard Error	Marginal Coefficient	Standard Error
Learners are read to at home often (>2 times per week) (dummy)	3.81	0.76***	2.61	0.99***	5.08	1.06***
Learner takes books home from school (dummy)	1.75	0.92*	1.31	1.25	2.11	1.01**
Learner age (in years)	-1.75	0.24***	-1.98	0.36***	-1.45	0.32***
Learner is a repeater (dummy)	-4.91	0.85***	-5.50	1.13***	-4.32	1.12***
Learner has porridge (phala) for breakfast (dummy)	1.68	0.74**	1.75	1.06*	1.89	0.85**
Learner has tea for breakfast (dummy)	0.65	0.69	1.15	0.93	0.06	1.03
Learner reports feeling tired at school (dummy)	-0.50	0.85	-0.14	1.30	-0.93	1.02
PCA for learner household assets	-0.12	0.20	-0.29	0.26	0.12	0.24
Class size (number of learners)	0.00	0.01	0.01	0.01	0.00	0.01
PCA for essential teaching practices	0.24	0.24	0.35	0.32	0.13	0.27
Teacher demonstrates effective classroom management (dummy)	0.68	0.97	1.07	1.31	0.28	1.02
PCA for school resources	0.44	0.29	0.56	0.37	0.33	0.32

Asterisks indicate statistical significance: \*=p-value<0.1, \*\*= p-value<0.05, \*\*\*=p-value<0.01

The regression results obtained by combining learners of both sexes and Standards 2 and 4 are shown in

Table 43 and indicate the following: factors such as learner is read to at home often (>2 times per week), learner reports eating porridge (*phala*) for breakfast, learner reports to have tea for breakfast, and teachers use of effective classroom management significantly predict higher oral reading fluency while higher learner age and repeating a class significantly predict lower oral reading fluency. However, results obtained through disaggregation of learners by standard and sex, as shown in Tables 47 and 48, indicate that only one indicator – learner is read to often at home (>2 times per week) – remains significantly positive across all models, and some variation exists in predictors of oral reading fluency by standards and sex. The following sections will explore the predictors in greater detail and offer additional analysis to contextualize the regression findings.

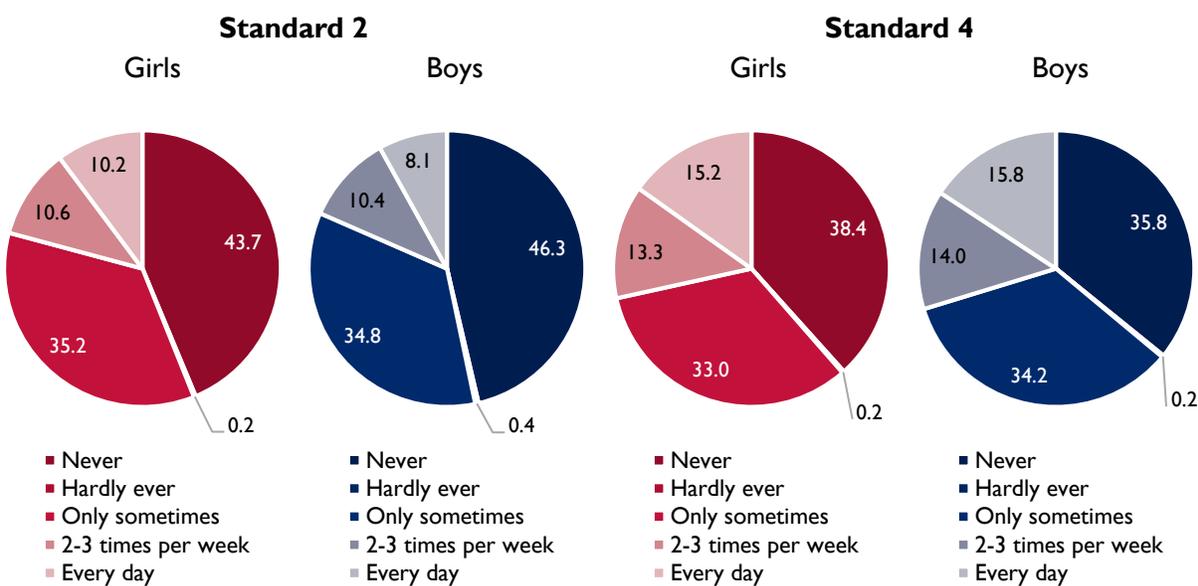
### **Household Members Read to Learners**

One of the strongest predictors of oral reading fluency is whether children report being read to at home on a regular basis (i.e., more than 2 times per week). Learners who are read to frequently at home score approximately 3 correct words per minute (or points) higher on the oral reading fluency subtask relative to those who report being read to less frequently (i.e., sometimes, rarely, or never). The positive coefficient of being read to at home also remain large and significant when disaggregated by sex and standard. Both the 2014 NRA and impact evaluation baseline in 2013, conducted by SI, also showed that whether learners reported being read to at home is one of the significant factors that was most consistently correlated with the predicted value of learner reading outcomes, and its predictive capability on learner reading scores was high.

There are some differences in the magnitude of the effect by sex, however, as reported in and Table 45. Specifically, being read to at home appear to have a slightly higher effect on Standard 2 girls than boys (coefficient of 2.97 versus 2.35). Recall that Standard 2 girls scored on average at 3.06 cwpm in oral reading fluency while Standard 2 boys on average scored 2.41 (Table 41 - Learner Scores by Sex, Standards and Subtasks). Data also show that more Standard 2 girls reporting to be read to at home than Standard 2 boys. It is likely related to household beliefs that young girls need more support than boys. A qualitative study consisting of ten focus group discussions (FGDs), conducted by the evaluation team in May 2014 suggested that parents may have been more likely to read to girls than boys because they suspected that girls needed more assistance than boys. Furthermore, fathers reported believing that girls are weaker than boys and, thus, require more coddling and support in school. Mothers also mentioned that young girls often stay home after school and therefore easier to read to them than boys.

However, In Standard 4, while the factor was significantly correlated to learning scores, the coefficient is higher for boys than girls (5.08 versus 2.61). Recall that it was 27.01 cwpm in oral reading fluency for Standard 4 girls while it was 23.66 for Standard 4 boys (Table 41 – Learner Scores by Sex, Standards and Subtasks). The data also show that more Standard 4 boys reported being read to at home relative to Standard 4 girls, as shown in Figure 25 below. It is likely related to household beliefs that as boys grow, they are more inclined to engage in playing than reading at home and require sitting them down regularly to study, as indicated in a qualitative study conducted by SI in 2014 with parents. Mothers mentioned that as girls get older, they tend to get engaged in domestic chores allowing little time for families to read to them.

**Figure 25: Frequency of Being Read to at Home, by Standard and Sex**



The large, robust relationship between being regularly read to at home and oral read fluency suggests an excellent opportunity for programming which encourages parents and guardians to read to their children on a regular basis. As shown in Figure 25, over two-thirds of children—regardless of sex and standard—are not being read to on a regular basis. Programs encouraging reading at home, however, should consider parents’ own reading capabilities. Indeed, it is of little surprise that 41.1 percent of children in the sample report never being read to at home, as 38.7 percent of adults in Malawi are classified as illiterate.<sup>33</sup> In areas where guardian literacy is low, after-school reading clinics staffed by community volunteers may offer an alternative option for ensuring children are given the opportunity to more regularly practice reading outside of the classroom.

### Learners Take Books Home from School

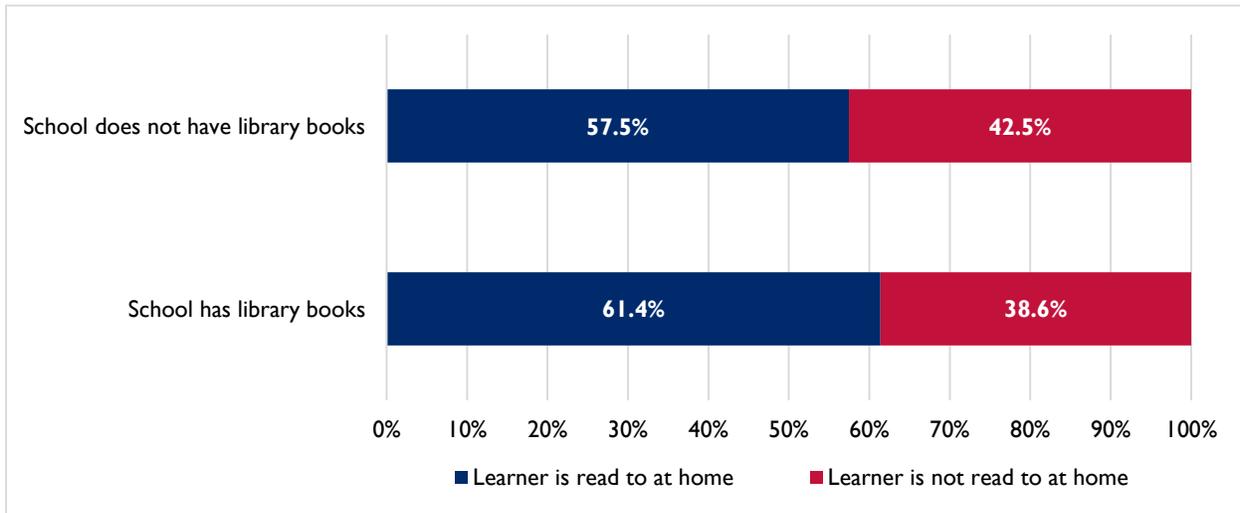
Teachers reporting that learners take books home from school is significantly associated with a 2.11 point increase on oral reading fluency for Standard 4 boys. The factor was also positively associated with reading scores among Standard 4 girls (1.31 points) and Standard 2 boys (0.28 points), albeit statistically insignificant. Similar results showing positive association between reading fluency and taking books home to read was found in the 2014 NRA and baseline impact evaluation.

Overall, approximately 65.4 percent of sampled teachers reported that learners from their class take textbooks and/or library books home from school, however access to books for home use varies. Of the 34.6 percent of classrooms that reported children not taking books home, for example, two-thirds do not have library books available at the school. Access to library books is found to be highly associated to whether children report being read to at home as well as whether they report reading independently at home. As shown in Figure 26, when library books are available at schools, the number of learners reporting being read to at home goes up by 3.9 percentage points relative to those who do not have access to library books (p-value=0.001). Similarly, the number of learners who report reading at home on their own increases 2 percentage points when library books are available at school (p-value=0.088). Despite this,

<sup>33</sup> [http://www.unicef.org/infobycountry/malawi\\_statistics.html](http://www.unicef.org/infobycountry/malawi_statistics.html)

65.2 percent of learners do not have access to library books (based on enumerator observations). Given the strong relationship between reading outside of school and oral reading performance, policymakers should consider how to make reading materials more readily available for children and their guardians to use at home.

**Figure 26: Learners Report Being Read to at Home, by Library Books Access at School**

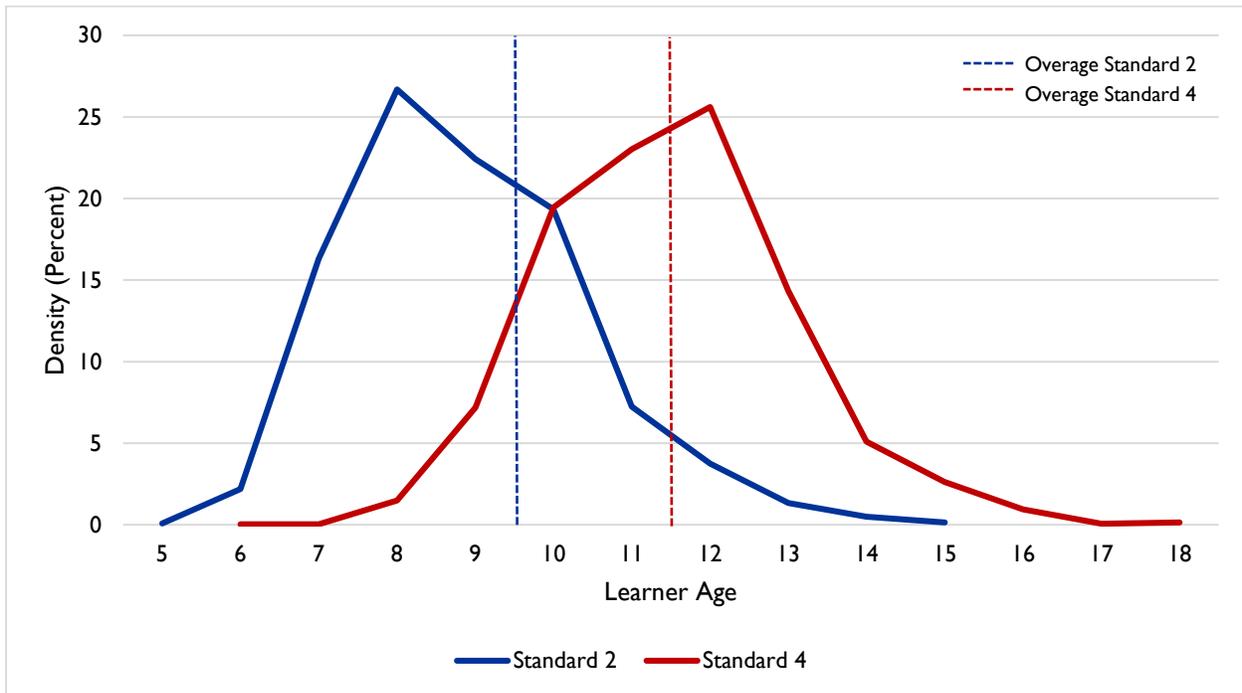


Furthermore, the reason some learners may not take books home was because their teachers did not allow them to. For example, many teachers reported that, during class, they do not hand out all of the textbooks they have been provided since they are worried that learners will not take good care of them (37.1 percent) or that learners will lose them (12.8 percent).

### Learner Age and Repetition

As shown in Table 43, learner age is a significant, negative predictor of oral reading fluency, with learner scores dropping 0.56 points for each additional year of age learners report (controlling for grade and present repeater status). This negative relationship is primarily driven by Standard 4 learners, with boys and girls scoring 1.45 and 1.98 points less, respectively, on oral reading fluency for each additional year of age that they report. As shown in Figure 27, there is considerable overaging among Standard 4 learners, with approximately one half (48.8 percent) of Standard 4 learners being classified as overage (i.e., over 12 years old) whereas roughly one-third (32.3 percent) of Standard 2 learners are overaged (over 10 years old). The reasons underlying the negative relationship between age and oral reading fluency are not clear, as one would expect that being older would afford benefits such as more exposure to reading and language in general—particularly when factors such as socio-economic status and past repetition are controlled for, as they are in the models in Tables 43-45. This is indeed true for younger students, with Standard 2 boys scoring 0.28 points higher on oral reading fluency for each year of age that they report (the relationship is negative and insignificant for Standard 2 girls). It may be the case that older children in Standard 4 are less likely to attend lessons regularly, as they may face more demands outside of school such as helping with household chores and engaging in labor or farming. In addition, the present data do not reflect whether Standard 4 learners had repeated prior to the most recent year (i.e., in Standards 1, 2 or 3) which may be a contributing factor to the negative relationship between age and oral reading fluency. The reason underlying this negative relationship is an area for further research.

**Figure 27: Age Distribution, by Standard**



While some teachers and head teachers reported learner underaging as a contributing factor to repetition (2.6 percent and 2.2 percent, respectively), very few sampled learners would be classified as underage by the criteria specified earlier (i.e., 6 years of age or younger for Standard 2 learners and 8 years of age or younger for Standard 4 learners). By this definition, only 2.3 percent of Standard 2 learners sampled can be classified as underage whereas just 1.5 percent of Standard 4 learners sampled were underage. In contrast to teacher beliefs, sampled underage learners performed better on average on the oral reading fluency subtask, with underage Standard 2 performers scoring 1.9 points higher (p-value=0.039) than non-underage Standard 2 learners and underage Standard 4 learners scoring 11.3 points higher (p-value=0.000) than their non-underage counterparts.

Of all the independent variables considered, repeater status is the strongest negative predictor of reading fluency, with current repeaters scoring 1.8 points less than non-repeaters on the oral reading subtask. This negative relationship loses significance for Standard 2 learners when disaggregated by standard and sex, but remains significant and negative for Standard 4 learners, with a coefficient of -5.5 on repeater status for Standard 4 girls and -4.32 for Standard 4 boys. Interestingly, Standard 4 learners sampled were less likely to be repeaters than Standard 2 learners, with 27.4 percent of Standard 2 learners repeating in the current school year and only 17.8 percent of Standard 4 learners doing the same (p-value=0.000). This may be because the survival rate<sup>34</sup> to Standard 2 in sampled schools is 91.1 percent whereas it is 74.0 percent for Standard 4, suggesting would-be repeaters in Standard 4 already dropped out in a previous standard. There were no statistically significant differences between boys and girls in learner-reported repeater status.

<sup>34</sup> Extrapolated based on dropout rates for Standards 1-4 reported by head teachers in 2016 National Reading Assessment.

To better understand the factors driving repetition given its strong negative association with oral reading fluency, the evaluation team examined learner characteristics, as reported in the learner questionnaire, to determine what factors are associated with repetition. Table 46 presents factors for which there were statistically significant, albeit relatively minor, differences between repeaters and non-repeaters. Overall, repeaters were more likely to miss school due to illness, less likely to have help with homework or be read to frequently at home, and less likely to report enjoying reading.

**Table 46: Characteristics of Repeaters and Non-Repeaters**

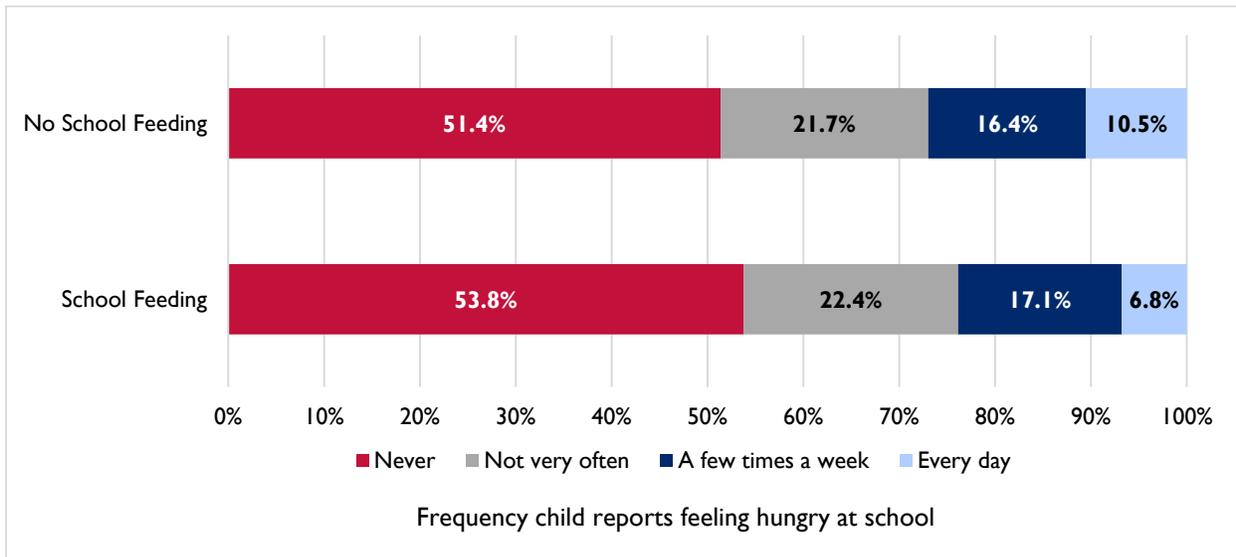
Variable	Repeaters		Non-Repeaters		t-Statistic	P-value
	Percent	Standard Deviation	Percent	Standard Deviation		
Learner misses school often due to sickness	12.8	0.33	10.9	0.31	-2.15	0.031
Learner receives help with homework at home	54.8	0.50	57.9	0.49	2.26	0.024
Learner is read to at home frequently	21.9	0.41	25.1	0.43	2.68	0.007
Learner reports feeling happy about reading	92.2	0.27	94.0	0.24	2.38	0.017

### School Feeding and Nutrition

The presence of school feeding was not found to be a significant predictor of learning achievement. This is robust to multiple specifications of school feeding, including learner reported participation, head teacher reported provision, and learner participation conditional on head teacher reporting. Similar insignificant association was also noticed for Standard 2 and 4 learner outcomes during the impact evaluation baseline in 2013. But, in the 2014 NRA, the team found a statistically significant positive correlation for Standard 1 learners' oral reading fluency scores but not for Standard 3 learners, although it was positive. Taken together, the results indicate that presence of school feeding does not appear to be contributing to learner scores after Standard 1.

Upon further investigation, we found that while 35.7 percent of sampled schools reported having a school feeding program, learner participation remains relatively low in these schools, with 41.5 percent of learners reporting eating breakfast at school and just 0.5 percent reporting eating lunch at school. Interestingly, 23.9 percent of learners in schools with school feeding programs report feeling hungry at school often (i.e., more than a few times a week). Of these, over half (50.8 percent) do not take breakfast at school. This suggests a potential opportunity to improve participation in school feeding programs for learners, either through advocacy with learners and their guardians or by adjusting the timing and nutritional quality of meals to maximize impact. Overall, children in this study with access to school feeding are more likely to report never feeling hungry at school and less likely to report feeling hungry every day relative to those who do not have access to school feeding, per Figure 28 below.

**Figure 28: Frequency Learners Feel Hungry at School, by School Feeding Availability**



As shown in Table 43 above, the type of breakfast food consumed by learners is a significant predictor of reading performance. Learners who report eating porridge, or *phala*, for breakfast score 0.87 points higher on the oral reading fluency subtask relative to those who do not. While the relationship between reading fluency and *phala* consumption at breakfast remains positive when disaggregated by both sex and standard, it loses significance for Standard 2 learners.

Similarly, as shown in Table 43, learners who take tea for breakfast score 0.59 points higher on oral reading fluency relative to those who do not. Other commonly reported breakfasts—including *nsima*, fruit, sweet potato, and even nothing at all—were not found to be significant predictors of reading performance when controlling for the covariates specified in Table 43. This suggests that nutritional content of school feeding programs should be given consideration by policymakers. Of note is the fact that 83.6 percent of learners who eat breakfast at school report eating *phala* whereas less than half (45.0 percent) of learners who eat breakfast at home eat *phala*. While there seems to be a clear connection between consuming *phala* and reading performance, and a similar connection between school feeding and consuming *phala*, this does not translate into a positive coefficient on learning outcomes for school feeding. While this is an area for further exploration, it is possible that low take-up as well as other aspects of the school feeding program may explain its status as a poor predictor of reading performance. Indeed, many studies report null or ambiguous effects of school feeding programs,<sup>35</sup> as such programs can distract teachers and learners from classroom activities.

The evaluation team additionally explored the relationship between nutrition and learners reporting feeling tired at school, as the latter variable had a large, negative relationship with oral reading fluency for Standard 2 girls. Specifically, Standard 2 girls who reported feeling tired at school scored 1.33 points less on the oral reading subtask than Standard 2 girls who did not report feeling tired at school. While regressing the “not tired at school” variable on porridge and tea does not yield a statistically significant

<sup>35</sup> See e.g., Glewwe, P. (Ed.). (2013). Education policy in developing countries. University of Chicago Press; Krishnaratne, S., White, H., & Carpenter, E. (2013). Quality education for all children? What works in education in developing countries. New Delhi: International Initiative for Impact Evaluation (3ie), Working Paper, (20).

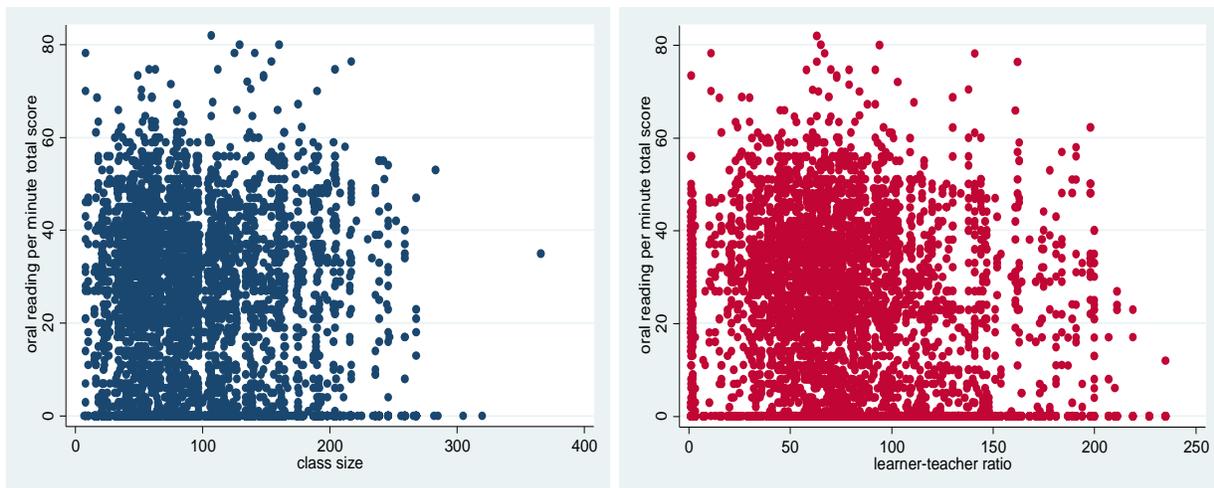
relationship for any subgroups, it is notable that Standard 2 boys are more likely to report having porridge for breakfast than Standard 2 girls, with 48.3 percent of girls reporting having porridge for breakfast compared to 51.1 percent of boys. While Standard 2 girls and boys eat porridge for breakfast in equal numbers when eating it at school, boys are more likely to eat porridge at home than girls whereas girls are more likely to consume *nsima* and sweet potatoes when eating breakfast at home.

### Class Size

As Tables 43-45 demonstrate, there is no apparent relationship between the number of children in a class and oral reading fluency. Similar lack of strong correlation between class size and learner scores was also found in 2014 NRA. This finding is robust to multiple specifications, including teacher-reported class size, head teacher reported enrollments for that standard, and enumerator learner counts.

Further, most specifications not only fail to find a significant relationship between reading fluency and class size, but report coefficients on class size that are close to zero. As shown in Figure 29, this is due to the fact that there is no clear pattern in terms of learner reading fluency and class size, with both lower and higher performing children being spread across a wide range of class sizes.

**Figure 29: Scatterplots of Oral Reading Fluency and Class Size, Learner-Teacher Ratio**



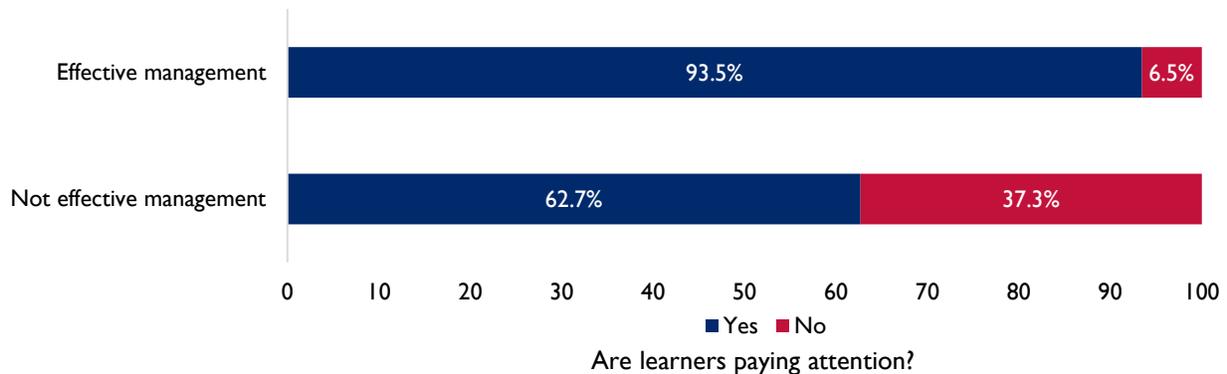
### Classroom Management

As shown in Table 44, teachers demonstrating effective classroom management is a positive predictor of oral reading fluency for learners in Standard 2, and slightly more so for girls than boys. Standard 2 boys scored 1.19 points higher while Standard 2 girls scored 1.64 points higher on the oral reading fluency subtask in classes where teachers exhibited effective management skills. While this positive correlation was not significant for Standard 4 learners, it is important to note that there was no difference between Standard 2 and Standard 4 teachers demonstrating this skill; about 73 percent of teachers in both standards effectively managed their classrooms.

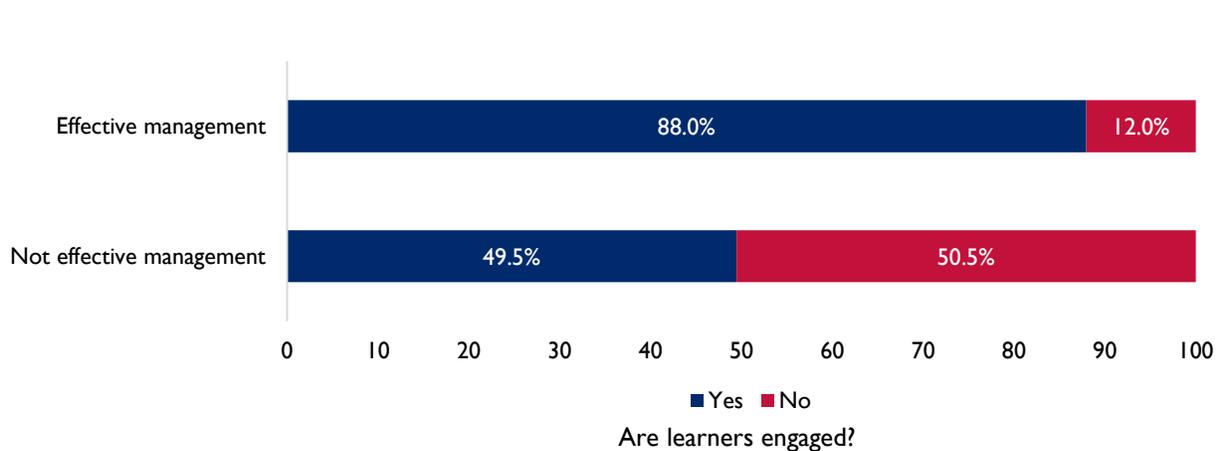
The relationship between effective classroom management and oral reading scores may be attributed to the fact that student behavior dramatically improves with better teacher management, as noted during classroom observations. When teachers effectively supervised their classrooms, 93.5 percent of learners paid attention and 88 percent of learners were engaged; these figures dropped to 62.7 percent and 50 percent when teachers did not manage well (see Figure 30 and Figure 31 below). Teachers who can

effectively supervise see better behavior from their students, which in turn could reasonably improve learner attentiveness and ability to absorb lesson content. However, it could be the case that better-behaved learners are already easy to effectively manage and thus do not require intensive or well-developed management from teachers. Regardless, there is a clear correlation between effective teacher management and well-behaved students, and effective teacher management and learner reading performance.

**Figure 30: Are learners paying attention, by whether teachers demonstrate effective classroom management skills**



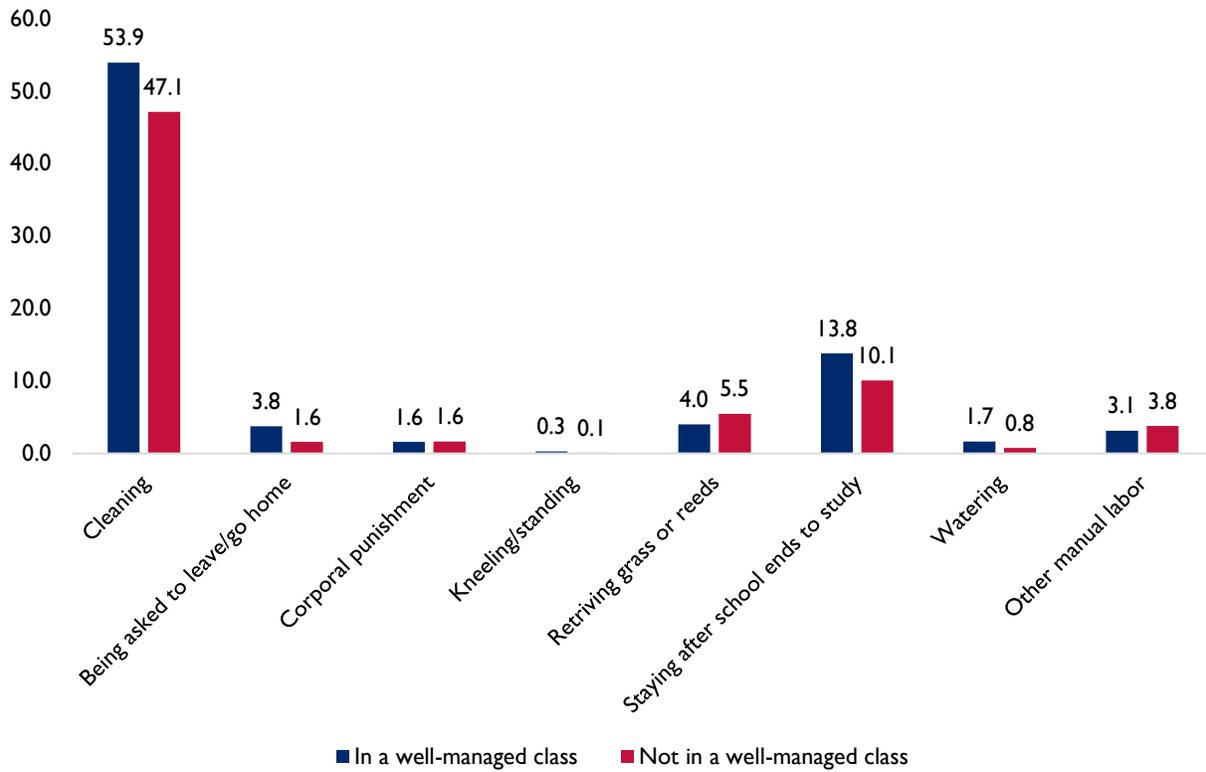
**Figure 31: Are learners engaged, by whether teachers demonstrate effective classroom management skills**



There is also a relationship between effective classroom management and learner likelihood of reporting being disciplined at school. Over 60 percent of learners report being disciplined at school, and nearly 75 percent of those children were in well-managed classes. Of this subset of learners (reporting being disciplined while also being in a well-managed class), the majority reported that their form of discipline was cleaning or being required to stay after school to study. There is no apparent relationship between class size and a teacher’s ability to effectively manage his or her learners.

Figure 32 shows the type of discipline that learners reported experiencing at school. Corporal punishment was relatively rare, with just 3 percent of learners reporting physical punishment by their teachers. In addition, corporal punishment was negatively associated with oral reading fluency, with learners who reported receiving corporal punishment scoring nearly 1 point less (though this is not statistically significant). The relationship between learner engagement and classroom management, including the mechanisms of effective classroom management, is an area for further research.

**Figure 32: Types of learner-reported discipline, by well-managed classroom classification**



# VII. CONCLUSIONS

Conclusions are presented in this section by assessment questions and assessment indicators.

## ASSESSMENT QUESTION 1A

***What proportion of learners by the end of the Standard 2 are able to read grade level text, as measured by the number of correct words per minute (cwpm)? What is the breakdown of learners grouped by sex and subdivisions?***

The average reading fluency score was 2.74 correct words per minute (cwpm) with only 1 percent of learners meeting the MoEST benchmark meaning that 99 percent of learners could not read fluently according to the benchmark. Furthermore, only eight Standard 2 learners could be considered “readers” in accordance with the EGRA designers that consider learners as “readers” if they score above zero on the reading fluency subtask and are able to answer 80 percent (four out of five) of the comprehension questions correctly. The difference in average oral reading fluency scores by learner sex was significant in that girls performed better than boys. No statistically significant difference was noted across subdivisions.

Standard 2 learners in Malawi still have a long way to go before they are able to read independently, with nearly 82 percent of learners scoring zero on the oral reading fluency subtask. The learners’ difficulty with reading fluency may be due to a lack of decoding skills and alphabetic understanding, as indicated by low scores on initial reading subtasks. Classroom observations provided a possible reason by showing that over half of teachers are still teaching the whole-word method rather than using phonics.

## ASSESSMENT QUESTION 1B

***What proportion of learners by the end of Standard 2 are able to answer comprehension questions after reading grade level text, as measured by the number of correct comprehension questions answered correctly? What is the breakdown of learners grouped by sex and subdivisions?***

In 2016, the average reading comprehension score for Standard 2 learners was 2 percent, with only 0.2 percent of learners meeting the MoEST reading comprehension benchmark meaning that 99.8 percent of learners could not comprehend the text and answer the questions correctly as per the benchmark. There was no statistically significant difference noted by learner sex in average reading comprehension scores. By subdivisions, scores were low across all education divisions and ranged from 0 to 0.6 percent with CWED and SEED scoring the highest. More than 90 percent of learners scored zero and the percent of zero scores was similar across education divisions, but ranged between 88 percent in SEED and 96 percent in CEED. Standard 2 learners in Malawi still have a long way to go, given that nearly 91 percent of learners in 2016 scored zero in reading comprehension.

## ASSESSMENT QUESTION 2A

***What proportion of learners by the end of the Standard 4 are able to read grade level text, as measured by the number of correct words per minute? What is the breakdown of learners grouped by sex and subdivisions?***

For Standard 4 learners, the average reading fluency score was 25.37 cwpm with only 9 percent meeting the MoEST benchmark meaning that 91 percent of learners could not read fluently according to the

benchmark. Further, only 226 Standard 4 learners (6.3 percent) can be considered “readers.” The difference in average oral reading fluency scores by learner sex was significant in that girls performed better than boys. No statistically significant difference was noted across subdivisions. Over 77 percent of Standard 4 learners in 2016 scored above zero. But, this also indicates that 23 percent still could not read a single word after four years of primary education.

## **ASSESSMENT QUESTION 2B**

***What proportion of learners by the end of Standard 4 are able to answer comprehension questions after reading grade level text, as measured by the number of correct comprehension questions answered correctly? What is the breakdown of learners grouped by sex and subdivisions?***

In 2016, the average reading comprehension score for Standard 4 learners was 26 percent, with only 6.7 percent of learners meeting the MoEST reading comprehension benchmarks used for Standard 4 meaning that nearly 93 percent of Standard 4 learners could not read fluently with comprehension according to the MoEST’s benchmarks. There was no statistically significant difference noted by learner sex in average reading comprehension scores. By subdivisions, scores were low across all education divisions and ranged from 2.5 to 10.4 percent, with CWED and SEED scoring the highest. Zero scores were much lower with a national average of 35 percent and ranged from just 28 percent in CWED and SEED to 48 percent in NED. Standard 4 learners in Malawi still have room to improve before they are able to read independently, as nearly 35 percent of learners in 2016 scored zero in reading comprehension.

## **FACTORS ASSOCIATED WITH ORAL READING SKILLS**

***What is the relationship of Standard 2 reading skill acquisition to factors that relate to or predict achievement, including classroom size?***

The following factors are found to be statistically significantly associated with Standard 2 oral reading fluency scores:

- Learners being read to at home – positive for Standard 2 overall and disaggregated by sex
- Teacher demonstrates effective classroom management – positive for Standard 2 overall and disaggregated by sex
- Learner has tea for breakfast – positive for Standard 2 overall
- Learner household assets – positive for Standard 2 overall
- Learner age – positive only for boys
- Learner reports feeling tired at school – negative only for girls

Oral reading scores increased with learners being read to often at home and with effective classroom management, for all learners and when disaggregated by sex. Overall, Standard 2 learners read 2.75 more correct words per minute (cwpm) when they reported being regularly read to at home and 1.47 more cwpm when their teachers were observed effectively managing the classroom. Learner age was positively associated for Standard 2 boys, with boys scoring 0.28 cwpm higher for each additional year of age. Finally, Standard 2 girls who reported feeling tired at school scored 1.3 cwpm lower than those who did not report feeling tired. Having tea for breakfast and higher levels of household assets were associated with higher scores only when all learners were analyzed (i.e., not disaggregated by sex).

Both the 2014 NRA and impact evaluation baseline in 2013, also conducted by SI, similarly showed that whether learners reported being read to at home is one of the significant factors that was most consistently correlated with the predicted value of learner reading outcomes, and its predictive capability

on learner reading scores was high. This offer low-cost methods of attempting to increase learner reading scores—such as incentivizing households to read to learners.

The presence of school feeding was not found to be a significant predictor of learning achievement irrespective of specifications of school feeding and source of data. The result was similar for Standard 2 outcomes during the impact evaluation baseline in 2013. This may be due to limited learner participation in school feeding programs: in 2016, over half of learners in schools with a feeding program did not participate in it. Furthermore, schools that participate in feeding programs are often targeted based on regional food insecurity and may therefore be more likely to serve struggling learners in general, limiting the extent to which a positive association can be identified between learner scores and school feeding.

There was no apparent relationship found between class size and oral reading fluency, irrespective of specification of class size indicator and source of assessment data. Also, there was no clear relationship between class size and a teacher’s ability to effectively manage the learners.

***What is the relationship of Standard 4 reading skill acquisition to factors that relate to or predict achievement, including classroom size?***

The following factors are found to be statistically significantly associated with Standard 4 oral reading fluency scores:

- Learners being read to at home – positive for Standard 4 overall and disaggregated by sex
- Learner takes books home from school – positive for Standard 4 overall and for boys when disaggregated by sex
- Learner age – negative for Standard 4 overall and disaggregated by sex
- Learner is a repeater – negative for Standard 4 overall and disaggregated by sex
- Learner has porridge (*phala*) for breakfast – positive for Standard 4 overall and for boys when disaggregated by sex

Standard 4 learners who reported being read to at home often scored 3.8 cwpm higher than those who did not report being read to often. Similarly, Standard 4 learners who reported taking books home from school scored 1.75 points higher than learners who did not take books home. Similar results were also found in NRA 2014 among Standard 3 learners and the impact evaluation baseline study in 2013 among Standard 4 learners, emphasizing the importance of motivating households to read to learners and making reading materials accessible for learners to take home. Repeating a class was negatively associated with reading scores, with repeaters scoring 4.9 cwpm less than non-repeaters. Repeaters were more likely to miss school due to illness, less likely to have help with homework or be read to frequently at home, and less likely to report enjoying reading. Age of learners was negatively correlated with reading scores in that scores were lower as learner age increased. Nearly half of Standard 4 learners (48.8 percent) were over age and it is likely that older children are less able to attend lessons regularly, as they may face more demands outside of school such as helping with household chores and engaging in labor or farming.

As with Standard 2 learners, the presence of school feeding was not found to be a significant predictor of learning achievement irrespective of specifications of school feeding and source of data, and the result was similar to that found during the impact evaluation baseline in 2013 and among Standard 3 learners in NRA 2014. But, it is worth noting that children who report eating fortified porridge, or *phala*—which 83.6 percent of learners report eating at school—score 0.87 cwpm higher on the oral reading subtask than those who do not eat *phala*.

There was also no apparent relationship found between class size and oral reading fluency, irrespective of

specification of class size indicator and source of assessment data. Also, there was no clear relationship between class size and a teacher’s ability to effectively manage the learners.

## **INDICATOR 1**

### ***What proportion of learners in targeted standards take textbooks and/or library books to their home from school?***

Overall, approximately 65.4 percent of sampled teachers reported that learners from their class take textbooks and/or library books home from school. Learners taking books home from school was highly associated with higher oral reading fluency scores for Standard 4 learners. Similar results showing positive association between reading fluency and taking books home to read was also found in the 2014 NRA and baseline impact evaluation in 2013.

Despite this positive relationship, many children do not have access to books for home use. Of the 34.6 percent of classrooms that reported children not taking books home, two-thirds did not have library books available at the school. Access to library books was found to be highly associated with whether children report being read to at home as well as whether they report reading independently at home.

## **INDICATOR 2**

### ***What proportion of schools received at least one external coaching/support visit in past three years?***

Overall, 86 percent of teachers reported receiving at least one hour of external coaching in the past three years from any one of the following: MoEST inspector, PEAs, Divisional Inspector, Mentor Teacher, or other providers with an average of 8.1 hours. The proportion of teachers receiving the coaching differed between the six divisions in that the teachers in CEED were the least likely to receive coaching, at 78 percent, and teachers in SHED and were the most likely to receive external coaching at 91 percent. Of the teachers who reported having received the EGRA intervention (276 teachers), 70 reported receiving coaching from the EGRA project.

## **INDICATOR 3**

### ***What proportion of teachers demonstrated “essential” skills in teaching reading?***

Only 2.7 percent of teachers used all of the 13 essential practices in the observed classes. However, about 48 percent of teachers demonstrated 67 percent adherence to the best practices on any one day.<sup>36</sup> The teaching practices appear to have improved overall from 2014 to 2016. Specifically, teachers improved in use of essential teaching practices from 2014 to 2016 as evidenced by 48 percent of teachers in 2016 utilizing at least 67 percent of essential practices (8 of the 13 essential teaching practices), up from 30 percent of teachers meeting this mark in 2014. Many of these practices are applicable to the reading-related subtasks, and can influence how well learners absorb material. However, the data showed that teachers still need to improve on encouraging learners to “sound it out” when they don’t know a word

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<sup>36</sup> EGRA has set a standard of 67 percent adherence to best practices on any one day as a cut off for determining adherence to best practices.

as well as asking learners to recognize letters and say letter names and/or sounds, which can improve learners' phonemic awareness and decoding skills.

## VIII. RECOMMENDATIONS

Based on the above findings and conclusions, the study recommends USAID and MoEST do the following:

***Build up community programs that work to get parents and household members involved in learner reading.*** These programs should encourage households to read to learners often by explaining the benefits of doing so. Learners tend to repeat classes when they are less likely to have help from family with homework or be read to frequently at home, among other factors. Reading materials should be made more readily available for children and their family to use at home through access to checking out books from school libraries, community reading centers, or community libraries.

***Consider other ways of ensuring learners are read to more often.*** This can possibly be done by creating afterschool peer mentoring programs. This method has been tried in many other education interventions and has been shown to be beneficial both for the mentors and mentees. In areas where parent / caretaker literacy is low, after-school reading clinics staffed by community volunteers may offer an alternative option for ensuring children are given the opportunity to more regularly practice reading outside of the classroom.

***Work with schools to ensure they have enough textbooks or a system of protecting textbooks to allow learners to take books home from school with them,*** and encourage learners to do so—possibly through reading incentive programs such as those often used in the U.S. that provide small rewards for learners who read multiple books over school break periods (or even throughout the academic year).

***Continue to work with teachers through targeted capacity-building and coaching interventions to improve teacher use of essential reading practices.*** During such capacity building efforts, emphasize also the importance of effective class room management by teachers - through non-corporal punishment methods - to ensure learners are behaving well since it can facilitate teachers' use of essential practices by providing a more productive learning environment. Learner reading performance is positively associated with them behaving well in the classrooms.

***Ensure learner participation in school feeding when such programs exist.*** After identifying schools with high levels of food insecurity and implementing programs in such schools either through partnerships with other donor organizations or scaling up of USAID Feed-the-Future Program, efforts should also be made to increase learner participation in the program, especially among those learners that need it. To that end, explore reasons for low learner participation in schools with the program and address them: the study found that in schools with the feeding program, more than one half of the learners do not participate in it and a quarter of learners report feeling hungry at school. Learners that participate in the program tend to be less likely to report feeling hungry every day. Also, reading scores were higher for learners that report eating *Phala* (fortified porridge) for breakfast than those that did not. School feeding programs could consider including *Phala* for breakfast to improve reading scores.

# ANNEX I: STATEMENT OF WORK

The following is the full statement of work (SOW) section, section C.3, from Contract number AID-612-C-13-00001. This report addresses Section 3 of this SOW only.

The Contractor shall provide evaluation services that will include data collection, data analyses, and report writing. The contractor shall conduct evaluations, assessments and surveys in accordance to the Statement of Work (SOW) and Contract Performance Standards reflective of the Contractor’s proposed approach. The evaluation services shall include baseline data collection, tracking of key indicators on an annual /bi-annual basis and report findings through the life of the five year EGRA and CDCS period as necessary. The data collected and analyzed will measure the impact of the USAID/Malawi Early Grade Reading Activity (EGRA), with a corresponding baseline (2013), mid-line (2015), and end-line (2017). Additional assessments and surveys conducted by the contractor of reading abilities will examine additional factors that are assumed to effect reading outcomes in Malawi. The Contractor shall provide the results of these evaluations, assessments and surveys to USAID/Malawi to inform EGRA implementation, contribute to USAID Malawi’s collaborative learning approach under the CDCS, and improve the ability of USAID to adapt to changing program needs based on data.

## C.3.1 Objectives

The Early Grade Reading Activity (EGRA) Impact Evaluation has two main objectives:

1. To measure the impact of USAID/Malawi’s EGRA efforts in target districts on student reading outcomes, and
2. To assess the hypotheses of **integration** and **community strengthening** related to student learning in the USAID/Malawi CDCS:
  - A. to measure how **integration** of USAID programming across sectors (education, health, agriculture) working in the same geographic areas impacts student reading outcomes; and
  - B. to measure how **community strengthening** through capacity-building of local institutions, and promotion of citizen participation impacts sustainable of reading interventions.

## C.3.2 Tasks

The Contractor shall provide evaluation services of four major tasks:

	Baseline		Mid-point		Endline
Required Tasks	May 2013	May 2014	May 2015	May 2016	May 2017
1. Evaluation of the USAID/Malawi Early Grade Reading Activity (EGRA) on Standard 2 and 4 Students Reading Outcomes	<b>X</b>		<b>X</b>		<b>X</b>
2. Household Survey of Sub-Sampled Standard 2 and 4 Students	<b>X</b>		<b>X</b>		<b>X</b>

3. National Reading Assessment for Standards 1 and 3 students		X		X	
4. Final Impact Evaluation of EGRA and CDCS Hypotheses					X

**Task 1: Evaluation of the USAID/Malawi Early Grade Reading Activity (EGRA) on Standard 2 and 4 Students Reading Outcomes.**

**1.1 Overview**

The Contractor shall collect data, prepare analyses, and reports of Standard 2 and 4 reading outcomes. The Contractor shall conduct all the necessary data collection, data analysis and report writing. The Contractor shall measure the impact of the USAID/Malawi Early Grade Reading Activity I in treatment zones compared to control zones. The Contractor shall have all data collected for Task 1 Evaluation by May 2013, May 2015, and May 2017, respectively.

**1.2 General Approach**

The contractor will implement activities under this Task in accordance with USAID principles and requirements, including those outlined in the USAID’s Evaluation Policy and ADS 203.

Prior to carrying out the evaluation, the contractor shall submit to the USAID Contracting Officer’s Representative (COR) an annual Work Plan that details the work to be conducted. The Contractor will use an evaluation design that best meets USAID evaluation policy standards and principles. The design will ensure reliability and validity of the data collected and allow disaggregation by sex. The design will enable analysis of USAID/Malawi’s CDCS hypotheses of integration and community strengthening focus on geographic regions as outlined in Section C2.1.

The design shall enable analysis to determine variation in outcomes based on level of integration of USAID/Malawi sectoral and geographic integration (Level I: those in Mission integrated treatment districts (Lilongwe, Balaka, and Machinga); Levels II and III: districts/zones where education intervention overlaps with either FtF or GHI; and Level IV: education only treatment districts/treatment zones). The contractor will assess Standard 2 and 4 students to determine their reading ability. The samples will include sufficient numbers of students disaggregated by Standard and by sex.

The Contractor will conduct classroom observations in at least one Standard 2, and 4 classroom and interview the head teacher of each school. The classroom based assessment shall be developed in close collaboration with the Malawi National Examination Board and the Department of Inspection and Advisory Services (DIAS) to ensure that it is grade and curriculum appropriate and will at a minimum measure early grade reading skills. Data on number of students in the class (classroom size) and its relationship to reading outcomes must be included in the assessment.

The Contractor will disseminate the annual results generated from the data collection to key stakeholders, including USAID and its implementing partners, the MoEST, Development Partners, and the larger early grade reading community of practice. These reports will be due to USAID/Malawi by July 31 of each year. This information will provide the basis for learning and adaptive programming decisions

to ensure that the program remains flexible to changing needs learned throughout the course of the evaluation.

The contractor shall further match schools in the treatment districts with schools in the non – intervention or control zones to allow for comparability. In matching the schools, the contractor shall use scientific matching methods such as propensity score matching or other scientifically rigorous methods. Baseline data collection may require oversampling to determine appropriate control zones. The following are illustrative examples that could be used:

Student Level Data such as:

- a. Participation in early childhood development (ECD) program
- b. Participation in a school feeding program
- c. Time spent in the classroom on reading instruction

School Level Data such as:

- a. Student to qualified teacher ratio,
- b. Dropout rate
- c. Repetition rate
- d. Average number of students per class
- e. Timing of school feeding in the school timetable
- f. Absenteeism rates, and
- g. Average number of teacher supervision/coaching visits to the teacher
- h. Other interventions including: classroom block and teacher housing construction, disability education interventions, complementary basic education, child-friendly schools.
- i. Text availability: textbook to student ratio
- j. Level of print rich environment found in the classroom.
- k. Language of instruction in the classroom

Community Level Data such as:

- a. Beneficiary of GHI programming (note: will need to be triangulated with USAID health team data as households may not be aware of GHI investments they are benefitting from)
- b. Beneficiary of FtF programming (note: will need to be triangulated with USAID FtF team data as households may not be aware of FtF investments they are benefitting from)
- c. If secondary data source is available:
- d. Prevalence of stunting, wasting, or underweight

### I.3 Evaluation Questions

At a minimum, the classroom based assessment will report on how the USAID/Malawi EGRA impacts, at a minimum, the following indicators:

- (i) Proportion of primary school students who are able to read with comprehension, according to their countries' curricular goals, by the end of lower primary school (Standard 4).
  - a. The proportion of students who by the end of the fourth school year (Standard 4) are able to read grade level text, as measured by the number of correct words per minute

- b. The proportion of students who by the end of the fourth school year (Standard 4) are able to answer comprehension questions after reading grade level text, as measured by the number of correct comprehension questions answered correctly.
- (ii) Proportion of students, who, by the end of two grades of primary schooling, demonstrate that they can read and understand the meaning of grade level text (Standard 2).
  - a. The proportion of students who by the end of the second school year (Standard 2) are able to read grade level text, as measured by the number of correct words per minute
  - b. The proportion of students who by the end of the second school year (Standard 2) are able to answer comprehension questions after reading grade level text, as measured by the number of correct comprehension questions answered correctly.

#### I.4 Sampling Frame

The Evaluation sampling will be of sufficient size to disaggregate by district, by sex, and by Standard. The sampling framework will enable analysis to examine how levels of integration of Mission programming across sectors in various districts impacts learning outcomes differently. The schools shall be selected between control and treatment schools that ensures comparability and disaggregation by the various levels of geographic integration: Level 1: those in Mission integrated treatment districts; Levels 2 and 3: districts/zones where education intervention overlaps with either FtF or GHI; and 4: education only treatment districts. This sample shall be of a sufficient size to allow for attribution of results. From the sampled schools (control and treatment), the contractor shall randomly draw a sample of sufficient size to allow for attribution of results. The Contractor will at a minimum draw from all four levels of USAID/Malawi geographic integration for analysis of the USAID/Malawi EGRA and to test the CDCS hypothesis. The levels include: Level 1: Mission integrated districts and zones in Lilongwe, Balaka, and Machinga. The sample will also draw from Levels 2 and 3: zones within Salima and Ntcheu to examine where the Early Grade Reading intervention has overlap with either FtF or Health interventions. The sample will be required to draw on two districts from Level 4: education intervention only districts (these include Mzimba North, Ntchisi, Zomba Rural, Blantyre Rural, and Thyolo).

The Contractor will at a minimum draw from all four levels of USAID/Malawi geographic integration for analysis of the USAID/Malawi EGRA and to test the CDCS hypothesis. The levels include: – Level I: those in Mission integrated treatment districts (Lilongwe, Balaka, and Machinga); Levels II and III: districts/zones where education intervention overlaps with either FtF or GHI; Level IV: education only treatment zones).

Where possible for data on community and household-level variables, the Contractor shall utilize secondary data sources such as national or population-level demographic and economic surveys, data from Education Management Information System collected by the Ministry of Education, Science and Technology (MoEST) annually or other USAID or donor-supported household surveys. Specifically, the USAID SSDI activity is a potential source for health-related data in target areas, and the USAID FtF impact evaluation is a potential source of data on agriculture and socioeconomic variables in target communities. To enhance comparability of study data with other USAID data analyses, all questionnaires shall include appropriate geo-referenced data.

The Contractor will disseminate the annual results generated from the data collection to key stakeholders, including USAID and its implementing partners, the MoEST, Development Partners, and the larger early grade reading community of practice. These reports will be due to USAID/Malawi by August 31 of each year. This information will provide the basis for learning and adaptive programming decisions to ensure that the program remains flexible to changing needs learned throughout the course of the evaluation. Additionally, the final impact evaluation report will be presented to key stakeholders

and disseminated widely to encourage sharing of results, lessons learned and best practices and identify USAID achievements under the CDCS targets.

## **Task 2: Household Survey of Sub-Sampled Standard 2 and 4 Students.**

### 2.1 Overview

The Contractor shall collect data, prepare analyses, and reports of a randomly selected sub-sample of students assessed in Task 1. The student's sub-sample will equally represent male and female students. The contractor will conduct a household survey of a sub-sample of children assessed in Task 1 to understand the dynamics and effects of other factors that contribute to children reading outcomes. The Contractor will use data collected from the household survey to isolate household and socio-economic related factors. The Contractor will collect data at the household level to reduce external bias and measure potential multiplier effects of complementary Mission interventions at the community and household level of USAID's programming under the Global Health Initiative (GHI) and Feed the Future (FtF). The Contractor shall incorporate data on relevant multiplier, socioeconomic and household factors and select appropriate control/comparison districts and communities to detect differential effects. The Contractor shall utilize secondary data sources from the GoM, USAID, or other sources to the greatest extent possible.

### 2.2 General Approach

The contractor will implement activities under this Task taking into account USAID principles and requirements, including those with USAID's Evaluation Policy and ADS 203. The Contractor will measure the Early Grade Reading Activity's efforts to increase parental and community engagement in supporting student reading. The Contractor will assess how social mobilization of parents, guardians, communities and other relevant stakeholders for supporting children reading has changed household behaviors and student learning outcomes. The Contractor will account for activities within the community that bridge schools and communities around reading or provide alternative sources of reading support to students. The Contractor will examine the dynamics and effects of other factors that contribute to children learning outcomes within the household and community. The household survey of sampled Standard 2 and 4 children will isolate households and socio-economic related factors, enabling the analysis to link children's reading performance to household factors and community factors. The Contractor will include appropriate geo-referenced data to enhance comparability of study data with other USAID data analyses.

"The Contractor will disseminate the annual results generated from the data collection to key stakeholders, including USAID and its implementing partners, the MoEST, Development Partners, and the larger early grade reading community of practice. These reports will be due to USAID/Malawi by August 31 of each year. This information will provide the basis for learning and adaptive programming decisions to ensure that the program remains flexible to changing needs learned throughout the course of the evaluation."

Prior to carrying out the household survey, the contractor shall submit to the USAID Contracting Officer's Representative (COR) a detailed annual Work Plan describing the work to be conducted. The Contractor will use an evaluation design that best meets USAID evaluation requirements and is robust enough to measure the complexity of integration.

### 2.3 Evaluation Questions

1. *What household and community factors relate to student reading outcomes?*
2. *What level of household and community resources/factors are dedicated to schooling and reading?*
3. *How have Health and Agricultural interventions at the household and community level affected schooling and reading outcomes?*
4. *What factors at the household and community level have been identified that relate to repetition and drop out and are there sex differences at the household level?*

Illustrative indicators of interest include:

- Participation in early childhood development (ECD) program
- Participation in a school feeding program
  - Timing of school feeding in the school timetable
- Family/household level variables for sub-group
  - Parental literacy
  - Household size
  - Food security
    - Number of times child ate breakfast before school or the number of missed meals in the past week
  - Incidence of diarrhea in past 2 weeks
    - Number of days of school missed due to illness
  - Number of days of school missed due to family/farm responsibilities
  - Health factors
    - Practice of key nutrition, water, sanitation and hygiene (WASH) behaviors related to school access (particularly hand washing, latrine use, micronutrient supplementation, and malnutrition)
    - Water access and quality, including access to a protected water source, and time required to access water
    - Access to child health services targeted by USAID programs
    - Access to de-worming
    - Other relevant health factors which may be related to early grade reading
  - Socio-economic variables
- School infrastructure, including water, sanitation, and hygiene facilities, which are particularly factors relevant to access and retention of girls and people with disabilities
- Average household time spent supporting child reading, and
- School level related data such as:
  - Student to qualified teacher ratio,
  - Dropout rate
  - Repetition rate
  - Classroom size,
  - Absenteeism rates, and
  - Average number of teacher supervision/coaching visits to the teacher
  - Other interventions including: classroom block and teacher housing construction, disability education interventions, complementary basic education, child-friendly schools.
- Community-level variables
  - Beneficiary of GHI programming (note: will need to be triangulated with USAID health team data as households may not be aware of GHI investments they are benefitting from)
  - Beneficiary of FtF programming (note: will need to be triangulated with USAID FtF team data as households may not be aware of FtF investments they are benefitting from)
  - If secondary data source is available:
  - Prevalence of stunting, wasting, or underweight

- Proportion (%) of students in intervention districts and targeted grades receiving extra 1-hour time-on-task reading instruction per day
- Proportion (%) of students in intervention districts and target grades that take home and use a book or other reading materials at home
- Proportion (%) of schools receiving at least one coaching/support visit per term; and
- Proportion (%) of teachers demonstrating “essential” skills in teaching reading

## 2.4 Sampling Frame

The Contractor will sample a sub-group of the students assessed in Task 1 to understand the dynamics and effects of other factors that contribute to children’s learning outcomes. The contractor will select Standard 2 and 4 students and their households to participate in the household survey. The sample will link children and households within communities to isolate household and community socio-economic related factors. The sample will link children’s reading performance to household and community factors. The Contractors sample size must adhere to criteria determined to have sufficient power and confidence of estimation. The sub-sample should come directly from the sampled schools and students being assessed under Task 1 of this Contract.

In determining the sampling framework, the Contractor will take into account the Mission’s CDCS development hypothesis on education interventions and outcomes – including integrating USAID FtF, GHI, and education programs in the same geographic regions. The Contractors sampling framework will enable USAID to examine its investments in community participation and institutional capacity development within education programs to test the validity of the CDCS hypothesis related to the education sector in Malawi.

Where possible for data on community and household-level variables, the Contractor shall utilize secondary data sources such as national or population-level demographic and economic surveys, data from Education Management Information System collected by the MoEST annually or other USAID or donor-supported household surveys. Specifically, the USAID SSDI activity is a potential source for health-related data in target areas, and the USAID FtF impact evaluation is a potential source of data on agriculture and socio-economic variables in target communities. To enhance comparability of study data with other USAID data analyses, all questionnaires shall include appropriate geo-referenced data.

## **Task 3: National Reading Assessments**

### 3.1 Overview

The contractor shall conduct national reading assessments in Standards 1 and 3 in 2014 and standards 2 and 4 in 2016. All assessments will be conducted towards the end of the school year. Sample will be weighted and nationally representative.

### 3.2 General Approach

The contractor will implement activities under this Task taking into account USAID principles and requirements, including those with USAID’s Evaluation Policy and ADS 203.

Prior to carrying out the assessment, the contractor shall receive approval of an Annual Work plan by the USAID Contracting Officer’s Representative (COR) that provides a detailed description of the work to be conducted. The Contractor will use its expertise conduct the evaluation design that best meets USAID evaluation policy standards and principles.

The Contractor's approach will allow comparison of results over time. The contractor will conduct a nationally representative reading assessment during the third term, in April or May of 2014 and 2016. The Contractor must conduct reading assessments in Chichewa. The reading skills assessed, must at a minimum include letter naming, syllable reading, familiar word reading, nonsense word reading, oral reading fluency, and reading comprehension. The Contractor will work closely with the Host Country partners, including: the MoEST, Directorate of Basic Education, Directorate of Inspection and Advisory Services, Teacher Training Colleges, Malawian University faculties of education, Directorate of Planning, particularly the Education Management Information Systems Unit, Malawi National Examination Board, and Primary Education Advisors during development, assessment, and analysis of the national assessment. The Contractor will work with Host Country partners and use appropriate Host Country institutions to build the capacity of the MoEST to sustainably implement early grade reading assessments. The Contractor will administer the reading assessment of students with an accompanying questionnaire that investigates various aspects of the student's backgrounds that could potentially be associated with performance. The Contractor will conduct teacher and head teacher interviews based on a standardized classroom observation and interview protocol in each sampled school. The contractor will be responsible for training all evaluators and assuring the strictest adherence to ensure validity and reliability of the assessment, and the protection of human subjects. During administration of these assessments the Contractor shall ensure that all personnel are adequately trained in assessing children's reading abilities. The Contractor will include data on classroom size and its relationship to reading outcomes in the assessment.

Primary data collection processes and exact data collection will be managed by the Contractor with concurrence from USAID/Malawi and will correspond directly to the methodological approach, sample size, and evaluation team size required to adhere to reporting deadlines. To enhance comparability of study data with other USAID data analyses, all questionnaires shall include appropriate geo-referenced data. Secondary data which are available from other national or USAID-supported household surveys will be incorporated wherever possible in lieu of original data collection.

The Contractor will disseminate the annual results generated from the data collection to key stakeholders, including USAID and its implementing partners, the MoEST, Development Partners, and the larger early grade reading community of practice. These reports will be due to USAID/Malawi by August 31 of each year. This information will provide the basis for learning and adaptive programming decisions to ensure that the program remains flexible to changing needs learned throughout the course of the evaluation. Additionally, the final impact evaluation report will be presented to key stakeholders and disseminated widely to encourage sharing of results, lessons learned and best practices and identify USAID achievements under the CDCS targets.

### 3.3 Evaluation Questions

The National Reading Assessment will examine how Malawian Primary students in Standard 1-4 are progressing towards reaching MoEST benchmarks in reading. Specifically, the proportion of primary school students meeting reading benchmarks, mean scores by reading subtask disaggregated by gender for respective classes assessed in 2014 and 2016 accordingly.

### 3.4 Sampling Frame

The Contractor shall conduct a nationally representative snapshot of early grade reading skills for Standard 1 and 3 students in 2014 and standard 2 and 4 students in 2016. The Contractor will select at a minimum two districts randomly within each of the six educational divisions. At a minimum, 30 schools

within each district will be randomly selected and ten Standard 1 and 3 students in 2014 and standard 2 and 4 students in 2016 will be assessed. The Contractor's sampling framework will allow adequate disaggregation by sex, urban and rural, and educational division. The Contractor's sampling framework will clearly identify power calculations for sample sizes used and demonstrate acceptable levels of statistical power for interpretation of results. Contractor shall provide a justification based on power and confidence of estimation for all sample sizes to be used during the annual Work Plan.

The contractor shall conduct the nationally representative assessment of student reading abilities in Standards 1 and 3 in 2014 and Standards 2 and 4 in 2016. The Contractor shall provide a national snapshot of early grade reading outcomes for Standard 1 to 4 students. The Contractor will use the data collected and corresponding results, findings, conclusions, and recommendations to inform Malawi's progress in improving early grade reading skills for Malawian primary students in line with Malawi Global Partnership for Education targets and objectives. The Contractor will provide evidence on best practices, lessons learned and cost-effectiveness approaches identified through the nationally representative assessment that correlate to improved reading skills in a low-resource setting such as Malawi directly drawn from the data.

#### **Task 4: Final Impact Evaluation of EGRA and CDCS Hypotheses**

##### **4.1 Overview**

The Contractor shall collect data, prepare analyses, and reports that provide an overall analysis of the USAID Early Grade Reading Activity and the USAID/Malawi CDCS hypotheses related to education. The Contractor shall measure the impact of the USAID/Malawi Early Grade Reading Activity in target districts and the Hypotheses of the USAID/Malawi CDCS as outlined in Section C2.1. The Final Impact Evaluation will draw from the data collected over the life of the contract to answer the evaluation questions below.

##### **4.2 General Approach**

The contractor will implement activities under this Task taking into account USAID principles and requirements, including those outlined in USAID's Evaluation Policy and ADS 203.

Prior to carrying out the assessment, the Contractor shall receive approval of the Annual Work Plan from the USAID Contracting Officer's Representative (COR) that provides detailed description of the work to be conducted. The Contractor's evaluation design will be in compliance with USAID evaluation policy standards and principles. The Contractor's approach will evaluate the impact of the USAID Early Grade Reading Activity and the hypotheses of the USAID/Malawi CDCS related to integration and community engagement as outlined in Section C2.1.

The design shall enable analysis to determine variation in outcomes based on level of integration of USAID/Malawi sectoral and geographic integration (Level I: those in treatment zones within Mission-integrated treatment districts (Lilongwe, Balaka, and Machinga); Levels II and III: districts/zones where education intervention overlaps with either FtF or GHI; Level IV: education only treatment zones;). The contractor will assess Standard 2 and 4 students to determine their reading ability. The samples will include sufficient numbers of students to disaggregate by Standard and by sex.

The Contractor will conduct classroom observations in at least one Standard 2, and 4 classroom and interview the head teacher of each school. The classroom based assessment shall be developed in close collaboration with the Malawi National Examination Board and the Department of Inspection and

Advisory Services (DIAS) to ensure that it is grade and curriculum appropriate and will at a minimum measure early grade reading skills. Data on number of students in the class (classroom size) and its relationship to reading outcomes must be included in the assessment.

The Contractor will disseminate the annual results generated from the data collection to key stakeholders, including USAID and its implementing partners, the MoEST, Development Partners, and the larger early grade reading community of practice. These reports will be due to USAID/Malawi by August 31 of 2017. This information will provide the basis for learning and adaptive programming decisions to ensure that the program remains flexible to changing needs learned throughout the course of the evaluation.

The contractor shall further match schools in the treatment zones with control zones to allow for comparability. In matching the schools, the contractor shall use scientific matching methods such as propensity score matching or other scientifically rigorous methods. Baseline data collection may require oversampling to determine appropriate control zones. The following are illustrative examples that could be used:

Student Level Data such as:

- a. Participation in early childhood development (ECD) program
- b. Participation in a school feeding program
- c. Time spent in the classroom on reading instruction

School Level Data such as:

- a. Student to qualified teacher ratio,
- b. Dropout rate
- c. Repetition rate
- d. Average number of students per class
- e. Timing of school feeding in the school timetable
- f. Absenteeism rates, and
- g. Average number of teacher supervision/coaching visits to the teacher
- h. Other interventions including: classroom block and teacher housing construction, disability education interventions, complementary basic education, child-friendly schools.
- i. Text availability: textbook to student ratio
- j. Level of print rich environment found in the classroom.
- k. Language of instruction in the classroom

Community Level Data such as:

- a. Beneficiary of GHI programming (note: will need to be triangulated with USAID health team data as households may not be aware of GHI investments they are benefitting from)
- b. Beneficiary of FtF programming (note: will need to be triangulated with USAID FtF team data as households may not be aware of FtF investments they are benefitting from)
- c. If secondary data source is available:
- d. Prevalence of stunting, wasting, or underweight

#### 4.3 Evaluation Questions

The Contractor must at a minimum, address the following questions over the life of the award:

- i. What is the USAID/Malawi Early Grade Reading Activity's impact on children's (disaggregated by sex) reading abilities in terms of the following:
  - a. Level of effort of reading instruction's impact on children reading abilities
  - b. Effect of extra-curricular reading activities
  - c. Effect of time on task in improving reading outcomes
- ii. Which components have the largest effects and what is the relative cost effectiveness of these various components?
- iii. How does teachers' classroom behavior and practices impact on the ability of children to read?
  - a. How did the level of coaching impact teacher behavior and student reading outcomes?
- iv. How does the level of integration with other USAID/Malawi FtF and GHI programs, and other related DP interventions in the target districts, impact the reading outcomes of students?
  - a. What interactions can be identified with other major USAID/Malawi Mission interventions in agriculture and health?
  - b. What other multiplier effects have been identified over the life of the Early Grade Reading Activity?
  - c. What are the key external factors that were found to have a multiplier effect, i.e. early childhood development (ECD) attendance, participation in school feeding, change in WASH behaviors, access to a secondary school, etc.?
  - d. How does the provision of non – cash incentives to performing teachers and schools translate into changes in children's reading abilities?
- v. What secondary effects can be attributed to the Early Grade Reading Activity?
  - a. Impact on repetition rate
  - b. Impact on dropout rate
  - c. Impact on school completion, particularly for girls and students with disabilities
- vi. What is the effect of USAID/Malawi investments in institutional capacity-building and community engagement to improve community participation on the effectiveness and sustainability of USAID Education programs and learning outcomes?

The Contractor's approach will adequately answer these evaluation questions at baseline (2013), two years after baseline (2015), and four years after baseline (2017), with a detailed methodological approach that uses impact evaluation methodologies be it quantitative, qualitative, or mixed methods. The Contractor will use existing data to the greatest extent possible using impact evaluation methodology where appropriate. The Contractor will use primary and secondary data to answer evaluation questions. Where existing data is insufficient, the Contractor will purposefully sample districts and schools (and their surrounding communities) via based on sampling methods that draw conclusions to inform the evaluation questions The Contractor shall use a quasi-experimental design to clearly demonstrate the impact of program interventions on reading outcomes, and to test the CDCS hypotheses and enable identification of differential impacts that result from geographic integration with GHI and FtF programming. The Contractor shall address evaluation questions related to integration, capacity-building and community participation, as well as identifying best practices and lessons learned. The Contractor's research design will be conducted over a five year period. The Contractor will provide a baseline, mid-line, and end-line data points. USAID/Malawi reserves the right to have the ultimate authority to approve the evaluation design prior to the roll out of the evaluation.

#### 4.4 Sampling Frame

The Contractor will use a sampling framework that is of sufficient size to disaggregate by district, by sex, and by Standard. The Contractor's sampling framework will enable analysis to examine how levels of integration of Mission programming across sectors in various districts impacts learning outcomes

differently. The sample will include a minimum of 30 schools randomly selected per district. The schools shall be selected between control and treatment schools that ensures comparability and disaggregation by the various levels of geographic integration: Level 1: those in Mission integrated treatment districts; Levels 2 and 3: districts/zones where education intervention overlaps with either FtF or GHI; Level 4: education only treatment zones. This sample shall be scientifically representative. From the sampled schools (control and treatment), the contractor shall randomly draw a representative sample of children per Standard 2 and Standard 4. From each selected school, at a minimum, a random selection of 10 students, equal numbers of boys and girls, will be selected from Standard 2 and 4 for inclusion in the assessment. The Contractor will at a minimum include a classroom observation of a Standard 2 and 4 classroom and conduct interviews with a Standard 2 and 4 teacher and the head teacher for each school visited. The Contractor will sample a sub-group of the students assessed to understand the dynamics and effects of other factors that contribute to children's learning outcomes. The contractor will select Standard 2 and 4 students and their households to participate in the household survey. The sample will link children and households within communities to isolate household and community socio-economic related factors. The sample will link children's reading performance to household and community factors. The Contractors sample size must adhere to criteria determined to have sufficient power and confidence of estimation. The sub-sample should come directly from the sampled schools and students being assessed under Task 1 of this Contract. If a different sample size is needed to achieve the requirements of this SOW, the Contractor shall provide justification based on power and confidence of estimation to the COR for approval.

In determining the sampling framework, the Contractor will take into account the Mission's CDCS development hypothesis on education interventions and outcomes – including integrating USAID FtF, GHI, and education programs in the same geographic regions. The Contractors sampling framework will enable USAID to examine its investments in community participation and institutional capacity development within education programs to test the validity of the CDCS hypothesis related to the education sector in Malawi. The Contractor will at a minimum draw from all four levels of USAID/Malawi geographic integration for analysis of the USAID/Malawi EGRA and to test the CDCS hypothesis. The levels include: Level 1: Mission integrated districts and zones in Lilongwe, Balaka, and Machinga. The sample will also draw from Levels 2 and 3: zones within Salima and Ntcheu to examine where the Early Grade Reading intervention has overlap with either FtF or Health interventions. The sample will be required to draw on at least two districts from Level 4: education intervention only districts (these include Mzimba North, Ntchisi, Zomba Rural, Blantyre Rural, and Thyolo). To determine the control zones, the sample will draw upon zones receiving no early grade reading interventions from within each of the Level 1-4 districts using a matched pair approach that enables the comparison of effects across intervention and treatment districts.

Where possible for data on community and household-level variables, the Contractor shall utilize secondary data sources such as national or population-level demographic and economic surveys, data from Education Management Information System collected by the MoEST annually or other USAID or donor-supported household surveys. Specifically, the USAID SSDI activity is a potential source for health-related data in target areas, and the USAID FtF impact evaluation is a potential source of data on agriculture and socio-economic variables in target communities. To enhance comparability of study data with other USAID data analyses, all questionnaires shall include appropriate geo-referenced data.

The Contractor will disseminate the annual results generated from the data collection to key stakeholders, including USAID and its implementing partners, the MoEST, Development Partners, and the larger early grade reading community of practice. These reports will be due to USAID/Malawi by August 31 of 2017. This information will provide the basis for learning and adaptive programming decisions to ensure that the program remains flexible to changing needs learned throughout the course

of the evaluation. Additionally, the final impact evaluation report will be presented to key stakeholders and disseminated widely to encourage sharing of results, lessons learned and best practices and identify USAID achievements under the CDCS targets.

# ANNEX II: CHICHEWA READING ASSESSMENT INSTRUMENT

## General Instructions:

*It is important to establish a playful and relaxed rapport with the children to be assessed via some simple initial conversation among topics of interest to the child. The child should perceive the following assessment almost as a game to be enjoyed rather than a severe situation. It is important to read ONLY the sections in boxes aloud slowly and clearly.*

**Hi! My name is \_\_\_\_\_ and I live at \_\_\_\_\_. (Establish a relaxed rapport with the child).**

## Verbal Consent

- Let me tell you why I am here today. I work with the Ministry of Education, and we are trying to understand how children learn to read. You were picked by chance, like in a raffle or lottery.
- We would like your help in this. But, you do not have to take part if you do not want to do so.
- We are going to play a reading game. I am going to ask you to read letters, words, and a short story out loud.
- Using this stopwatch, I will see how long it takes you to read.
- This is NOT a test, and it will not affect your grade at school.
- I will also ask you other questions about your family and your experiences in school, like what language your family uses at home and whether you like school.
- I will NOT report your individual results to your parents, teacher, or anyone else. Instead, your results will be summarized with other students like you.
- Once again, you do not have to participate if you do not wish to. Once we begin, if you would rather not answer a question, that's all right.
- Do you have any questions? Are you ready to get started?

**Check box if verbal consent is obtained:**  **YES**

*(If verbal consent is not obtained, thank the child and move on to the next child, using this same form)*

A. Date of assessment	Day : _____		H. Class	<input type="radio"/> 1 = Standard 1 <input type="radio"/> 2 = Standard 2 <input type="radio"/> 3 = Standard 3 <input type="radio"/> 4 = Standard 4
	Month : _____			
B. Enumerator's name				
C. School Name			I. Teacher name	
D. Zone			J. Stream name	
E. District			K. Stream name	
F. Chigawo			L. EMIS Student ID	
			M. Student's Age	
G. School Shift	<input type="radio"/> 1 = Full day <input type="radio"/> 2 = Morning <input type="radio"/> 3 = Afternoon		N. Student's gender O. Student's village P. Head of student's household	<input type="radio"/> 1 = Boy <input type="radio"/> 2 = Girl
			N. Time Started	5710 ____ : ____

## Section 1: Letter Name Knowledge

Show the child the sheet of letters in the student stimuli booklet. Say:

Here is a page of letters from the Chichewa alphabet. Please tell me the NAMES of as many letters as you can, not the SOUNDS of the letters, but the names. You do not need to tell me if the letter is upper case or lower case, only the NAME of the letter.

For example, the name of this letter [point to S] is "S"

Let's practice: tell me the name of this letter [point to u]:

If the child responds correctly, say: Good, the name of this letter is "u."

If the child does not respond correctly, say: The name of this letter is "u."

Now try another one: tell me the name of this letter [point to P]:

If the child responds correctly, say: Good, the name of this letter is "P."

If the child does not respond correctly, say: The name of this letter is "P."

Do you understand what you are to do?

When I say "Begin," please name the letters as quickly and carefully as you can. Start here and continue this way. You will read the letters from this side to the other and then move to the next line down. It may be helpful if you point to the letter you're on. [Point to the first letter on the top left of the first row after the example and draw your finger across the first line from left to right]. If you come to a letter you do not know, I will tell it to you. If not, I will keep quiet & listen to you. Ready? Begin..



Start the timer when the child reads the first letter. Follow along with your pencil and clearly mark any incorrect letters with a slash (/). Count self-corrections as correct. If you've already marked the self-corrected letter as incorrect, circle the letter and go on. Stay quiet, except when if the child hesitates for 3 seconds, then point to the next letter and say "Please go to the next letter." Mark the letter skipped as incorrect. If the student gives you the letter sound, rather than the name, provide the letter name and say: ["Please tell me the NAME of the letter"]. This prompt may be given only once during the exercise. If the student skips a sound, mark that one as incorrect, but do not stop the student. If you can't be sure you heard the student correctly, stop the stopwatch and say, "Sorry, I couldn't hear you. Can you please say it again?" Then restart stopwatch, continuing from

AFTER 60 SECONDS SAY, "stop." Mark the final letter read with a bracket (]).

Early stop rule: If the child does not give a single correct response on the first line, say "Thank you!", discontinue this exercise, check the box at the bottom, and go on to the next exercise.

Example : S u P

1	2	3	4	5	6	7	8	9	10	
D	i	t	i	O	T	g	C	T	m	(10)
H	t	O	A	r	C	n	e	h	R	(20)
L	e	H	p	e	A	i	o	z	U	(30)
h	f	i	N	T	o	o	F	d	E	(40)
e	r	P	H	r	d	T	K	t	a	(50)
y	w	e	L	e	E	U	N	o	d	(60)

W	e	A	A	S	E	n	i	m	R	(70)
s	t	C	V	S	N	D	t	i	L	(80)
A	s	J	G	e	E	i	A	C	n	(90)
N	a	H	S	t	U	B	y	S	o	(100)

Time remaining on stopwatch at completion (number of SECONDS).

Check this box if the exercise was discontinued because the child had no correct answers in the first line.

## Section 2. Syllable Segmentation

This is NOT a timed exercise. I will read aloud a word twice, and you should tell me the syllable segmentation for that word.

For example, the word “nguluwe” has the following segmentation: “ngu-lu-we”. In this subtask I will let you tell the syllable segmentations for the words that I will read to you. I will mention the word twice, listen carefully, and then tell me the syllable segmentation in the word.

**Let’s practice:** What are the syllable segments in the word “mayi”, “mayi” ?

[If the child responds correctly, say: Good, the syllable segmentation in the word “mayi” are “ma – yi”.

If the child does not respond correctly, say: Listen again: “mayi”. the syllable segmentation in the word “mayi” are “ma – yi”.

Now try another one: tell me the tell me the syllable segmentation for the word “khwanya”, “khwanya” ndi chiyani?.

[If the child responds correctly, say: Good, the syllable segmentation in the word “khwanya” is “khwa - nya ”.

If the child does not respond correctly, say: Listen again: “khwanya”. the syllable segmentation in the word “khwanya” are “khwa” and “nya.”

**Do you understand what you are to do?**

[If the child says no, say]: **Just try your best.**

Read the prompt and then pronounce the target word a second time. Accept only as correct the isolated sound. If the child does not respond after 3 seconds, mark as “No response,” and say the next prompt. Enunciate clearly, but do not overemphasize the beginning sound of each word.

**Early stop rule:** If the child responds incorrectly or does not respond to the first five words, say “Thank you!”, discontinue this exercise, check the box at the bottom of the page, and go on to the next exercise

What are the syllable segments in the following words? [Repeat the Word twice]					
Ana	A – na	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don't know	<input type="radio"/> no response
Boola	Bo-o – la	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don't know	<input type="radio"/> no response
Mwamuna	Mwa – mu na	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don't know	<input type="radio"/> no response
Bola	Bo – la	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don't know	<input type="radio"/> no response
Mkaka	Mka – ka	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don't know	<input type="radio"/> no response
Nama	Na – ma	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don't know	<input type="radio"/> no response
Kakamiza	Ka – ka – mi – za	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don't know	<input type="radio"/> no response
Mbola	Mbo – la	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don't know	<input type="radio"/> no response
Mnkhwani	Mnkhwa–ni	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don't know	<input type="radio"/> no response
Kankha	Ka – nkha	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don't know	<input type="radio"/> no response

(5 words)

Check this box if the exercise was discontinued because the child had no correct answers in the first five words.

### **Section 3. Initial Sound Identification**

*This is NOT a timed exercise, and THERE IS NO STUDENT SHEET. Read aloud each word twice, and have the student say the initial sound. Remember to model the “pure” sounds: /p/, not “puh” or “pe.” Say:*

This is a listening exercise. I want you to tell me the beginning sound of each word. For example, in the word “galu”, the first sound is “/g/”. In this exercise, I would like you to tell me the first sound you hear in each word. I will say each word two times. Listen to the word, then tell me the very first sound in that word.

Let’s practice. What is the first sound in “mayi” “mayi.”?

[If the child responds correctly, say]: Very good, the first sound in “mayi” is /mmmmm/.

[If the child does not respond correctly, say]: Listen again: “mmmayi”. The first sound in “mayi” is /mmmmm/.”

Now let’s try another one: What is the first sound in “nzimbe”? “nzimbe”.

[If the child responds correctly, say]: Very good, the first sound in “nzimbe” is / n / ”.

[If the child does not respond correctly, say]: Listen again: “nnnzimbe”. The first sound in “nzimbe” is / n / ”.

If the child does not respond correctly, say: mveranso kaciwiri: liwu loyamba la m’mawu oti “nzimbe” ndi /n/

Do you understand what you are to do? *[If the child says no, say]:* **Just try your best.**

*Read the prompt and then pronounce the target word a second time. Accept only as correct the isolated sound. If the child does not respond after 3 seconds, mark as “No response,” and say the next prompt. Enunciate clearly, but do not overemphasize the beginning sound of each word.*

**Early stop rule:** *If the child responds incorrectly or does not respond to the first five words, say “Thank you!”, discontinue this exercise, check the box at the bottom of the page, and go on to the next exercise.*

What is the first sound in “_____”? “_____”? <i>[Repeat the word twice]</i>					
Kala	/k/	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don’t know	<input type="radio"/> no response
Dona	/d/	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don’t know	<input type="radio"/> no response
Khala	/kh/	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don’t know	<input type="radio"/> no response
Atate	/a/	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don’t know	<input type="radio"/> no response
Bala	/b/	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don’t know	<input type="radio"/> no response
Mana	/mmm/	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don’t know	<input type="radio"/> no response
Gada	/g/	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don’t know	<input type="radio"/> no response
Wada	/www/	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don’t know	<input type="radio"/> no response
Nola	/n/	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don’t know	<input type="radio"/> no response
Gwada	/g/	<input type="radio"/> correct	<input type="radio"/> incorrect	<input type="radio"/> don’t know	<input type="radio"/> no response

(5 words)

Check this box if the exercise was discontinued because the child had no correct answers in the first five words.

## Section 4. Syllable Reading

Show the child the sheet of letters in the student stimuli booklet. Say:

Here is a page of syllables in Chichewa. Please read for me as many syllables as you can.

For example, this syllable [point to “jo”] is “jo”

Let’s practice: tell me this syllable [point to bwe]:

If the child responds correctly, say: Good, this syllable is “bwe.”

If the child does not respond correctly, say: This syllable is “bwe.”

Now try another one: tell me this syllable [point to nu]:

If the child responds correctly, say: Good, this is “nu.”

If the child does not respond correctly, say: this syllable is “nu.”

Do you understand what you are to do? Ready? Begin.



Start the timer when the child reads the first syllable. Follow along with your pencil and clearly mark any incorrect letters with a slash (/). Count self-corrections as correct. If you’ve already marked the self-corrected syllable as incorrect, circle the letter and go on. Stay quiet, except when if the child hesitates for 3 seconds, then point to the next syllable and say “Please go to the next syllable.” Mark the letter skipped as incorrect. If the student skips a syllable, mark that one as incorrect, but do not stop the student. If you can’t be sure you heard the student correctly, stop the stopwatch and say, “Sorry, I couldn’t hear you. Can you please say it again?” Then restart stopwatch, and continue

AFTER 60 SECONDS SAY, “stop.” Mark the final syllable read with a bracket ( ] ).

Early stop rule: If the child does not give a single correct response on the first line, say “Thank you!”, discontinue this exercise, check the box at the bottom, and go on to the next exercise

Example : jo bwe nu

1	2	3	4	5	6	7	8	9	10	
ka	mi	po	ra	bwa	Dza	mnya	na	da	li	(10)
nja	thu	da	ki	fu	Ngi	ko	tsi	i	mphu	(20)
mfu	fa	o	se	pi	Lu	mda	mse	dzi	tsa	(30)
ma	ye	re	na	me	Pa	mkha	wo	si	ntha	(40)
dya	nyu	u	wa	ri	Ka	mwa	ba	ku	go	(50)
e	le	tu	sa	nkho	Nga	fi	wi	la	nda	(60)
te	mba	ndi	ti	zi	Zo	va	ya	no	mu	(70)
phu	mbo	Be	cha	kwa	Mbi	tho	za	ne	chi	(80)
yo	yi	pe	ke	mle	Kwe	ndo	wu	nkha	ta	(90)
tso	ngo	ni	A	kho	Bwi	lo	nzi	ndu	mo	(100)

Time remaining on stopwatch at completion (number of SECONDS):

Check this box if the exercise was discontinued because the child had no correct answers in the first line

e. <input style="width: 30px; height: 20px;" type="checkbox"/>

## Section 5. Familiar Word Reading

Show the child the sheet of letters in the student stimuli booklet. Say:

Here are some words in Chichewa. Please read as many words as you can. For example, this word is: "khama".

Let's practise: please read this word [point to the word "ona"]:

If the child responds correctly say: Good, this word is "ona"

If the child does not respond correctly, say: This word is "ona."

Now try another one: please read this word [point to the word "bakha"]:

If the child responds correctly say: Good, this word is "bakha."

If the child does not respond correctly, say: This word is "bakha."

When I say "begin," read the words as quickly and carefully as you can. Read the words across the page, starting at the first row below the line. I will keep quiet and listen to you, unless you need help. Do you understand what you are to do? Ready? Begin



Start the timer when the child reads the first word. Follow along with your pencil and clearly mark any incorrect words with a slash (/). Count self-corrections as correct. If you've already marked the self-corrected word as incorrect, circle the word and go on. Stay quiet, except when if the child hesitates for 3 seconds, then point to the next word and say "Please go to the next syllable." Mark the word skipped as incorrect. If the student skips a word, mark that one as incorrect, but do not stop the student. If you can't be sure you heard the student correctly, stop the stopwatch and say, "Sorry, I couldn't hear you. Can you please say it again?" Then restart stopwatch, and continue

AFTER 60 SECONDS SAY, "stop." Mark the final word read with a bracket (]).

Early stop rule: If the child does not give a single correct response on the first line, say "Thank you!", discontinue this exercise, check the box at the bottom, and go on to the next exercise.

Example : khama ona bakha

	1	2	3	4	5	
Atate	chiwala	Amayi	zovala	chakudya		(5)
Zina	atate	nyumba	lata	ndi		(10)
Fisi	malangizo	Mutu	mbalame	mnyamata		(15)
Pamanda	agogo	Tsiku	chimanga	bwino		(20)
Monga	mbewu	Zinthu	anthu	mitengo		(25)
Kalulu	ambiri	kwambiri	ana	abambo		(30)
Mbozi	kwa	zakudya	mphunzitsi	koma		(35)
Izi	kudziwa	Lina	mlonda	kusamala		(40)
Kuti	zipatso	nkhalango	iwo	zambiri		(45)
Mlendo	ena	mbatata	lye	akulu		(50)

Time remaining on stopwatch at completion (number of SECONDS) :

Check this box if the exercise was discontinued because the child had no correct answers in the first line.

## Section 5. Invented (Unfamiliar) word decoding

Show the child the sheet of letters in the student stimuli booklet. Say:

Here are some invented words in Chichewa. Please read as many words as you can. For example, this word is: "lufa".

Let's practise: please read this word [point to the word "aga"]:

If the child responds correctly say: Good, this word is "aga"

If the child does not respond correctly, say: This word is "aga."

Now try another one: please read this word [point to the word "kete"]:

If the child responds correctly say: Good, this word is "kete."

If the child does not respond correctly, say: This word is "kete."

When I say "begin," read the words as quickly and carefully as you can. Read the words across the page, starting at the first row below the line. I will keep quiet and listen to you, unless you need help. Do you understand what you are to do? Ready? Begin



Start the timer when the child reads the first word. Follow along with your pencil and clearly mark any incorrect words with a slash (/). Count self-corrections as correct. If you've already marked the self-corrected word as incorrect, circle the word and go on. Stay quiet, except when if the child hesitates for 3 seconds, then point to the next word and say "Please go to the next syllable." Mark the word skipped as incorrect. If the student skips a word, mark that one as incorrect, but do not stop the student. If you can't be sure you heard the student correctly, stop the stopwatch and say, "Sorry, I couldn't hear you. Can you please say it again?" Then restart stopwatch, and continue

AFTER 60 SECONDS SAY, "stop." Mark the final word read with a bracket (]).

Early stop rule: If the child does not give a single correct response on the first line, say "Thank you!", discontinue this exercise, check the box at the bottom, and go on to the next exercise.

Example : lufa

aga

kete

	1	2	3	4	5	
Aza	Leta	geba	upa	atu		(5)
Omo	Mnkhawi	mvuvu	bwazo	goju		(10)
Nthibe	Aza	Suule	mpholi	nkhiki		(15)
Tchefe	Juje	udo	mng'ene	nkhwena		(20)
Booli	Chizi	thyata	eze	ngogo		(25)
zefa	Mnapa	mphwika	pwika	sati		(30)
thobi	Uto	khuda	tapuli	ono		(35)
ndwigo	Faano	Fese	bzyata	nyanu		(40)
zeepi	Iso	Patu	ilu	deeni		(45)
popo	Phena	Laafi	tetu	ntchuka		(50)

Time remaining on stopwatch at completion (number of SECONDS) :

Check this box if the exercise was discontinued because the child had no correct answers in the first line.

## **Section 7a. Oral Passage Reading**

Show the child the story in the student stimuli booklet. Say,

Here is a short story. I want you to read it aloud, quickly but carefully. When you have finished, I will ask you some questions about what you have read

Ready? Begin.



*Start the timer when the child reads the first word. Follow along with your pencil and clearly mark any incorrect words with a slash (/). Count self-corrections as correct. If you've already marked the self-corrected word as incorrect, circle the word and go on. Stay quiet, except when if the child hesitates for 3 seconds, then point to the next word and say "Please go to the next syllable." Mark the word skipped as incorrect. If the student skips a word, mark that one as incorrect, but do not stop the student. If you can't be sure you heard the student correctly, stop the stopwatch and say, "Sorry, I couldn't hear you. Can you please say it again?" Then restart stopwatch, and continue*

*AFTER 60 SECONDS SAY, "stop." Mark the final word read with a bracket ( ] ).*

*Early stop rule: If the child does not give a single correct response on the first line, say "Thank you!", discontinue this exercise, check the box at the bottom, and go on to the next exercise*

## **Section 7b. Reading Comprehension**

When 60 seconds are up, or if the child finishes reading the passage in less than 60 seconds, **REMOVE the passage from in front of the child**, and ask the first question below.

Give the child at most 15 seconds to answer the question, mark the child's response, and move to the next question

Read the questions for each line up to the bracket showing where the child stopped reading

Now I am going to ask you a few questions about the story you just read.		correct	incorrect	don't know	No response
On Friday morning, Mada prepared to go school .	<b>Where did the story take place?</b> <i>[The story took place at school. On the closing day of a school term]</i>				
It was a closing day for the school term. Chiefs and parents came to Kaliza School to witness the showcasing of the reading talent.	What was happening on this day? <i>[Standard 1 learners were showcasing their Reading talents.]</i>				
Mada was so nervous as she was a young girl and was just a beginner in standard 1.	<b>Why was Mada so nervous?</b> <i>[Mada was so nervous because she was a Young girl. She was a beginner in standard 1]</i>				
Mada had read interestingly as compared to her age. People were very impressed and rewarded her with some cash prizes.	<b>What made Mada famous?</b> <i>[Mada had read interestingly as compared to her age.]</i>				
Mada became very famous.	What reward did people give Mada? <i>[People gave Mada some cash prizes]</i>				

## Section 8. Oral Comprehension

This is NOT a timed exercise, and THERE IS NO STUDENT SHEET. (Read aloud the short story twice and interestingly)

Now, I am going to read you a short story. I will read it to you twice. When I have finished, I will ask you some questions about what I have read. Please listen to the story carefully as I am reading. After I read the story, please attempt to answer all of my questions as best as you can.  
Ready? Let's start.

One day I was going to the market to buy meat. Along the road I saw a money wallet and I picked it. Inside the wallet there were some cash and bank auto-teller cards. When I told my mum, she advised me to surrender the wallet to the Villagehead. One day my mum was summoned by the Villagehead. At the villagehead's place, we met with a certain gentleman who happened to be the owner of the wallet. The gentleman thanked with some money amounting to K5000.00 and promised to assist in my education

Now I am going to ask you a few questions about the story you have just read.

	correct	incorrect	don't know	no response
Where did the story take place? <i>[It took place in a village, along the road, on the way to the market]</i>				
What was inside the wallet? <i>[There were money and bank auto-teller cards]</i>				
Why was the wallet surrendered to the villagehead? <i>[For safe custody and the chief needed to know]</i>				
Who came to the villagehead's place? <i>[There came the owner of the money wallet]</i>				
What reward did the owner of the wallet give? Cash amounting to K5000.000 and an offer for educational support				

Time at completion: \_\_\_\_ : \_\_\_\_ (24 hour)

# ANNEX III: CLASSROOM OBSERVATION PROTOCOL

**Instructions:** Meet with the Head Teacher and tell him/her you want to observe a Standard 2 and Standard 4 classroom where the teacher has been teaching most of the year. For those classes, ask when the Chichewa and English reading classes are and when the breaks/recess and school feeding occurs in each class. You will need to determine your observation schedule based on this information, observing Std. 2 and Std. 4 each for 3 lessons for the same teacher. If a teacher is absent and no other class and teacher is available to be sampled, student teachers may be observed. We do not want to observe caretaker teachers.

**Enumerator: COMPLETE A SEPARATE PROTOCOL FOR EACH LESSON**

1. Questionnaire ID: \_\_\_\_\_
2. Enumerator Name: \_\_\_\_\_
3. Survey and Logistics Manager Signature: \_\_\_\_\_
4. Technical Manager Signature: \_\_\_\_\_
5. Division: \_\_\_\_\_
6. District: \_\_\_\_\_
7. Zone: \_\_\_\_\_
8. School: \_\_\_\_\_
9. EMIS ID Number: \_\_\_\_\_
10. Teacher name: \_\_\_\_\_
11. Teacher gender: \_\_\_\_\_
12. Date: \_\_\_\_\_
13. Class Standard: \_\_\_\_\_
14. Is teacher present when lesson is scheduled to begin? Yes \_\_\_\_\_ No \_\_\_\_\_
15. Time lesson begins: \_\_\_\_\_  
For 16 and 17, enter the number of boys/girls present when the lesson begins and then add those who come late at the end of the lesson – from #20.
16. Number of boys present: \_\_\_\_\_
17. Number of girls present: \_\_\_\_\_
18. Number of adults helping in the classroom in addition to the teacher: \_\_\_\_\_
19. Subject being taught:
  - a. Reading (in Chichewa)
  - b. English
  - c. Reading in another language, please specify language \_\_\_\_\_
  - d. Other, please specify \_\_\_\_\_

20. Number of learners that come to class late: (Complete table by entering under “minutes” columns a tick in the appropriate cell each time a pupil comes in late, then sum and record an “X” in each appropriate row)

No. of Learners	Time late in minutes			
	A - 1 - 10	B - 11 - 20	C - 21 - 30	D - Total late
1 - Boys				
2 - Girls				

TEACHER BEHAVIOR OBSERVED	1 Opposite of behavior described or do not see the behavior described	2 See the behavior sometimes or partially correct	3 See the behavior done very well and consistently where appropriate	4 Not Applicable (Behavior is not relevant to the subject being taught)
25a. Uses a lesson plan				
25b. Uses a scripted lesson plan				
26. Introduces lesson by <b>connecting</b> to what learners have learned previously				
27. Introduces lesson with <b>advance organizer</b>				
28. Manages instructional time effectively				
29. Demonstrates effective <b>classroom management</b> skills				
30. Makes effective use of different instructional resources and strategies				
31. Treats all students equally/fairly				
32. Engages learners in carefully planned <b>cooperative learning</b> strategies				
33. Asks <b>probing, open-ended questions</b> that encourage thinking and helps learners explicate their thinking				
34. Provides learners with structured opportunities to <b>apply their understanding and skills</b> to everyday life and problems				

35. Provides opportunities for learners to <b>develop higher-order and critical</b> thinking skills					
36. Uses appropriate learning materials besides textbooks					
37. <b>Assesses</b> pupil learning					
<b>BIAS or MISTREATMENT</b>					
38. Avoids using <b>gender biased</b> language					
	<b>1</b> Opposite of behavior described or do not see the behavior described	<b>2</b> See the behavior sometimes or partially correct	<b>3</b> See the behavior done very well and consistently where appropriate		<b>4</b> Not Applicable (Behavior is not relevant to the subject being
39. Avoids using <b>abusive language</b>					
40. Provides positive, encouraging <b>feedback</b>					
41. Does not allow learners to use gender bias					
42. Does not allow learners to use abusive language					
43. <b>Girls</b> have equal <b>access</b> to desks, learning materials, etc.					
<b>READING PRACTICE</b> May need to mark Option 4 for many of these, if not observing a reading class					
44. Engages learners in reading activities or games appropriate to their reading level					
45. Encourages learners to <b>“sound it out”</b> when they don’t know a word					
46. <b>Avoids criticizing</b> learners who don’t answer correctly or read poorly					
47. When teacher or pupil(s) read a story, teacher asks learners <b>pre-reading questions</b> such as “What do you think					

the story will be about based on the pictures and/or title of the book?"				
48. When teacher or learners read a story, teacher asks learners to make <b>appropriate sounds or act something</b> out, such as the roar a lion makes or the way a frog hops				
49. Applies <b>multiple methods to support comprehension</b> , including games, group work, etc.				
50. Encourages learners to <b>help each other</b>				
51. Has individual learners <b>read aloud</b>				
	<b>1</b> Opposite of behavior described or do not see the behavior described	<b>2</b> See the behavior sometimes or partially correct	<b>3</b> See the behavior done very well and consistently where appropriate	<b>4</b> Not Applicable (Behavior is not relevant to the subject being
52. Provides instructions on how to <b>decode</b> syllables and words				
53. Teaches learners <b>meanings of new</b> words				
54. Asks learners questions to assess their understanding of something the learner(s) or teacher have/has <b>read</b>				
55. Asks learners questions to assess their understanding of stories they <b>hear</b>				
56. Asks learners to <b>recognize letters and</b> say letter names and/or sound				
57. Learners <b>retell a story</b> they or the teacher read				
58. Asks learners to <b>recite the alphabet</b>				
59. Assigns <b>reading</b> for learners to do <b>on their own</b> during school time				

60. Provides a variety of methods for learners to establish <b>good writing</b> skills				
<b>PUPIL BEHAVIOR</b>				
61. Most learners are <b>paying attention</b>				
62. Most learners are <b>actively engaged</b> in the lesson				
63. Most learners are <b>actively engaged</b> when working in <b>small groups or in pairs</b>				
64. Learners appear to <b>understand</b> what the teacher is saying				

Time lesson ends: \_\_\_\_\_

Length of Lesson: \_\_\_\_\_

21. Number of textbooks being used by learners: \_\_\_\_\_

22. Number of reading materials on walls and around classroom (NOT painted walls): \_\_\_\_\_

23. Number of reading materials on the walls and around the classroom that appear to be recent: \_\_\_\_\_

24. Language teacher uses	A - Local only	B - Local + Chichewa	C - Local + English	D - Chichewa only	E - English only	F - Chichewa + English
Put X in appropriate box						

**NOTES ABOUT THE LESSON:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# ANNEX IV: HEAD TEACHER INTERVIEW PROTOCOL

The Malawi Ministry of Education, Science and Technology (MoEST) with funding from USAID are conducting a nationwide assessment of student reading ability in Standards 2 and 4. Your school was selected through a process of statistical sampling to take part in this study. We would like your help in this. But you do not have to take part if you do not want to, and you are free to opt out of any questions you do not feel comfortable answering. If you decide to take part, your name will not be mentioned anywhere in the survey data or report. The results of our analysis will be used by the Ministry of Education, Science and Technology to help identify additional support that is needed to help ensure that all children in Malawi become good readers. Additionally, your school will receive a report of the results that you can use to help you better address the needs of children in your school. This interview will take approximately one hour to complete. If you agree to help with this study, please read the consent statement below, sign on the line, and answer the questions I will ask you as completely and accurately as you can.

CONSENT STATEMENT: I understand and agree to participate in this reading research study by filling out this questionnaire as completely and accurately as possible.

HEAD TEACHER SIGNATURE: \_\_\_\_\_

Please answer all questions truthfully.

Date:

Time Started:

Time Ended:

Enumerator Name:

Survey and Logistics Manager Signature:

Technical Manager Signature:

School Name:

EMIS ID:

Questionnaire ID:

Division:

District:

Zone:

Location Type: Urban Rural Peri-Urban (circle one)

Type of School: Coed All Boys All Girls (circle one)

Designation of School: Junior Primary Full Primary (circle one)

**Instructions:** *The enumerator should read each of the questions to the head teacher as is. He/she can also read the response choices (unless the question specifies that the head teacher should not be prompted). Once the head teacher has selected an option, the letter associated with that option should be circled. Most questions should have only one response. However, in some cases, a question will specify that multiple responses are allowed. In those cases, the enumerator should circle the letters corresponding with all response options that apply. All regular text can be read to the respondents, and all italic text includes instructions to the enumerator.*

## **RESPONDENT BACKGROUND**

- 1a. Respondent name: \_\_\_\_\_
- 1b. Respondent age: \_\_\_\_\_
2. What is your position at this school?
  - a. Head Teacher (HT) = 1 (***Skip to QUESTION 3b***)
  - b. Deputy Head Teacher (DHT) = 2
  - c. Other, please specify \_\_\_\_\_ = 3
- 3a. Is the Head Teacher male or female?
  - a. Male = 1
  - b. Female = 2
- 3b. What is the sex of the person being interviewed (observe, do not ask)
  - a. Male = 1
  - b. Female = 2
4. How many years have you been in this position (as HT or DHT)? (Don't know/Refuse to answer = 9999): \_\_\_\_\_ (***please write the number of years***)
  - a. How many months have you been in this position (as HT or DHT)? (Don't know/Refuse to answer = 9999): \_\_\_\_\_ (***please write the number of years***)
5. How many years have you been in this position **at this school**? (Don't know/Refuse to answer = 9999): \_\_\_\_\_ (***please write the number of years***)
  - a. How many months have you been in this position **at this school**? (Don't know/Refuse to answer = 9999): \_\_\_\_\_ (***please write the number of years***)
6. What is your highest academic qualification? (*Do not prompt; select the answer that matches the response provided*)
  - a. JCE = 1
  - b. MSCE = 2
  - c. Diploma = 3
  - d. Degree = 4
  - e. Other, please specify: \_\_\_\_\_ = 5
  - f. Don't know/Refuse to answer = 9999
7. Are you a trained teacher?
  - a. No = 0
  - b. Yes = 1
  - c. Don't know/Refuse to answer = 9999

## **SCHOOL BACKGROUND**

8. What is the length of the school day for each of the following standards? (Don't know/Refuse to answer = 9999) (*List in hours and minutes; example – 2½ hours = 2 hours 30 minutes*):

- a. Standard 1: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes
- b. Standard 2: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes
- c. Standard 3: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes
- d. Standard 4: \_\_\_\_\_ Hours \_\_\_\_\_ Minutes

9a. Does this school operate on shifts?

- a. No = 0 (*Skip to QUESTION 12*)
- b. Yes = 1
- c. Don't know/Refuse to answer = 9999 (*Skip to QUESTION 12*)

9b. Which standards are offered during shift one? (*multiple responses possible*)

- a. Standard 1
- b. Standard 2
- c. Standard 3
- d. Standard 4
- e. None
- f. Don't know/Refuse to answer

10. Which standards are offered during shift two? (*multiple responses possible*)

- a. Standard 1
- b. Standard 2
- c. Standard 3
- d. Standard 4
- e. None
- f. Don't know/Refuse to answer

11. How many classes are there at this school for each of the following standards? (Don't know/Refuse to answer = 9999):

- a. Standard 1: \_\_\_\_\_
- b. Standard 2: \_\_\_\_\_
- c. Standard 3: \_\_\_\_\_
- d. Standard 4: \_\_\_\_\_

## **RESOURCES**

12. Do all of your pupils have the prescribed number of textbooks?

- a. No = 0
- b. Yes = 1 (*Skip to QUESTION 14*)
- c. Don't know/Refuse to answer = 9999 (*Skip to QUESTION 14*)

13. Why not? (*Do not prompt; select all that apply; multiple responses possible*).

- a. The ministry did not provide more textbooks
- b. The donor organization did not provide enough textbooks
- c. We have more textbooks, but they are in too poor of condition to hand out
- d. We don't like to hand out all textbooks because we want to keep some in good condition
- e. Other, please specify \_\_\_\_\_
- f. Don't know/Refuse to answer

14. Has your school received textbooks or materials?
- No = 0 (*Skip to QUESTION 16*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 16*)
15. Who provided/provides pupils with textbooks? (*Do not prompt; select all that apply; multiple responses possible*).
- MoEST = 1
  - MTPDS = 2
  - EGRA = 3
  - Read Malawi = 4
  - UNICEF = 5
  - Other, please specify \_\_\_\_\_ = 6
  - Don't know/Refuse to answer = 9999
16. Is there a water supply available on school premises?
- No = 0 (*Skip to QUESTION 18*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 18*)
17. What type of water supply is available on school premises? (*select all that apply; multiple responses possible*)
- Borehole
  - Lake
  - No Water
  - Piped Water
  - Protected hand dug well with pump
  - Protected Spring
  - River
  - Unprotected hand-dug well
  - Unprotected Spring
18. Does the school have electricity? (either Grid or Solar)?
- No = 0
  - Yes = 1
  - Don't know/Refuse to answer = 9999
19. Does your school have a school feeding program?
- No = 0 (*Skip to QUESTION 23*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 23*)
20. If yes, what time does the feeding occur in the school day?
- Before school starts = 0
  - In the middle of the day = 1
  - After school = 2
  - Don't know/Refuse to answer = 9999
21. Is school feeding offered every school day?
- No = 0
  - Yes = 1

- c. Don't know/Refuse to answer = 9999
22. How long has the school been participating in the school feeding program? (*Do not prompt*)
- a. Less than one year = 0
  - b. One year = 1
  - c. Two years = 2
  - d. Three years = 3
  - e. Four years = 4
  - f. Five years = 5
  - g. More than five years = 6
  - h. Don't know/Refuse to answer = 9999

### **TEACHER INFORMATION**

23. How many Standard 1-Standard 4 teachers are there at this school? (Don't know/Refuse to answer = 9999):\_\_\_\_\_
24. How many of the Standard 1-Standard 4 teachers at this school are trained? (Don't know/Refuse to answer = 9999):\_\_\_\_\_
25. How many Standard 1-4 teachers from this school have participated in a training on how to teach reading since 2013? (Don't know/Refuse to answer = 9999):\_\_\_\_\_ (*If the answer is "0," Skip to QUESTION 30*)
26. What type of training on the teaching of reading did these teachers participate in? (*select all that apply; multiple responses possible*)
- a. EGRA
  - b. National Reading Program
  - c. Don't know/refuse to answer
27. Among those who participated in the **National Reading Program** training, on average, how many **National Reading Program** trainings has each of the Standard 1-Standard 4 teachers participated in the past two years? (Don't know/Refuse to answer = 9999):\_\_\_\_\_
28. How many of the Standard 1-Standard 4 teachers are using the NRP reading methods in their teaching? (Don't know/Refuse to answer = 9999):\_\_\_\_\_ (*If the answer is "0," Skip to QUESTION 30*)
29. How many of the Standard 1-Standard 4 teachers do you think feel confident about using the NRP teaching methods? (Don't know/Refuse to answer = 9999):\_\_\_\_\_
30. How many of the Standard 1-Standard 4 teachers do you think need additional training on applying early grade reading methods in the classroom? (Don't know/Refuse to answer = 9999):\_\_\_\_\_
31. How many of the Standard 1-Standard 4 teachers have participated in training in another approach to teaching reading? (Don't know/Refuse to answer = 9999):\_\_\_\_\_ (*If the answer is "0," Skip to QUESTION 35*)
32. Which organization(s) organized these trainings? (*Do not prompt; select all that apply; multiple responses possible*):
- a. DTED
  - b. MIE
  - c. Read Malawi

- d. UNICEF
  - e. World Vision (NASFEM)
  - f. MTPDS
  - g. Plan Malawi
  - h. Tikwere
  - i. Save the Children
  - j. SIG (Ministry of Education Program)
  - k. Other, please specify \_\_\_\_\_
  - l. Don't know/Refuse to answer
33. Among those who have participated in such trainings, on average, how many non-reading trainings has each of the Standard 1-Standard 4 teachers participated in during the past two years? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
34. How many of the Standard 1-Standard 4 teachers are using these other methods of teaching reading in their classrooms? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
35. How many Standard 1 to Standard 4 teachers were absent yesterday (or on the last school day)? (Don't know/Refuse to answer): \_\_\_\_\_
36. How many Standard 1 to Standard 4 teachers often arrive late or after the start of classes? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
37. Do you maintain records of teacher absences? *(If yes, ask to see them and provide an estimate of the numbers of absences for all teachers in Standard 1-Standard 4 for the entire year). (If no, mark with an 8888; Don't know/Refuse to answer = 9999):* \_\_\_\_\_
38. How often do you or someone else from your school review teacher lesson plans? *(Do not prompt)*
- a. Never = 0
  - b. Once per year = 1
  - c. Once every 2-3 months = 2
  - d. Once per month = 3
  - e. Once every two weeks = 4
  - f. Every week = 5
  - g. Once a day = 6
  - h. Don't know/Refuse to answer = 9999
39. In a term, how many times are teachers provided with supervision or coaching in their classrooms by someone in this school? *(Do not prompt)*
- a. Never = 0
  - b. One time = 1
  - c. Two times = 2
  - d. Three times = 3
  - e. Four or more times = 4
  - f. Other, please specify \_\_\_\_\_ = 5
  - g. Don't know/Refuse to answer = 9999

**INFORMATION ON PUPILS**

40. Rank the three primary reasons, not including transfers, in this school for the **Standard 2** dropouts?  
(Do not prompt; mark the greatest reason with a 1, the second greatest with a 2, and the third greatest with a 3. Leave all other reasons blank after answer first three.):

- a. Limited availability of teachers: \_\_\_\_\_
- b. Employment/helping with family work: \_\_\_\_\_
- c. Taking care of siblings or other relatives: \_\_\_\_\_
- d. Fees: \_\_\_\_\_
- e. Long distances travel: \_\_\_\_\_
- f. Marriage: \_\_\_\_\_
- g. Poor school facilities: \_\_\_\_\_
- h. Pregnancy: \_\_\_\_\_
- i. Sickness or injury: \_\_\_\_\_
- j. Violence: \_\_\_\_\_
- k. Not motivated/Don't see importance of education: \_\_\_\_\_
- l. Difficultly understanding the curriculum/Poor performance: \_\_\_\_\_
- m. Other, please list \_\_\_\_\_ : \_\_\_\_\_
- n. Don't know/Refuse to answer (Write 9999 if selected): \_\_\_\_\_

41. Rank the three primary reasons, not including transfers, in this school for the **Standard 4** dropouts?  
(Do not prompt; mark the greatest reason with a 1, the second greatest with a 2, and the third greatest with a 3):

- a. Limited availability of teachers: \_\_\_\_\_
- b. Employment/helping with family work: \_\_\_\_\_
- c. Taking care of siblings or other relatives: \_\_\_\_\_
- d. Fees: \_\_\_\_\_
- e. Long distances travel: \_\_\_\_\_
- f. Marriage: \_\_\_\_\_
- g. Poor school facilities: \_\_\_\_\_
- h. Pregnancy: \_\_\_\_\_
- i. Sickness: \_\_\_\_\_
- j. Violence or Injury: \_\_\_\_\_
- k. Not motivated/Don't see importance of education: \_\_\_\_\_
- l. Difficultly understanding the curriculum/Poor performance: \_\_\_\_\_
- m. Other, please list \_\_\_\_\_ : \_\_\_\_\_
- n. Don't know/Refuse to answer (Write 9999 if selected): \_\_\_\_\_

42. Are dropout rates higher or lower for boys or girls?

- a. Higher for girls = 1 (**Explain in 43**)
- b. Higher for boys = 2(**Explain in 43**)
- c. About the same for both sexes = 3 (**Skip to QUESTION 43a**)
- d. It varies by standard level = 4 (**Explain in 43**)
- e. Don't know/Refuse to answer = 9999 (**Skip to QUESTION 43a**)

43. Why do dropout rates vary by sex or standard level? \_\_\_\_\_

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43a. What, if anything has been done (by you, as the head teacher or deputy head teacher, the school as a whole, the Parent-Teacher Association, and the Community) to reduce dropouts at your

school? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

43b. What else would you like to be doing to reduce dropouts in your school if the resources were available? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

44. What is the average repetition rate (percent) for pupils in the following standards? (Don't know/Refuse to answer = 9999):
- a. Standard 1: \_\_\_\_\_
  - b. Standard 2: \_\_\_\_\_
  - c. Standard 3: \_\_\_\_\_
  - d. Standard 4: \_\_\_\_\_

- 44a. What is the **main** reason for pupils' repetition in Standard 2? (*Do not prompt*)
- a. They don't study = 1
  - b. They don't have textbooks = 2
  - c. There are too many pupils in the class = 3
  - d. They don't pay attention = 4
  - e. There isn't enough time in the school day = 5
  - f. I can't effectively teach this many pupils = 6
  - g. Some of the pupils are too young = 7
  - h. They can't study at home because there is no electricity = 8
  - i. They can't study at home because they don't have any materials to take home = 9
  - j. Other, please specify \_\_\_\_\_ = 10
  - k. Don't know/Refuse to answer = 9999

- 44b. What is the **main** reason for pupils' repetition in Standard 4? (*Do not prompt*)
- a. They don't study = 1
  - b. They don't have textbooks = 2
  - c. There are too many pupils in the class = 3
  - d. They don't pay attention = 4
  - e. There isn't enough time in the school day = 5
  - f. I can't effectively teach this many pupils = 6
  - g. Some of the pupils are too young = 7
  - h. They can't study at home because there is no electricity = 8
  - i. They can't study at home because they don't have any materials to take home = 9
  - j. Other, please specify \_\_\_\_\_ = 10
  - k. Don't know/Refuse to answer = 9999

44c. What, if anything has been done (by you, as the head teacher or deputy head teacher, the school as a whole, the Parent-Teacher Association, and the Community) to reduce repetition at your school? \_\_\_\_\_  
\_\_\_\_\_

44d. What else would you like to be doing to reduce repetition in your school if the resources were available? \_\_\_\_\_  
\_\_\_\_\_

45. Are boys or girls more likely to repeat a standard?
- Boys are more likely to repeat a standard = 1 Why? \_\_\_\_\_
  - Girls are more likely to repeat a standard = 2 Why? \_\_\_\_\_
  - They are equally likely to repeat a standard = 3
  - It varies by standard level = 4, Explain \_\_\_\_\_
  - Don't know/Refuse to answer = 9999
46. How many pupils with disabilities are there in the school? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
47. How, if at all, does the school cater to pupils with disabilities? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### **COMMUNITY INVOLVEMENT IN THE SCHOOL**

48. Does the school have a PTA?
- No = 0 (*Skip to QUESTION 52*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 52*)
49. When did it begin operating? (*Enter year*) (Don't know/Refuse to answer = 9999): \_\_\_\_\_ (*If before 1990, choose 1990*)
50. How often did the PTA meet in this academic year? (*Do not prompt unless the Head Teacher is struggling with understanding the questions. Then, it is okay to list the answer choices.*)
- Never = 0
  - Once a year = 1
  - Twice per year = 2
  - Once every 2-3 months = 3
  - Once a month = 4
  - Once a week = 5
  - Don't know/Refuse to answer = 9999
51. For which of the following does the PTA have decision making authority and/or responsibility? (*Read each answer choice; select all that apply; **multiple responses possible***):
- School management
  - Pupil learning challenges and solutions
  - Curriculum
  - Physical school improvement efforts
  - Maintenance of infrastructure/equipment
  - Financial issues/fund raising
  - Procurement and/or distribution of textbooks
  - Reading instruction in after-school programming
  - Other, please specify \_\_\_\_\_
  - Don't know/Refuse to answer

52. Does the school have a school management committee?
- No = 0 (*Skip to QUESTION 56*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 56*)
53. When did it begin operating? (*Enter year*) (Don't know/Refuse to answer = 9999): \_\_\_\_\_ (*If before 1990, choose 1990*)
54. How often did the school management committee meet in this academic year? (*Do not prompt*)
- Never = 0
  - Once a year = 1
  - Twice per year = 2
  - Once every 2-3 months = 3
  - Once a month = 4
  - Once a week = 5
  - Don't know/Refuse to answer = 9999
55. For which of the following does the school management committee have decision making authority and/or responsibility? (*Read each answer choice; select all that apply; **multiple responses possible***):
- School management
  - Pupil learning challenges and solutions
  - Curriculum
  - Physical school improvement efforts
  - Maintenance of infrastructure/equipment
  - Financial issues/fund raising
  - Procurement and/or distribution of textbooks
  - Don't know/Refuse to answer
56. Do you ever invite parents to participate in their pupils' classrooms or become engaged in extra-curricular activities?
- No = 0
  - Yes = 1
  - Don't know/Refuse to answer = 9999
57. Other than the PTA, school management committee, and parents, is the community (individuals, organizations, or businesses) involved in supporting the school and pupil learning?
- No = 0 (*Skip to QUESTION 59*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 59*)
58. In what other ways, if any, does the community (including local individuals and businesses) get involved with your school? (*Do not prompt; just select all those that apply*)

	<b>A – Way</b> ( <i>see below list for codes; list only one code per box</i> )	<b>B - When did involvement begin</b> ( <i>year</i> )	<b>C - Has this support helped the school</b> ( <i>No = 0, Yes = 1, Don't know = 9999</i> )	<b>D - If so, in what ways</b> ( <i>see below list for codes; multiple selections possible</i> )
1				
2				
3				

**Codes for 58A:**

- a. Helping with construction (i.e. molding bricks, constructing buildings) = 1
- b. Digging wells/toilets = 2
- c. Donating materials and resources for construction = 3
- d. Cooking = 4
- e. Fundraising = 5
- f. Volunteering at schools; please specify in what way(s)\_\_\_\_\_ = 6
- g. Other, please list in space above = 7
- h. Don't know/Refuse to answer = 9999

**Codes for 58D:**

- It didn't benefit the school at all = 0
- Better facilities = 1
- More resources for teachers = 2
- More resources for learners = 3
- More motivation on the part of staff = 4
- More motivation on the part of learners = 5
- Better quality teaching = 6
- Longer school day = 7
- Learners are able to read better = 8
- Learner are able to learn better in other learning areas = 9
- Learners are getting better scores on their tests = 10
- Better or more regular attendance = 11
- Other, please list in space above = 12
- Don't know/Refuse to answer = 9999

59. Has community involvement increased or decreased over the past three years?
- a. It has decreased = 1
  - b. It has increased = 2
  - c. It has stayed the same = 3
  - d. Don't know/Refuse to answer = 9999

**SUPPORT FROM OUTSIDE ORGANIZATIONS**

- 60a. Do you have an extended school day?
- a. No, our school day has not been extended = 0 (*Skip to QUESTION 61*)
  - b. Yes = 1
  - c. Don't know/Refuse to answer = 9999 (*Skip to QUESTION 61*)
- 60b. What benefits are you getting from this extension of the school day? \_\_\_\_\_ f
- 60c. For which Standards has the school day been extended? (*Don't prompt; select all that apply; multiple answers possible; Don't know/Refuse to answer = 9999*)
- a. Standard 1
  - b. Standard 2
  - c. Standard 3
  - d. Standard 4
  - e. Standard 5
  - f. Standard 6
  - g. Standard 7
  - h. Standard 8
  - i. Don't know/Refuse to answer

61. Are there any other individuals, organizations, or businesses that are involved in providing any kind of support/training/assistance to the school? Please include support or training received from Airtel, World Vision, UNICEF, FAWEMA, World Bank, and any other organizations.
- No = 0
  - Yes = 1
  - Don't know/Refuse to answer = 9999

### **RESPONDENT ROLE AND THOUGHTS**

62. For how many hours per week do you provide instructional support to your teachers? (Don't know/Refuse to answer = 9999):\_\_\_\_\_
63. What are the reasons you don't provide more instructional support? (*Don't prompt; select all that apply; multiple responses possible*):
- I think that amount of support is enough
  - I have to teach classes too often
  - I have too many administrative duties
  - I don't feel comfortable providing instructional support
  - The teachers don't like it when I provide instructional support
  - Other, please specify\_\_\_\_\_
  - Don't know/Refuse to answer
64. Have you participated in any training on instructional support?
- No = 0 (*Skip to QUESTION 67*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 67*)
65. Who provided the training on instructional support? (*Don't prompt; select all that apply; multiple responses possible*):
- MoEST DTED (DEMs, PEAs, etc.)
  - MIE
  - MTPDS
  - EGRA
  - Read Malawi
  - UNICEF
  - World Vision
  - Other, please specify\_\_\_\_\_
  - Don't know/Refuse to answer
66. How many days have you participated in instructional support training in the **past three years**? (Don't know/Refuse to answer = 9999):\_\_\_\_\_
67. Have you participated in training or taken courses in school management in the **past three years**?
- No = 0 (*Skip to QUESTION 71*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 71*)
68. Did you complete the MSSSP training?
- No = 0
  - Yes = 1
  - Don't know/Refuse to answer = 9999

69. Have you participated in any other school management training?
- No = 0 (***Skip to QUESTION 71***)
  - Yes = 1
  - Don't know/Refuse to answer (***Skip to QUESTION 71***)
70. How many hours of non-MSSSP training did you receive from each of the following organizations? (*Read out each organization; fill in the hours for all that apply or mark "0" if the head teacher did not receive any training from the specified organization*):
- DTED \_\_\_\_\_
  - MIE \_\_\_\_\_
  - MTPDS \_\_\_\_\_
  - EGRA \_\_\_\_\_
  - Read Malawi \_\_\_\_\_
  - UNICEF \_\_\_\_\_
  - World Vision \_\_\_\_\_
  - Other, please specify \_\_\_\_\_
  - Don't know/Refuse to respond

71. Have you received training (training of trainers) or taken courses on how to teach reading?
- No = 0 (***Skip to QUESTION 73***)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (***Skip to QUESTION 73***)

72. How many hours of training on how to teach reading did you receive from each of the following organizations? (*Read out each organization; fill in the hours for all that apply or mark "0" if the head teacher did not receive any training from the specified organization*):
- DTED \_\_\_\_\_
  - MIE \_\_\_\_\_
  - MTPDS \_\_\_\_\_
  - EGRA \_\_\_\_\_
  - Read Malawi \_\_\_\_\_
  - UNICEF \_\_\_\_\_
  - World Vision \_\_\_\_\_
  - Other, please specify \_\_\_\_\_
  - Don't know/Refuse to answer

73. Are you satisfied with the reading performance at Standards 2 and 4 in your school?
- No = 0
  - Yes = 1 (***Skip to QUESTION 76***)
  - Don't know/Refuse to answer = 9999 (***Skip to QUESTION 76***)

74. Why aren't you satisfied with the reading performance at Standards 2 and 4? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

75. What things would you suggest to improve reading performance in your school? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**QUESTIONS THAT MAY REQUIRE SOME RESEARCH**

76. What is the total enrollment at the school for Standards 1-4? (Don't know/Refuse to answer = 9999):
- a. Standard 1: \_\_\_\_\_
  - b. Standard 2: \_\_\_\_\_
  - c. Standard 3: \_\_\_\_\_
  - d. Standard 4: \_\_\_\_\_
77. What is the pupil-teacher ratio across the following standards (including both trained and untrained teachers but not student trainees or substitutes)? Don't know/Refuse to answer = 9999) (*If it is 200 to 1, list 200, etc.*):
- a. Standard 1: \_\_\_\_\_
  - b. Standard 2: \_\_\_\_\_
  - c. Standard 3: \_\_\_\_\_
  - d. Standard 4: \_\_\_\_\_
78. Since the start of the current school year, was this school closed for any days other than holidays?
- a. No = 0 (***Skip to QUESTION 81***)
  - b. Yes = 1
  - c. Don't know/Refuse to answer = 9999 (***Skip to QUESTION 81***)
79. How many days, other than holidays, was the school closed this academic year? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
80. Why was the school closed for days other than holidays this year? (*Do not prompt; select all that apply; multiple responses possible.* Don't know/Refuse to answer = 9999):
- a. Strike by teachers
  - b. Examinations
  - c. Funeral / Death
  - d. Weather
  - e. Teacher absences
  - f. Elections
  - g. Other(s), please specify \_\_\_\_\_
  - h. Don't know/Refuse to answer
81. What has been the average daily absentee rate (percentage) for pupils in the following standards this academic year: (Don't know/Refuse to answer = 9999):
- a. Standard 1: \_\_\_\_\_
  - b. Standard 2: \_\_\_\_\_
  - c. Standard 3: \_\_\_\_\_
  - d. Standard 4: \_\_\_\_\_
82. What is the dropout rate for all learners in the following standards this academic year? (Don't know/Refuse to answer = 9999):
- a. Standard 1: \_\_\_\_\_
  - b. Standard 2: \_\_\_\_\_
  - c. Standard 3: \_\_\_\_\_
  - d. Standard 4: \_\_\_\_\_

# ANNEX V: TEACHER INTERVIEW PROTOCOL

The Malawi Ministry of Education, Science and Technology (MoEST) with funding from USAID are conducting a nationwide assessment of student reading ability in Standards 2 and 4. Your school was selected through a process of statistical sampling to take part in this study. We would like your help in this. But you do not have to take part if you do not want to, and you are free to opt out of any questions you do not feel comfortable answering. If you decide to take part, your name will not be mentioned anywhere in the survey data or report. The results of our analysis will be used by the Ministry of Education, Science and Technology to help identify additional support that is needed to help ensure that all children in Malawi become good readers. Additionally, your school will receive a report of the results that you can use to help you better address the needs of children in your school.

If you agree to help with this study, please read the consent statement below, sign your name, and answer the questions I will ask you as completely and accurately as you can. It should take us no more than one hour.

CONSENT STATEMENT: I understand and agree to participate in this reading research study by filling out this questionnaire as completely and accurately as possible.

TEACHER SIGNATURE: \_\_\_\_\_

Please answer all questions truthfully. *Ask teacher to have attendance and progress record books for the entire year as well as the inventory book for the class with them for the interview.*

Date:

Time Started:

Time Ended:

Enumerator Name:

Survey and Logistics Manager Signature:

Technical Manager Signature:

School Name:

School EMIS ID:

Questionnaire ID:

Location Type: Urban    Rural    Peri-Urban (circle one)

Type of School: Coed    All Boys    All Girls    (circle one)

**Instructions:** *The enumerator should read each of the questions to the teacher as is. He/she can also read the response choices (unless the question specifies that teachers should not be prompted). Once the teacher has selected an option, the letter associated with that option should be circled. Most questions should have only one response. In some cases, a question will specify that*

*multiple responses are allowed. In those cases, the enumerator should circle the letters corresponding with all response options that apply. All regular text can be read to the respondents, whereas all italic text is meant for the enumerator clarification only.*

### **GENERAL BACKGROUND INFORMATION**

2. Division: \_\_\_\_\_
3. District: \_\_\_\_\_
4. Zone: \_\_\_\_\_
5. Teacher's Name: \_\_\_\_\_
6. Class level:
  - a. Standard 2 = 2
  - b. Standard 4 = 4

### **TEACHER BACKGROUND INFORMATION**

7. How old did you turn on your last birthday (Don't know/Refuse to answer = 9999): \_\_\_\_\_
8. How many years have you been teaching? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
  - a. How many months have you been teaching? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
9. How many years have you been teaching in this school? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
  - a. How many months have you been teaching in this school? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
10. What is your highest academic qualification? (*Don't prompt*)
  - a. JCE = 1
  - b. MSCE = 2
  - c. Diploma = 3
  - d. Other (specify: \_\_\_\_\_) = 4
  - e. Don't know/Refuse to answer = 9999
11. Are you a trained teacher?
  - a. No = 0 (*Skip to QUESTION 12*)
  - b. Yes = 1
  - c. Don't know/Refuse to answer = 9999 (*Skip to question 12*)
12. How many years have you been teaching as a trained teacher? (Don't know/Refuse to answer = 9999): \_\_\_\_\_ (*Skip to QUESTION 13 after this question*)
  - a. How many months have you been teaching as a trained teacher? (Don't know/Refuse to answer = 9999): \_\_\_\_\_ (*Skip to QUESTION 13 after this question*)
13. If you are not a trained teacher, what is your teaching status? (*Don't prompt unless the teacher does not understand the question; then you can list*)
  - a. Voluntary teacher = 1
  - b. Learner teacher = 2
  - c. Teaching assistant = 3

- d. Other, please specify \_\_\_\_\_ = 4
- e. Don't know/Refuse to answer = 9999

**CLASS BACKGROUND INFORMATION**

24. How many times each week do you use each of the following methods to measure/assess your learners' reading progress? (Don't know/Refuse to answer = 9999) (Enter 0-5 for each)
- a. Written evaluations: \_\_\_\_\_
  - b. Individual learner oral evaluations: \_\_\_\_\_
  - c. Whole class oral evaluations: \_\_\_\_\_
  - d. Small group oral evaluations: \_\_\_\_\_
  - e. Checking learners' exercise books: \_\_\_\_\_
  - f. Checking learners' homework: \_\_\_\_\_
  - g. Other methods (please describe): \_\_\_\_\_ #: \_\_\_\_\_
- 25a. In this school, what are the most important things that prevent learners from learning? (Don't prompt; circle all that apply; **multiple responses possible**):
- a. Classes too large
  - b. Learners don't have textbooks
  - c. There's not enough time in the school day
  - d. Learners don't understand the language of instruction
  - e. There are too many subjects in the curriculum for the time available
  - f. Teachers don't have access to the teaching materials they need
  - g. There are too many languages for learners to learn at one time
  - h. Learners shouldn't have to learn English so early
  - i. Learners don't attend school regularly
  - j. Teachers don't have enough training
  - k. Teachers don't understand English enough to be able to teach it
  - l. Learners do not have enough to eat
  - m. Learners are taking care of younger siblings or helping parents with work
  - n. The distance to school is too far for children to travel
  - o. The school is lacking in other resources, please list \_\_\_\_\_
  - p. Other, please specify: \_\_\_\_\_
  - q. Don't know/Refuse to answer

- 25b. What percent of reading instruction in Standards 1-4 is in the local familiar language (if something other than Chichewa)? (Don't know/Refuse to answer = 9999):
- a. Standard 1: \_\_\_\_\_
  - b. Standard 2: \_\_\_\_\_
  - c. Standard 3: \_\_\_\_\_
  - d. Standard 4: \_\_\_\_\_

**SCHOOL RESOURCES**

26. Does your school or classroom have a library?
- a. No = 0 (**Skip to QUESTION 29**)
  - b. Yes, a classroom library = 1 (check to see if you see books there, and ask a follow up question if not)
  - c. Yes, a school library = 2 (**Skip to QUESTION 28**)
  - d. Yes, both classroom and school libraries = 3
  - e. Don't know/Refuse to answer = 9999 (**Skip to QUESTION 29**)
27. How often do your learners use the classroom library? (Don't prompt)

- a. Every day = 1
  - b. Every other day = 2
  - c. Three – Four times a week = 3
  - d. Once a week = 4
  - e. Once or twice a month = 5
  - f. Only occasionally = 6
  - g. Never = 7
  - h. Don't know/Refuse to answer = 9999
28. How often do your learners use the school library? (*Don't prompt*)
- a. Every day = 1
  - b. Every other day = 2
  - c. Three – Four times a week = 3
  - d. Once a week = 4
  - e. Once or twice a month = 5
  - f. Only occasionally = 6
  - g. Never = 7
  - h. Don't know/Refuse to answer = 9999
29. Excluding textbooks, do you have sufficient teaching and learning resources (TALULAR)?
- a. No = 0
  - b. Yes = 1 (*check the room for them, and ask follow-up question if you don't see any*)
  - c. Don't know/Refuse to answer = 9999
30. In what other ways, if any, does the community (including local individuals and businesses) get involved with your school?
- |                       |                   |   |                             |
|-----------------------|-------------------|---|-----------------------------|
|                       | B - When did      | C - Has this support                          | <b>D - If so, in what</b>   |
| <b>a. A – Way</b>     | involvement begin | helped the school                             | <b>ways</b> (see below list |
| (no codes, just list) | ( <i>year</i> )   | ( <i>No = 0, Yes = 1, Don't know = 9999</i> ) | for codes)                  |
- 1 -
- 2 -
- 3 -
31. How many reading textbooks do you have for your class? (Don't know/Refuse to answer = 9999):
- a. English = \_\_\_\_\_ (*count them to verify, if possible*)
  - b. Chichewa = \_\_\_\_\_ (*count them to verify, if possible*)
32. How many reading textbooks do you hand out to learners? (Don't know/Refuse to answer = 9999):
- a. English = \_\_\_\_\_ (*count them to verify, if possible*)
  - b. Chichewa = \_\_\_\_\_ (*count them to verify, if possible*)
- (*if both numbers match those in 30, skip to QUESTION 32b*)
- 32a. Why do you not hand them all out? (*Don't prompt*)
- a. There are not enough for each learner to have one.
  - b. Learners do not take good care of the books/destroy them
  - c. Learners tend to lose the books
  - d. Other, please specify \_\_\_\_\_
  - e. Don't know/Refuse to answer = 9999

- 32b. Do learners from your class ever take textbooks or library books home from school?
- No = 0
  - Yes = 1
  - Don't know/Refuse to answer = 9999
33. In what ways do the staff in your school work together to identify strategies for increasing learner success in learning in school? \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### **COMMUNITY INVOLVEMENT IN THE SCHOOL**

34. Does your school have a functioning Parent Teacher Association?
- No = 0 (*Skip to QUESTION 37*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 37*)
35. How often does it meet? (*Don't prompt*)
- On an "as-needed" basis = 1
  - Weekly = 2
  - Twice per month = 3
  - Monthly = 4
  - Every other month = 5
  - Quarterly (once per term) = 6
  - Twice per year = 7
  - Annually = 8
  - Less than once/year = 9
  - Don't know/Refuse to answer = 9999
36. What sorts of activities does the PTA do to support the school? (*Don't prompt; multiple responses possible*)
- Manage/help with construction of school buildings
  - Help, manage, or fundraise to construct teacher houses
  - Dig wells/toilets or manage this process
  - Donate materials and resources for construction
  - Cook
  - Fundraise
  - Volunteer at schools; please specify in what way(s) \_\_\_\_\_
  - Mobilize the community to be more involved in the school
  - Encourage parental participation in their learner's education
  - Discuss/implement ways of reducing absenteeism
  - Discuss/implement ways of reducing dropouts
  - School maintenance
  - Other(s), please specify \_\_\_\_\_
  - Don't know/Refuse to answer
37. Do you have meetings with groups of parents of your learners (outside of PTA meetings)?
- No = 0 (*Skip to QUESTION 39*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 39*)

38. How often do you have meetings with groups of your learners' parents (outside of PTA meetings)?  
(*Don't prompt*)
- Once per school year =1
  - Twice per school year =2
  - Three times per school year = 3
  - Four or more times per school year = 4
  - Don't know/Refuse to answer = 9999
39. Do you ever invite parents to participate in their learners' classrooms or become engaged in extra-curricular activities?
- No = 0
  - Yes = 1
  - Don't know/Refuse to answer = 9999

### **SUPPORT FROM OUTSIDE ORGANIZATIONS**

40. Has your school received support from the EGRA Project?
- No = 0 (*Skip to QUESTION 42*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999(*Skip to QUESTION 42*)
41. What types of support has the school received from the EGRA Project? (*Read through each option and mark with a "Yes," "No," or "9999" for Don't know/Refuse to answer; multiple responses possible*):
- Have you received more textbooks for use in class?: \_\_\_\_\_
  - Do learners have textbooks to take home now?: \_\_\_\_\_
  - Have you received sample lesson plans or help with your lesson plans: \_\_\_\_\_
  - Has EGRA helped to get more parents involved in school?: \_\_\_\_\_
  - Has EGRA extended the length of your school day?: \_\_\_\_\_
  - Has EGRA provided you with training?: \_\_\_\_\_
  - Has EGRA provided other teachers in your school with training?: \_\_\_\_\_
  - Has EGRA provided you with coaching?: \_\_\_\_\_
  - Has EGRA provided any other support?, please specify \_\_\_\_\_
42. Are there any other donor or nonprofit organizations involved in providing any kind of support/training/assistance to the school?
- No = 0
  - Yes = 1
  - Don't know/Refuse to answer = 9999

### **INSERVICE TRAINING/PROFESSIONAL DEVELOPMENT**

43. How many days of **any type of in-service training** or professional development have you attended during the **last three (3) years**? (Don't know/Refuse to answer = 9999): \_\_\_\_\_ (*If 0, skip to QUESTION 49*)
44. How many days of **MTPDS** in-service training or professional development in teaching reading have you attended during the last **three (3) years**? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
45. How many days of **EGRA** in-service training or professional development in teaching reading have you attended during the last **three (3) years**? (Don't know/Refuse to answer = 9999): \_\_\_\_\_ (*If 0, skip to QUESTION 48*)

46. What were the **most** useful aspects of the **EGRA reading** trainings? (Don't know/Refuse to answer = 9999): \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

47. What were the **least** useful aspects of the **EGRA reading** trainings? (Don't know/Refuse to answer = 9999): \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

48. How many days of in-service training or professional development in **another method of teaching reading** have you attended during the last **three (3)** years? (Don't know/Refuse to answer = 9999): \_\_\_\_\_

**CLASSROOM-BASED COACHING**

49. Of the following list of possible supervision and/or coaching providers, please indicate the approximate number of hours each provider supervised/coached you in the past three (3) years and the last full term and then rate each coaching provider on a scale of 1-5 with **1 being least useful** and **5 being most useful**. (Don't know/Refuse to answer = 9999) (**Codes:** 0 = doesn't apply, 1=hurtful or discouraging, 2=not helpful, 3=somewhat helpful, 4=helpful, 5=very helpful):

Coaching provider	A - Approximate number of hours in past 3 years	B - Approximate number of hours in the last full term	C - Rating 1-5
1 - Head teacher			
2 - MoEST inspector			
3 - PEAs			
4 - Divisional inspector			
5 - MTPDS staff			
6 - Teacher Training College Staff			
7- Mentor Teacher			
8 - Other, please specify _____			

50. What were the most useful aspects of the coaching sessions? (Don't know/Refuse to answer = 9999): \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

51. What were the least useful aspects of the coaching sessions? (Don't know/Refuse to answer = 9999): \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

52. Was this training **enough** for you to be able to use these methods correctly in your classroom?  
(Don't prompt)
- No = 0
  - Somewhat = 1
  - Yes = 2
  - Don't know/Refuse to answer = 9999
53. Do you feel you need more training?
- No = 0 (*Skip to QUESTION 13*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 13*)
54. In which topics would you like to receive more training? (Don't know/Refuse to answer = 9999): \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**QUESTIONS THAT MAY REQUIRE SOME RESEARCH (Returns to #13)**

14. How many learners are enrolled in your class? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
15. How many are girls? (Don't know/Refuse to answer = 9999): \_\_\_\_\_
16. Is the teacher regularly maintaining an **attendance register**? (*Look at his/her attendance register*).
- No = 0 (*Skip to QUESTION 17*)
  - Yes = 1
17. *If the teacher is maintaining an attendance register, make one "X" per column below for the **number** of absences during the Wednesday of the third week of the school year, the third week of January, and the most recent week (For any instances where numbers are not available, write – 9999, and if the school was closed on one of those Wednesdays, go to Thursday in that same week):*

Approximate number of absences	A – Wednesday of the Third Week of the School Year	B – Wednesday of the Third Week of January	C – Wednesday of the most recent full week
0 = 0			
1 = 1 – 15			
2 = 16 – 30			
3 = 31 – 50			
4 = 51 – 75			

18. Is the teacher regularly maintaining a **progress record book**? (*Look at his/her grade book*).
- No = 0
  - Yes = 1
19. How many learners have stopped attending or dropped out of your class during this academic year (since the third week of school)? (*if necessary, count the number of learners at week 3 and count the number that are recorded as somewhat regular attendance during the past two weeks, and subtract*)(Don't know/Refuse to answer **and** No attendance records available = 9999): \_\_\_\_\_ (*If 0, Skip to QUESTION 21*).

20. About how many of the learners who have stopped attending or dropped out have moved or transferred to another school during this academic year? (Don't know/Refuse to answer = 9999):\_\_\_\_\_
21. Why do you think learners drop out in your class? (*Do not prompt; **multiple responses possible**; select all that apply*)
- Lack of parental encouragement/support to attend school
  - Need for the learner to earn money/sell things/work outside of the home
  - Need for the learner to work inside of the home (caring for younger siblings or elderly family members or doing other chores)
  - Need for the learner to work on the family farm or tending to family animals
  - Learners live too far away from the school
  - Learners don't do well in school or repeat grades often
  - Learners get married young
  - Learners become pregnant (teen pregnancy)
  - Learners come from poor families and have insufficient food or resources
  - Learners are not interested in school
  - Learners do not have good role models showing them the value of education
  - Learners become ill
  - Learners move/migrate
  - Learners lose their parents/become orphans
  - Other(s), please specify\_\_\_\_\_
  - Don't know/Refuse to answer = 9999
22. How many of your learners are repeating this standard? (*Response of 0-100 should be recorded directly. For values more than 100, enter 101; enter 9999 only for Don't know/Refuse to answer*):\_\_\_\_\_ (**If 0, Skip to END**)
23. How many of your learners have been in this standard level for **more than two years**? (*Any response of 0-100 should be recorded directly. For values more than 100, enter 101; enter 9999 only for Don't know/Refuse to answer*):\_\_\_\_\_
24. What do you think are the main reasons learners in your class have had to repeat a standard? (*Don't prompt; select all that apply; **multiple responses possible***)
- They don't study
  - They don't have textbooks
  - There are too many learners in the class
  - They don't pay attention
  - There isn't enough time in the school day
  - I can't effectively teach this many learners
  - Some of the learners are too young
  - They can't study at home because there is no electricity
  - They can't study at home because they don't have materials to take home
  - Other, please specify:\_\_\_\_\_
  - Don't know/Refuse to answer

**Thank you for your participation! You have been very helpful!**

# ANNEX VI: LEARNER INTERVIEW PROTOCOL

***Instructions:** The enumerator should read each of the questions to the learner as is. He/she can also read the response choices (unless the question specifies that learners should not be prompted). Once the learner has selected an option, the letter associated with that option should be circled. Most questions should have only one response. However, in some cases, a question will specify that multiple responses are allowed. In those cases, the enumerator should circle the letters corresponding with all response options that apply. All regular text can be read to the respondents, and all italic text includes instructions to the enumerator.*

## LEARNER BACKGROUND

1. What is your age? \_\_\_\_\_
2. For how many years have you been attending school at this school? (*Don't prompt learners; let them answer, and then choose the best response based on their reply – you might need to compare this response to the learner's age to make sure they are old enough to have been there that long.*)
  - a. Less than one year = 0
  - b. One year = 1
  - c. Two years = 2
  - d. Three years = 3
  - e. Four years = 4
  - f. More than four years = 5
  - g. Don't know/Refuse to answer = 9999
3. In which class were you last year?
  - a. Not in school = 0
  - b. Standard 1 = 1
  - c. Standard 2 = 2
  - d. Standard 3 = 3
  - e. Standard 4 = 4
  - f. Don't know/Refuse to answer = 9999
4. How often did you miss school because you were sick this year?
  - a. Almost never = 1
  - b. Occasionally = 2
  - c. A lot = 3
  - d. Don't know/Refuse to answer = 9999
5. How often have you seen the doctor or nurse or visited a health clinic this year?
  - a. Almost never = 1
  - b. Occasionally = 2
  - c. A lot = 3
  - d. Don't know/Refuse to answer = 9999

## READING

6. Does anyone at home read to you?
  - a. No = 0 (*Skip to QUESTION 8*)

- b. Yes = 1
  - c. Don't know/Refuse to answer = 9999 (*Skip to QUESTION 8*)
7. How often does someone at home read to you?
- a. Hardly ever = 1
  - b. Only sometimes = 2
  - c. 2-3 times a week = 3
  - d. Every day = 4
  - e. Don't know/Refuse to answer = 9999
8. Do you read on your own at home?
- a. No, never = 0
  - b. Yes, occasionally = 1
  - c. Yes, regularly = 2
  - d. Don't know/Refuse to answer = 9999
9. Does anyone at home help you with your homework?
- a. No = 0
  - b. Yes = 1
  - c. Don't know/Refuse to answer = 9999
10. How do you feel about reading?
- a. Happy = 1
  - b. Neutral = 2
  - c. Unhappy = 3
  - d. Don't know/Refuse to answer = 9999

### **MEAL INFORMATION**

11. Do you eat breakfast every day?
- a. No = 0
  - b. Yes = 1 (*Skip to QUESTION 13*)
  - c. Don't know/Refuse to answer = 9999 (*Skip to QUESTION 13*)
12. How often do you eat breakfast?
- a. Less than once per week = 1
  - b. One to two times per week = 2
  - c. Three to four times per week = 3
  - d. Five to six times per week = 4
  - e. Don't know/Refuse to answer = 9999
13. Do you eat breakfast at home or at school?
- a. Home = 1 (*Skip to QUESTION 15*)
  - b. School = 2
  - c. Both – home and school = 3
  - d. Don't know/Refuse to answer = 9999 (*Skip to QUESTION 15*)
14. What time do you eat breakfast at school? (*Please read response options*)
- a. During the first break = 1
  - b. During the second break = 2
  - c. After school = 3
  - d. Don't know/Refuse to answer = 9999

15. What do you usually eat at breakfast? (*Select all that apply; multiple responses possible*):
- Porridge = 1
  - Tea = 2
  - Nsima = 3
  - Sweet potatoes = 4
  - Fruit = 5
  - Other, please specify: \_\_\_\_\_ = 6
  - Don't know/Refuse to answer = 9999
16. Do you eat lunch every day?
- No = 0
  - Yes = 1 (*Skip to QUESTIONS 18*)
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTIONS 18*)
17. If so, how often do you eat lunch?
- Less than once per week = 1
  - One to two times per week = 2
  - Three to four times per week = 3
  - Five to six times per week = 4
  - Don't know/Refuse to answer = 9999
18. What do you usually eat for lunch?
- Rice = 1
  - Nsima/rice and vegetables = 2
  - Sweet potatoes = 3
  - Nsima and chicken = 4
  - Nsima/rice with beef/goat = 5
  - Nsima/rice with usipa 6
  - Other, please specify: \_\_\_\_\_ = 7
  - Don't know/Refuse to answer = 9999
19. Do you eat lunch at home, bring lunch from home with you to school, or does the school give you lunch?
- Eat at home = 1 (*Skip to QUESTION 21*)
  - Bring lunch to school = 2
  - Eat lunch at school = 3
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 21*)
20. Are there some days when you don't eat?
- No = 0 (*Skip to QUESTION 22*)
  - Yes = 1
  - Don't know/Refuse to answer = 9999 (*Skip to QUESTION 22*)
21. How many days this week did you not eat any food?
- Once = 1
  - Twice = 2
  - Three times = 3
  - Four times = 4
  - Five times = 5
  - Six times = 6
  - Seven times = 7

22. How often do you feel hungry at school?
- Never = 0
  - Not very often = 1
  - A few times a week = 2
  - Every day = 3
  - Don't know/Refuse to answer = 9999
23. Do you get tired at school?
- No = 0 (**Skip to QUESTION 25**)
  - Sometimes = 1
  - Yes = 2
  - Don't know/Refuse to answer = 9999 (**Skip to QUESTION 25**)
24. When are you most tired?
- When school starts = 1
  - In the middle of the school day = 2
  - When school is finished = 3
  - Don't know/Refuse to answer = 9999

### **FEELINGS ABOUT SCHOOL**

25. What do you **like** about coming to school? (*Don't read these options to the learner. If the learner is slow to respond, wait up to 8 seconds before asking "Are there things you like about coming to school? If so, what are they?" (The learner may not give these exact responses, but circle all those that are close to what he/she indicates. Select all that apply; multiple responses possible):*
- Seeing my friends
  - Learning new things
  - Seeing my teacher
  - School meals
  - I like everything
  - Other, please specify \_\_\_\_\_
  - I don't like anything
  - Don't know/Refuse to answer
26. What do you **not like** about coming to school? (*Don't read these options to the learner. If the learner is slow to respond, wait up to 8 seconds before asking "Are there things you like about coming to school? If so, what are they?" (The learner may not give these exact responses, but circle all those that are close to what he/she indicates. Select all that apply; multiple responses possible):*
- Other children are mean
  - It's boring
  - I don't understand the lessons
  - The teacher is mean
  - There's no latrine or it's too dirty
  - I have to sit on the floor – no desk
  - I can't see the textbooks or don't have textbooks
  - I'm too tired
  - I'm hungry
  - It's hard to pay attention
  - I don't feel well
  - Other children fight too much
  - I like everything
  - Other, please specify \_\_\_\_\_

- o. Don't know/Refuse to answer
27. Do you feel happy or sad about coming to school?
- a. Happy = 1
  - b. Sad = 2
  - c. Don't know/Refuse to answer = 9999
28. How would you describe your teacher?
- a. Nice/happy = 1
  - b. Neutral/neither happy nor unhappy = 2
  - c. Mean/unhappy = 3
  - Don't know/Refuse to answer = 9999
29. How much do you think you learn at school?
- a. Not anything = 0
  - b. Not much = 1
  - c. Some = 2
  - d. A lot = 3
  - e. Don't know/Refuse to answer = 9999
30. Do you find school interesting or boring?
- a. Boring = 1
  - b. Interesting = 2
  - c. Don't know/Refuse to answer = 9999

**SCHOOL ENVIRONMENT**

31. Do you feel comfortable about using the latrine at school?
- a. No = 0
  - b. Yes = 1 (*Skip to QUESTION 33*)
  - c. Don't know/Refuse to answer = 9999 (*Skip to QUESTION 33*)
32. Why do you not feel comfortable using the latrine? (*Select all that apply; multiple responses possible*)
- a. It's dirty
  - b. It's smelly
  - c. I'm afraid other children/boys/girls will come in while I'm using it
  - d. A snake (any animal/insect) may be in there
  - e. Other, please specify: \_\_\_\_\_
  - f. Don't know/Refuse to answer
33. How long does it take you to walk to school?
- a. A short time (Less than 30 minutes) = 1
  - b. A medium amount of time (30 minutes to 1 hour) = 2
  - c. A long time (More than an hour) = 3
  - d. Don't know/Refuse to answer = 9999
34. Do you ever get teased at school:
- a. No = 0
  - b. Yes = 1
  - c. Don't know/Refuse to answer = 9999
35. Do you feel safe walking to school?

- a. No = 0
  - b. Yes = 1 (*Skip to QUESTION 37*)
  - c. Don't know/Refuse to answer = 9999 (*Skip to QUESTION 37*)
36. If you don't feel safe walking to school, what kinds of things make you feel unsafe? (*Select all that apply; multiple responses possible*)
- a. Animals
  - b. Snakes
  - c. Difficult-to-walk-on roads/paths (example – muddy, lots of rocks, many cars passing, etc.)
  - d. Bad men or boys
  - e. Other kids who are mean
  - f. I'm afraid of getting lost
  - g. Other, please specify: \_\_\_\_\_
  - h. Don't know/Refuse to answer
37. Do you ever get punished at school?
- a. No = 0 (*Skip to END of interview*)
  - b. Yes = 1
  - c. Don't know/Refuse to answer = 9999 (*Skip to END of interview*)
38. If yes, what do you get punished for? (*Select all that apply; multiple responses possible*)
- a. Making too much noise/talking
  - b. Showing up late
  - c. Fighting with other children
  - d. Answering a question incorrectly
  - e. Not paying attention
  - f. Other, please specify: \_\_\_\_\_
  - g. Don't know/Refuse to answer
39. If yes, how do you get punished? (*Select all that apply; multiple responses possible*)
- a. Send learner out of classroom
  - b. Sweep or clean the classroom or school grounds
  - c. Corporal punishment
  - d. Kneel or stand on one leg for a long time
  - e. Bring grass or reeds
  - f. Stay after school and do school work
  - g. Other (specify) \_\_\_\_\_

### **HOUSEHOLD ASSETS**

40. What is your household's main source of drinking water?
- a. Piped water into dwelling
  - b. Piped water into yard/plot
  - c. Piped water into community/stand pipe
  - d. Unprotected well (This is a dug well for which one of the following conditions is true: 1) the well is not protected from runoff water; or 2) the well is not protected from bird droppings and animals. If at least one of these conditions is true, the well is unprotected).
  - e. Protected well
  - f. Borehole
  - g. Spring
  - h. River/stream
  - i. Pond/lake
  - j. Dam

- k. Rainwater
- l. Tanker truck/bowser
- m. Bottle water
- n. Don't know
- o. Refuse to answer

41. What kind of toilet facility does your household use?

- a. Flush toilet
- b. Traditional pit toilet
- c. Ventilated pit toilet (ventilated improved pit)
- d. No facility
- e. Don't know/Refuse to answer

42a. Does your household have a lamp?

- a. No
- b. Yes
- c. Don't Know/Refuse to Answer

42b. Does your household have a cell phone?

- a. No
- b. Yes
- c. Don't Know/Refuse to Answer

42c. Does your household have a bicycle?

- a. No
- b. Yes
- c. Don't Know/Refuse to Answer

42d. Does your household have a table?

- a. No
- b. Yes
- c. Don't Know/Refuse to Answer

42e. Does your household have a bed with mattress?

- a. No
- b. Yes
- c. Don't Know/Refuse to Answer

42f. Does your household have a sofa?

- a. No
- b. Yes
- c. Don't Know/Refuse to Answer

42g. Does your household have a radio?

- a. No
- b. Yes
- c. Don't Know/Refuse to Answer

42h. Does your household have a television?

- a. No
- b. Yes
- c. Don't Know/Refuse to Answer

- 42i. Does your household have an ox plow?
- No
  - Yes
  - Don't Know/Refuse to Answer
- 42j. Does your household have a motorcycle or motorized scooter?
- No
  - Yes
  - Don't Know/Refuse to Answer
- 42k. Does your household have a refrigerator?
- No
  - Yes
  - Don't Know/Refuse to Answer
- 42l. Does your household have a car or truck?
- No
  - Yes
  - Don't Know/Refuse to Answer
- 42m. Does your household have a tractor?
- No
  - Yes
  - Don't Know/Refuse to Answer
43. What is the main source of lighting in your house?
- Electricity
  - Gas
  - Paraffin
  - Firewood
  - Grass
  - Candle
  - Solar
  - Torch
  - Battery-lit light bulbs
  - No lightning
  - Don't know/Refuse to answer
44. Not including the bathroom, how many rooms does your house have?

**Thank you for your participation! You have been very helpful!**

# ANNEX VII: SCHOOL CLIMATE PROTOCOL

Strongly Agree	Agree	Disagree	Strongly Disagree	Not Applicable	Observed Conditions	No improvement is needed	Slight improvement is needed	Much improvement is needed	Urgent or immediate improvement is
					School grounds well maintained – without litter				
					Rubbish bins are available to dispose of rubbish				
					School has plantings to make the school more attractive				
					There are no broken windows				
					Buildings and classrooms have functioning locks				
					Classrooms have space for the teacher and students to move around				
					Class schedule for entire school is available in HT's office or Teachers Room				
					A teachers' lounge/room is available				
					Teachers' lounge/room is in good condition				
					Classrooms have sufficient ventilation				
					Classrooms have sufficient light				
					Classrooms have electricity				
					The school has clean water available for learners to drink/wash their hands				
					Classrooms appear to have a range of learning materials available – not simply years-old posters or paintings on the wall				
					Latrines are available				
					Latrines are clean				
					Latrines are available specifically for girls				
					Latrines are available specifically for boys				
					Girls latrine is a respectful distance away from boys latrine				
					Latrines are available specifically for teachers				
					Most or all classrooms have enough desks for all students				
					The school has library books (even if there is no library)				
					There is a school (not classroom) library				
					The library appears to be well stocked				
					The library appears to be actively used by students and teachers				
					The books in the library are in good condition				
					Most textbooks appear to have been distributed to learners				
					The resources in this school are adequate for teaching the material				
					Teachers/head teachers appear very engaged and interested in the development of learners				
					Teachers/head teachers do not seem hostile or angry				
					No signs of physical punishment of students				
					School staff speak to students in a friendly, supportive way				
					No learner fighting/bullying observed				
					No teasing among pupils observed				

					Few interruptions of class time				
					When learners get into trouble, the teacher/head teacher gives them a chance to tell their side of the story				
					The school has school feeding				
					If observed, school feeding functions in an orderly way				

NOTES: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

# ANNEX VIII: STAGES OF READING AND HOW THESE ARE MEASURED BY RA SUBTASKS

## **Stage 1: Pre-Reading Skills**

This stage typically lasts from birth to kindergarten, when children should learn oral language and listening comprehension skills. Testing of listening comprehension is important because it is a prerequisite competency to reading. These pre-reading skills are measured by the listening comprehension, syllable segmentation, and initial sound identification subtasks in the RA used in NRA. The listening comprehension subtask seeks to measure auditory phonemic awareness, and the RA uses the syllable segmentation and initial sound identification subtasks to measure complete (not just auditory) phonemic awareness skills.

## **Stage 2: Initial Reading/Decoding Skills**

This stage consists of phonics, or alphabetic understanding, and decoding skills. Alphabetic understanding is the understanding that words are composed of individual letters and that there is a clear link between a letter and a sound (Edwards, Simmons, Coyne, 2005). This is the second phase of initial reading because it builds on the concept of identifying sound patterns in speech by connecting the sound patterns to the printed letters. To read words, a beginning reader must come to know each letter as a discrete, self-contained visual pattern that can be printed or pointed to. They must also be able to apply alphabetic understanding and phonics skills to “sound out” or “decode” unknown words. Decoding is the ability to blend and segment sounds into recognizable words. These skills are measured by four initial reading subtasks in the RA instrument used in the NRA: letter name knowledge, syllable reading, familiar word reading, and non-word reading.

## **Stage 3: Fluency and Comprehension**

Once beginning readers have recognized speech sounds (phonemic awareness) and identified alphabetic letters and sounds (phonics), the third stage is achieving automaticity and fluency with the phonological or alphabetic code. Reading fluency is defined as the ability to decode and comprehend text at the same time (NICHD, 2000; Samuels, 2006). The oral reading fluency and reading comprehension subtasks assess the ability of learners to translate letters into sounds, unify sounds into words, process connections, relate text to meaning, and make inferences to fill in missing information. Because oral reading fluency and reading comprehension capture this complex process, these two subtasks can be used to characterize overall reading competency. Fluency and comprehension skills are measured through a simple oral reading passage of 56 words and five comprehension questions in the oral reading fluency and reading comprehension subtasks.

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