USAID/ZAMBIA EDUCATION PROJECT BASELINE REPORT:

Nonreading Indicators

Prepared by RTI International
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ABBREVIATIONS

CA	continuous assessment
CIS	curriculum implementation system
EGR	early grade reading
EGRA	Early Grade Reading Assessment
EP	education portfolio
GRZ	Government of the Republic of Zambia
HIV/AIDS	human immunodeficiency virus/acquired immunodeficiency syndrome
INSET	in-service education and training
LOI	language of instruction
LQAS	lot quality assurance sampling
MOGE	Ministry of General Education
NRI	nonreading indicator
ORF	oral reading fluency
OTL	Opportunity to Learn
PCSC	Parent Community School Committee
PPS	probability proportional to size
RQ	research question
RTI	RTI International (registered trademark and trade name of Research Triangle Institute)
SPLASH	Schools Promoting Learning Achievement through Sanitation and Hygiene
STEP-Up	Strengthening Educational Performance Up
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
wpm	words per minute

EXECUTIVE SUMMARY

In March 2014, under the contract for *Data Collection Services for the USAID/Zambia Education Project*, the Zambian Mission of the United States Agency for International Development (USAID/Zambia) asked RTI to develop 10 nonreading indicators (NRIs) and to measure their baseline status. These NRIs—together with a set of reading indicators—are meant to provide USAID/Zambia with some of the information needed to monitor the work of its education portfolio, measure the impact of that work, and examine the efficacy of the various measures being undertaken to improve early grade reading (EGR) teaching and learning. These NRIs were also chosen in part because if the factors they measure are in place then one might assume that there is a likelihood that early grade student reading outcomes will improve over time. However, this report also underscores the point that if USAID/Zambia wants to improve early grade student reading outcomes in a substantial and sustainable manner, a number of other factors should be in place as well—factors which flow out of a theory of change that differs slightly from the theory of change that is evidenced in the education projects of USAID/Zambia's current education portfolio (EP) and which are not yet addressed by the four projects of the EP.

RTI makes this point because the work of identifying these 10 NRIs emanated from a number of discussions that RTI had with USAID/Zambia on the theory of change underlying the projects of the EP. In particular, months before RTI was asked to develop these nonreading indicators, USAID/Zambia asked RTI to examine the theory of change upon which their EP rested, and to the extent that it might have proven to be lacking in some way, to recommend how it could be improved. The impetus behind USAID/Zambia's request was simple. If the theory of change upon which the four projects of the EP was in any way lacking, the four projects of the EP may not achieve what USAID hoped they would. RTI examined the theory of change and concluded that it was missing what RTI refers to as demand drivers—institutional/systemic elements that help to generate demand among actors in the system to do what they have been charged and/or trained to do.

Because the theory of change evidenced in the four projects of the EP was missing these demand drivers, it inadvertently inferred that when, for example, people are trained to oversee and manage better, they will in fact do so; or when teachers are trained to teach EGR better, they will. Yet, decades of donor-project experience and numerous journal articles maintain that this is not necessarily the case especially in developing countries like Zambia. Granted, these countries all have a number of highly motivated and committed government workers, who

when trained, will do their very best to utilize the skills they have been given to perform better in their jobs. However, a number of their counterparts who have also been trained by various donor projects tend to need to be extrinsically motivated to put their training into practice. This external motivation can come from well-designed elements of the system in which these actors work: job descriptions, career ladders, incentive systems, and accountability systems. Accordingly, this report presents the 10 proposed NRIs, their baseline values, and an in-depth discussion on how the 10 NRIs were chosen *against the backdrop of a theory of change that includes demand drivers*.

USAID/Zambia's education portfolio consists of four projects—Read to Succeed, SPLASH, STEP-Up, and Time to Learn—that were designed to (1) improve oversight and management across the education system, (2) improve teacher literacy instructional skills, (3) strengthen early grade reading assessment, and (4) increase children's Opportunity to Learn (OTL) by improving the overall learning environment of schools, with particular attention being paid to the availability of toilet facilities. Given these objectives, RTI was asked to develop 10 NRIs that would address these four research questions (RQs) that were put forth in the request for proposals:

- RQ1: How has improved oversight and management across the education system impacted learner performance?
- RQ2: Have reading skills improved among Zambian students in grade 2 as a result of the focus on teacher literacy instructional skills?
- RQ3: Is strengthened early grade reading assessment improving teaching and learning?
- RQ4: Has the Opportunity to Learn approach improved participation and supported learning achievement?[1]

All 10 of the NRIs could have been developed around demand drivers, but since the four projects in the EP were not doing much work to put these demand drivers in place, and given the fact that RTI was asked to develop and measure no more than 10 NRIs, it made little sense to develop 10 indicators whose baseline values would be zero. So, only one of the 10 NRIs examines the existence of a demand driver. To ensure that the 10 NRIs reflected international best practice, a desk study was conducted to examine the systemic and institutional determinants of effective education systems and schools.

[1] USAID's OTL approach is closely tethered to the work that was carried out under SPLASH. It was believed that providing water and sanitation facilities would lead more children, particularly girls, to enroll and stay in school and so have an opportunity to learn.

The 10 NRIs that were developed and examined are:

1. Evidence of an up-to-date database that tracks the coaching visits made by coaches and manages and analyzes the data coaches gather from those coaching visits.

2. Evidence of an up-to-date database (which could very well be the same database as the one above, and hopefully is) that tracks student/school performance data and shows that district and/or zone personnel are targeting poor-performing schools more frequently than higher-performing schools.

3. Evidence that communities are "overseeing" schools and that they are doing it on a regular basis: the number of Parent Community School Committee (PCSC) oversight visits that have taken place over the course of the past month.

4. Number of EGR textbooks/reading materials in the schools.

5. Amount of coaching and noncoaching EGR instruction received by teachers in the past 12 months.

6. Evidence that teachers are teaching EGR appropriately on a regular basis.

7. Teacher and nonteacher career ladders that are driven *in part* by learner performance.

8. The amount of continuous assessment (CA) that is being carried out by teachers on a monthly basis: number of children for whom CA was done per teacher per month.

9. Number of functional hand-washing facilities and toilets in schools.

10. Impact of HIV/AIDS on primary school aged children.

Each indicator was formally defined, the means by which to gather the data needed to measure the indicator were delineated, and the data subsequently were collected. The baseline status for each indicator was then established. The baseline results for the NRIs for Zambia are summarized in ***Table 1.***

Table 1: Summary baseline results of the nonreading indicators for Zambia

NONREADING INDICATORS, BY RESEARCH QUESTION	BASELINE STATUS
RQ1: How has improved oversight and management across the education system impacted learner performance?	
1. Evidence of an up-to-date database that tracks the coaching visits made by coaches and manages and analyzes the data coaches gather from those coaching visits.	While no such database exists, coaching is taking place.
2. Evidence of an up-to-date database (could very well be the same database as the one above, and hopefully is) that tracks	No such database exists.

Table 1: Summary baseline results of the nonreading indicators for Zambia

NONREADING INDICATORS, BY RESEARCH QUESTION	BASELINE STATUS
lot quality assurance sampling (LQAS) group-administered EGR data and shows that district and/or zone personnel are visiting "failed" schools more frequently—offering additional support—than when they are visiting schools that pass.	
3. Evidence that communities are "overseeing" schools and that they are doing it on a regular basis: the number of Parent Community School Committee oversight visits that have taken place over the course of the past X months.	There was community (i.e., parental) involvement in the schools; however, there was only one mode of parental involvement—monitoring school projects—which over 50% of the Head Teachers and over 50% of the teachers said was taking place (monitoring school projects).[2]
4. Number of EGR textbooks/reading materials.	Head Teachers were asked if they had the appropriate number of textbooks at the school *according to ministry policy*. Only 24% said that their school did have the required number.
RQ2: Have reading skills improved among Zambian students in grade 2 as a result of the focus on teacher literacy instructional skills?	
5. Frequency of formal coaching / noncoaching EGR instruction received by each teacher in the past 12 months.	41% of teachers said that they had not been coached; 21% said that they had been coached once; 30% of teachers had not received any in-service education and training (INSET); 60% said they had received 1–3 such sessions.
6. Evidence that teachers are teaching EGR appropriately on a regular basis.	Teachers appear to be performing generally well, but 22% of pupils reported being hit by the teacher when they provided an incorrect response to a question.
7. Teacher and nonteacher career ladders that are driven *in part* by learner performance.	No such career ladder exists.
RQ3: Is strengthened early grade reading assessment improving teaching and learning?	
8. The amount of continuous assessment that is being carried out by teachers on a monthly basis: number of children for whom CA was done per teacher per month.	On average, 24 students per classroom were being assessed every month: half of the average primary pupil–teacher ratio of 48.
RQ4: Has the Opportunity to Learn approach improved participation and supported learning achievement?	
9. Number of functional water points, hand-washing facilities, and functional toilets for schools.	74% (out of a total of 473) had two or fewer functional hand-washing facilities. 75% of schools had only 1–4 functional toilets for girls; 79% of schools had only 1–4 functional toilets for boys. Girls at schools with one functioning toilet for at least 135 girls were 1.66 times more likely to be unable to read a single word than girls at schools with one functioning toilet per 33 girls or less. For boys the same ratio was less, at 1.2 times. Only 15% of schools had piped water or a standpipe water source (see ***Table 11,*** page 31), which explains some of the reasons behind limited hand-washing facilities. Only 8.7% of schools reported not having a functional main water source of any type (see ***Figure 9,*** page 32).
10. Impact HIV/AIDS has on primary school age children	Data not collected due to methodological constraints (see below).

[2] While not a "school oversight" issue, it is worth noting that pupils were asked if someone at home helped them with their homework; 69% indicated that they did get help. While who helped them was not asked, it is likely that if the pupil had an older sibling, they would be the one who helps.

Overall, the baseline status of the NRIs was not very strong, which means that it is difficult to answer the four research questions with a high degree of confidence. With regard to RQ1, there was insufficient evidence of improved oversight and management across the education system to discern any conclusive impact that it might have on learner performance. Nevertheless, regression analyses (see the Appendix to this report) showed that when parents and communities monitored the implementation of school projects, mean oral reading frequency (ORF) was +1.6 words per minute (wpm); and when parents and communities helped teachers to teach reading, mean ORF was again +1.6 wpm. As for textbook availability (NRI 4), it was found that when pupils read a book on their own during the school day, ORF was +5.3 wpm; and when pupils brought a reading book home from school in the previous week, ORF was +1.0 wpm.

While the EP focuses quite a lot on teacher literacy instructional skills, Table 1 shows that many teachers are not getting all of the instructional support they really need. But the regression analyses showed the following:

- ORF was +1.8 wpm when the teacher reminded pupils to use their finger to point to words.
- ORF was +1.9 wpm when the teacher told pupils to look at all the letters when they read incorrectly.
- ORF was -7.4 wpm less when teachers found the in-service training they undertook was not useful at all.

As for RQ3, the regression analyses showed that ORF was +3.1 wpm when a teacher conducted monthly assessments with the pupils (NRI 8).

Finally, no statistical relationship was found between the RQ4 indicators (NRI 9) and ORF.

OTL is clearly important; a lack of opportunity affects pupil attendance at school, and thus learning outcomes. Children who reported being absent for some part of the previous week at school, scored on average 1.3 fewer correct words per minute in reading fluency. Note that this figure is obtained from a school based survey (i.e. pupils who have remained at school in grade 2 and does not include pupils who never attended or dropped out of school due to lack of OTL.)

With regard to NRI 10, it was not possible to collect comprehensive range of indictors for HIV/AIDs within the context of a representative sample. If we consider two basic indicators of HIV/AIDs 1) the impact it has on an infected children's education, and 2) the impact on a child who has been orphaned by HIV/AIDS, these data are difficult to collect for the following reasons:

- Only 1.3% of children aged 0–14 years old have HIV/AIDS (source: unaids.org) and 1.3 million children aged 0-17 years have lost one/both parents (UNICEF, 2009). Considering that the Early Grade Reading Assessments in Zambia have focused on grade 2, only a relatively small

number of children sampled are members of the above-mentioned subpopulations. This would require specific identification, targeting and oversampling of these pupils which would be very difficult to achieve.

- It will be difficult to identify these at risk children. Unless a child is identified as orphaned or vulnerable through the Education Management Information System, appropriateness of asking is clearly an issue.

The recommendation is not to measure the indicator through a traditional targeted school-based sample, but rather through the use of case studies, an expanded school based sample, or the use of a household survey. Since gathering this data via any one of the suggested means was not possible within this particular project, the data was not collected.

In conclusion, if (1) improved oversight and management across the education system, (2) increased focus on teacher literacy instructional skills, (3) strengthened early grade reading assessments, and (4) USAID's Opportunity to Learn (OTL) approach are to have significant impact on high-quality EGR teaching and learning, some additional work will have to be done. We recommend that USAID expand the work of its EP such that it can help the MOGE to put in place a viable *curriculum implementation system* (CIS), see ***Figure 10***. We also recommend that USAID modify the theory of change evidenced in the four projects of the EP to include demand drivers, and that it design projects that aim to help put these demand drivers in place such that the CIS functions as intended. Finally, additional NRIs should be developed and measured as a means of monitoring the development and impact of this CIS.

1 RATIONALE FOR CHOOSING THE 10 NONREADING INDICATORS

RTI International was asked to develop 10 nonreading indicators (NRI) related to improved early grade reading (EGR) in Zambia—or more generally, to improved learning outcomes. Accordingly, the desk study that was required as background research for this effort focused on the international literature related to high-performing education systems and schools, or "effective schools"; and our own research and experience in the realm of systems reform and reform support for improved learning outcomes. While some of the findings of this desk study may not be immediately applicable to the Zambian context, they nevertheless helped to create an overall understanding of what is needed by a system to improve learning outcomes, and so inform our effort to develop 10 nonreading indicators. The general findings of this desk study are as follows.

1.1 FINDINGS OF THE DESK STUDY

Quality education for all must be a primary focus of *everyone* in the entire education system. Everyone must see it as their mission to do their jobs as best as possible to ensure that all children in the system receive a high-quality education (Senge et al, 1994; Coburn, 2003; Mourshed, Chijiko, & Barber, 2010; Snyder, 2013). The entire education system must, then, be designed for quality (Healey & Crouch, 2012). This suggests that there must be high expectations for everyone, including the students; and that education is a serious business and people throughout the system are expected to perform at the highest levels (Tucker, 2012; Pritchett, 2013; Ripley, 2013). Of particular importance here is the reliance on high-quality teachers—very smart people who know what they are teaching, who know how to teach, who know how to facilitate high-quality learning in all students, and who themselves are lifelong learners (Coburn, 2003; Tucker, 2012; Ripley, 2013). The system must also select for these high-quality teachers at the outset; that is, in much the same way that the medical profession selects from among the brightest students graduating from college to train as doctors, the education profession must select from among the same high-quality candidates to become teachers, which requires both potential candidates and employers to understand that teaching is a serious profession (Ripley, 2013).

When one hires high-quality teachers, one can and should give them and the schools they work in the freedom to do what they feel they have to do in order to ensure that all their students learn. Specifically, they must have the institutional space to identify and solve problems, to innovate, to collaborate with each other,

and to learn (Fullan, 1993; Healey & DeStefano, 1997; Mourshed et al., 2010; Pritchett, Woolcock, & Andrews, 2012; Tucker, 2012). But with this freedom, teachers and schools must also be held accountable for results (Crouch & Winkler, 2008; Pritchett, 2013). Such local-level freedom is made possible by fairly decentralized education systems, another characteristic of many high-performing education systems (Mourshed et al., 2010; Pritchett, 2013; Ripley, 2013; Snyder, 2013). However, as important as it is to give these schools and teachers this freedom, it is equally important to provide them with the technical assistance (support) they might need to make the best of that freedom. In this regard, a highly capable "meso"-layer that can identify poor performers of some sort and provide them with the support they need is critical (Mourshed et al., 2010; Pritchett, 2013; Snyder, 2013). This support should also come in the form of professional teacher networks that enable teachers to learn from each other to address particular problems and issues (Niesz, 2007). High-performing systems and schools are, then, vibrant learning organizations (Senge et al, 1994; Mourshed et al., 2010; Pritchett et al., 2012; Snyder, 2013).

Inherent in all of this is the fact that that high-performing systems and schools are goal oriented (Fullan, 1993; Healey, 1997; Crouch & Winkler, 2008; Pritchett, 2013; Ripley, 2013). They know where they want to go and they have the resources, freedom, skills, and knowledge; the opportunities to learn; and the pressure needed to get them there (Mourshed et al., 2010; Bruns et al., 2011; Tucker, 2012; Pritchett, 2013).

But how does a poor-performing education system become a high-performing one? High-performing education systems are filled with people driven to do their best, they see education as a serious business, and they are quite serious about doing their business. This is not the case with many low-performing education systems. By and large, many actors in low-performing education systems need to be motivated to do what they are being paid and/or trained to do. If teachers are trained to teach EGR, but they are not motivated to do it, what can be done to get them to do it—especially if, as one Minister of Education once said, "They all have a job for life" regardless of how well they perform?

1.2 DEMAND DRIVERS AND THEORIES OF CHANGE

"Demand drivers" is a term used to describe the things one can put in place within an education system to help generate an element of demand within people to do what they are being paid and/or trained to do. Demand drivers include such things as formal job descriptions, career ladders, incentives systems, and accountability systems.

Demand drivers, however, are only part of what is needed to positively influence reading outcomes. Generally speaking, standing in the way of low-performing systems becoming better performing systems are critical aspects of the low-

performing system itself: institutional or systemic barriers, such as a public service law that makes it nearly impossible to remove government personnel for repeated poor or nonperformance; inadequate funds; obsolete and inefficient planning and budgeting procedures; corruption; and a general lack of political will. And even if there is political will to address these barriers, there is the political economy to contend with—the fact that the status quo is fiercely guarded by powerful interest groups. When a reform threatens the stake these interest groups have in the status quo, they will fight it. Therefore, work must be done to address the political economy (Fullan, 1993; Healey & DeStefano, 1997).

Against this backdrop of understanding, RTI prepared an *illustrative* set of nonreading indicators, one that could be used to assess meaningful change across the entire Zambian education system and beyond (see ***Table 2***). The intent behind this table is to underscore the fact that while reading indicators are very important, successful EGR cannot become a characteristic feature of the education system unless a number of "nonreading" things happen, a lot more than 10 NRIs suggest. As for the levels of indicators shown in Table 2, they are meant to portray the fact that "high level" things need to happen (i.e., decentralization), "low level" things have to happen (i.e., coaches have to coach), and various other things have to happen somewhere in between.[3]

Table 2: Levels of nonreading indicators that impact student performance

HIGH-LEVEL INDICATORS	MID-LEVEL "A" INDICATORS	MID-LEVEL "B" INDICATORS	LOW-LEVEL INDICATORS
RQ1: How has improved oversight and management across the education system impacted learner performance?			
Evidence that political, fiscal, and administrative decentralization are occurring	GRZ coaching budget per coach (for each district/zone)	**Evidence of an up-to-date database that tracks coaching**	Number of coaching visits/hours per teacher per year
	GRZ school-support budget per school (for each district and zone)	**Evidence of an up-to-date database that tracks school and teacher performance and permits targeted support to poor performers**	Increased support of any kind to "failed" schools as compared to the level of support provided to schools that "passed"
	Strong horizontal accountability linkages at all levels inclusive of schools hiring teachers, and a significant budget that they can program	Formal means of informed democratic deliberation—evidence of the educational equivalent of a town hall meeting at which robust information is readily available	**Evidence that communities are "overseeing" schools and that they are doing it on a regular basis**

[3] The boldfaced indicators are the 10 chosen for the study.

Table 2: Levels of nonreading indicators that impact student performance

HIGH-LEVEL INDICATORS	MID-LEVEL "A" INDICATORS	MID-LEVEL "B" INDICATORS	LOW-LEVEL INDICATORS
	Evidence of accountability and incentive systems that are driven in part by critical learning outcomes such as Early Grade Reading Assessment (EGRA) results		
		Evidence of institutionalized means to encourage collaboration and learning among coaches	The perceived relevance and quality of the coaching
		Robust information systems that feed into learning/decision nodes	**Number of EGR textbooks or reading materials per student**
The existence of a sustainable pro-child, pro-quality education political economic force that has the capacity to do reform support			
RQ2: Have reading skills improved among Zambian students in grade 2 as a result of the focus on teacher literacy instructional skills?			
Increased teacher pay[4]			
More rigorous selection standards for people wanting to become teachers—for people entering pre-service education and training programs			
Sufficient GRZ budget for INSET		Teacher attendance (%)	**Hours of formal noncoaching EGR instruction received by each teacher in the past 12 months**
	Teacher and nonteacher career ladders that are driven in part by performance—i.e., learning outcomes	Formalized mechanism for periodic classroom observations	**Evidence that teachers are teaching EGR appropriately on a regular basis**
		Teacher networks; mechanisms for information sharing and collaboration	

[4] In and of itself, increased teacher pay will not necessarily bring about improved student learning outcomes, but as the literature review revealed, teachers do need to be paid enough for some of the best and brightest students to choose the teaching profession over, say, medicine. Note that while some of the proposed improved actions are at project level, some would require government policy reforms.

Table 2: Levels of nonreading indicators that impact student performance

HIGH-LEVEL INDICATORS	MID-LEVEL "A" INDICATORS	MID-LEVEL "B" INDICATORS	LOW-LEVEL INDICATORS
RQ3: Is strengthened early grade reading assessment improving teaching and learning?			
The use of EGRA or similar assessment embedded in the institutional fabric of the education system	EGRA or equivalent conducted periodically (once a year, once every two years)	Assessment results channeled to key decision makers	
	Continuous assessment a critical aspect of curriculum	Continuous assessment a critical aspect of teacher professional development	**The amount of CA that is being carried out by teachers on a monthly basis: Number of children for whom CA was done per teacher per mont**h
	The use of LQAS embedded in the institutional fabric of the education system	Number of routine student or school assessment exercises that were performed at the school during the school year	Increased support of any kind to "failed" schools as compared to the level of support provided to schools that "passed"
RQ4: Has the EP's Opportunity to Learn approach improved participation and supported learning achievement?			
National water, sanitation, and health standards in place for schools	Goals in place for lower levels of the system to help schools achieve those standards	Goals in place for all schools to achieve those standards	**Number of new hand-washing facilities for schools in each district**
		Sufficient funds in place for the goals to be realized in the allotted time frame	Number of new menstrual sanitation facilities in schools, for each district
			Number of new toilets in schools, for each education district
			Impact HIV/AIDS has on primary school age children
			Number of functional water points for schools in each district

2 NONREADING INDICATORS FOR ZAMBIA

2.1 INDICATORS, INDICATOR DEFINITIONS, AND METHODOLOGY FOR GATHERING THE DATA NEEDED TO MEASURE THE INDICATOR

The 10 NRIs that were chosen are presented, defined, and categorized under the research question they are meant to help address.

Research Question: How has improved oversight and management across the education system impacted learner performance?

1. **Indicator: Evidence of an up-to-date database that tracks the coaching visits made by coaches and manages and analyzes the data coaches gather from those coaching visits.**[5]

    - Definition/Rationale: Since we are tracking "improved oversight and management," there must be some database in place that keeps track of the following kinds of data:
        - Names of schools visited by each coach
        - Names of teachers coached during each coaching visit
        - Date on which each coaching visit took place
        - Specific findings from each coaching visit, in particular, the findings and actions taken from a formal classroom observation exercise

    While one could ask teachers how many times a coach coaches them, the concern here is with improved oversight and management. The database and its use vis-à-vis coaching is the more relevant indicator of this process.

    - Calculation/Source of data:
        - Observation of a database in the district or zonal office
        - Examination of the data within the database (against a checklist of key data that should be in the database)

[5] While the amount of money available for coaching is critical, it is assumed that if there is a computerized database in place, and if it is being used to oversee the coaching process, then there is money available for coaching. So we chose this indicator over the amount of coaching money available per coach.

2. **Indicator: Evidence of an up-to-date database (could very well be the same database as the one above, and hopefully is) that tracks group-administered EGR data and shows that district and/or zone personnel are visiting "failed" schools more frequently—offering additional support—than when they are visiting schools that pass.**

    - Definition/Rationale: A critical aspect of improved oversight and management is using data from group-administered reading assessments (such as those implemented under Read to Succeed) to identify poor performing schools and the district or zone's subsequent support to those schools. The database not only should exist, but also must categorize schools on a pass/fail basis and show that more support has been given to failed schools. Over time it should show that those failed schools that have been supported are no longer failing.
    - Calculation/Source of data:
        - Observation of a database in the district/zonal office
        - Examination of the data within the database (against a checklist of key data that should be in the database)
    - A record of the number of coaching visits and support events per "failed" school as compared to number of coaching visits and support events per school that passed (annually)

3. **Indicator: Evidence that communities are "overseeing" schools and that they are doing it on a regular basis: the number of PCSC oversight visits that have taken place over the course of the past X months.**

    - Definition/Rationale: A key aspect of improved oversight and management is the role that the community plays in these regards. Communities have been trained to (1) monitor attendance of teachers and learners to ensure that teachers report for classes on time, stay, and teach regularly; (2) ensure that learners report for school on time (by checking the attendance registers); (3) conduct class observations (observe lessons); (4) monitor the implementation of school projects (agreed upon during community meetings); (5) monitor the use of teaching and learning materials; (6) monitor and manage human, material, and financial resources; and (7) monitor the school environment to ensure that it is conducive to teaching and learning. One needs to examine how many of these kinds of community oversight visits or events occur monthly.
    - Calculation/Source of data:
        - Records of these visits taking place.
        - If such records are not available, the Head Teacher and/or teachers can be queried about the kind of community oversight that is happening and the frequency by which it is happening

4. **Indicator: Number of EGR textbooks/reading materials**

   - Definition/Rationale: If there is improved oversight and management within the system, then the appropriate number of EGR textbooks and supplemental reading materials should be in the hands of every EGR student, with the appropriate number of textbooks (curriculum materials) being the number required by Ministry policy.
   - Calculation/Source of data: During a school visit—
     - Count the number of textbooks and supplemental readers in every EGR class and divide by the number of students in those classes.
     - Ask the Head Teacher if the appropriate number of textbooks, as per Ministry policy, arrived.
     - Ask students if they have textbooks or readers.

Research Question: Have reading skills improved among Zambian students in grade 2 as a result of the focus on teacher literacy instructional skills?

5. **Indicator: Hours of formal coaching/noncoaching EGR instruction received by each teacher in the past 12 months**

   - Definition/Rationale: While this indicator does not really tap into what teachers know and are able to do (their literacy instructional skills), it is important to track how much formal in-service EGR training and relevant coaching they are receiving each year, since it is an indication of the "focus" on teacher literacy instructional skills.
   - Calculation/Source of data:
     - Query the teachers on how much coaching and noncoaching EGR training they received over the course of the past 12 months.

6. **Indicator: Evidence that teachers are teaching EGR appropriately on a regular basis**

   - Definition/Rationale: While the research question asks if the focus on teacher literacy instructional skills has improved Zambian student reading skills, it is critical to find out whether this focus has been translated into improved literacy instructional skills. The only way to determine if teacher instructional skills have been improved is to observe teachers teaching or to ask students particular questions that lend insight into how teachers teach EGR.
   - Calculation/Source of data: While they are being assessed on early grade reading skills, students can be asked the following questions:
     - Does your teacher remind you to use your finger to point to words when you read?

- When you learn new words, does your teacher bring in objects or draw pictures on the chalkboard that represent the words?
- When you learn a letter, does your teacher tell you the letter name and letter sounds?
- When you learn a letter, does your teacher ask you to write it in the air, or on your desk, with your fingers?
- When you learn a letter, does your teacher ask what pupils in the class have that letter in their first names?
- When you write, does your teacher tell you to put a finger space between each word?
- When you read a word wrong, does your teacher tell you to look at all of the letters?

7. **Indicator: Teacher and nonteacher career ladders that are driven *in part* by learner performance**

   - Definition/Rationale: One of the key findings from the desk study was that teachers and nonteachers (i.e., coaches) need to be accountable for producing meaningful learning outcomes. How a system does this is the tricky question. Pay-for-performance models have proven to be inconclusive regarding the impact they have on overall teacher and student performance. One modest way of holding teachers and nonteachers accountable for meaningful learning outcomes is to include student performance as one of a number of criteria upon which a decision is made for their promotion. If relevant courses, and evidence that teachers are putting this training into practice (see NRI 6) are also included among the criteria needed for promotion, then career ladders can act as powerful demand drivers that help improve the overall reading situation in a particular country.
   - Calculation/Source of data:
     - An official career ladder for teachers and nonteachers that has student performance as one of a number of criteria needed for promotion
     - Ask EP project heads if such a career ladder is in place

Research Question: Is strengthened early grade reading assessment improving teaching and learning?

8. **Indicator: The amount of continuous assessment (CA) that is being carried out by teachers on a monthly basis: number of children for whom CA was done per teacher per month**

   - Definition/Rationale: EGR assessment can improve EGR teaching and learning in a number of ways. One is the use of EGR CA by classroom teachers. Just using EGR CA as a means of diagnosing how well one's

class is doing is itself "improved" teaching. Then taking the results of the CA and using them to address learners' needs is key as well. So, if one can determine how much EGR CA is taking place among teachers, one can get a sense of how EGR assessment may be impacting improved teaching and learning.

- Calculation/Source of data:
  - It is assumed that if teachers are doing CA, they must have a record of the results: the children assessed, and the results of each child's assessment. One also assumes that this record is dated. This being the case, monitors can look at the teachers' records and count the number of children assessed via CA over the course of, say, the past month, and record that number.[6]
  - One can ask teachers if they do CA and then ask them how many students were assessed in the past month.

Research Question: Has the EP's Opportunity to Learn (OTL) approach improved participation and supported learning achievement?

9. Indicator: Number of functional water points, hand-washing facilities and toilets in schools

- Definition/Rationale: EP's OTL is premised in part on creating a physical environment that strives to increase access to school, especially among girls. The availability of clean water and functional toilet facilities can help to increase access.
- Calculation/Source of data:
  - District Office records of the number of functional water points, hand-washing facilities and toilets in place in schools each year
  - In-person examination of water points/hand-washing facilities/toilets at the school

10. Indicator: Impact HIV/AIDS has on primary school age children

- Definition/Rationale: HIV/AIDS greatly impacts children's ability to attend school, either when they are HIV/AIDS victims themselves or when they have been orphaned by the disease. The impact of USAID's efforts to mitigate the incidence of HIV/AIDS can be measured by the number of children impacted by HIV/AIDS--the number of children not in school because of HIV/AIDS

[6] Discussions with EP project heads reveal that USAID EP projects have put in place the systemic wherewithal needed to send CA results up to the zonal and/or district office. One could, then, obtain the desired data from these databases.

- Calculation/Source of data:
  - A case study and/or a survey of a large enough target population to capture sufficient numbers of impacted children. Over time, the incidence of children impacted by HIV/AIDS should decrease as measures to mitigate the disease are implemented.

2.2 METHODOLOGY

The data needed for NRIs 3, 4, 5, 6, 8, and 9, were collected during an EGRA exercise that took place in November 2014. The data needed for NRIs 1, 2, and 7 were collected through communication with EP project staff. Data for NRI 10 was not collected for reasons offered earlier in this report.

The study sample for the EGRA consisted of 486 schools sampled in all 10 national provinces to allow for regional and language-of-instruction representativeness. The sample frame was all schools with Grade 2 pupils, including private, GRZ (government), community, and grant-aided schools.

Seventy-three districts were identified and a designated number were randomly selected by stratification of language regions crossed with province, using probability proportional to size (PPS) systematic sampling. When the language-of-instruction group was a small percentage of the population (for example, in the Lunda and Luvale language regions), oversampling was used in order to obtain a subpopulation sample that would provide estimates with a reasonable level of precision. In all, 48 districts were selected. These districts were then stratified by school type and—where possible—one private, one grant-aided, and eight community or GRZ schools were selected using PPS systematic sampling.

The final stage of sampling occurred during the school visits. One Grade 2 class was selected at random and the teacher of that class was administered the teacher survey. Additionally, the Head Teacher of the school was administered a survey. The questions that were asked that were related to the NRIs are shown below in ***Tables 3-8***.

NRI 3: Evidence that communities are "overseeing" schools and that they are doing it on a regular basis: the number of Parent Community School Committee (PCSC) oversight visits that have taken place over the course of the past month.

Table 3: Questions related to NRI 3

SURVEY QUESTION	RESPONSE
I am now going to ask you about parental and community involvement. In particular, I will mention a particular mode of involvement. If this mode takes place, please answer yes, if it does not take place, please answer no.	

Table 3: Questions related to NRI 3

SURVEY QUESTION	RESPONSE
Monitor student attendance:	No
	Yes
Conduct classroom observations	No
	Yes
Monitor implementation of school projects	No
	Yes
Monitor the availability of textbooks	No
	Yes
Look at your record of continuous assessment	No
	Yes
Help you to teach reading in some way	No
	Yes
Other	No
	Yes
Are you satisfied with the level of parental support your students receive?	No
	Yes

NRI 4: Number of EGR textbooks/reading materials.

Table 4: Questions related to NRI 4

SURVEY QUESTION	RESPONSE
Did your school have the appropriate number of textbooks?	No
	Yes

NRI 5: Amount of coaching and noncoaching EGR instruction received by teachers in the past 12 months

Table 5: Questions related to NRI 5

SURVEY QUESTION	RESPONSE
How often did you receive a reading teacher professional coaching visit?	Never
	Once
	More than once a month
	Once every month
	Once every week
How many coaching visits for reading did you receive over the year?	0
	1
	2
	3
	4
	5 or more
	One hour or less

Table 5: Questions related to NRI 5

SURVEY QUESTION	RESPONSE
On average, how many minutes did each coaching visit last?	Between 1 and 3 hours
	More than 3 hours
How useful did you find this coaching to be?	Very useful
	Somewhat useful
	Not useful
How many INSET sessions on reading did you receive over the past year?	None
	One
	Two to four
	Five or more
How useful did you find this training?	Very useful
	Somewhat useful
	Not useful at all

NRI 6: Evidence that teachers are teaching EGR appropriately on a regular basis

Table 6: Questions related to NRI 6

QUESTION	RESPONSE
Record how many pages the teacher has marked or corrected	No pages
	One quarter of the pages:
	Half of the pages
	Three quarters of the pages
	All pages
	Reading exercise book not available
Pages the teacher has marked or corrected math exercise book.	No pages
	One quarter of the pages:
	Half of the pages
	Three quarters of the pages
	All pages
	Mathematics exercise book not available
What does the teacher do when you do well?	
Nothing	No
	Yes
Praises me	No
	Yes
Gives me a prize	No
	Yes
Other	No

Table 6: Questions related to NRI 6

QUESTION	RESPONSE
	Yes
Do not know/No response	No
	Yes
When you are unable to answer a question?	
Teacher rephrases	No
	Yes
Teacher tells the student to try again	No
	Yes
Teacher asks another student	No
	Yes
Teacher asks again	No
	Yes
Teacher corrects the student	No
	Yes
Teacher hits student	No
	Yes
Other	No
	Yes
Did you read books on your own during school yesterday?	No
	Yes
	No response
Did you bring home reading books from your classroom or library last week?	No
	Yes
	No response
Does your teacher remind you to use your finger to point to words?	No
	Yes
	No response
Does your teacher bring in objects or draw pictures that represent new words?	No
	Yes
	No response
Does your teacher tell you the letter name and letter sounds?	No
	Yes
	No response
Does your teacher ask you to write it in the air, or on your desk?	No
	Yes
	No response
Does your teacher ask who has that letter in their first names?	No
	Yes
	No response
Does your teacher tell you to put a finger space between each word?	No
	Yes

Table 6: Questions related to NRI 6

QUESTION	RESPONSE
	No response
Read incorrectly: does your teacher tell you to look at all of the letters?	No
	Yes
	No response

NRI 8: The amount of continuous assessment (CA) that is being carried out by teachers on a monthly basis: number of children for whom CA was done per teacher per month

Table 7: Questions related to NRI 8

SURVEY QUESTION	RESPONSE
Last month, did you conduct reading assessment exercises with your students?	No
	Yes
Number of students who were assessed on their reading skills over last month	0
	1-10
	11-20
	21-30
	30 or more

NRI 9: Number of functional water points, hand-washing facilities, and toilets in schools

Table 8: Questions related to NRI 9

SURVEY QUESTION	RESPONSE
How many hand-washing facilities are there in the school for children?	1-2
	3-6
	7 or more
What is the school's main water source?	No water available in or near school
	Piped water to school yard/plot
	Public tap/standpipe
	Tube well/borehole
	Protected dug well
	Unprotected dug well
	Other

Table 8: Questions related to NRI 9

SURVEY QUESTION	RESPONSE
Is the main water source functional now?	No
	Yes
	Partially (at a reduced rate)
Total number of toilets exclusively for girls	0
	1-3
	4-6
	7 or more
Total number of toilets exclusively for girls and functional	None
	1-3
	4-6
	7 or more
Total number of toilets exclusively for boys	None
	1-3
	4-6
	7 or more
Total number of toilets exclusively for boys and functional	None
	1-3
	4-6
	7 or more
Total number of communal toilets anyone can use	None
	1-3
	4-6
	7 or more
Total number of communal toilets anyone can use which are functional	None
	1-3
	4-6
	7 or more

The data gathered to measure the baseline situation for NRIs 1, 2, and 7 were not collected during the EGRA. Rather, RTI contacted key personnel working on the projects of the EP and asked them what the baseline situation was for these NRIs. With regard to NRI 1, they were asked if they had seen any evidence of or were aware of any evidence of an up-to-date database that tracks the coaching visits made by coaches and manages and analyzes the data coaches gather from those

coaching visits. With regard to NRI 2, they were asked if they had seen any evidence of or were aware of any evidence of an up-to-date database (could very well be the same database as the one above, and hopefully is) that tracks student/school performance data and shows that district and/or zone personnel are targeting poor-performing schools more frequently than higher-performing schools. With regard to NRI 7, they were asked if the MOGE had teacher and nonteacher career ladders that are driven *in part* by learner performance. For all three indicators, the responses from the field were unanimously "no." Finally, for reasons explained earlier, data for NRI 10 were not collected.

2.3 BASELINE RESULTS OF THE NONREADING INDICATORS

In this section of the report, the baseline results of the 10 NRIs that proved to be statistically significant are presented.

2.3.1 INDICATOR 1: Evidence of an up-to-date database that tracks the coaching visits made by coaches and manages and analyzes the data coaches gather from those coaching visits

Baseline situation: There are no such databases in place. However, the results of the Head Teacher survey and the teacher survey that were administered alongside the EGRA in November 2014 showed that coaching was occurring. As shown in ***Table 9,*** 65% of Head Teachers reported that coaching visits occurred at least once a year, with just over 30% reporting that it took place more than once per year.

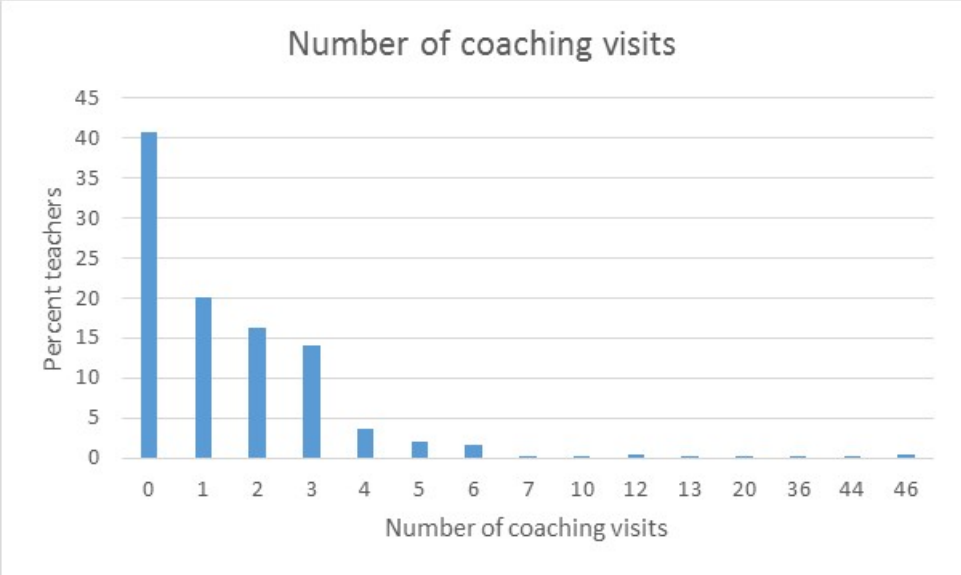
Table 9: Frequency of coaching visits reported by Head Teachers

QUESTION	RESPONSE	PERCENT
How often did you receive a reading teacher professional coaching visit?	Never	35.9
	Once	32.5
	More than once a month	19.6
	Once every month	11.7
	Once every week	0.3

When teachers were asked how many coaching visits they had experienced in the past year, 60% reported that they had been "coached" at least once per year, with

nearly 30% reporting that they had been coached more than once per year ***(Figure 1).*** Over 80% of teachers noted that they had been coached for nearly an hour for each coaching session they had. While USAID can use these numbers as baseline values tied to coaching, they say little about how the coaching effort is being managed and overseen. Evidence of this can be seen only in a database that tracks coaching visits—a database that does not presently exist, as reported by key people working on the projects of the EP.

Figure 1: Number of coaching visits as reported by teachers



2.3.2 INDICATOR 2: Evidence of an up-to-date database that tracks the coaching visits made by coaches and manages and analyzes the data coaches gather from those coaching visits

This could very well be the same database as the one above with data that tracks student and teacher performance data and shows that district and zone personnel are visiting poor-performing schools more frequently—offering additional support—than they are visiting high-performing schools.

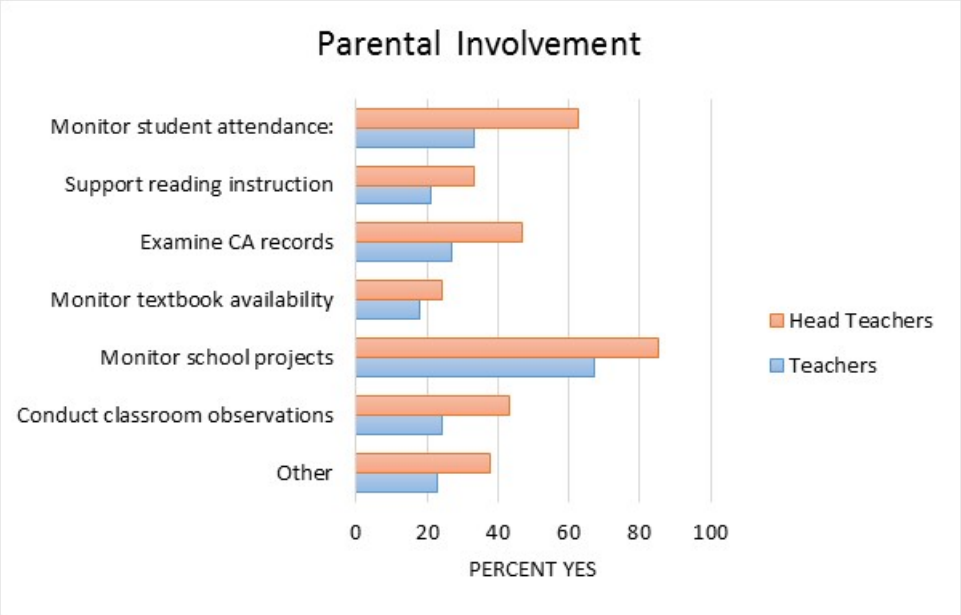
Baseline situation: There are no such databases in place.[7]

[7] While records of various types may be kept by government staff who visit schools, these do not qualify as the kind of "database" that can facilitate data analysis that can identify teachers' needs vis-à-vis a number of factors that are examined during classroom observations that are tracked over time, nor can they facilitate the kind of analysis that can identify particular teachers in need and provide the information needed to provide targeted support to those teachers.

2.3.3 INDICATOR 3: Evidence that communities are "overseeing" schools and that they are doing it on a regular basis: the number of PCSC oversight visits that have taken place over the course of the past 12 months

Baseline situation: Head Teachers and teachers were asked a number of questions about parental involvement. Specifically, they were asked if parents were involved in such things as monitoring school attendance, supporting a school project, etc. The questions asked and the Head Teachers' and teachers' responses to the questions are presented in ***Figure 2.***

Figure 2: Parental involvement in school activities



Of note is the fact that Head Teachers said that parental and community oversight focused largely on student attendance and support to school projects, while teachers noted only support to school projects as a majority (i.e., over 50%) response.

2.3.4 INDICATOR 4: Number of EGR textbooks and reading materials per student

Baseline situation: The data for this indicator (see ***Table 10***) came from questions asked of Head Teachers and students during the 2014 EGRA. As one can see, the responses reflect a poor situation, with only about 24% of Head Teachers saying that they had the number of textbooks according to ministry policy. When students were asked questions about textbook availability/use, only about 27%

said that they read a book on their own while in school the previous day, and only about 17% said that they had brought a book home to read the previous day. This faintly "echoes" the situation presented by the Head Teachers—realizing, of course, that textbooks could be at the schools and still students may not have read one at school or taken one home the day before.

Table 10: Textbook availability and use

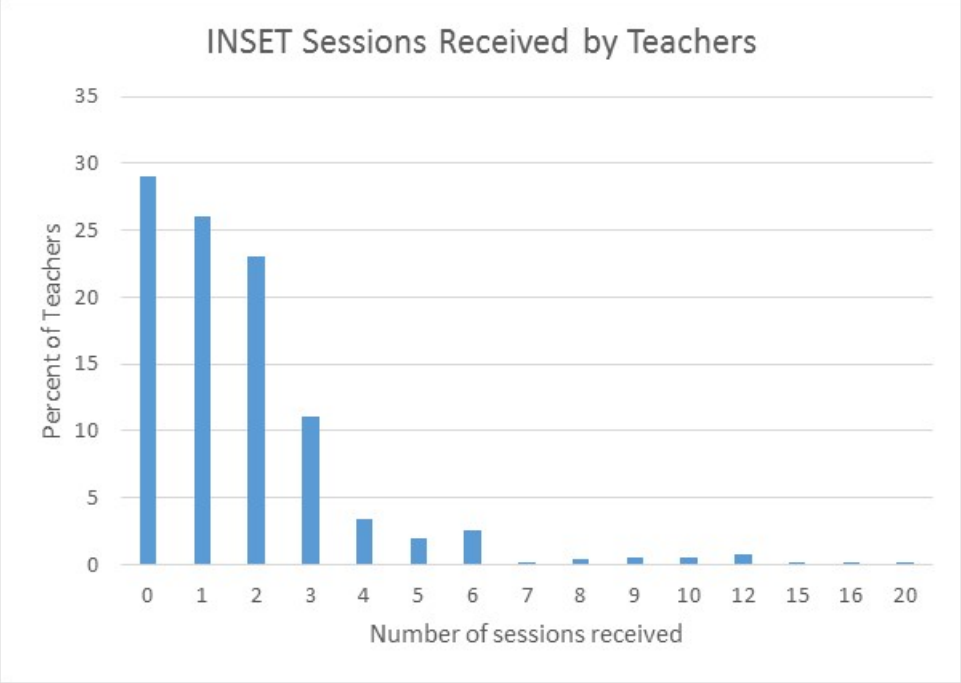
SURVEY QUESTION	RESPONSE	PERCENT
Head Teacher: Did your school have the appropriate[8] number of textbooks according to current ministry policy?	Yes	23.8
Student: Did you read books on your own during school yesterday?	Yes	27.3
Student: Did you bring home reading books from your classroom or library last week?	Yes	16.5

2.3.5 INDICATOR 5: Frequency of formal coaching and noncoaching EGR instruction received by each teacher in the past 12 months

Baseline situation: With regard to coaching, see the baseline situation for NRI 1 above (Table 3 and Figure 1). As for INSET ***(Figure 3)***, 30% of the teachers said that they had not received any in-service EGR instruction in the past year, while 60% said that they had received anywhere from 1 to 3 such sessions. Ninety percent of the teachers who had received some INSET found the instruction useful.

[8] The appropriate number of textbooks is the required number as per the curriculum (i.e., are there two official textbooks that are needed for every student) and ministry's policy on students sharing textbooks (does the ministry as a policy provide one set of textbooks per student or one set of textbooks for every two students).

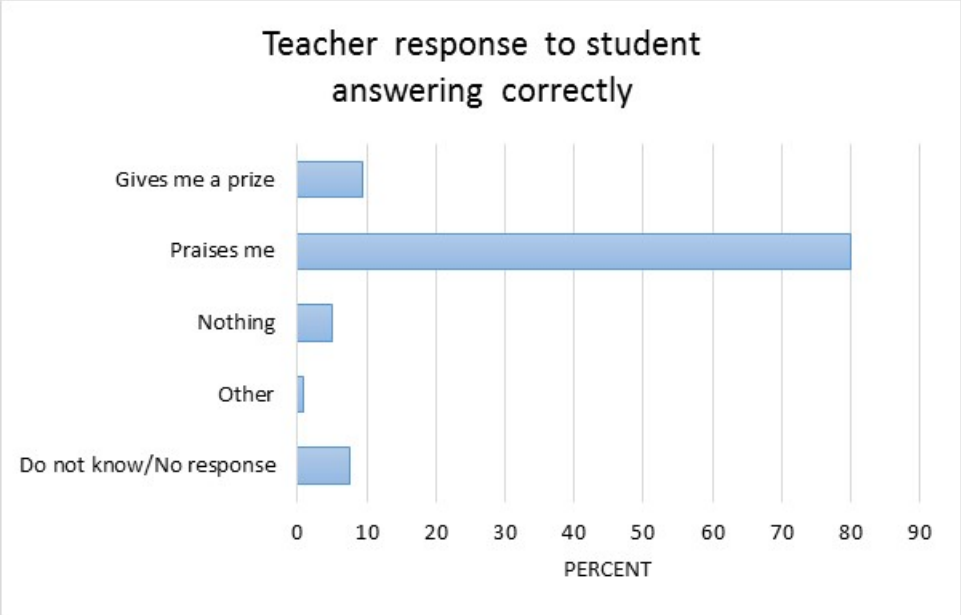
Figure 3: Number of INSET sessions



2.3.6 INDICATOR 6: Evidence that teachers are teaching EGR appropriately on a regular basis

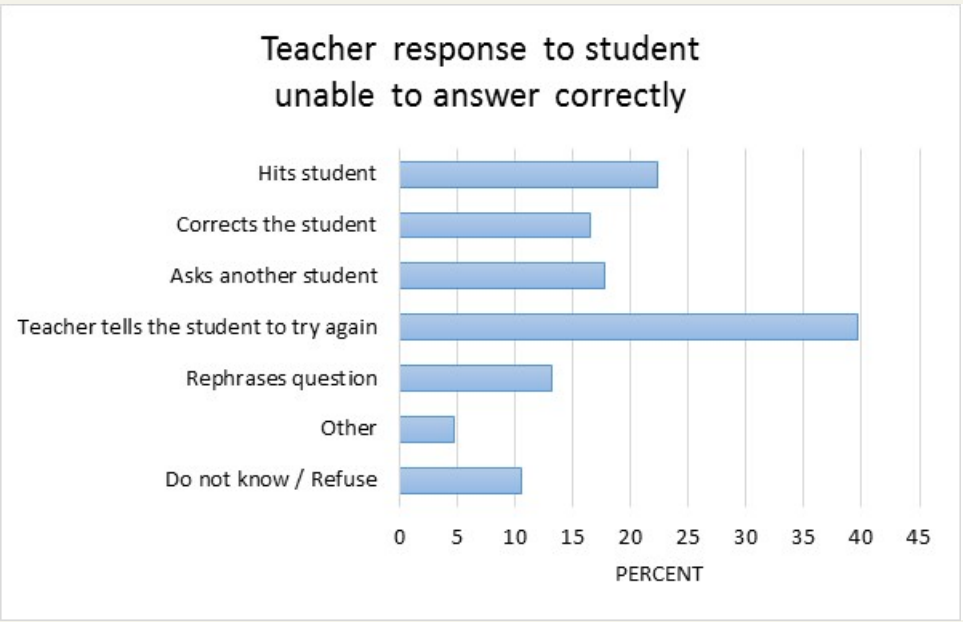
Baseline situation: Students were asked a number of questions that were designed to lend some insight into the way EGR teachers teach. First, they were asked what the teacher does when they are able to answer a question asked by the teacher. As shown in ***Figure 4,*** 80% said that the teacher praises them. Note that for this question, the students were able to give multiple responses.

Figure 4: Effective teaching: Student observation on teacher response when student answers a question correctly



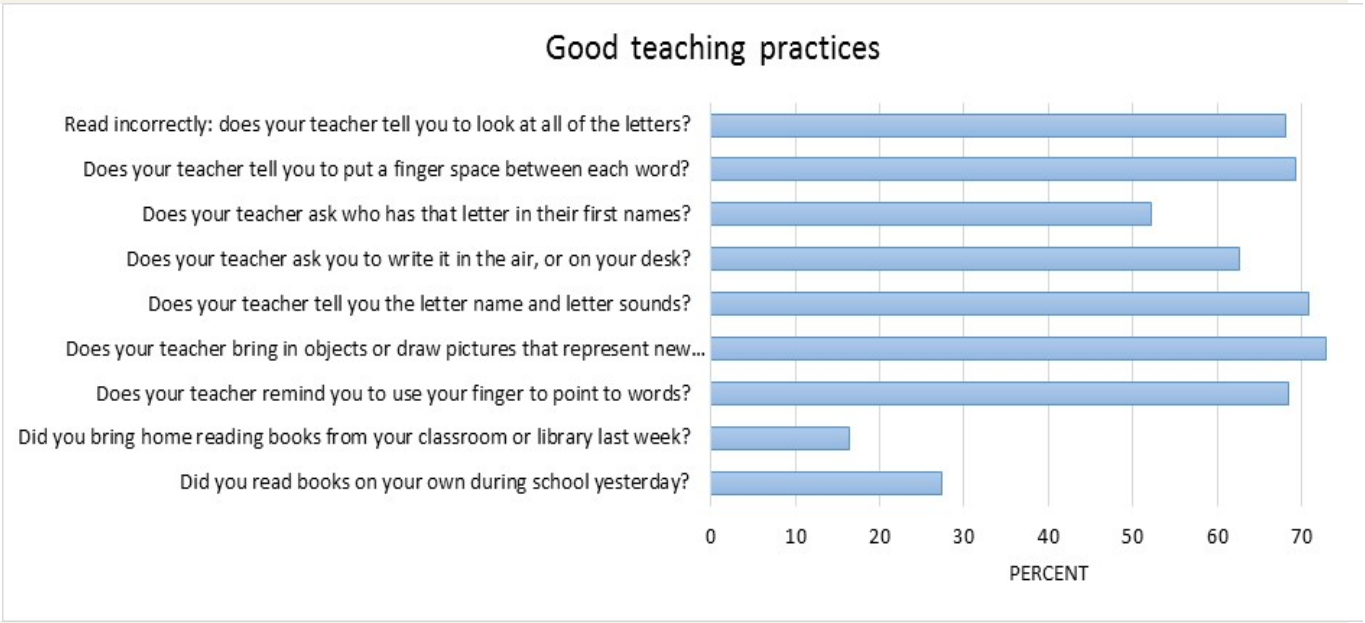
When asked what a teacher does when they do not answer a question correctly ***(Figure 5),*** nearly 40% said that the teacher asks them to try again, while over 20% said that the teacher hits them.

Figure 5: Effective teaching: Teachers' response to a student who is unable to answer a question correctly



Students were then asked a number of questions designed to provide some insight into how teachers teach EGR. The questions and the students' responses to the questions are shown in ***Figure 6.*** As one can see, many teachers appear to be instructing the students fairly well.

Figure 6: Effective teaching: Evidence of good EGR instruction



Finally, the survey assessors were asked to examine student workbooks. In 69% of the workbooks examined, one-fourth or more of the pages had been marked by the teachers. In over 75% of the math books, one-fourth or more of the pages had been marked.

2.3.7 INDICATOR 7: Teacher and nonteacher career ladders that are driven in part by learner performance

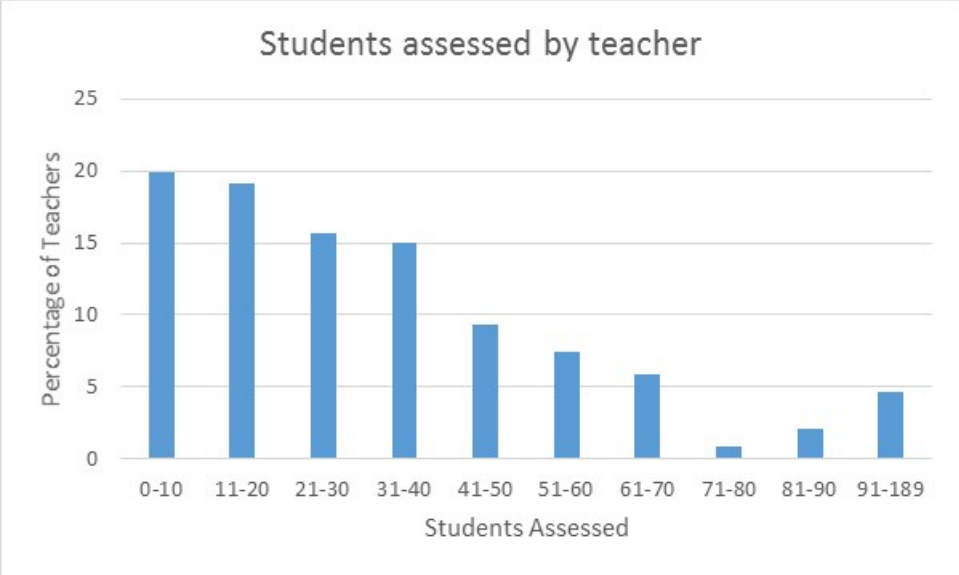
Baseline situation: No such career ladders exist.

2.3.8 INDICATOR 8: The amount of CA that is being carried out by teachers on a monthly basis: Number of children for whom CA was done per teacher per month

Baseline situation: Teachers were asked if, in the past month, they conducted classroom reading assessment exercises with their students. Seventy-four percent of the teachers said "yes." They were then asked how many students they assessed over the course of the past month. The results are shown in ***Figure 7.*** To help shed some light on what these figures actually mean, one must realize

that the average primary level pupil–teacher ratio for Zambia in 2013 was 48.[9] So, while the data in Figure 7 show that a fair amount of continuous assessment is taking place, on average, only 24 students per classroom are being assessed each month, or half of the average number of students per teacher in the system.

Figure 7: Amount of continuous assessment carried out by teachers in their classrooms

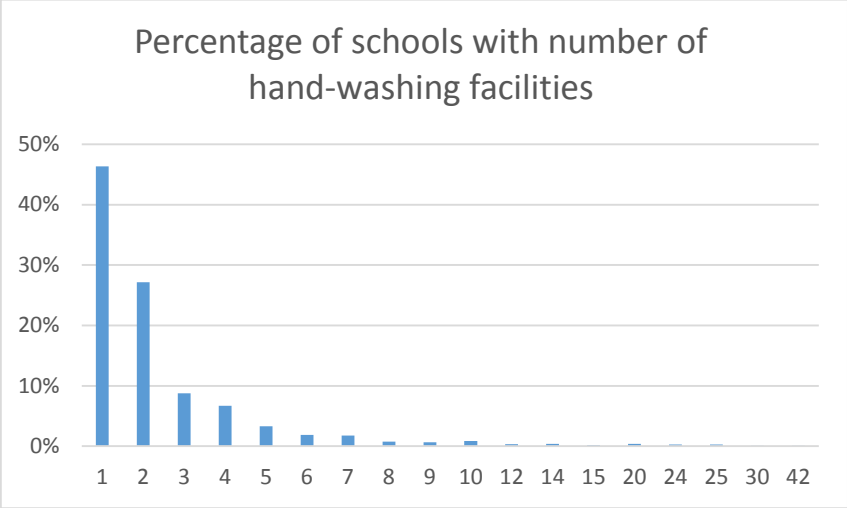


2.3.9 INDICATOR 9: Number of functional hand-washing facilities and toilets in schools in each district

Baseline situation: The 2014 school observation survey carried out alongside the EGRA showed that 74% of the schools had two hand-washing facilities or fewer (see ***Figure 8***).

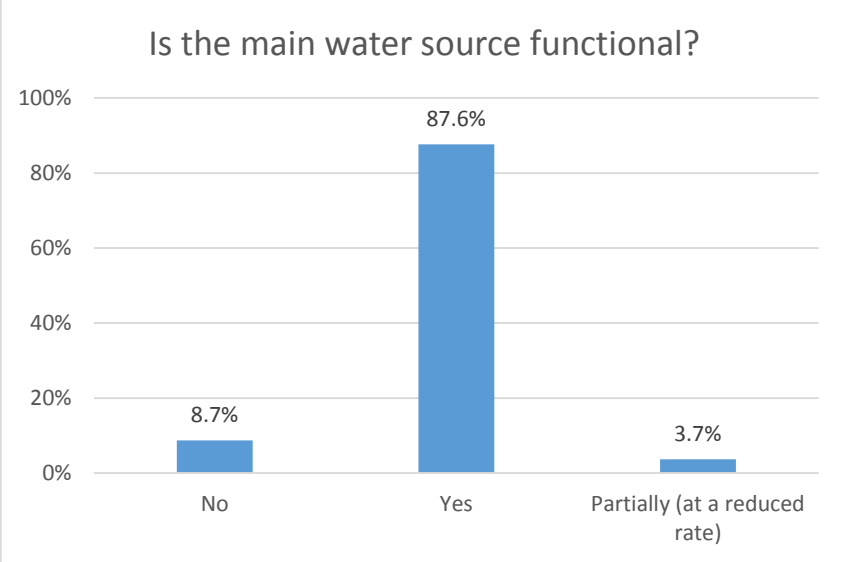
[9] See World Bank online database of World Development Indicators, global pupil–teacher ratios at primary level, http://data.worldbank.org/indicator/SE.PRM.ENRL.TC.ZS.

Figure 8: Percentage of schools with number of hand-washing facilities



Only 8.7% of schools reported not having a functional water source. All other schools reported at least having a partial or functional water source (see ***Figure 9***).

Figure 9: Is the main water source functional now?



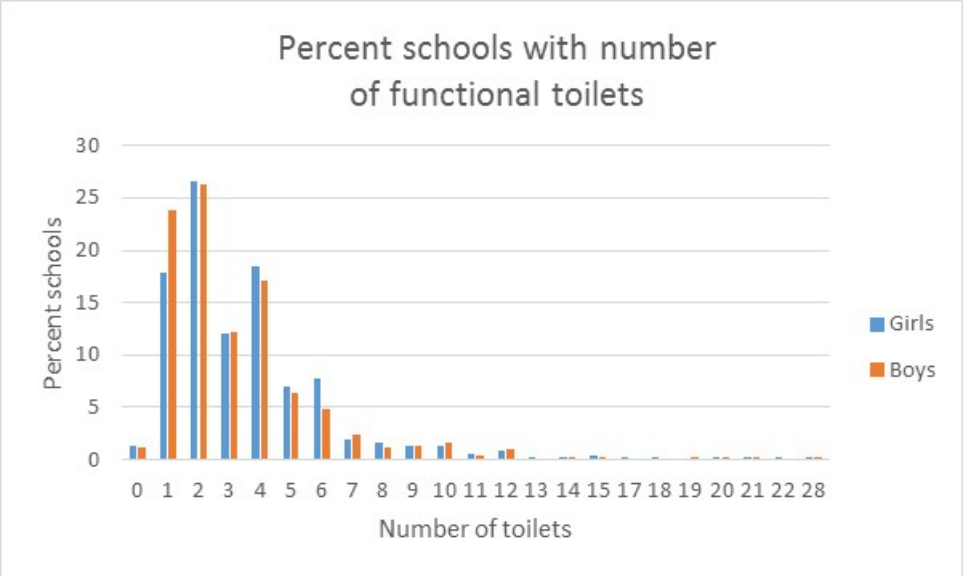
The survey also showed that 67% of the schools had as their main source of water a tube well (see ***Table 11***).

Table 11: Source of schools' water points

SURVEY QUESTION	RESPONSE	PERCENT
What is the school's main water source?	No water available in or near school	3.4
	Piped water to school yard/plot	13.2
	Public tap/standpipe	2.2
	Tube well/borehole	67.1
	Protected dug well	4.1
	Unprotected dug well	4.5
	Other	5.5

Finally, the survey showed that approximately 75% of the schools had two or more functional toilets (see ***Figure 10).***

Figure 10: Percentage of schools with number of functional toilets



2.3.1 INDICATOR 10: Impact of HIV/AIDS on primary school age children

Baseline situation: Data were not collected, for reasons offered earlier in the report.

3 CONCLUSION AND RECOMMENDATIONS

3.1 CONCLUSION

Overall, the baseline status of the NRIs was not very strong and while regression analysis showed some level of correlational significance between some of the NRIs and improved oral reading fluency (ORF), see ***Table 12***, many of the indicators were statistically nonsignificant such that no firm conclusion could be obtained.

Table 12: Results of regression analysis (NRIs' relationship to ORF)

RESEARCH QUESTION	RELATIONSHIP TO ORF
How has improved oversight and management across the education system impacted learner performance?	ORF is +1.6 wpm when parents and community monitor implementation of school projects ORF is +1.6 wpm when parents and community help teacher to teach reading in some way ORF is +5.3 wpm when pupils read books on their own during school day (yesterday) ORF is + 1.0 wpm when pupils bring home reading books from library or classroom (last week)
Have reading skills improved among Zambian pupils in grade 2 as a result of the focus on teacher literacy instructional skills?	ORF is -7.4 wpm less when teacher found training they undertook not useful at all ORF is +3.6 wpm when pupil reads book on their own during school day (yesterday) ORF is +1.8 wpm when teacher reminds pupils to use their finger to point to words ORF is +1.9 wpm when teacher tells pupils to look at all the letters when they read incorrectly
Is strengthened early grade reading assessment improving teaching and learning?	ORF is +3.1 wpm when teacher conducts monthly assessment with pupils
Has the EP's Opportunity to Learn approach improved participation and supported learning achievement?	No statistically significant association with ORF, which could be due to the fact that while the OTL effort may help increase access, it has little to do with helping children to learn how to read. However, there was a significant association between attendance and learning outcomes.

3.2 RECOMMENDATIONS

3.2.1 DEMAND DRIVERS

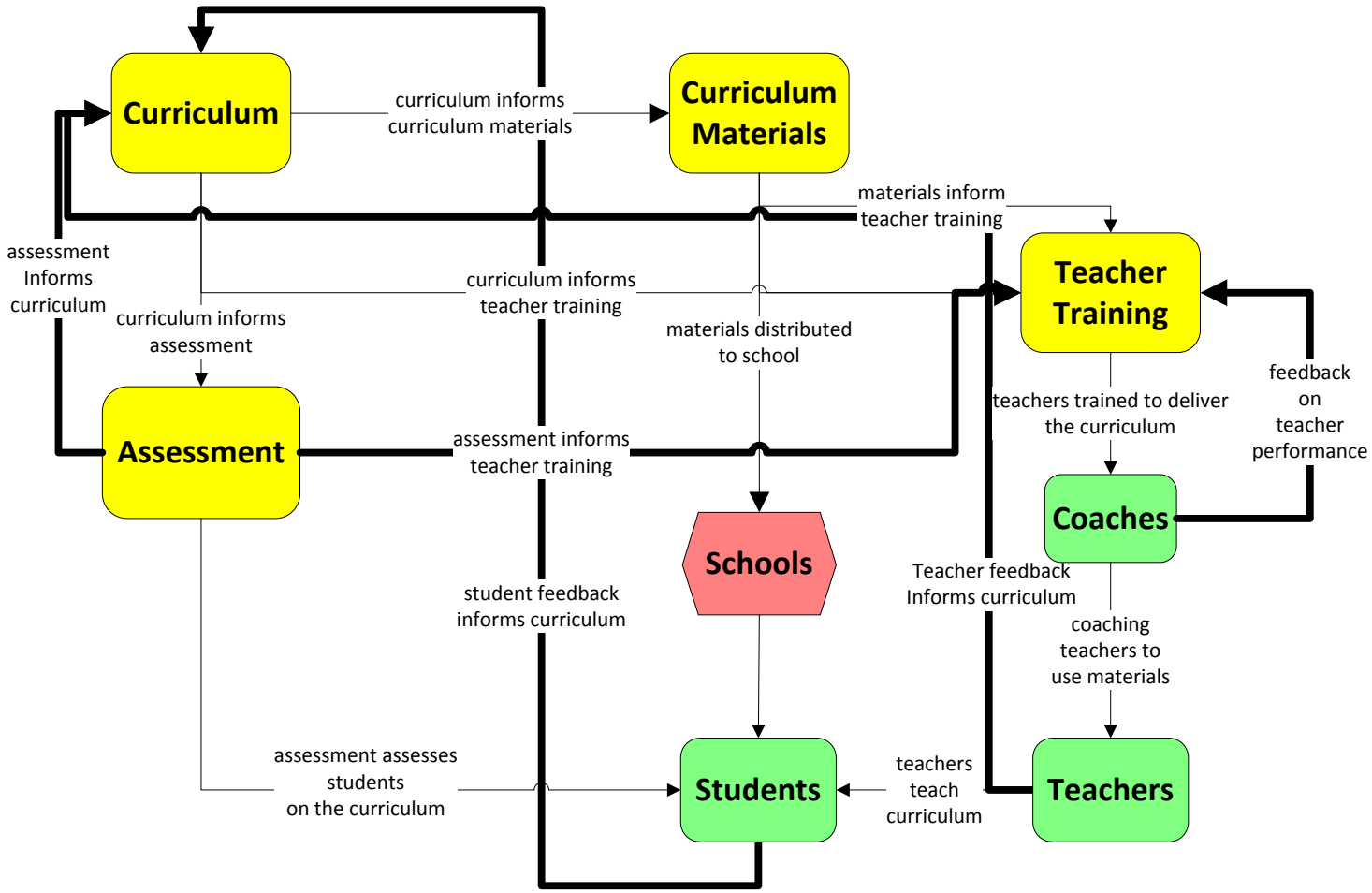
If (1) improved oversight and management across the education system, (2) increased focus on teacher literacy instructional skills, (3) strengthened early grade reading assessment, and (4) USAID's Opportunity to Learn approach are to have significant impact on high-quality teaching and learning, some more work may have to be done. First, the underlying theory of change upon which this additional work will be developed should embrace the notion of and need for demand drivers. Then, the projects through which this additional work will be done must help to put in place these demand drivers (requiring policy reforms)—in particular, detailed job descriptions that outline the work people have been trained to do; career ladders for which the criteria for advancement include, at the very least, an "acceptable" level of performance on the work outlined in their job descriptions; incentive systems that carefully reward people for doing the work outlined in their job descriptions well; and accountability systems which also reward people for acceptable performance and which come with sanctions when, over a period of time, performance remains unacceptable.

3.2.2 A VIABLE CURRICULUM IMPLEMENTATION SYSTEM

However, these demand drivers will have a meaningful effect only if the institutional space within which people work enables them to do the work they need to do. With regard to EGR in particular, the EGR curriculum needs to be sound; the EGR materials need to be aligned with the EGR curriculum; the correct numbers of the correct EGR materials need to reach the correct schools on time; teacher professional development (both INSET and coaching) needs to be aligned with the curriculum to ensure that teachers know how to teach the curriculum and use the curriculum materials; the entire student assessment function needs to be aligned with the curriculum such that it can examine the extent to which the pupils are attaining the EGR learning objectives put forth in the curriculum; and critical feedback linkages need to be in place to ensure that when EGR learning objectives are not being met, the key actors in this curriculum implementation system (CIS) receive the information they need to critically reflect on the work they are doing and improve upon it if need be. Furthermore, for all of this to work there must be ample funds. Accordingly, USAID should be strive to help the MOGE to put in place a viable CIS along with all the demand drivers needed to render it fully functional. Such a CIS is illustrated in ***Figure 11.***

Finally, given this recommendation, an appropriate set of NRIs, many more than the 10 presented in this report, should be developed and measured.

Figure 11: Illustrative curriculum implementation system



APPENDIX: ANALYTICAL TABLE

VARIABLE	SUB-VARIABLE	ORAL READING FLUENCY (LOCAL LANGUAGE)							
		RESEARCH QUESTION 1		RESEARCH QUESTION 2		RESEARCH QUESTION 3		RESEARCH QUESTION 4	
		COEFFI-CIENT	*T* SCORE	COEFFI-CIENT	*T* SCORE	COEFFI-CIENT	*T* SCORE	COEFFI-CIENT	*T* SCORE
Home language = language of instruction (LOI)		2.443*	(2.59)	2.476*	(2.21)	2.275*	(2.32)	2.685*	(2.69)
Pupil has language reader		2.293*	(2.38)	2.805	(1.72)	4.567***	(4.10)	4.034**	(3.31)
Pupil is repeating grade		-1.205	(-1.66)	-1.352	(-1.25)	-1.044	(-1.53)	-0.731	(-0.73)
Pupil is correct age for grade 2		0.755	(1.93)	-0.107	(-0.14)	0.639	(1.46)	0.213	(0.26)
School type	Community								
	GRZ	1.704	(1.23)	-0.150	(-0.07)	0.861	(0.65)	1.504	(0.98)
	Grant-aided	2.842	(1.67)	2.837	(1.05)	1.714	(0.96)	3.731	(1.50)
	Private	-0.290	(-0.21)	-1.648	(-0.65)	-1.096	(-0.68)	0.397	(0.20)
How often do you read out loud to someone at home?	Never								
	Sometimes	3.144***	(5.32)	3.369***	(5.10)	4.524***	(9.01)	5.291***	(6.33)
	Every day	5.539**	(2.99)	5.525*	(2.18)	7.408***	(4.01)	8.914***	(4.71)
Head Teacher conducts classroom observations		1.818*	(2.08)						
Teacher is satisfied with the level of parental support students receive		-1.234	(-1.00)						
Parent / community involvement	Monitor implementation of school projects	1.632	(1.93)						
	Help you to teach reading in some way	1.617	(1.81)						
Pupil read books on their own during school (yesterday)		5.300***	(7.94)	3.613***	(3.85)				

VARIABLE	SUB-VARIABLE	ORAL READING FLUENCY (LOCAL LANGUAGE)							
		RESEARCH QUESTION 1		RESEARCH QUESTION 2		RESEARCH QUESTION 3		RESEARCH QUESTION 4	
		COEFFI-CIENT	*T* SCORE	COEFFI-CIENT	*T* SCORE	COEFFI-CIENT	*T* SCORE	COEFFI-CIENT	*T* SCORE
Pupil brought home reading books from their classroom or library last week		0.975	(0.88)						
Minutes of each coaching visit				-0.00640	(-1.74)				
Number of INSET sessions attended by teacher				-0.150	(-0.64)				
Teacher found INSET training…	Somewhat useful			-0.138	(-0.09)				
	Not useful			-7.386***	(-4.40)				
Teacher reminds pupil to use finger to point to words? (reported by pupil)				1.847*	(2.56)				
Teacher tells pupil to look at all of the letters when they read a word incorrectly (reported by pupil)				1.876**	(3.17)				
Teacher conducts reading assessment exercises with pupils						3.059**	(3.55)		
How many hand-washing facilities are there in the school for children?								-0.0900**	(-2.97)
What is the school's main water source?	No water								
	Piped water							-0.0394	(-0.02)
	Public tap							-1.560	(-0.96)
	Borehole							-0.0176	(-0.01)
	Protected well							7.321**	(2.79)
	Unprotected well							-0.491	(-0.28)
	Unprotected spring							9.777***	(5.59)
	Small tank/drum							7.634**	(3.16)
	Surface water							3.230	(1.56)
	Other							-1.286	(-0.48)
Ratio: Number of grade 2 children per FUNCTIONAL toilet								0.147	(0.71)
Ratio: Number of grade 2 children per toilet								-0.134	(-0.66)

VARIABLE	SUB-VARIABLE	ORAL READING FLUENCY (LOCAL LANGUAGE)							
		RESEARCH QUESTION 1		RESEARCH QUESTION 2		RESEARCH QUESTION 3		RESEARCH QUESTION 4	
		COEFFICIENT	*T* SCORE	COEFFICIENT	*T* SCORE	COEFFICIENT	*T* SCORE	COEFFICIENT	*T* SCORE
Constant		-4.567**	(-3.38)	-0.796	(-0.29)	-3.399*	(-2.71)	-2.007	(-1.04)
F statistic		25.37	0.000	10.60	0.000	27.77	0.000	147.4	0.000
Number of observations		2,909		1,186		3,181		1,767	

t statistics in parentheses.

Note: Statistical significance denoted by *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$, and *$p < 0.1$.

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