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REPORT

FINAL REPORT

Niger NECS EGRA Descriptive Study Round 1

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The opinions, conclusions, and any errors in this report are the sole responsibility of the authors and do not reflect the official views of MCC or Mathematica.

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EXECUTIVE SUMMARY

The Millennium Challenge Corporation (MCC) sponsored a three-year Niger Threshold Program (NTP) beginning in 2008 to reduce corruption, register more businesses, promote land titling, and improve girls' education outcomes. One activity under girls' education was the IMAGINE project (IMprove the educAtion of Girls In NigEr). Although the NTP was suspended early in 2009 because of a constitutional crisis, Mathematica Policy Research was still able to conduct a rigorous evaluation of the component designed to increase girls' school enrollment, attendance, and completion rates, IMAGINE.

In 2012, MCC partnered with the U.S. Agency for International Development (USAID) to implement a second phase of IMAGINE, the Niger Education and Community Strengthening (NECS) project through NTP and USAID regional funding.. The NECS project activities focus on increasing access to quality education and improving student reading achievement through an ambitious early grade reading curriculum that trains and supports teachers in new methods of teaching early grade reading in local languages, and also develops local language reading materials. The project also supports community mobilization for participation in local primary schools. All these activities place a special emphasis on girls. NECS activities are being implemented in 150 villages located in 11 departments and 20 communes across 7 regions of Niger.

Mathematica was chosen to rigorously evaluate the impact of the NECS project. The NECS evaluation builds on the random assignment method used in the IMAGINE evaluation—the NECS project is being implemented in all IMAGINE villages and a randomly selected group of villages from the original set of eligible villages that did not receive IMAGINE schools. This approach allows us to estimate the impact of the NECS project alone and the NECS and IMAGINE projects together. We will conduct two rounds of data collection (henceforth referred to as "Wave 1" and Wave 2"). Wave 1 data for the NECS evaluation were collected in October and November of 2013 and Wave 2 data collection had been planned for the end of the 2014–2015 school year, but will possibly be pushed back to the end of the 2015-2016 school year to account for delays in implementation of some NECS project activities.

In addition to the NECS impact evaluation, MCC and USAID requested a descriptive study on reading performance in local languages in NECS schools' early grades. The goal of this descriptive study is to contribute to USAID's education strategy goal 1 of improved reading skills for 100 million children in primary grades by 2015[1] by providing data on reading levels for first and second grade students in NECS schools. These data should be useful to the NECS implementation team, as well as the Niger Ministry of Education (MEN), in informing policy and project rollout.

This report is an analysis of the first round of data that were collected in a randomly selected sample of 27 intervention schools at the end of the 2013–2014 school year (May 2014).

[1] See "Education: Opportunity through Learning. USAID Education Strategy." (USAID 2011).

A. Overview of the study

This descriptive study will measure and document reading skills in local languages for first and second grade students in a sample of intervention schools over a two- or three-year period. Two or three rounds of data collection are planned, and the exact number will be determined in discussions with stakeholders (including USAID, MCC, and Plan International) during 2015.

Specifically, this study is designed to answer two research questions:

1. How much does oral reading fluency (ORF) in local language change over time for first and second graders in NECS intervention schools?
2. By the end of two grades of primary schooling, what proportion of students in NECS intervention schools demonstrate that they can read and understand the meaning of grade 2 level text in local language?

This study will use repeated cross-sectional data for first and second grade students. The same schools will be in each round of data collection, but the children themselves will not be followed over time. The first cross-sectional data were collected in May 2014 at the end of the 2013–2014 school year, when grade 1 students had four months of the NECS early grade reading curriculum and grade 2 students had not had any of the early grade reading curriculum. There is an optional follow-up at the end of the 2014–2015 school year, and the final follow-up is planned for the end of the 2015–2016 school year.

For each round, the sample frame is first and second grade students enrolled and present at the time of data collection in 27 randomly selected NECS intervention schools. Where possible, 50 students per school (25 first graders and 25 second graders) were sampled. Sampling was stratified by gender to ensure an even distribution when sufficient numbers of boys and girls were enrolled in first and second grades. In the first round of data collection during the 2013–2014 school year, a total of 1,007 students completed the assessments—597 in first grade and 410 in second grade, 520 boys and 487 girls. A similar number of students will be sampled in future rounds, using the same sampling frame of students currently enrolled and present at the time of data collection.

Five skills that are particularly important for developing reading comprehension are measured using an Early Grade Reading Assessment (EGRA)[2]: letter recognition, familiar word reading, invented word reading, oral reading fluency of grade 2 level text, and reading comprehension.[3] The assessments are short enough to limit respondent burden and the tested reading skills are tightly linked to the NECS reading intervention. The assessments were developed and administered in four local languages, including Hausa, Zarma, Kanuri, and one other local language.[4] Mathematica worked closely with a team of experts from the MEP and other stakeholders to create the assessments in each local language.

[2] Standard EdData procedures were followed to develop the assessments. See the EGRA Toolkit (RTI International 2009).

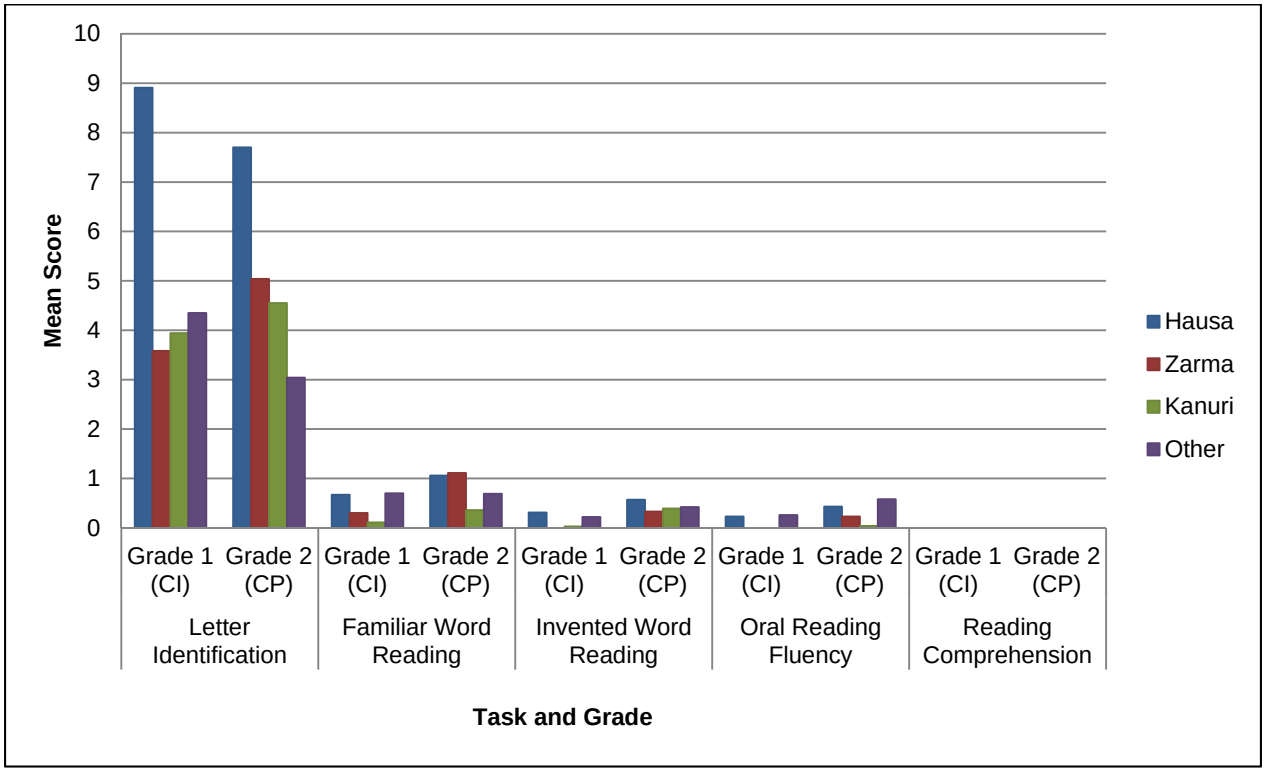
[3] Invented word reading is also referred to as nonword or nonsense word reading/decoding.

[4] The fourth language is not specified in this report in order to adhere to MCC's data anonymization guidelines.

B. Findings

Reading skills for all four languages are very low for both first and second grade students in Niger. Although we cannot directly compare EGRA scores between different languages, given the variations in the language themselves and in the assessments, we present in Figure ES-1 the mean scores by language and grade for all five reading skills measured (the score is the unadjusted number of items for which a correct response was given). This provides a useful overview of the trends across the different languages.

Figure ES.1. Mean scores by language and grade



Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Scores are highest for letter identification, though they are still low. Depending on the language, children are able to identify an average of between three and nine letters per minute out of a possible 100. Scores in letter identification for grades 1 and 2 are comparable. This may reflect the effect of the NECS intervention, which had been implemented in grade 1 for four months at the time of data collection. The NECS intervention had not begun in second grade yet by the 2013–2014 school year. In both grades, scores are much lower for reading skills other than letter identification. Students in all languages identified, on average, less than one familiar word per minute (out of a possible 50). Mean scores for invented word reading, oral reading fluency, and reading comprehension are near or equal to zero. We find no significant, consistent differences in scores between students of different grades, genders, NECS intervention groups, or regions. There are strong floor effects in these data in all languages and both grades.

[5] In addition, we estimate the impact of the IMAGINE program alone four years after its completion (See Bagby et al. 2014).

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I. INTRODUCTION

A. USAID and MCC support in Niger

The Millennium Challenge Corporation (MCC) sponsored a three-year Niger Threshold Program (NTP) beginning in 2008 to reduce corruption, register more businesses, promote land titling, and increase girls' education outcomes. One activity within the girls education component was the IMAGINE project (IMprove the educAtion of Girls In NigEr), designed to improve girls' school enrollment, attendance, and completion rates. Although a constitutional crisis ended the original NTP early, Mathematica Policy Research was still able to conduct a rigorous evaluation IMAGINE.

In 2012, MCC and the U.S. Agency for International Development (USAID) partnered to implement a second phase of IMAGINE, the Niger Education and Community Strengthening (NECS) project through NTP and USAID regional funding. The NECS project activities are being implemented as a package in targeted villages, and have been designed to address two strategic objectives. The first is to increase access to quality education. The second is to increase student reading achievement by implementing an ambitious early grade reading curriculum that trains and supports teachers in new methods of teaching early grade reading in local languages, and also develops local language reading materials. This curriculum is being implemented in the first and second grades. The project is also designed to promote a culture of reading by establishing community support for reading and developing an adult literacy program. In all these activities, NECS will place a special emphasis on girls and their access to quality primary education.

B. Evaluation activities

1. Description of NECS impact evaluation

Mathematica was chosen to conduct a rigorous evaluation of the NECS project's impact. The evaluation builds on the random assignment scheme used in the IMAGINE project. NECS activities are being implemented in 150 villages located in 11 departments and 20 communes across the 7 regions of Niger. The approach allows us to estimate the impact of the NECS project alone and of the NECS and IMAGINE projects together.[5] Wave 1 data for the NECS evaluation were collected in October and November 2013, just as the 2013–2014 school year began (but before all schools had opened for the school year), and follow-up data collection will occur after either the 2014-15 or the 2015-2016school year, when children in NECS treatment villages will have been in the project for one to two years.

This NECS evaluation uses random assignment to determine whether or not NECS, with or without the IMAGINE infrastructure, has an effect on key educational outcomes for children, including enrollment, attendance, and learning. We will also assess the project's impact by gender and household asset levels, and conduct a detailed cost analysis of whether the NECS project was economically justified.

[5] In addition, we estimate the impact of the IMAGINE program alone four years after its completion (See Bagby et al. 2014).

2. Description of EGRA study

MCC and USAID requested a descriptive study of reading performance in local languages for students in the early grades at NECS schools. The goal of this descriptive study is to contribute to USAID's education strategy goal 1: improved reading skills for 100 million children in primary grades by 2015,[6] and to provide data to the NECS implementation team, as well as the Niger Ministry of Education. The study measures and documents the change over time in five reading skills in local languages (letter identification, familiar word reading, invented word reading,[7] oral reading fluency of grade 2 level text, and reading comprehension) for first and second grade students in a sample of NECS schools.

Specifically, the descriptive study addresses two research questions:

1. How much does oral reading fluency (ORF) in local language change over time for first and second graders in NECS intervention schools?
2. By the end of two grades of primary schooling, what proportion of students in NECS intervention schools demonstrate that they can read and understand the meaning of grade 2 level text in local language?

This study focuses on measuring learning in reading skills in local languages in Niger. Early Grade Reading Assessments (EGRAs) were used to measure several foundational skills of reading. The assessments were developed through a workshop and pilot testing and were administered in four local languages including Hausa, Zarma, Kanuri, and one other.[8] The EGRA data were collected after four months of exposure to the early grade reading curriculum for students in grade 1 and as baseline data for students in grade 2.

In this report, we describe the development and testing of the EGRA in Niger, and present findings from the first round of data collection in May 2014. Section II describes the research design, development of the assessments, data collection, and analysis. Section III presents findings from the assessments for each language. The report concludes with a discussion of the results and implications for the next round of data collection.

[6] See "Education: Opportunity Through Learning. USAID Education Strategy" (USAID 2011).
[7] Invented word reading is also referred to as nonword or nonsense word decoding.
[8] Standard EdData procedures were followed to develop the assessments See the EGRA Toolkit (RTI International 2009).

II. METHODOLOGY

A. Research design

1. Study design

In this descriptive study, data from EGRA tests show literacy levels and will show trends in five early grade reading skills in four local languages. In a representative sample of NECS schools in Niger, children's reading skills will be measured over a two- to three-year period. This study is meant to be descriptive in nature, and will include a cross section of students currently enrolled and attending the 27 sampled schools at each point in time. Information related to schools and students, as well as student reading skills will be measured in all four local languages in which the NECS early grade reading curriculum is working. The sample of schools was purposefully drawn to enable drawing conclusions for schools with each local language as the language of reading instruction. The first round of data were collected at the end of the 2013-2014 school year, and follow-up data from students in the same schools will potentially be collected the end of the 2014–2015 school year, and/or the end of the 2015–2016 school year.

In addition to administering local language assessments, we developed a simple questionnaire that collected basic school enrollment and attendance information from a school administrator. Student demographic data were gathered directly from students in the sample. These data were necessary to explore relationships between students' reading scores and their grade, age, gender, language, and school.

2. Data collection

Cross-sectional data are collected for first and second graders in a sample of intervention schools.[9] The same schools will be in each round of data collection, but the same children will not be followed over time. The outcomes themselves are grade-specific (to grade 1 and grade 2) and therefore the children in the sample will be different. Two or three rounds of data collection are planned. The first took place at the end of the 2013–2014 school year, in May 2014. There is an optional follow-up at the end of the 2014–2015 school year, as well as an optional final round of data collection at the end of the 2015–2016 school year.

Assessments in four local languages are used and the testing language is the language of reading instruction in a given sample school. During round 1, the same assessment was administered to all children in the sample whose schools used that reading instructional language. During later rounds, different but equated assessments in each local language will be administered.[10]

Instrumentation for the assessments is the same in each local language. Before completing the EGRA assessment in the primary language of reading instruction at their school, students were

[9] The number of follow-up data collection efforts will be determined in discussions with stakeholders during the 2014–2015 school year.

[10] See Section C.2 for a discussion of equating assessments across rounds of data collection.

asked a few questions about their age, grade, and language in which they were most comfortable communicating. Each instrument contains the following modules:

- School information. Basic information about the school, such as region, language of reading instruction, number of students enrolled in grades 1 and 2, number of students present in grades 1 and 2 on the day of data collection, and NECS intervention group (NECS-only or NECS-plus-IMAGINE)
- Student information. Basic information about the students, including consent, grade level, gender, and age.
- Local language assessment. Randomly selected students were given assessments to test letter identification, familiar word reading, invented word reading, and oral reading fluency and comprehension. The language of the test—Hausa, Zarma, Kanuri, or other local language—was based on the principal language of reading instruction used in the school. The test instructions were explained to children in the language in which they were most comfortable communicating, which was sometimes different from the test language.

B. Sample

1. Sampling procedure

The sample frame for this study includes students enrolled in grade 1 or 2 in the 27 sampled NECS schools who were present at the time of data collection. Mathematica randomly selected a sample of NECS schools from the seven regions of Niger: Agadez, Diffa, Dosso, Maradi, Tahoua, Tillaberri, and Zinder. The sample was stratified by language of reading instruction and NECS treatment group (NECS-only and NECS-plus-IMAGINE) while ensuring coverage in all regions. We purposely sampled fewer Hausa schools and more schools in other languages to ensure that the EGRA sample would allow for conclusions to be drawn for schools using each language. The same schools will be in each round of data collection, but the same children will not be followed over time.

Using enrollment registers and developing a list of all enrolled children present on the day of data collection, we randomly sampled up to 25 children in first grade and 25 children in second grade in each school. If more than 25 children were enrolled in a grade, the sample was distributed as evenly as possible by gender.

Some schools had fewer than 25 students in each grade, so Mathematica added seven additional randomly selected schools until the final sample exceeded 1,000 students. The resulting sample is composed of eight Hausa schools, eight Zarma schools, nine Kanuri schools, and two schools that teach in another local language, for a total of 27 schools and 1,010 children, 600 in first grade (304 boys and 296 girls) and 410 in second grade (218 boys and 192 girls).[11] Of those 1,010 students,

[11] The target sample size was 1,000 students divided evenly across first and second grades. Based on previous data we had collected in schools in these villages, we had anticipated that 50 students, 25 students in CI and 25 students in CP (first and second grades, respectively), could be sampled in each school. This led to an initial sample of 21 schools across all 7 regions. However, some schools had fewer than the anticipated number of students present on the day of data collection. Therefore, the sample was supplemented with alternate schools until we reached the desired student sample size of 1,000 students.

three declined to take the assessment, resulting in a response rate of 99.7 percent. All analyses used the sample of 1,007 students who completed the questionnaire and assessment.

2. Student and school characteristics

The language of reading instruction for the NECS intervention, the intervention group (NECS-only or NECS-plus-IMAGINE), and the regional distribution of sample schools are presented in Table II.1. The first two columns show the number and percentage of schools with each characteristic. Thirty percent of the schools in this sample use Hausa, 30 percent use Zarma, 33 percent use Kanuri, and 7 percent use another local language as the primary language of instruction for the early grade reading curriculum. The schools come from all seven regions of Niger: 67 percent are NECS-plus-IMAGINE schools and 33 percent are NECS-only schools. Six of the 27 sampled schools offered only grade 1 during the 2013–2014 school year, meaning data was collected from only grade 1 students at these schools.

Table II.1. School characteristics of study sample compared with characteristics of all NECS schools

	Schools in descriptive study (EGRA data)		All NECS schools (Wave 1 data)	
	Number of schools	Percentage of sample	Number of schools	Percentage of sample
Language of reading instruction				
Hausa	8	29.6	89	59.3
Zarma	8	29.6	37	24.7
Kanuri	9	33.3	19	12.7
Other	2	7.4	5	3.3
Region				
Agadez	1	3.7	4	2.7
Diffa	3	11.1	7	4.7
Dosso	6	22.2	14	9.3
Maradi	4	14.8	33	22.0
Tahoua	3	11.1	28	18.7
Tillaberri	3	11.1	32	21.3
Zinder	7	25.9	32	21.3
Research group				
NECS-plus-IMAGINE	18	66.7	87	58.0
NECS-only	9	33.3	63	42.0
School offered only grade 1 (CI) at the time of data collection	6	22.2	0	0.0
Sample size: Schools	27	100.0	150	100.0

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014; NECS Wave 1 data collection, October and November 2013, Village Survey.

Table II.1 also shows the same information for all NECS intervention schools; as expected, this profile is different from the profile of schools sampled for this descriptive study. For instance, almost 60 percent of the intervention schools use Hausa as the language of reading instruction for early grade reading, compared with 30 percent in the EGRA sample. These differences are because of the stratification procedure (the sample was stratified by language of reading instruction and NECS treatment group, NECS-only and NECS-plus-IMAGINE, while ensuring coverage in all regions). We purposely sampled fewer Hausa schools and more schools in other languages to ensure that the EGRA sample would allow for conclusions to be drawn for schools using each

language. By ensuring a distribution of schools across all seven regions in Niger, while also stratifying on language and intervention group, the regional distribution of all intervention schools is different from the EGRA sample.

Table II.2 shows student enrollment and student sampling figures for both studies. The 27 sampled schools averaged 60 first grade students and 29 second grade students enrolled per school; we sampled an average of 22 first grade and 15 second grade students per school. This represents about 40 percent of the children enrolled in first and second grades combined. In the NECS Wave 1 data collection (which was used for the IMAGINE long-term and NECS baseline evaluations), we surveyed households just before most schools began the start of the 2013–2014 school year (October and November 2013). This meant we could collect data on whether the students had been enrolled during the previous school year (2012–2013). In the 27 schools studied for this EGRA report, on average, eight students were enrolled in first grade and nine students were enrolled in second grade during the previous school year in each school. These represent about 20 percent of the children that might have been enrolled in first and second grade during that school year. A similar number of students previously enrolled in grade 1 or grade 2 per village were included in the entire NECS sample of 150 villages. So, on average, the NECS Wave 1 data sampled half the number of first and second grade students per village as the NECS EGRA study did, but covered five times as many NECS schools (all 150 compared to the sample of 27).

Table II.2. Student enrollment and sample size in EGRA and NECS studies

EGRA sample	Grade 1 (CI)		Grade 2 (CP)	
	Number of enrolled students per school		**Number of enrolled students per school**	
27 EGRA villages				
Total	59.6		28.9	
Boys	31.3		15.6	
Girls	28.3		13.3	
	Number of sampled students per school	**Percent of enrolled students sampled**	**Number of sampled students per school**	**Percent of enrolled students sampled**
27 EGRA villages				
Total	22.1	37.1	15.2	52.5
Boys	11.2	35.7	8.1	51.8
Girls	10.9	38.6	7.1	53.5
Wave 1 sample	**Grade 1 (CI)**		**Grade 2 (CP)**	
	Number of sampled children enrolled in SY 2012–2013 per village	**Percent of estimated enrolled children sampled per village**	**Number of sampled children enrolled in SY 2012–2013 per village**	**Percent of estimated enrolled children sampled per village**
27 EGRA villages				
Total	7.9	13.2	8.6	29.7
Boys	4.1	13.1	4.9	31.1
Girls	3.8	13.3	3.7	28.1
150 NECS villages				
Total	9.3	15.6	9.0	31.1
Boys	5.3	16.9	4.8	30.8
Girls	4.0	14.2	4.2	31.5

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014; 2013 NECS Wave 1 data collection, October and November 2013, Village Survey.

Table II.3 groups the sampled schools by language used in the school, then describes the schools' region, research group, mean number of enrolled students, mean number of students

present on the day of data collection, and number of schools in the sample.[12] Schools sampled for this study were stratified on language, specifically ensuring schools were also sampled across regions. Because languages tend to be clustered in specific regions, the sample is clustered by region as well. Overall, the languages used in NECS-plus-IMAGINE and NECS-only schools were well distributed because of this stratification. Table II.3 also shows enrollment and attendance by language. Approximately 70 percent of enrolled students were present on the day of data collection in sampled schools, and this is similar for schools across all four languages.

Table II.3. Region, research group, enrollment, and attendance by language of school

	Hausa	Zarma	Kanuri	Other	All schools
Number of schools by region					
Agadez	1	0	0	0	1
Diffa	0	0	2	1	3
Dosso	0	5	0	1	6
Maradi	4	0	0	0	4
Tahoua	3	0	0	0	3
Tillaberri	0	3	0	0	3
Zinder	0	0	7	0	7
Number of schools by research group					
NECS-plus-IMAGINE	6	5	6	1	18
NECS-only	2	3	3	1	9
Mean number of students enrolled in grades 1 and 2	119	112	53	36	88
Mean number of students present in grades 1 and 2 on the day of data collection	89	76	36	25	63
Attendance rate on the day of data collection	75%	68%	68%	68%	71%
Sample size: Schools	8	8	9	2	27

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Table II.4 groups schools by language and presents the characteristics of the sampled students. Six schools did not offer second grade during the 2013–2014[13] school year and there are consequently more first grade students than second grade students in the sample. Gender distribution varies by language spoken in the school. In Kanuri schools, 55 percent of students are female, and in Hausa schools 59 percent are male. In the full sample, 51.6 percent are male. A large share (46 percent) of students do not know their age. Of those who do, the majority are eight years old or younger. Grade repetition is fairly common: 9 percent of sampled students were repeating their current grade. Only nine students in this sample of 1,007 attend a school using a language other than their mother tongue.

[12] The mean number of enrolled students and students present in first grade and second grade includes those schools that did not offer second grade during the 2013–2014 school year. If we exclude those schools from the average, there are approximately 114 students enrolled and 81 students present per school across all languages.

[13] Average enrollment in first grade and in second grade is similar if schools with no second grade are excluded. If we exclude those schools from the average, there are approximately 57 students enrolled in first grade and 37 students enrolled in second grade.

Table II.4. Sample student characteristics across sampled schools, by language

	Hausa		Zarma		Kanuri		Other		All schools	
	N	%	N	%	N	%	N	%	N	%
Grade										
Grade 1 (CI)	200	63.5	195	56.5	179	60.1	23	46.9	597	59.3
Grade 2 (CP)	115	36.5	150	43.5	119	39.9	26	53.1	410	40.7
Gender										
Boys	186	59.0	175	50.7	133	44.6	26	53.1	520	51.6
Girls	129	41.0	170	49.3	165	55.4	23	46.9	487	48.4
Age										
6 and younger	57	18.1	50	14.5	41	13.8	5	10.2	153	15.2
7	62	19.7	57	16.5	24	8.1	10	20.4	153	15.2
8	59	18.7	47	13.6	20	6.7	11	22.4	137	13.6
9	7	2.2	26	7.5	14	4.7	9	18.4	56	5.6
10 and older	12	3.9	11	3.2	17	5.7	7	14.3	47	4.7
Don't know	118	37.5	154	44.6	182	61.1	7	14.3	461	45.8
Repeating current grade	34	10.8	34	9.9	9	3.0	14	28.6	91	9.0
Students primarily speaking another language at home	0	0	0	0	9	3.0	0	0	9	0.9
Sample size: Students	315		345		298		49		1007	315
Sample size: Schools	8		8		9		2		27	8

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: N indicates the number of students and % indicates the percentage of students with that characteristic, within that language category.

C. EGRA assessments

Assessments were administered in four local languages for this study—Hausa, Zarma, Kanuri, and another local language. The assessments measure the same reading skills across the different languages. This section describes the assessment structure and its development.

1. Reading skills measured

This study measures change in local language reading skills of currently enrolled students in the early grades in NECS schools. An EGRA measuring five reading skills was developed in four different local languages. Similar assessments were created for each language in which the NECS project is implementing activities. Based on discussions with MCC and USAID, we developed assessments to measure five reading skills: letter identification, familiar word reading, invented word reading, oral reading fluency of grade 2 texts, and reading comprehension questions about the text children read.

Five emergent reading skills are particularly important to developing reading comprehension: phonemic awareness, alphabetic principle, and concepts about print, writing, and oral language, according to existing research (National Reading Panel 2000, Dickinson et al. 2009). Automaticity in letter recognition, word reading, or oral reading is also important to a child's ability to read and comprehend (National Reading Panel 2000, Dickinson et al. 2009, Abadzi 2006 and Abu-Hamour et al. 2012). If a child cannot read quickly enough, they will not be able to recall what they just read by the time they complete a passage. Oral reading fluency is the strongest predictor of reading comprehension (Kim et al. 2010), and in turn, the best predictors of oral reading fluency are oral

language and letter recognition (Kim and Pallante 2012 and Dickinson et al. 2009). One common assessment tool used to test the alphabetic principle and ensure that students are not simply identifying words based on sight and memorization is invented word reading (also known as non-word reading). This task measures decoding skills by requiring children to associate graphemes (letters or letter combinations) with phonemes (the sounds those letters represent) (RTI International 2009).

Mathematica created reading assessments for this study that focus on these predictive skills, specifically letter recognition, familiar word reading, invented word reading, oral reading fluency, and reading comprehension. The assessments are short enough to limit respondent burden and are tightly linked to the NECS reading intervention. Table II.5 explains each task and the early reading skill it tests.

Table II.5. Instrument components

Early reading skill tested	Description of task	Rationale for including task
Letter identification	The child is asked to identify letters by stating the letter name or sound. The child is scored on the number of letter names or sounds correctly identified in 60 seconds.	Letter recognition tests the foundation for reading and is a regular determinant of reading development.
Familiar word reading	The child reads simple, frequently used, monosyllabic or bisyllabic words. The child is scored on the number of words correctly read in 60 seconds.	Familiar word reading tests the child's ability to decode and recognize words presented in isolation, without the advantage of context.
Invented word reading	The child reads simple invented words, testing the ability to determine pronunciation based on known relationships between letters or letter combinations (graphemes) and the sounds they represent (phonemes). The child is scored on the number of invented words correctly decoded in 60 seconds.	Invented word reading further tests the ability to decode words and avoids the problem of children recognizing words by memorization.
Oral reading fluency	The child is given 60 seconds to read words in connected text. The child is scored on ability to read connected text accurately (number of words read correctly) and at a sufficient rate (number of words read correctly in 60 seconds).	Oral reading fluency is a strong measure of overall reading proficiency since it jointly tests multiple skills, including translating letters into sounds and decoding words.
Reading comprehension	The test administrator asks the child reading comprehension questions for the text the child just read. The child is scored on the percentage of questions answered correctly.	Reading comprehension questions are an additional test of reading proficiency. Students must make connections between words and assign meaning to those words.

Source: Adapted from the EGRA toolkit (RTI International 2009).

The assessments were administered orally, and the results were recorded on paper by the enumerator. Full versions of the final assessments used in round 1 of data collection are included in Appendix A and B for Hausa, Zarma, and Kanuri. We do not present the assessment used for the other local language to prevent identification of participating schools.

For each task, letters and words read needed to be read using the correct pronunciation within a given language to be marked as a correct response. Regional pronunciation to account for different dialects within a given language was incorporated.

Within each task, the enumerators mark the correct number of responses in each line or section of the task, as well as the time remaining (in seconds) and the total number of correct. Enumerators are directed to mark an "autostop" if the child is unable to correctly answer an item in the first row or section of the task. This is consistent with EGRA procedure and is also sometimes referred to as an "early stop rule." Making each of the first four tasks time-limited is standard for EGRA, as it makes the assessment shorter and helps with assessing automaticity (RTI 2009).

2. Development and testing of instruments

To create student assessments in the primary local languages of focus, Mathematica worked closely with a team of experts from the Nigerien Ministry of Primary Education (MEP) and other stakeholders including Plan International and other members of the NECS implementation team, MCC, MCA-Niger, and USAID. The design discussions took place at a one-week workshop in April 2014 in Niamey.

a. Workshop. The assessments use the EGRA methodology developed by USAID's EdDataII: Education Data for Decision Making.[14] They were created at an April 2014 workshop that convened linguistics experts from each of the local language groups. Mathematica staff began the workshop by presenting the five reading skills to be measured in the assessments, the rationale for measuring each skill, the tasks on the assessment that measured each reading skill, and the process for developing each task according to the EGRA methodology. The experts then worked together to create appropriate assessment tasks for each language. Three different test versions were developed for each language. The three versions were developed to be of equivalent difficulty to the extent possible. The process used to develop each task is described below. The final questionnaires in each language are presented in Appendix A and B.

- **Letter identification (task 1).** To develop the table of letters used in this task, we first had to validate the frequency of occurrence of each letter of the alphabet in each local language. We developed a list of frequencies using texts provided to us by the MEP for each language, and noted the prevalence of each letter within the texts. Workshop participants and experts from the MEP confirmed that complete and correct alphabets were being used for each language. Working with local language experts was imperative to the validity of this exercise because (1) some of the local languages have been re-codified over time, and (2) special characters that are stand-alone letters in a local language can be confused for diacritics (signs above or below letters, such as accents, or combinations of letters) in other primary languages, such as French. For example, "ã" and "ẽ" are stand-alone letters in Zarma, and " ' " is considered a letter in Hausa. In Kanuri the letter "ny" can only be found in seven words, and the letter "z" is only part of certain dialects, and is sometimes omitted from alphabet lists. Also, keyboards are not often designed with all possible letters, and it is common to find texts in local languages that were written using only the French alphabet, substituting near-equivalent letters for

[14] EGRA Toolkit (RTI International 2009)

special symbols not readily available. To mitigate these challenges, we made every effort to access appropriate texts that use fonts consistent with the font used to create the assessments.[15]

A variety of texts were analyzed for each language, depending on what was available in print in the language and including children's stories, theater pieces, and newspaper articles. Texts were selected to be of normal difficulty, meaning they included all the letters of the alphabet, including rare letters, and were at a normal, everyday adult level of difficulty, to accurately represent average frequencies. A primary text was chosen for each language, and a letter frequency table was developed using that text. The frequency table was then validated using other texts of similar difficulty and length. Finding each frequency table to be similar, we randomly generated a list of 100 letters for each version of this task based on the frequency table from the primary text for each language. For this task, children were presented with 10 rows of 10 letters and had one minute to name as many of them as they could. Therefore, the highest score that could be achieved on this task was 100 letters per minute.

- **Familiar word reading (task 2).** To construct this task, workshop participants created a list of 150 basic, commonly used words in each local language, using their own expertise and referencing text books and NECS materials. According to the MEP experts for each language, a student completing grade 2 should be able to read all the words on this list. The list of words was then randomized to generate a list of 50 words for each version of this task in each language. Children were presented with 10 rows of 5 familiar words and were asked to read as many of them as they could in one minute. Therefore, the highest score that could be achieved on this task was 50 familiar words per minute.
- **Invented word reading (task 3).** The experts used textbooks, NECS materials, and their own expertise to identify syllables in each local language. They next created a list of 150 invented words, each one or two syllables in length, following these patterns: consonant-vowel, vowel-consonant, consonant-vowel-consonant, and other rules of legal letter and phoneme combinations specific to each local language. Homophones of real words were excluded. The list of words was then randomized to generate a list of 50 invented words for each version of this task in each language. As with the familiar word reading task, 10 rows of 5 invented words were given to the children, who had one minute to read as many as possible. Therefore, the highest score that could be achieved on this task was 50 invented words per minute.
- **Oral reading fluency (task 4).** Each linguistic group created original, locally relevant narratives with a grade 2 level of difficulty. Each short story narrative, ranging from 56 words to 72 words, contained a main character and a story plot with a beginning, middle, and end, as well as some simple and some complex vocabulary and sentence structure. The texts were consistent with the level of difficulty appropriate for grade 2, according to the MEP workshop participants. The groups referenced textbooks, NECS materials, and other texts including narrative stories during the exercise. Therefore, there was a range by language in the highest score that could be achieved on this task.

[15] We used the Andika font suggested by USAID in our assessments for all languages, though in some languages we also had to use the Hazafuk font (typically used by the MEN) to represent some characters.

- **Reading comprehension (task 5)**. After creating the narrative used to measure oral reading fluency (task 4), the groups developed five comprehension questions for the text. These included fact-based questions, as well as one question requiring inference. After draft texts and questions were created by each linguistic small group, all members of the workshop reviewed the narratives and questions, providing feedback and improving the content. The highest score that could be achieved on this task was 100 percent.

For all assessment tasks, all workshop members worked through the items in each local language, giving feedback and improving the content in plenary sessions. Achieving a comparable level of difficulty across languages is a challenge, but the inclusive process of the workshop increases our confidence that the level of difficulty is comparable both within languages across test versions and across the different languages. The assessments were then vetted through a pilot, and we have a high level of confidence in their face validity and reliability. Evidence of internal consistency reliability is presented in section III.

b. Pilot. Data collection was led by a local data collection firm, the Centre International d'Etudes et de Recherches Sur Les Populations Africaines (CIERPA). Members of CIERPA's data collection team attended and participated in the workshop, ensuring a thorough understanding of the instruments to be fielded. Following the test development, CIERPA developed and translated the test protocols in local languages. The assessments were then tested through a pilot data collection effort in April 2014.

i. ***Assessor training.*** CIERPA conducted a five-day interviewer training session before the start of pilot data collection. Mathematica participated in the training and worked with the data collection team to ensure a clear and common understanding of the assessments and their protocols. Before conducting the pilot, a pretest was organized in nearby schools for interviewer practice. In addition, all interviewers took an inter-rater reliability (IRR) test before the start of the pilot. Interviewers whose scores were below 90 percent were given the opportunity to retake the test. If they failed to meet this threshold again, they were dropped from the interviewer list. The average IRR was 98 percent.

ii. ***Procedure and sample.*** The goal of the pilot was to test the instruments to establish comparability between the three versions of each instrument within languages and ensure that the same protocols were followed to administer the assessments across all interviewers and languages. At the pilot, all three versions of the assessments for each language were administered to each student using that language, and the order of the test versions themselves was randomized to account for test fatigue or order bias. The purpose was to allow us to check for any differences between versions of the assessments within each language. In addition, the local language protocols for administering the tests were validated and supervisors ensured that all enumerators were using the same protocol. One version of each language test was selected to be administered at round 1, whereas the other versions will be administered in follow-up rounds of data collection.

The interviewers were split by linguistic group, and each group was assigned to a school with the corresponding language. Schools for the pilot were chosen based on

the local language spoken, size to allow for a large enough sample, and proximity to Niamey (when possible) to facilitate ease of testing. Special attention was paid to ensure that none of the schools selected for the pilot were NECS schools.

A total of 100 students were tested for each language during the pilot. At each school, a list was developed including all students enrolled in first and second grades and present that day, and 50 students from each grade were randomly selected, with the sample stratified by gender to the extent possible. If a school did not have enough students in each grade, a nearby school was added until the desired sample size for each language was achieved.

c. Equating. To show meaningful trends in reading skills over time, the assessments themselves must not be the source of any apparent changes in the scores. It is also valuable to have different assessments at different points in time to ensure there is no test-retest bias, and guard against teachers obtaining the test and teaching students how to perform well (teaching to the test). We therefore created three different versions of the assessment in each language. To the extent possible, the three versions were at the same level of difficulty. To ensure that the measures obtained from each assessment on each skill were comparable, the assessments were equated using a statistical method (described in detail below).

Two equating options were considered for the EGRA study in Niger: means equating and item response theory (IRT) equating. Means equating has been used in multiple EGRA studies.[16] In means equating, a student completes two or more forms of the test (with the order of the forms counterbalanced). The student's mean score for each section of each form is computed. Then the scores on one form are adjusted so that the means are the same. For example, in USAID's 2010 EGRA Plus program evaluation in Liberia (Piper & Korda 2010), the researchers multiplied the oral reading fluency score by 1.19 in the final assessment to make it equivalent to the level of difficulty in the baseline passage. The advantages of the means equating method are that it has been used in previous EGRA studies and is easy to implement, interpret, and understand. One disadvantage is that it does not provide information about the equivalence of particular items. For example, means equating would not tell the study team if the word "cat" is approximately the same difficulty level as the word "dog."

In IRT, difficulty parameters are estimated for each item and ability parameters are estimated for each student. Two different forms can be equated when a set of common anchor items are used in both forms to put the parameters of both forms on the same scale. Each student only needs to take one form of the test. Although IRT equating provides more in-depth information on each item and the test as a whole, it is a much more complex analysis and requires that certain assumptions are met. One of these assumptions is that of non-speededness. Because IRT measures the difficulty of each item, it cannot adequately account for whether an item was missed because of a time limit (speed) and not because of a lack of knowledge about the content. This is an issue because four of the tasks included in these EGRAs have a time limit

[16] For examples of means equating used in previous EGRA studies, see "EGRA Plus: Liberia. Program Evaluation Report." (Piper and Korda 2010) and "Malawi National Early Grade Reading Assessment Survey Final Assessment—November 2012" (Pouezevara et al 2013).

(number of letters or words read in one minute). IRT also requires larger sample sizes compared with means equating.

Means equating was ultimately determined to be the best option for this study. To conduct means equating, we calculate raw scores (mean, standard deviation, minimum, maximum, and number of non-zero responses) for each skill tested on each form of the test (by language), to create an adjustment factor for each test form, language, and task. However, the scores from the pilot were so low that means equating of the full assessments was not possible (IRT would not have been possible either).[17]

We could conduct means equating for a future round of data collection should MCC and USAID decide to move forward with it. We could administer all versions of the assessments in each language to a sample of children enrolled in NECS schools who have been exposed to the project for some time. These students will theoretically have higher scores than those tested during the pilot, who had never been exposed to a local language reading curriculum. This should produce higher scores with more variation, thereby allowing us to conduct means equating for the final analysis.

3. Data procedures

a. Collection. CIERPA staff attended the assessment workshop and data collection training, developed the protocols, and piloted the assessments. They were also responsible for the following:

1. Writing terms of reference and contracts for field interviewers and controllers
2. Hiring and training field interviewers and controllers
3. Ensuring proper dispatch of field staff to survey sites
4. Supervising field staff during the data collection to identify and correct problems
5. Maintaining constant communication with the Mathematica team
6. Entering and cleaning data

Round 1 of data collection took place in May 2014, after the data from the pilot test were collected and analyzed. Mathematica selected one version of the piloted tests to be used for the baseline EGRA assessments. The data collection team was provided with a list of randomly selected NECS villages, as described earlier. The data collection team hired 18 interviewers, split by language and led by an experienced field supervisor. These interviewers had achieved a particularly high IRR score for the test administrated to enumerators during the training The IRR test was administered before fieldwork began. The mean IRR score for this group of interviewers was 99 percent. The teams were assigned a list of villages and surveys were conducted simultaneously throughout the country.

[17] See Figure I-1 for a summary of scores across languages. Scores were sufficiently high in all languages to conduct means equating on the letter identification task only.

b. Entry and cleaning. Once the data were collected, CIERPA staff entered and cleaned the data using the Census and Survey Processing System (CSPro). Mathematica worked with the data collection firm to review the system and oversee the process. In addition, we implemented double data entry of 50 percent of the sample and checked the accuracy of the second entry with the data from the first entry. The data entry error rate was very small at 0.34 percent.

To complete the data cleaning process, Mathematica staff designed a protocol to resolve inconsistencies and out-of-range data. Examples of inconsistent data included cases of inconsistent reporting of the number of children enrolled in a particular grade and school combination; in such cases, we followed up with CIERPA to determine the correct value and recoded all incorrect values. Out-of-range data reflected responses that were probably data entry errors, such as a response of "87" rather than "88" to reflect non response. These errors were identified and corrected during the cleaning process.

c. Anonymization. The EGRA descriptive study assessments collected very little personal information. Variables that present identifying information, such as school name and interviewer and supervisor name, were dropped from the public use data sets following MCC anonymization guidelines. Village name and commune name were coded as numbers to allow for analysis at those levels without disclosing the location of the school. Variables used solely for the administration of the survey, such as interviewer/supervisor notes, were also dropped.

Some analysis variables contained sufficiently small categories to require further anonymization. The age variable is an example: age categories prevented those children who are especially young or old for their grade from standing out. These groupings maintain distinctions in the responses while protecting respondents' anonymity. In addition, the sample of schools included a small number of schools (and students) in one local language. We have put those schools into an "other local language" category to obscure their identity.

d. Analysis. The analyses presented in this report include all students who completed the assessments. We present summary statistics for the test score data by language and by grade. We conduct significance tests between mean scores for different subgroups within a language, clustering standard errors at the school level to account for similarities between children within schools. The following section presents the results from the data collected at the end of the 2013–2014 school year (May 2014). Scores for each task are shown for schools using each language. The results also feature scores by region, grade, gender, and NECS group.

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III. RESULTS

A. EGRA reliability analyses

Cronbach's alpha is one of the most widely used measures of internal consistency reliability for multi-item tests. It calculates the inter-correlation between test items: the higher the coefficient, the more the items measure a given concept in the same way (Tavakol and Dennick 2011). Scores range from zero (items within the test are completely uncorrelated) to one (items are perfectly correlated). The literature on Cronbach's alpha cites 0.7–0.95 as an acceptable range for establishing internal consistency within the test items (Tavakol and Dennick 2011). Bland and Altman (1997) specify that an alpha of 0.7–0.8 is sufficient when comparing groups, whereas an alpha above 0.9 is critical in clinical settings. For this reason, and in accordance with previous EGRA studies, we consider 0.7 or higher an acceptable alpha, meaning that it reflects a high degree of internal consistency across the test items.

There are some drawbacks to using alpha as a measure of internal consistency reliability. The value of alpha is affected by the length of the test, and alpha may underestimate the reliability of the test if different test items measure different underlying concepts (Tavakol and Dennick 2011). In addition, according to the EGRA toolkit (RTI International 2009), the fact that some EGRA tasks have a time limit is likely to inflate the alpha score.[18] However, the extent of this bias is not known, and Cronbach's alpha continues to be widely used for calculating the internal consistency of EGRA tests.

We calculated Cronbach's alpha for the pilot, which collected children's responses for each test item. An item refers to one letter or word. For instance, in the letter identification task, we first recorded an item score for each of the 100 letters displayed. The child received a "1" if they correctly identified the letter and a "0" if they did not. Calculating alpha based on individual items gives an accurate measure of the test's internal consistency reliability since we can estimate how well the full set of items measure the same concept. Table III.1 displays the alpha scores by item for each of the three versions of the assessments in each language.

[18] This assumes that students would score higher without a time limit, producing a greater distribution of scores that would lower the alpha. In the case of this study, particularly in word reading and oral reading fluency, so few students were able to identify words that it is unlikely that scores would have been much higher without a time limit. The tasks are indeed measuring the students' ability rather than the speed at which they can complete the task.

Table III.1. Internal consistency reliability (Cronbach's alpha) by item for the pilot

	Hausa			Zarma			Kanuri			Other Local Language		
	Form A	Form B	Form C	Form A	Form B	Form C	Form A	Form B	Form C	Form A	Form B	Form C
Task 1: Letter identification	0.97	0.97	0.97	0.98	0.98	0.98	0.96	0.94	0.95	0.98	0.98	0.98
Task 2: Familiar word reading	0.95	0.99	0.95	0.96	0.94	0.97	0.96	--	--	0.97	0.98	0.98
Task 3: Invented word reading	1.00	1.00	0.98	--	--	--	--	--	--	0.98	0.99	0.99
Task 4: Oral reading fluency	1.00	1.00	0.99	--	--	--	--	--	--	1.00	1.00	1.00
Task 5: reading comprehension	--	--	--	--	--	--	--	--	--	--	--	--
Overall test	0.97	0.97	0.97	0.98	0.98	0.98	0.96	0.94	0.95	0.99	0.98	0.99

Source: Niger NECS EGRA Descriptive Study Round 1 Pilot, April 2014.

Note: The sample size is 100 students for each form in each language. The same students were administered all three forms in each language. -- = not calculable.

In some instances, there were no data with which to calculate the alpha score. For instance, in three of the languages no child provided a correct answer in the reading comprehension task, so it was not possible to calculate alpha ('—' in the table). Despite these constraints, Tables III.1 and III.2a–d indicate that the EGRA pilot tests developed for each language have a high degree of internal consistency. Alpha is above 0.9 for every task, when it is calculable, and for every version of the overall assessment in the four languages.[19]

B. Correlation of task within language

In addition to calculating Cronbach's alpha for each task and the assessments overall, we analyzed the correlation between tasks within each language assessment in round 1. We would expect adjacent tasks to be the most closely correlated, meaning that students that score high on one task would be likely to also score high on the following task, since the tasks are arranged in increasing order of difficulty. Our findings confirm that, for the most part, adjacent tasks are highly correlated with each other within each language (Tables III.2 panels a-d).

[19] We also analyzed the alpha for the test sample, but do not present those results here because the calculations were based on row total scores rather than individual item scores. Using row total scores, we find that each assessment is internally consistent for all four languages. Given the very high alpha from the pilot test using item-level responses, we are confident that even if the real alphas for the test sample were slightly lower, they would easily exceed the 0.7 threshold.

Table III.2. Correlation of tasks within language

	Task 1	Task 2	Task 3	Task 4	Task 5
A. Hausa					
Task 1: Letter identification	1.00				
Task 2: Familiar word reading	0.61	1.00			
Task 3: Invented word reading	0.40	0.82	1.00		
Task 4: Oral reading fluency	0.32	0.76	0.93	1.00	
Task 5: Reading comprehension	0.33	0.55	0.52	0.59	1.00
B. Zarma					
Task 1: Letter identification	1.00				
Task 2: Familiar word reading	0.69	1.00			
Task 3: Invented word reading	0.34	0.67	1.00		
Task 4: Oral reading fluency	0.26	0.55	0.77	1.00	
Task 5: Reading comprehension	--	--	--	--	--
C. Kanuri					
Task 1: Letter identification	1.00				
Task 2: Familiar word reading	0.37	1.00			
Task 3: Invented word reading	0.32	0.93	1.00		
Task 4: Oral reading fluency	0.21	0.77	0.88	1.00	
Task 5: Reading comprehension	--	--	--	--	--
D. Other local language					
Task 1: Letter identification	1.00				
Task 2: Familiar word reading	0.73	1.00			
Task 3: Invented word reading	0.52	0.89	1.00		
Task 4: Oral reading fluency	0.44	0.79	0.97	1.00	
Task 5: Reading comprehension	--	--	--	--	--

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: -- = not calculable.

Table III.2, panel A shows the correlation between tasks for the Hausa assessment. Adjacent tasks are highly correlated and correlation between tasks decreases the further apart they are in the assessment. Tables III.2, Panel B and III.2, Panel D show similar trends for the Zarma and the other local language assessment, though the reading comprehension task is not included because no student scored above zero. Table III.2, Panel C displays the correlations for the Kanuri assessment, with a high correlation between familiar word reading, invented word reading, and oral reading fluency. The correlation between letter identification and familiar word reading is lower than expected (0.37) for schools using the Kanuri language. This could be due to the sharp decrease in responding students: about 45 percent correctly named at least one letter in the first task, and only about 6 percent correctly read at least one familiar word in the second task.[20]

C. Description of test scores

Table III.3 shows the distribution of scores for each language, including the mean, standard deviation, minimum score obtained, and maximum score obtained. Some students scored fairly high on the letter identification task, as indicated by the highest scores obtained. The mean scores are low, however, because so many students scored zero. The highest scores obtained for the other

[20] Full results from the Kanuri assessment are presented later in this chapter.

four tasks in all languages were relatively low: only in Kanuri schools did the highest score equal at least half of the highest score possible on any task.

Table III.3. Description of EGRA test scores obtained

	Task 1: Letter identification	Task 2: Familiar word reading	Task 3: Invented word reading	Task 4: Oral reading fluency	Task 5: Reading comprehension
A. Hausa					
Mean	8.5	0.8	0.4	0.3	0.0
Standard Deviation	9.1	2.1	2.1	2.1	0.0
Min	0	0	0	0	0
Max	49	15	24	24	0.4
Number of children	315	315	315	315	315
B. Zarma					
Mean	4.2	0.6	0.1	0.1	0.0
Standard Deviation	5.5	1.5	0.9	0.9	0.0
Min	0	0	0	0	0
Max	33	10	9	12	0
Number of children	345	345	345	345	345
C. Kanuri					
Mean	4.2	0.2	0.2	0.0	0.0
Standard Deviation	6.3	1.5	1.8	0.3	0.0
Min	0	0	0	0	0
Max	39	20	27	5	0
Number of children	298	298	298	298	298
D. Other local language					
Mean	3.7	0.7	0.3	0.4	0.0
Standard Deviation	6.6	1.9	1.4	2.3	0.0
Min	0	0	0	0	0
Max	31	9	9	15	0
Number of children	49	49	49	49	49

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

D. Overall scores

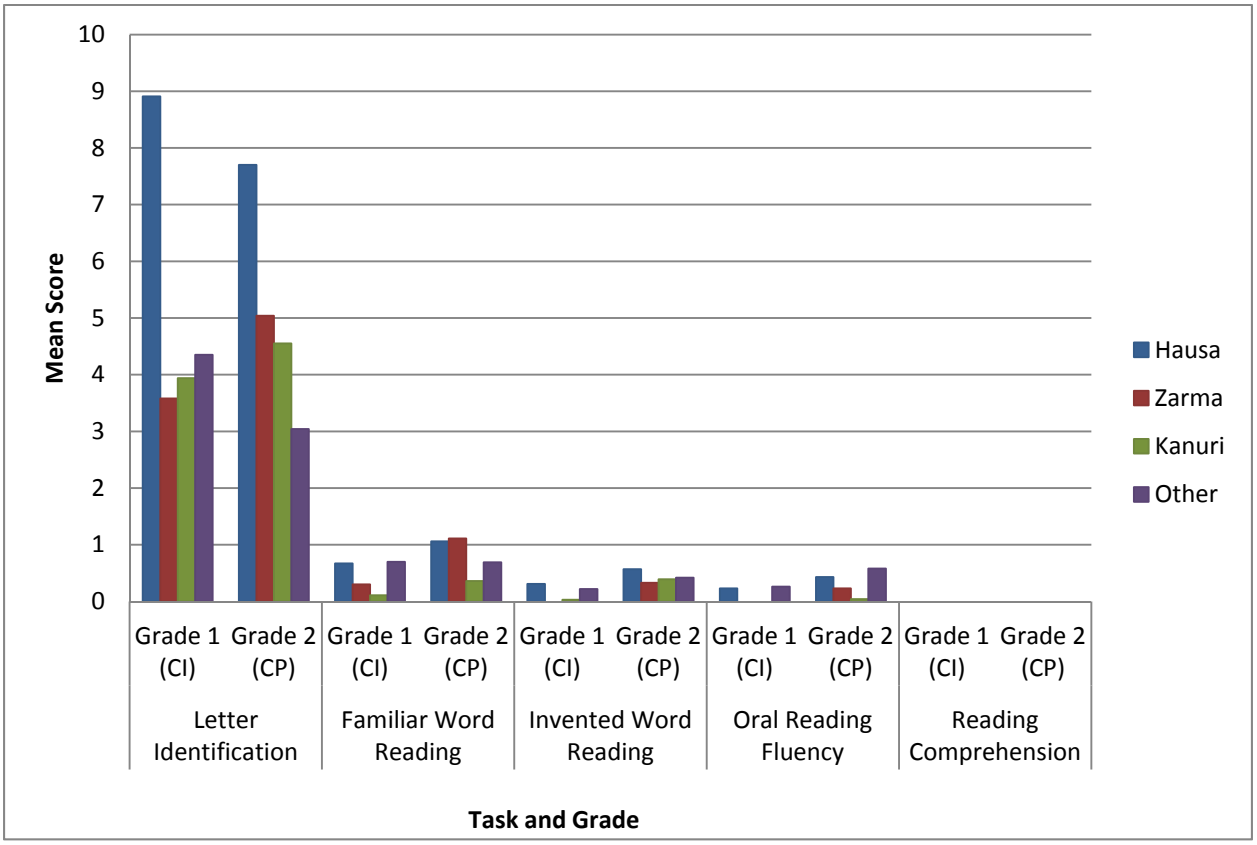
Although we cannot directly compare EGRA scores between different languages, given the variations in the language themselves and in the assessments, Figure III.1 displays the mean scores by language and grade across all five reading skills tested. This provides a useful overview of trends.

Mean scores in the first task, letter identification, are higher than in the other tasks, but are still low, ranging from three to nine letters identified per minute.[21] Scores drop sharply for the familiar word reading task, with students in all languages identifying, on average, one word per

[21] In comparison, second grade students in neighboring Mali were able to identify an average of 5 to 18 graphemes per minute in their local language (RTI International & CEPROCIDE 2009). Scores on the familiar word reading task were also higher in Mali, with students identifying between 0.66 and 2.93 words per minute, on average, compared to 0.36 to 1.11 words per minute among second grade students in Niger.

minute. Mean scores for the invented word reading, oral reading fluency, and reading comprehension tasks are close to or equal to zero.

Figure III.1. Mean scores by language and grade



Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

These low mean scores reflect that many students could not answer a single question correctly. Table III.4 shows the number of students who gave at least one correct answer within each task.[22] Those who did not respond correctly to a certain number of questions were marked as an "autostop" and directed to move on to the next task. For all tasks except letter identification, the majority of students received an "autostop." In fact, for each of the final three tasks, fewer than 5 percent of all students were able to provide at least one correct answer. Table III.3, Figure III.1 and Table III.4 show that reading skills are very low across all four local languages.

[22] For the most part, the percentage of students unable to correctly answer one question within each task was similar across languages. In all languages, the majority of students could correctly name at least one letter in the first task, but only a minority could read at least one correct word in the familiar word reading task.

Table III.4. Number of students without an autostop, separated by task

Grade	Task 1: Letter identification	Task 2: Familiar word reading	Task 3: Invented word reading	Task 4: Oral reading fluency	Task 5: Reading comprehension
Grade 1 (CI) (N=597)					
Number responding	364	111	16	9	5
Percentage responding	61.0	18.6	2.7	1.5	0.8
Grade 2 (CP) (N=410)					
Number responding	250	92	28	12	10
Percentage responding	61.0	22.4	6.8	2.9	2.4
Combined (N=1,007)					
Number responding	614	203	44	21	15
Percentage responding	61.0	20.2	4.4	2.1	1.5

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: These percentages are similar across languages.

It is important to point out that we cannot directly compare EGRA scores between different languages. Although the tests were developed in the same way for each language, fundamental structural differences between the languages make comparisons misleading and incorrect (RTI International 2009). Specifically, differences in the complexity of syllables and in orthographic depth (the degree to which grapheme-phoneme correspondences are consistent and predictable) affect the rate at which language acquisition occurs (Seymour et al 2003). For example, it is widely established that early reading skills develop more slowly for English learners than for learners of other European languages (Seymour et al 2003). Therefore, English-learning children are likely to be behind when tested on the same skills at the same age as learners of a structurally less complex language, regardless of their exposure to instruction or their innate ability. Even when languages are similar, systematic differences in scores across languages could be a product of numerous factors, including varying degrees of difficulty of the assessment itself or differences in the quality of reading instruction between languages. Keeping these limitations in mind, we present separate, detailed results for students tested in each language.

For each language, we first present results by grade, and we test for significant differences between grade 1 and grade 2 students and find that in no cases are the scores different. At the time of data collection, grade 1 students had been exposed to the reading activities in the NECS project for four months at the time of testing, while grade 2 students had not been exposed to NECS reading components, and had never been taught reading in a local language. We next present scores by grade and by gender. We also present scores for different subgroups of particular interest related to the NECS intervention. Since the NECS project has a special emphasis on girls, stakeholders are particularly interested in assessing reading levels for boys and girls separately within each grade. In addition, all schools in the EGRA sample currently participate in the NECS project, but some also participated in the IMAGINE project, which built new school infrastructure in 2008–2009. We therefore break out results for the two groups (NECS-only and NECS-plus-IMAGINE). Finally, NECS stakeholders also requested results by region in order to determine any regional differences. Though many factors influence the scores within a given region, any large and significant differences across regions may suggest differences in project implementation that could be investigated. For each of these key subgroups we tested whether or not differences are statistically significant - by gender, NECS intervention group and region – and found that most were not statistically significant. Even in the few instances where differences were significant,

there were no consistent trends. This suggests that they are chance differences resulting from the large number of significance tests conducted.[23]

E. Hausa score analyses

Three hundred and fifteen students in eight sampled schools completed the Hausa EGRA. All students in the Hausa schools sampled chose to have the questions read to them in Hausa. In this section we present results by grade, gender, NECS intervention group, and region, and discuss any differences across subgroups that may have implications for project implementation.

1. By grade

Mean test scores and standard deviations are presented in Table III.5, which shows that some students in schools using the Hausa language scored relatively well on some tasks. For instance, the highest score was 49 for the letter identification task (out of a possible 100). However, mean scores are very low across all tasks. Grade 1 students could read an average of 8.91 letters per minute and grade 2 students could read an average of 7.7 letters per minute, though these differences are not statistically significantly different from zero. Twenty-four percent of grade 1 students and 28 percent of Grade 2 students were not able to correctly identify one letter from the Hausa alphabet within the one-minute time limit. In other words, 76 percent of grade 1 students and 72 percent of grade 2 students correctly identified at least one letter within one minute. The table also shows results for the group of students who identified at least one letter correctly: they averaged 11.73 letters per minute for grade 1 and 10.66 letters per minute for grade 2. These scores are statistically significantly different from zero.

On no task are the scores for the grade 1 and grade 2 students statistically different from each other. The fact that grade 1 and grade 2 scores are similar might suggest that four months of the NECS intervention brought grade 1 students to the same reading level as grade 2 students who were one full year of schooling ahead, but these data do not allow us to draw such a conclusion. It is also important to note, as mentioned above, that grade 2 students had not been taught the letters in their local language. At the time of data collection they had only received reading instruction in French.

In Task 2, familiar word reading, three-quarters of students in both grades were not able to identify a single Hausa word in one minute, with a mean score of 0.67 words read per minute for grade 1 students and 1.06 words read per minute for grade 2 students. Mean scores among those students who could identify at least one word were 2.68 words per minute for grade 1 students and 4.21 words per minute for grade 2 students. The highest score achieved for this task was 15 words read correctly out of 50.

[23] Comparing a large number of outcomes across multiple groups is likely to produce a few significant differences by chance, even if no true differences exist. For example, if we were to investigate the differences between 50 combinations of task scores and subgroups (grade, gender, etc), we would expect to find statistically significant differences (at the 10 percent level of statistical significance) for five outcomes simply by chance, even in the absence of any true differences.

Table III.5. Mean scores in Hausa by grade, separated by task

	All Students		Percentage of students scoring zero	Excluding students scoring zero		
	Mean score	Standard deviation		Mean score	Standard deviation	Sample size
Task 1: Letter identification						
Grade 1 (CI)	8.91	9.74	24	11.73	9.57	152
Grade 2 (CP)	7.70	7.74	28	10.66	7.17	83
Task 2: Familiar word reading						
Grade 1 (CI)	0.67	1.85	75	2.68	2.90	50
Grade 2 (CP)	1.06	2.52	75	4.21	3.48	29
Task 3: Invented word reading						
Grade 1 (CI)	0.31	1.59	94	5.17	4.30	12
Grade 2 (CP)	0.57	2.71	90	6.00	6.94	11
Task 4: Oral reading fluency						
Grade 1 (CI)	0.23	1.45	96	5.88	4.70	8
Grade 2 (CP)	0.43	2.86	96	10.00	10.68	5
Task 5: Reading comprehension						
Grade 1 (CI)	0.00	0.03	99	0.27	0.12	3
Grade 2 (CP)	0.00	0.03	98	0.20	0.00	2
Sample size: Students in grade 1 (CI)		200				
Sample size: Students in grade 2 (CP)		115				
Sample size: Schools		8				

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

In each of the last three tasks—invented word reading, oral reading fluency, and reading comprehension—over 90 percent of the students did not give a single correct answer. In the full sample and among students giving at least one correct response, scores were higher for grade 2 students, although the difference was not statistically significant. In the invented word reading task, grade 1 students read 0.31 invented words and grade 2 students read 0.57 invented words per minute, on average, with the highest score being 24 words correctly read. In the oral reading fluency task, students were presented with a grade 2 level text, and were asked to read as much as possible in one minute. The total sample of grade 1 students read 0.23 words and the total sample of grade 2 students read 0.43 words correctly, on average. Limiting the sample to those 13 children that could respond to the oral reading fluency task, mean scores were 5.9 words per minute in grade 1 and 10 words per minute in grade 2. Those 13 students who correctly read any part of the text were then asked a series of questions about it and only five students answered at least one question correctly.

2. By gender

Table III.6 shows that there was no significant difference between boys' and girls' scores on any tasks in either grade 1 or grade 2. On most tasks, boys tended to achieve higher scores in first grade, whereas girls scored higher in second grade, although these differences are small and are not statistically significant. The table also shows that there were slightly more boys in the sample

than girls, with 110 male and 90 female students in grade 1, and 76 male and 39 female students in grade 2.[24]

Table III.6. Mean scores in Hausa by gender, separated by task

		All students		Percent of students scoring zero	Excluding students scoring zero	
Grade	Gender	Mean score	Standard deviation		Mean score	Standard deviation
Task 1: Letter identification						
Grade 1 (CI)	Boys	9.34	9.43	23	12.08	9.05
	Girls	8.40	10.12	26	11.28	10.26
Grade 2 (CP)	Boys	7.70	7.69	24	10.09	7.30
	Girls	7.69	7.95	36	12.00	6.81
Task 2: Familiar word reading						
Grade 1 (CI)	Boys	0.81	2.23	74	3.07	3.49
	Girls	0.50	1.22	77	2.14	1.74
Grade 2 (CP)	Boys	0.86	2.31	79	4.06	3.59
	Girls	1.46	2.86	67	4.38	3.55
Task 3: Invented word reading						
Grade 1 (CI)	Boys	0.47	2.08	93	6.50	4.72
	Girls	0.11	0.57	96	2.50	1.29
Grade 2 (CP)	Boys	0.57	2.90	89	5.38	7.80
	Girls	0.59	2.34	92	7.67	4.73
Task 4: Oral reading fluency						
Grade 1 (CI)	Boys	0.35	1.84	95	6.50	5.05
	Girls	0.09	0.74	98	4.00	4.24
Grade 2 (CP)	Boys	0.36	2.77	97	13.50	14.85
	Girls	0.59	3.07	92	7.67	9.87
Task 5: Reading comprehension						
Grade 1 (CI)	Boys	0.01	0.04	98	0.30	0.14
	Girls	0.00	0.02	99	0.20	NA
Grade 2 (CP)	Boys	0.00	0.00	100	0.00	0.00
	Girls	0.01**	0.04	95	0.20	0.00
Sample size: Male students in grade 1 (CI)			110			
Sample size: Female students in grade 1 (CI)			90			
Sample size: Male students in grade 2 (CP)			76			
Sample size: Female students in grade 2 (CP)			39			
Sample size: Schools			8			

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: Differences between the group means of boys and girls within grades 1 and 2 were tested using two-tailed t-tests. NA = not applicable.

***/**/* Statistically significant at the .01/.05/.10 level.

[24] This reflects the enrolled and attending children at the time of data collection in the sampled schools. Where possible we sampled a similar number of boys and girls, but it was not always possible.

3. By NECS intervention group

Table III.7 shows that scores were not significantly different between the NECS-only and NECS-plus-IMAGINE groups within grade 1 and grade 2. There are also no discernible patterns in scores. For example, fewer grade 2 students in the NECS-plus-IMAGINE group scored a zero on the familiar and invented word reading and oral reading fluency tasks compared with those in the NECS-only group, but they also scored lower on average when scores of zero were removed.

Table III.7. Mean scores in Hausa by NECS intervention group, separated by task

		All students			Excluding students scoring zero	
Grade	Group	Mean score	Standard deviation	Percent of students scoring zero	Mean score	Standard deviation
Task 1: Letter identification						
Grade 1 (CI)	NECS-only	9.70	9.19	17	11.73	8.85
	NECS + IMAGINE	6.56**	10.97	44	11.71	12.48
Grade 2 (CP)	NECS-only	7.36	7.29	27	10.03	6.75
	NECS + IMAGINE	8.92	9.26	32	13.12	8.37
Task 2: Familiar word reading						
Grade 1 (CI)	NECS-only	0.63	1.74	74	2.44	2.72
	NECS + IMAGINE	0.78	2.15	78	3.55	3.45
Grade 2 (CP)	NECS-only	0.80	2.42	81	4.24	4.13
	NECS + IMAGINE	2.00**	2.69	52	4.17	2.44
Task 3: Invented word reading						
Grade 1 (CI)	NECS-only	0.30	1.53	94	5.00	4.15
	NECS + IMAGINE	0.34	1.78	94	5.67	5.69
Grade 2 (CP)	NECS-only	0.49	2.89	94	8.80	9.73
	NECS + IMAGINE	0.88	1.96	76	3.67	2.50
Task 4: Oral reading fluency						
Grade 1 (CI)	NECS-only	0.20	1.36	96	5.00	5.14
	NECS + IMAGINE	0.34	1.71	96	8.50	2.12
Grade 2 (CP)	NECS-only	0.49	3.21	97	14.67	12.10
	NECS + IMAGINE	0.24	0.83	92	3.00	0.00
Task 5: Reading comprehension						
Grade 1 (CI)	NECS-only	0.00	0.02	99	0.20	NA
	NECS + IMAGINE	0.01*	0.06	96	0.30	0.14
Grade 2 (CP)	NECS-only	0.00	0.02	99	0.20	NA
	NECS + IMAGINE	0.01	0.04	96	0.20	NA
Sample size: NECS-only students in grade 1 (CI)				150		
Sample size: NECS-plus-IMAGINE students in grade 1 (CI)				50		
Sample size: NECS-only students in grade 2 (CP)				90		
Sample size: NECS-plus-IMAGINE students in grade 2 (CP)				25		
Sample size: Schools				8		

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: Differences between NECS and NECS-plus-IMAGINE group means within grades 1 and 2 were tested using two-tailed t-tests. NECS-plus-IMAGINE schools are those NECS schools that were also part of the treatment group during the initial IMAGINE project. NA = not applicable.

***/**/* Statistically significant at the .01/.05/.10 level.

4. By region

There are no results for grade 2 students in Tahoua, since none of the three Hausa schools in the sample there offered grade 2 during the 2013–2014 school year. One school from Agadez, four schools from Maradi, and three schools from Tahoua are in the sample described below.

Table III.8 shows that grade 1 students in Agadez scored higher on the letter identification task. Students identified an average of 16.28 letters per minute compared with 7.42 and 8.45 letters per minute in Maradi and Tahoua schools, respectively. On the remaining four tasks, grade 1 students in the one Agadez school in the sample did not score significantly higher than those in the other two Hausa regions. Within grade 2, mean scores across all tasks were significantly higher in Agadez than in Maradi, and the difference was fairly large. For task 1, letter identification, grade 2 students in Agadez read, on average, 12.08 letters per minute while grade 2 students in Maradi read only 6.48 letters per minute. These differences also exist among students who did not score zero. Given that the Agadez region had only one Hausa school in the sample (25 students in grade 1 and 25 students in grade 2), the results cannot be generalized to all NECS schools in the region.

Table III.8. Mean scores in Hausa by region, separated by task

		All students			Excluding students scoring zero	
		Mean score	Standard deviation	Percentage of students scoring zero	Mean score	Standard deviation
Task 1: Letter identification						
Grade 1 (CI)	Agadez	16.28***	13.58	8	17.70***	13.23
	Maradi	7.42	9.16	33	11.07	9.2
	Tahoua	8.45	7.83	17	10.23	7.48
Grade 2 (CP)	Agadez	12.08***	7.56	8	13.13***	6.92
	Maradi	6.48	7.38	33	9.72	7.09
	Tahoua	--	--	--	--	--
Task 2: Familiar word reading						
Grade 1 (CI)	Agadez	1.20	2.68	68	3.75	3.69
	Maradi	0.65	2.11	82	3.61	3.84
	Tahoua	0.52	0.88	68	1.65	0.78
Grade 2 (CP)	Agadez	2.36***	4.10	56	5.36***	4.76
	Maradi	0.70	1.73	80	3.50	2.32
	Tahoua	--	--	--	--	--
Task 3: Invented word reading						
Grade 1 (CI)	Agadez	0.60	1.89	84	3.75	3.59
	Maradi	0.39	1.98	95	7.80	4.97
	Tahoua	0.11	0.58	96	2.67	1.53
Grade 2 (CP)	Agadez	1.72***	5.37	84	10.75***	10.05
	Maradi	0.26	1.10	92	3.29	2.50
	Tahoua	--	--	--	--	--
Task 4: Oral reading fluency						
Grade 1 (CI)	Agadez	0.20	0.82	92	2.50	2.12
	Maradi	0.39	1.99	96	9.75	3.10
	Tahoua	0.04	0.26	97	1.50	0.71
Grade 2 (CP)	Agadez	1.76***	5.99	88	14.67***	12.10
	Maradi	0.07	0.44	98	3.00	0.00
	Tahoua	--	--	--	--	--

		All students		Percentage of students scoring zero	Excluding students scoring zero	
		Mean score	Standard deviation		Mean score	Standard deviation
Task 5: Reading comprehension						
Grade 1 (CI)	Agadez	0.00	0.00	100	--	--
	Maradi	0.01	0.05	97	0.27	0.12
	Tahoua	0.00	0.00	100	--	--
Grade 2 (CP)	Agadez	0.01	0.04	96	0.20	NA
	Maradi	0.00	0.02	99	0.20	NA
	Tahoua	--	--	--	--	--
Sample size: Students in grade 1 (CI) in Agadez			25			
Sample size: Students in grade 1 (CI) in Maradi			100			
Sample size: Students in grade 1 (CI) in Tahoua			75			
Sample size: Students in grade 2 (CP) in Agadez			25			
Sample size: Students in grade 2 (CP) in Maradi			90			
Sample size: Students in grade 2 (CP) in Tahoua			0			
Sample size: Schools in Agadez			1			
Sample size: Schools in Maradi			4			
Sample size: Schools in Tahoua			3			

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: Differences between regional group means within grades 1 and 2 were tested for joint significance by calculating the F statistic. NA = not applicable; -- = no observations.

***/**/* Statistically significant at the .01/.05/.10 level.

F. Zarma score analyses

Three hundred and forty-five students in eight schools were tested in Zarma. They all chose to have the questions read to them in Zarma. In this section we present results by grade, gender, NECS intervention group, and region, and discuss any differences across subgroups that may have implications for project implementation.

1. By grade

Mean test scores and standard deviations are presented in Table III.9. Mean scores are very low across all tasks. Grade 1 students were able to identify an average of 3.58 letters per minute and grade 2 students an average of 5.04 letters per minute, though these differences are not statistically significantly different from zero. The highest score achieved on this task was 33 letters correctly read out of a possible 100. Almost half (45 percent) of both grade 1 and grade 2 students were not able to correctly identify one letter from the Zarma alphabet within the one-minute time limit. In other words, 55 percent of all students correctly identified at least one letter within one minute. Scores were higher among the group of students who identified at least one letter correctly, with an average of 6.52 letters per minute for grade 1 students and 9.11 letters per minute for grade 2 students, which are statistically significantly different from zero.

Table III.9. Mean scores in Zarma by grade, separated by task

	All students		Percentage of students scoring zero	Excluding students scoring zero		
	Mean score	Standard deviation		Mean score	Standard deviation	Sample size
Task 1: Letter identification						
Grade 1 (CI)	3.58	5.02	45	6.52	5.17	107
Grade 2 (CP)	5.04	6.06	45	9.11	5.40	83
Task 2: Familiar word reading						
Grade 1 (CI)	0.30	0.56	74	1.16	0.47	50
Grade 2 (CP)	1.11	2.16	65	3.19	2.60	52
Task 3: Invented word reading						
Grade 1 (CI)	0.00	0.00	100	--	--	0
Grade 2 (CP)	0.33	1.40	93	5.00	2.54	10
Task 4: Oral reading fluency						
Grade 1 (CI)	0.00	0.00	100	--	--	0
Grade 2 (CP)	0.23	1.37	97	7.00	3.32	5
Task 5: Reading comprehension						
Grade 1 (CI)	0.00	0.00	100	--	--	0
Grade 2 (CP)	0.00	0.00	100	--	--	0
Sample size: Students in grade 1 (CI)		195				
Sample size: Students in grade 2 (CP)		150				
Sample size: Schools		8				

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: -- = no observations.

Scores for grade 2 students are only slightly higher than those for grade 1 students across all tasks, but the differences are not statistically significant. This suggests that four months of the NECS intervention brought grade 1 students to the same reading level as grade 2 students who were one full year of schooling ahead; however, these data do not allow us to draw such a conclusion.

In Task 2, familiar word reading, the mean score was 0.30 words read per minute for grade 1 students and 1.11 words read per minute for grade 2 students, and the highest score achieved was 10 out of a possible 50. Seventy-four percent of grade 1 students and 65 percent of grade 2 students scored a zero on this task. Among those students who identified at least one word, grade 1 students identified an average of 1.16 words per minute and grade 2 students correctly read 3.19 words per minute.

In each of the last three tasks—invented word reading, oral reading fluency, and reading comprehension—100 percent of grade 1 students and over 90 percent of grade 2 students scored a zero. In the invented word reading task, grade 2 students read an average of 0.33 invented words, with the highest score 9 out of 50. In the oral reading fluency task, grade 2 students read 0.23 words of the grade 2 level text correctly on average, with the highest score 12 out of 58. The five students who correctly read any part of the text were then asked a series of questions about the text. No student completed this section.

2. By gender

Table III.10 shows that scores for boys and girls on all tasks were not significantly different in either grade 1 or grade 2. The table also shows that the number of boys and girls in the sample was similar, with 100 male students and 95 female students in grade 1, and 75 male students and 75 female students in grade 2.

Table III.10. Mean scores in Zarma by gender, separated by task

		All students		Percent of students scoring zero	Excluding students scoring zero	
Grade	Gender	Mean score	Standard deviation		Mean score	Standard deviation
Task 1: Letter identification						
Grade 1 (CI)	Boys	3.28	5.51	49	6.43	6.28
	Girls	3.90	4.46	41	6.61	3.96
Grade 2 (CP)	Boys	4.87	6.16	44	8.69	5.87
	Girls	5.21	5.98	45	9.54	4.89
Task 2: Familiar word reading						
Grade 1 (CI)	Boys	0.26	0.54	78	1.18	0.50
	Girls	0.34	0.58	71	1.14	0.45
Grade 2 (CP)	Boys	1.03	2.16	68	3.21	2.77
	Girls	1.19	2.17	63	3.18	2.51
Task 3: Invented word reading						
Grade 1 (CI)	Boys	0.00	0.00	100	--	--
	Girls	0.00	0.00	100	--	--
Grade 2 (CP)	Boys	0.36	1.37	93	5.40	0.89
	Girls	0.31	1.43	93	4.60	3.65
Task 4: Oral reading fluency						
Grade 1 (CI)	Boys	0.00	0.00	100	--	--
	Girls	0.00	0.00	100	--	--
Grade 2 (CP)	Boys	0.31	1.37	95	5.75	2.06
	Girls	0.16	1.39	99	12.00	NA
Task 5: Reading comprehension						
Grade 1 (CI)	Boys	0.00	0.00	100	--	--
	Girls	0.00	0.00	100	--	--
Grade 2 (CP)	Boys	0.00	0.00	100	--	--
	Girls	0.00	0.00	100	--	--
Sample size: Male students in grade 1 (CI)			100			
Sample size: Female students in grade 1 (CI)			95			
Sample size: Male students in grade 2 (CP)			75			
Sample size: Female students in grade 2 (CP)			75			
Sample size: Schools			8			

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Notes: Differences between the group means of boys and girls within grades 1 and 2 were tested using two-tailed t-tests. NA = not applicable; -- = no observations.

***/**/* Statistically significant at the .01/.05/.10 level.

3. By NECS intervention group

Table III.11 shows that there were a few statistically significant differences in scores between the two groups, within both grade 1 and grade 2. In general, students in the NECS-plus-IMAGINE schools scored lower than those in the NECS-only schools. However, these results should be interpreted with caution: we cannot draw conclusions about the impacts of either the IMAGINE or the NECS projects since the data provided here describe, but do not explain. Other factors could be contributing to those differences.

Table III.11. Mean scores in Zarma by NECS intervention group, separated by task

		All students		Percent of students scoring zero	Excluding students scoring zero	
Grade	Group	Mean score	Standard deviation		Mean score	Standard deviation
Task 1: Letter identification						
Grade 1 (CI)	NECS-only	3.77	5.65	48	7.31	6.00
	NECS + IMAGINE	3.27	3.83	40	5.45*	3.54
Grade 2 (CP)	NECS-only	5.79	6.87	47	10.85	5.75
	NECS + IMAGINE	4.29	5.06	43	7.49***	4.53
Task 2: Familiar word reading						
Grade 1 (CI)	NECS-only	0.33	0.62	74	1.26	0.58
	NECS + IMAGINE	0.25	0.44	75	1.00*	0.00
Grade 2 (CP)	NECS-only	1.48	2.52	61	3.83	2.73
	NECS + IMAGINE	0.73**	1.65	69	2.39**	2.25
Task 3: Invented word reading						
Grade 1 (CI)	NECS-only	0.00	0.00	100	--	--
	NECS + IMAGINE	0.00	0.00	100	--	--
Grade 2 (CP)	NECS-only	0.63	1.92	89	5.88	1.96
	NECS + IMAGINE	0.04***	0.26	97	1.50**	0.71
Task 4: Oral reading fluency						
Grade 1 (CI)	NECS-only	0.00	0.00	100	--	--
	NECS + IMAGINE	0.00	0.00	100	--	--
Grade 2 (CP)	NECS-only	0.47	1.92	93	7.00	3.32
	NECS + IMAGINE	0.00	0.00	100	--	--
Task 5: Reading comprehension						
Grade 1 (CI)	NECS-only	0.00	0.00	100	--	--
	NECS + IMAGINE	0.00	0.00	100	--	--
Grade 2 (CP)	NECS-only	0.00	0.00	100	--	--
	NECS + IMAGINE	0.00	0.00	100	--	--
Sample size: NECS-only students in grade 1 (CI)				120		
Sample size: NECS-plus-IMAGINE students in grade 1 (CI)				75		
Sample size: NECS-only students in grade 2 (CP)				75		
Sample size: NECS-plus-IMAGINE students in grade 2 (CP)				75		
Sample size: Schools				8		

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: Differences between NECS and NECS-plus-IMAGINE group means within grades 1 and 2 were tested using two-tailed t-tests. NECS-plus-IMAGINE schools are those NECS schools that were also part of the treatment group during the initial IMAGINE project. -- =no observations.

***/**/* Statistically significant at the .01/.05/.10 level.

4. By region

Our sample includes 195 students in five Zarma schools in the Dosso region (two of which teach grade 1 only) and 150 students in three schools in the Tillaberri region. Table III.12 shows that within both grades, mean scores for letter identification and familiar word reading were slightly higher in Tillaberri, but these differences are not statistically significant. For the other three tasks, scores are so low that comparisons between regions are not useful.

Table III.12. Mean scores in Zarma by region, separated by task

		All students		Percent of students scoring zero	Excluding students scoring zero	
		Mean score	Standard deviation		Mean score	Standard deviation
Task 1: Letter identification						
Grade 1 (CI)	Dosso	3.33	5.50	52	7.00	6.16
	Tillaberri	3.99	4.15	33	5.98	3.72
Grade 2 (CP)	Dosso	2.79	4.57	60	6.97	4.80
	Tillaberri	7.29	6.53	29	10.32	5.38
Task 2: Familiar word reading						
Grade 1 (CI)	Dosso	0.27	0.56	78	1.23	0.51
	Tillaberri	0.35	0.56	68	1.08	0.41
Grade 2 (CP)	Dosso	0.40	1.29	81	2.14	2.35
	Tillaberri	1.81	2.58	49	3.58	2.62
Task 3: Invented word reading						
Grade 1 (CI)	Dosso	0.00	0.00	100	--	--
	Tillaberri	0.00	0.00	100	--	--
Grade 2 (CP)	Dosso	0.08	0.69	99	6.00	NA
	Tillaberri	0.59	1.82	88	4.89	2.67
Task 4: Oral reading fluency						
Grade 1 (CI)	Dosso	0.00	0.00	100	--	--
	Tillaberri	0.00	0.00	100	--	--
Grade 2 (CP)	Dosso	0.00	0.00	100	--	--
	Tillaberri	0.47	1.92	93	7.00	3.32
Task 5: Reading comprehension						
Grade 1 (CI)	Dosso	0.00	0.00	100	--	--
	Tillaberri	0.00	0.00	100	--	--
Grade 2 (CP)	Dosso	0.00	0.00	100	--	--
	Tillaberri	0.00	0.00	100	--	--
Sample size: Students in grade 1 (CI) in Dosso			120			
Sample size: Students in grade 1 (CI) in Tillaberri			75			
Sample size: Students in grade 2 (CP) in Dosso			75			
Sample size: Students in grade 2 (CP) in Tillaberri			75			
Sample size: Schools in Dosso			5			
Sample size: Schools in Tillaberri			3			

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: Differences between regional group means within grades 1 and 2 were tested for joint significance by calculating the F statistic. NA = not applicable; -- =no observations.

***/**/* Statistically significant at the .01/.05/.10 level.

G. Kanuri score analyses

Two hundred and ninety-eight students in nine schools were tested in Kanuri. Nine students in the sample chose to have the questions read to them in Hausa. However, all students still completed the assessment in Kanuri, since that is the language taught in their school.

In this section we present results by grade, gender, NECS intervention group, and region, and discuss any differences across subgroups that may have implications for project implementation.

1. By grade

Mean test scores and standard deviations are presented in Table III.13. Mean scores are very low across all tasks. Grade 1 students were able to read an average of 3.94 letters per minute and grade 2 students an average of 4.55 letters per minute, though these differences are not statistically significantly different from zero. The highest score achieved for the letter identification task was 39 out of 100 (by a grade 1 student); 47 percent of grade 1 students and 43 percent of grade 2 students could not correctly identify one letter from the Kanuri alphabet within the one-minute time limit. In other words, only a little more than half of all students correctly identified at least one letter within one minute. Even among the group of students who identified at least one letter correctly, the average was just 7.58 letters per minute for grade 1 students and 7.97 letters per minute for grade 2 students. These scores are statistically significantly different from zero.

Table III.13. Mean scores in Kanuri by grade, separated by task

	All Students		Percentage of students scoring zero	Excluding students scoring zero		
	Mean score	Standard deviation		Mean score	Standard deviation	Sample size
Task 1: Letter identification						
Grade 1 (CI)	3.94	6.29	48	7.58	6.97	93
Grade 2 (CP)	4.55	6.34	43	7.97	6.56	68
Task 2: Familiar word reading						
Grade 1 (CI)	0.11	0.69	97	3.33	2.07	6
Grade 2 (CP)	0.36	2.20	93	5.38	7.15	8
Task 3: Invented word reading						
Grade 1 (CI)	0.03	0.33	99	3.00	1.41	2
Grade 2 (CP)	0.39	2.77	96	9.24	11.12	5
Task 4: Oral reading fluency						
Grade 1 (CI)	0.00	0.00	100	--	--	0
Grade 2 (CP)	0.04	0.46	99	5.00	NA	1
Task 5: Reading comprehension						
Grade 1 (CI)	0.00	0.00	100	--	--	0
Grade 2 (CP)	0.00	0.00	100	--	--	0
Sample size: Students in grade 1 (CI)	179					
Sample size: Students in grade 2 (CP)	119					
Sample size: Schools	9					

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: NA = not applicable; -- =no observations.

The fact that grade 2 scores are not statistically different from grade 1 scores might suggest that four months of the NECS intervention brought grade 1 students to the same reading level as grade 2 students who were one full year of schooling ahead; however, these data do not allow us to draw such a conclusion.

In Task 2, familiar word reading, the mean score was 0.11 words read per minute for grade 1 students and 0.36 words read per minute for grade 2 students, with the highest score 20 words out of 50. Surprisingly, 97 percent of grade 1 students and 93 percent of grade 2 students scored a zero on this task. In other words, only 17 of 298 students could correctly read one word in Kanuri. Mean scores among those few students who identified at least one word were slightly higher than the mean scores for the full sample, with grade 1 students identifying an average of 3.33 words per minute and grade 2 students correctly reading 5.38 words per minute.

In the invented word reading task, grade 1 students (of which there are two) read 0.03 invented words and grade 2 students (of which there are five) read 0.39 invented words, and the highest score was 27 out of 100 (by a grade 2 student). In the oral reading fluency and reading comprehension tasks, the mean scores were essentially zero for both grades. In each of these last three tasks, fewer than five students in each grade answered at least one question correctly.

2. By gender

Table III.14 shows that in two instances, the scores for boys and girls were significantly different at the 5 and 10 percent level for the whole sample of children tested in Kanuri, but this probably occurred by chance. For the sample of children that scored better than zero, in one instance the difference between genders were significantly different at the 1 percent level. Girls outnumber boys in schools using the Kanuri language, with 102 female and 77 male students in grade 1, and 63 female and 56 male students in grade 2.

Table III.14. Mean scores in Kanuri by gender, separated by task

		All students			Excluding students scoring zero	
Grade	Gender	Mean score	Standard deviation	Percentage of students scoring zero	Mean score	Standard deviation
Task 1: Letter identification						
Grade 1 (CI)	Boys	5.05	7.72	48	9.72	8.33
	Girls	3.10**	4.82	48	5.96***	5.27
Grade 2 (CP)	Boys	3.75	5.28	48	7.24	5.34
	Girls	5.27	7.11	38	8.51	7.37
Task 2: Familiar word reading						
Grade 1 (CI)	Boys	0.18	0.97	96	4.67	2.08
	Girls	0.06	0.37	97	2.00	1.00
Grade 2 (CP)	Boys	0.00	0.00	100	--	--
	Girls	0.68*	3.00	87	5.38	7.15
Task 3: Invented word reading						
Grade 1 (CI)	Boys	0.05	0.46	96	4.00	NA
	Girls	0.02	0.20	99	2.00	NA
Grade 2 (CP)	Boys	0.00	0.00	100	--	--
	Girls	0.73	3.78	92	9.24	11.12
Task 4: Oral reading fluency						
Grade 1 (CI)	Boys	0.00	0.00	100	--	--
	Girls	0.00	0.00	100	--	--
Grade 2 (CP)	Boys	0.00	0.00	100	--	--
	Girls	0.08	0.63	98	5.00	NA
Task 5: Reading comprehension						
Grade 1 (CI)	Boys	0.00	0.00	100	--	--
	Girls	0.00	0.00	100	--	--
Grade 2 (CP)	Boys	0.00	0.00	100	--	--
	Girls	0.00	0.00	100	--	--
Sample size: Male students in grade 1 (CI)			77			
Sample size: Female students in grade 1 (CI)			102			
Sample size: Male students in grade 2 (CP)			56			
Sample size: Female students in grade 2 (CP)			63			
Sample size: Schools			9			

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Notes: Differences between the group means of boys and girls within grades 1 and 2 were tested using two-tailed t-tests. NA = not applicable; -- =no observations.

***/**/* Statistically significant at the .01/.05/.10 level.

3. By NECS intervention group

Table III.15 shows that there were no statistically significant differences in scores between the two groups for grade 1 and grade 2. Even had there been differences in the scores, we could not draw conclusions about the impact of either the IMAGINE or the NECS projects, since the data provided here are descriptive, and other factors could be contributing to those differences.

Table III.15. Mean scores in Kanuri by NECS intervention group, separated by task

Grade	Group	All students: Mean score	All students: Standard deviation	Percentage of students scoring zero	Excluding students scoring zero: Mean score	Excluding students scoring zero: Standard deviation
Task 1: Letter identification						
Grade 1 (CI)	NECS-only	4.36	6.17	44	7.84	6.41
	NECS + IMAGINE	2.98	6.51	56	6.83	8.49
Grade 2 (CP)	NECS-only	5.13	7.01	42	8.86	7.20
	NECS + IMAGINE	3.53	4.84	44	6.33	4.92
Task 2: Familiar word reading						
Grade 1 (CI)	NECS-only	0.08	0.52	98	3.33	0.58
	NECS + IMAGINE	0.18	0.98	95	3.33	3.21
Grade 2 (CP)	NECS-only	0.53	2.74	92	6.67	7.97
	NECS + IMAGINE	0.07	0.34	95	1.50	0.71
Task 3: Invented word reading						
Grade 1 (CI)	NECS-only	0.02	0.18	99	2.00	NA
	NECS + IMAGINE	0.07	0.54	98	4.00	NA
Grade 2 (CP)	NECS-only	0.60	3.45	95	11.31	11.68
	NECS + IMAGINE	0.02	0.15	98	1.00	NA
Task 4: Oral reading fluency						
Grade 1 (CI)	NECS-only	0.00	0.00	100	--	--
	NECS + IMAGINE	0.00	0.00	100	--	--
Grade 2 (CP)	NECS-only	0.07	0.57	99	4.00	NA
	NECS + IMAGINE	0.00	0.00	100	--	--
Task 5: Reading comprehension						
Grade 1 (CI)	NECS-only	0.00	0.00	100	--	--
	NECS + IMAGINE	0.00	0.00	100	--	--
Grade 2 (CP)	NECS-only	0.00	0.00	100	--	--
	NECS + IMAGINE	0.00	0.00	100	--	--
Sample size: NECS-only students in grade 1 (CI)				124		
Sample size: NECS-plus-IMAGINE students in grade 1 (CI)				55		
Sample size: NECS-only students in grade 2 (CP)				76		
Sample size: NECS-plus-IMAGINE students in Grade 2 (CP)				43		
Sample size: Schools				9		

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: Differences between NECS and NECS-plus-IMAGINE group means within grades 1 and 2 were tested using two-tailed t-tests. NECS-plus-IMAGINE schools are those NECS schools that were also part of the treatment group during the initial IMAGINE project. NA = not applicable; -- =no observations.

***/**/* Statistically significant at the .01/.05/.10 level.

4. By region

Our sample includes 72 students in two Kanuri schools in the Diffa region and 226 students in seven schools in the Zinder region. One Zinder school had only grade 1 students. Table III.16 shows that in both grades, mean scores for the first three tasks were slightly higher in Zinder, but these differences are not statistically significant. For oral reading fluency and reading comprehension, scores are so low that comparisons between regions are not useful.

Table III.16. Mean scores in Kanuri by region, separated by task

		All students		Percentage of students scoring zero	Excluding students scoring zero	
		Mean score	Standard deviation		Mean score	Standard deviation
Task 1: Letter identification						
Grade 1 (CI)	Diffa	0.35	1.27	89	3.25	2.63
	Zinder	4.87	6.73	37	7.78	7.05
Grade 2 (CP)	Diffa	1.60	3.08	69	5.09	3.56
	Zinder	5.79	6.93	32	8.53	6.88
Task 2: Familiar word reading						
Grade 1 (CI)	Diffa	0.08	0.49	97	3.00	NA
	Zinder	0.12	0.74	96	3.40	2.30
Grade 2 (CP)	Diffa	0.09	0.37	94	1.50	0.71
	Zinder	0.48	2.61	93	6.67	7.97
Task 3: Invented word reading						
Grade 1 (CI)	Diffa	0.00	0.00	100	--	--
	Zinder	0.04	0.37	99	3.00	1.41
Grade 2 (CP)	Diffa	0.03	0.17	97	1.00	NA
	Zinder	0.54	3.29	95	11.31	11.68
Task 4: Oral reading fluency						
Grade 1 (CI)	Diffa	0.00	0.00	100	--	--
	Zinder	0.00	0.00	100	--	--
Grade 2 (CP)	Diffa	0.00	0.00	100	--	--
	Zinder	0.06	0.55	99	5.00	NA
Task 5: Reading comprehension						
Grade 1 (CI)	Diffa	0.00	0.00	100	--	--
	Zinder	0.00	0.00	100	--	--
Grade 2 (CP)	Diffa	0.00	0.00	100	--	--
	Zinder	0.00	0.00	100	--	--
Sample size: Students in grade 1 (CI) in Diffa			37			
Sample size: Students in grade 1 (CI) in Zinder			142			
Sample size: Students in grade 2 (CP) in Diffa			35			
Sample size: Students in grade 2 (CP) in Zinder			84			
Sample size: Schools in Diffa			2			
Sample size: Schools in Zinder			7			

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: Differences between regional group means within grades 1 and 2 were tested for joint significance by calculating the F statistic. NA = not applicable; -- =no observations.

H. Other local language score analyses

Forty-nine students in two schools were tested in a local language other than Hausa, Zarma, or Kanuri, which we do not identify to hide the identity of the schools and the children as described earlier. In this section we present results by grade, gender, NECS intervention group, and region, and discuss any differences across subgroups that may have implications for project implementation.

1. By grade

Mean test scores and standard deviations are presented in Table III.17. Scores are quite low on all tasks. Grade 1 students were able to read an average of 4.35 letters per minute, slightly more than grade 2 students, who read an average of 3.04 letters per minute, though these differences are not statistically significantly different from zero. The highest score achieved on the letter identification task was 31 out of 100. Forty-eight percent of grade 1 students and 39 percent of grade 2 students were not able to correctly identify one letter from the alphabet within the one-minute time limit. In other words, only a little more than half of all students correctly identified at least one letter within one minute. Among the group of students who identified at least one letter correctly, the average was 8.33 letters per minute for grade 1 students and 4.94 letters per minute for grade 2 students, though these differences are not statistically significantly different from zero.

Table III.17. Mean scores in local language other than Hausa, Zarma, or Kanuri by grade, separated by task

	All students		Percent of students scoring zero	Excluding students scoring zero		
	Mean score	Standard deviation		Mean score	Standard deviation	Sample size
Task 1: Letter identification						
Grade 1 (CI)	4.35	8.33	48	8.33	10.13	12
Grade 2 (CP)	3.04	4.71	39	4.94	5.20	16
Task 2: Familiar word reading						
Grade 1 (CI)	0.70	1.77	74	2.67	2.73	6
Grade 2 (CP)	0.69	2.09	85	4.50	3.70	4
Task 3: Invented word reading						
Grade 1 (CI)	0.22	0.85	91	2.50	2.12	2
Grade 2 (CP)	0.42	1.79	92	5.50	4.95	2
Task 4: Oral reading fluency						
Grade 1 (CI)	0.26	1.25	96	6.00	NA	1
Grade 2 (CP)	0.58	2.94	96	15.00	NA	1
Task 5: Reading comprehension						
Grade 1 (CI)	0.00	0.00	100	--	--	0
Grade 2 (CP)	0.00	0.00	100	--	--	0
Sample size: Students in grade 1 (CI)	23					
Sample size: Students in grade 2 (CP)	26					
Sample size: Schools	2					

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: NA = not applicable; -- =no observations.

On no task are the scores for the grade 1 and grade 2 students statistically different from each other. These similar scores might suggest that four months of the NECS intervention brought grade 1 students to the same reading level as grade 2 students who were one full year of schooling ahead, however these data and this study design do not allow us to draw such a conclusion.

In Task 2, familiar word reading, the mean score was 0.70 words read per minute for grade 1 students and 0.69 words read per minute for grade 2 students. The highest score was 9 out of 50. 74 percent of grade 1 students and 85 percent of grade 2 students scored a zero on this task. Since the original sample size was so small, this means that only 10 students could correctly read one word in their local language. As expected, mean scores among those few students who identified at least one word were slightly higher than the mean scores for the full sample, with grade 1 students identifying an average of 2.67 familiar words per minute and grade 2 students correctly reading 4.50 familiar words per minute.

In the invented word reading task, grade 1 students read 0.03 invented words and grade 2 students read 0.39 invented words. The highest score was 9 out of 50. In the oral reading fluency and reading comprehension tasks, the mean scores were essentially zero for both grades. In each of last three tasks, only one or two students in each grade answered at least one question correctly.

2. By gender

Table III.18 shows that in no instance were the scores significantly different between boys and girls in either grade. The number of boys and girls in the sample was close to equal, with 26 male students and 23 female students.

Table III.18. Mean scores in local language other than Hausa, Zarma, or Kanuri by gender, separated by task

Grade	Gender	All students: Mean score	All students: Standard deviation	Percent of students scoring zero	Excluding students scoring zero: Mean score	Excluding students scoring zero: Standard deviation
Task 1: Letter identification						
Grade 1 (CI)	Boys	5.13	9.75	53	11.00	12.11
	Girls	2.88	4.91	38	4.60	5.68
Grade 2 (CP)	Boys	1.36	1.86	55	3.00	1.58
	Girls	4.27	5.78	27	5.82	6.06
Task 2: Familiar word reading						
Grade 1 (CI)	Boys	0.87	2.07	67	2.60	3.05
	Girls	0.38	1.06	88	3.00	NA
Grade 2 (CP)	Boys	0.09	0.30	91	1.00	NA
	Girls	1.13	2.70	80	5.67	3.51
Task 3: Invented word reading						
Grade 1 (CI)	Boys	0.27	1.03	93	4.00	NA
	Girls	0.13	0.35	88	1.00	NA
Grade 2 (CP)	Boys	0.00	0.00	100	--	--
	Girls	0.73	2.34	87	5.50	4.95
Task 4: Oral reading fluency						
Grade 1 (CI)	Boys	0.40	1.55	93	6.00	NA
	Girls	0.00	0.00	100	--	--
Grade 2 (CP)	Boys	0.00	0.00	100	--	--
	Girls	1.00	3.87	93	15.00	NA
Task 5: Reading comprehension						
Grade 1 (CI)	Boys	0.00	0.00	100	--	--
	Girls	0.00	0.00	100	--	--
Grade 2 (CP)	Boys	0.00	0.00	100	--	--
	Girls	0.00	0.00	100	--	--
Sample size: Male students in grade 1 (CI)			15			
Sample size: Female students in grade 1 (CI)			8			
Sample size: Male students in grade 2 (CP)			11			
Sample size: Female students in grade 2 (CP)			15			
Sample size: Schools			2			

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Notes: Differences between the group means of boys and girls within grades 1 and 2 were tested using two-tailed t-tests. NA = not applicable; -- =no observations.

***/**/* Statistically significant at the .01/.05/.10 level.

3. By NECS intervention group

Although the mean scores in NECS-only schools appear higher than the mean scores for NECS-plus-IMAGINE schools (Table III.19), the differences are not statistically significant. Even had there been differences in the scores, we could not draw conclusions about the impact of either the IMAGINE or the NECS projects, since the data provided here are purely descriptive, and other factors could be contributing to those differences.

Table III.19. Mean scores in local language other than Hausa, Zarma, or Kanuri by NECS intervention group, separated by task

		All students		Percent of students scoring zero	Excluding students scoring zero	
Grade	Group	Mean score	Standard deviation		Mean score	Standard deviation
Task 1: Letter identification						
Grade 1 (CI)	NECS-only	7.64	11.13	27	10.50	11.94
	NECS + IMAGINE	1.33	2.35	67	4.00	2.45
Grade 2 (CP)	NECS-only	5.70	6.70	40	9.50	6.12
	NECS + IMAGINE	1.38	1.54	38	2.20	1.40
Task 2: Familiar word reading						
Grade 1 (CI)	NECS-only	1.45	2.38	45	2.67	2.73
	NECS + IMAGINE	0.00	0.00	100	--	--
Grade 2 (CP)	NECS-only	1.80	3.16	60	4.50	3.70
	NECS + IMAGINE	0.00	0.00	100	--	--
Task 3: Invented word reading						
Grade 1 (CI)	NECS-only	0.45	1.21	82	2.50	2.12
	NECS + IMAGINE	0.00	0.00	100	--	--
Grade 2 (CP)	NECS-only	1.10	2.85	80	5.50	4.95
	NECS + IMAGINE	0.00	0.00	100	--	--
Task 4: Oral reading fluency						
Grade 1 (CI)	NECS-only	0.55	1.81	91	6.00	NA
	NECS + IMAGINE	0.00	0.00	100	--	--
Grade 2 (CP)	NECS-only	1.50	4.74	90	15.00	NA
	NECS + IMAGINE	0.00	0.00	100	--	--
Task 5: Reading comprehension						
Grade 1 (CI)	NECS-only	0.00	0.00	100	--	--
	NECS + IMAGINE	0.00	0.00	100	--	--
Grade 2 (CP)	NECS-only	0.00	0.00	100	--	--
	NECS + IMAGINE	0.00	0.00	100	--	--
Sample size: NECS-only students in grade 1 (CI)				11		
Sample size: NECS + IMAGINE students in grade 1 (CI)				12		
Sample size: NECS-only students in grade 2 (CP)				10		
Sample size: NECS + IMAGINE students in grade 2 (CP)				16		
Sample size: Schools				2		

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: Differences between NECS and NECS-plus-IMAGINE group means within grades 1 and 2 were tested using two-tailed t-tests. NECS-plus-IMAGINE schools are those NECS schools that were also part of the treatment group during the initial IMAGINE project. NA = not applicable; -- =no observations.

***/**/* Statistically significant at the .01/.05/.10 level.

4. By region

Our sample includes 21 students attending a school in the Diffa region that teaches a language other than Hausa, Zarma, or Kanuri, and 28 students attending a school in the Dosso region that teaches a language other than those three. As shown in Table III.20, the scores by region mirror the scores by NECS intervention group, since one school was a NECS-only school and one was a NECS-plus-IMAGINE school. There are no significant differences in scores between regions.

Table III.20. Mean scores in local language other than Hausa, Zarma, or Kanuri by region, separated by task

		All students		Percent of students scoring zero	Excluding students scoring zero	
		Mean score	Standard deviation		Mean score	Standard deviation
Task 1: Letter identification						
Grade 1 (CI)	Diffa	7.64	11.13	27	10.50	11.94
	Dosso	1.33	2.35	67	4.00	2.45
Grade 2 (CP)	Diffa	5.70	6.70	40	9.50	6.12
	Dosso	1.38	1.54	38	2.20	1.40
Task 2: Familiar word reading						
Grade 1 (CI)	Diffa	1.45	2.38	45	2.67	2.73
	Dosso	0.00	0.00	100	--	--
Grade 2 (CP)	Diffa	1.80	3.16	60	4.50	3.70
	Dosso	0.00	0.00	100	--	--
Task 3: Invented word reading						
Grade 1 (CI)	Diffa	0.45	1.21	82	2.50	2.12
	Dosso	0.00	0.00	100	--	--
Grade 2 (CP)	Diffa	1.10	2.85	80	5.50	4.95
	Dosso	0.00	0.00	100	--	--
Task 4: Oral reading fluency						
Grade 1 (CI)	Diffa	0.55	1.81	91	6.00	NA
	Dosso	0.00	0.00	100	--	--
Grade 2 (CP)	Diffa	1.50	4.74	90	15.00	NA
	Dosso	0.00	0.00	100	--	--
Task 5: Reading comprehension						
Grade 1 (CI)	Diffa	0.00	0.00	100	--	--
	Dosso	0.00	0.00	100	--	--
Grade 2 (CP)	Diffa	0.00	0.00	100	--	--
	Dosso	0.00	0.00	100	--	--
Sample size: Students in grade 1 (CI) in Diffa			11			
Sample size: Students in grade 1 (CI) in Dosso			12			
Sample size: Students in grade 2 (CP) in Diffa			10			
Sample size: Students in grade 2 (CP) in Dosso			16			
Sample size: Schools in Diffa			1			
Sample size: Schools in Dosso			1			

Source: Niger NECS EGRA Descriptive Study Round 1, May 2014.

Note: Differences between regional group means within grades 1 and 2 were tested for joint significance by calculating the F statistic. NA = not applicable; -- =no observations.

***/**/* Statistically significant at the .01/.05/.10 level.

IV. CONCLUSIONS

This report documents the findings from the first round of data collection for the EGRA Descriptive Study. Our sample of 27 schools was randomly selected from the 150 schools participating in the NECS project. This report examines reading scores for grade 1 and grade 2 students in four local languages as measured by an adapted EGRA assessment in each language, including tasks on letter identification, familiar word reading, invented word reading, oral reading fluency, and reading comprehension.

The students in grade 1 had been exposed to the NECS early grade reading curriculum for four months, and thus these data can be seen as a four-month follow-up for these students. For students in grade 2 who had not been exposed to the early grade reading curriculum, these data can be seen as a baseline.

Children's reading skills are very low for all schools and all local languages. Children are able to identify between three and nine letters per minute, on average, across the four languages. Between 25 percent and 50 percent of students are unable to identify a single letter, but even among those who score above zero, mean scores are between five and 12 letters per minute. On all other tasks, mean scores are so close to zero that a meaningful descriptive analysis of differences between groups is challenging. In almost no instance do we find significant differences in scores between boys and girls, NECS-only schools and NECS-plus-IMAGINE schools, or regions on any of the tasks.

We recommend that the three different forms being used to measure reading skill in each language be equated at endline, after all children have been exposed to the NECS reading intervention for some time. This is because the scores on the assessments were so low during the pilot and at round 1 that we were not able to confidently equate the different versions of the assessments within each language.

We also find that children in grade 2 performed only slightly higher than grade 1 students on many tasks, and the differences were not statistically significant. In some languages, grade 1 students scored higher on the letter identification task, possibly because grade 2 students had never been taught the letters in their local language. The similarities in scores could indicate that the four months of NECS instruction grade 1 students received during the last school year brought them up to the same reading level as grade 2 students, who were not in the project. We cannot conclude this is indeed the case, since we do not know what the grade 1 scores would have been in the absence of the NECS intervention. Other factors may have contributed to the similarity in scores. However, it is promising to see that scores for students in grade 1 that had been exposed to the intervention are as high as scores for students in grade 2 that did not receive the intervention. We plan to look closely at both first and second graders at follow-up.

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APPENDIX A

ENGLISH QUESTIONNAIRE

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NIGER – (SCHOOL DIRECTOR) **EGRA QUESTIONNAIRE**

Hello. My name is [NAME] and I am working with the research institute CIERPA. We are working on a study concerned with education in your community. The study is funded by the Millennium Challenge Corporation, an American foreign aid agency, and is being carried out by Mathematica Policy Research. I would like to talk to a randomly selected sample of students who are enrolled in grades CI and EP in this school, and to administer a short reading assessment. The interview will take a short time for each child. All the information we obtain will remain strictly confidential and this information will not be released in any way that would allow identification of the child. This information will be used for evaluation purposes only, and once the study is completed data from the study that does not identify the child personally will be made publicly available to enable additional analyses. The participation of each child is voluntary and they may choose not to answer any or all questions for any reason. In other words, they have the alternative to not participate. There are no risks and no direct benefits to the child for participating in this study. You may contact M. Kourgueni, the director of CIERPA, at 96.59.80.79, if you have questions, concerns or complaints about the study or the right of the children as participants. If you have any questions for me, please feel free to ask at any time.

SCHOOL IDENTIFICATION		**IM**
IM1. REGION: _____ ID |___|	IM2. COMMUNE: _____ ID |___|___|	
IM3. VILLAGE: _____ ID |___|___|___|	IM4. SCHOOL: _____ ID |___|___|	
IM5. INTERVIEWER NAME AND NUMBER: NAME_____ ID |___|___|___|	IM6. SUPERVISOR NAME AND NUMBER: NAME_____ ID |___|___|___|	
IM7. DAY/MONTH/YEAR OF INTERVIEW: |___|___| / |___|___| / |_2_|_0_|_1_|_4_|		
IM8. LOCAL LANGUAGE OF READING INSTRUCTION FOR GRADES CI AND CP:	1 HAUSA 2 ZARMA 3 KANURI 4 OTHER	|___| CONFIRM THAT THE LANGUAGE IS THE SAME AS WHAT IS WRITTEN ABOVE.
IM9. NUMBER OF STUDENTS ENROLLED IN CI AND CP	CI 1. GIRLS |___|___| 2. BOYS |___|___|	CP 1. GIRLS |___|___| 2. BOYS |___|___|
IM10. NUMBER OF STUDENTS PRESENT IN CI AND CP TODAY	CI 1. GIRLS |___|___| 2. BOYS |___|___|	CP 1. GIRLS |___|___| 2. BOYS |___|___|

STUDENTS **VILLAGE ID: |___|___|___|** **SCHOOL ID : |___|___|** **ET**

To be administered to each child selected for grades CI and CP. "I am [your name]. I work with children and education. I am trying to learn more about the school life of children like you. I would like to ask you a few questions." **Pose some simple questions to the child to build a rapport. Try to make them feel comfortable. Use the language most comfortable to the child, his/her mother tongue, and note it in ET4.** "What is your name? What is the name of your father? What is the name of your mother?" **If the child refuses to speak with you, note the refusal and move to the next child. If the child speaks with you, say:** "Now I would like to ask you a few questions about school and then give you a short test in [local language]. I will ask you a set of questions. You should give the answer that fits best. If you don't understand the question, I will read the question again. You can ask me anytime to explain a question. You can choose not to answer, or you can tell me if a question is hard for you and we will skip that question. If you like, you can end the interview at any time. Do you understand?" **If the child understands, continue. If the child does not understand, ask what the child does not understand and clarify the issue for the child. If the child agrees, begin with the questions below and then move to the first reading test. Record the result code of the child.**

ET1. *ID*	ET2. CHILD'S NAME	ET3. CHILD'S GRADE? GRADE : 1 CI 2 CP	**CHILD RESULT CODE** AFTER OBTAINING CONSENT, RECORD THE RESULT CODE 1 REFUSE 2 INCOMPLETE 3 COMPLETE 4 OTHER (SPECIFY)	ET4. *WRITE THE LANGUAGE USED TO POSE QUESTIONS TO THE CHILD* 01 HAUSA 02 ZARMA 03 KANURI 04 FULFULDE 05 TAMASHEQ 96 OTHER LOCAL LANGUAGE (SPECIFY)	ET5. NOTE IF MALE OR FEMALE 1 MALE 2 FEMALE	ET6. HOW OLD ARE YOU? 98 DON'T KNOW	ET7. WHAT GRADE ARE YOU IN THIS YEAR? GRADE: 1 CI 2 CP	ET8. AND LAST YEAR, WHAT GRADE WERE YOU IN? GRADE: 1 Preschool 2 CI 3 CP 4 Not in school 98 Don't know
ID	NAME		RESULT	LANGUAGE	SEX	AGE	GRADE 13/14	GRADE 12/13
01		|___|	|___|	|___|___|	|___|___|	|___|___|	|___|	|___|
02		|___|	|___|	|___|___|	|___|___|	|___|___|	|___|	|___|
03		|___|	|___|	|___|___|	|___|___|	|___|___|	|___|	|___|
04		|___|	|___|	|___|___|	|___|___|	|___|___|	|___|	|___|
05		|___|	|___|	|___|___|	|___|___|	|___|___|	|___|	|___|
06		|___|	|___|	|___|___|	|___|___|	|___|___|	|___|	|___|
07		|___|	|___|	|___|___|	|___|___|	|___|___|	|___|	|___|
08		|___|	|___|	|___|___|	|___|___|	|___|___|	|___|	|___|
09		|___|	|___|	|___|___|	|___|___|	|___|___|	|___|	|___|
10		|___|	|___|	|___|___|	|___|___|	|___|___|	|___|	|___|

VILLAGE ID: |___|___|___| **SCHOOL ID : |___|___|___|** **TASK 1**

Task 1: Letter identification (name or sound)

This is a timed exercise and is administered using the test booklet.

Show the test booklet to the child for Task 1. Explain the subtask in the child's maternal language, using the examples in the booklet. After explaining the examples, say "Ok? Do you understand? When I say "Begin", point to each letter with your finger as you read it. Be careful to read from left to right, line by line. Do you understand what I am asking? Put your finger on the first letter. Ready? Try to read quickly and correctly. Begin."

Start the timer when the child reads the first letter **name** or **sound**. If the child does not respond within the first ten letters, mark 'Auto Stop'. If the child responds incorrectly but then corrects him/herself (self-correction), mark the response as correct. Stay quiet, except if the child hesitates on a letter for at least 3 seconds. In this case, point to the next letter and say "Please go on." Mark the letter skipped as incorrect on the test sheet.

After 60 seconds say, "Stop and Thank you." Note the total number correct. If the child read everything in less than one minute, note the exact number of seconds remaining on the timer. Otherwise, if the child has not finished the exercise, mark '00' seconds.

Auto stop rule: If the child does not give a single correct response in the first 10 letters, gently tell the child to stop, and mark 'Auto Stop'. Say "Thank you" and go on to the next subtask.

ET1. *CHILD'S ID*	ET2. CHILD'S NAME	LL10	LL11	LL12	LL13	LL14	LL15	LL16	LL17	LL18	LL19	AUTO STOP	TIME REMAINING	TOTAL CORRECT
ID	NAME	(10)	(20)	(30)	(40)	(50)	(60)	(70)	(80)	(90)	(100)	AUTO	SECONDS	TOTAL
01		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
02		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
03		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
04		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
05		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
06		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
07		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
08		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
09		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
10		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|

Before continuing, say "Good effort! Let's continue to the next section!"

VILLAGE ID: |___|___|___| **SCHOOL ID** |___|___|___| **TASK 2**

Task 2: Familiar Word Reading

This is a timed exercise and is administered using the test booklet.

Show the test booklet to the child for task 2. Explain the subtask in the child's maternal language, using the examples in the booklet. After explaining the examples, say "Ok? Do you understand what I am asking you to do? When I say "Start", read the words from left to right, line by line. At the end of the line, continue to the next line. Try to read quickly and correctly. Ready? Begin."

Start the timer when the child reads the first word. If the child does not respond correctly within the first 5 words, mark 'Auto Stop'. If the child responds incorrectly but then corrects him/herself (self-correction), mark the response as correct. Stay quiet, except if the child hesitates for 3 seconds. In this case, point to the next word and say "Please go on." Mark the word as incorrect on the test sheet.

After 60 seconds say, "Stop and Thank you." Note the total number correct. If the child read everything in less than one minute, note the exact number of seconds remaining on the timer. Otherwise, if the child has not finished the exercise, mark '00' seconds.

Auto stop rule: If the child does not give a single correct response in the first 5 words, gently tell the child to stop, and mark 'Auto Stop'. Say "Thank you" and go on to the next subtask.

ET1. *CHILD'S ID*	ET2. CHILD'S NAME	LL20.	LL21	LL22	LL23	LL24	LL25	LL26	LL27	LL28	LL29	AUTO STOP	TIME REMAINING	TOTAL CORRECT
ID	NAME	(5)	(10)	(15)	(20)	(25)	(30)	(35)	(40)	(45)	(50)	AUTO	SECONDS	TOTAL
01		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
02		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
03		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
04		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
05		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
06		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
07		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
08		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
09		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
10		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|

Before continuing, say "Good effort! Let's continue to the next section!"

FRENCH **VILLAGE ID:** |___|___|___| **SCHOOL ID:** |___|___|___| **TASK 3**

Task 3: Nonsense word reading

This is a timed exercise and is administered using the test booklet.

Show the test booklet to the child for subtask 3. Explain the subtask in the child's maternal language, using the examples in the booklet. After explaining the examples, say "Ok? Do you understand what I am asking you to do? When I say "Start", read the words from left to right, line by line. At the end of the line, continue to the next line. Try to read quickly and correctly. Ready? Begin."

Start the timer when the child reads the first word. If the child does not respond within the first 5 words, mark 'Auto Stop'. If the child responds incorrectly but then corrects him/herself (self-correction), mark the response as correct. Stay quiet, except if the child hesitates for 3 seconds. In this case, point to the next word and say "Please go on." Mark the word as incorrect on the test sheet.

After 60 seconds say, "Stop and Thank you." Note the total number correct. If the child read everything in less than one minute, note the exact number of seconds remaining on the timer. Otherwise, if the child has not finished the exercise, mark '00' seconds.

Auto stop rule: If the child does not give a single correct response in the first 5 words, gently tell the child to stop, and mark 'Auto Stop'. Say "Thank you" and go on to the next subtask.

ET1. *CHILD'S ID*	ET2. CHILD'S NAME	LL30.	LL31.	LL32	LL33	LL34	LL35	LL36	LL37	LL38	LL39	AUTO STOP	TIME REMAINING	TOTAL CORRECT
ID	NAME	(5)	(10)	(15)	(20)	(25)	(30)	(35)	(40)	(45)	(50)	AUTO	SECONDS	TOTAL
01		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
02		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
03		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
04		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
05		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
06		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
07		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
08		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
09		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|
10		|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|___|	|___|	|___|___|	|___|___|

Before continuing, say "Good effort! Let's continue to the next section!"

VILLAGE ID: |___|___|___| **SCHOOL ID : |___|___|___|** **TASKS 4 & 5**

ET1. *CHILD'S ID*

ET2. CHILD'S NAME

TASK 4- ORAL READING FLUENCY

Give the child 60 seconds to read as much of the text as possible. Note the number of words read correctly per each line. Show the child the test booklet.

"Here is a story. Now I would like you to read it out loud, quickly and correctly, and afterwards, I will ask you some questions. Start here when I tell you. If you don't know a word, continue to the next word. Ready? Start."

Give the child 60 seconds to read all that he can.

Stay quiet, except when providing answers as follows: if the child hesitates for 3 seconds, point to the next word and say "Please go on." Mark the word as incorrect on the test sheet.

Auto stop rule: if the child cannot read correctly a single word in the first two lines, stop the test and note "auto-stop". Say "thank you" and end the test.

NOTE THE NUMBER OF WORDS READ CORRECTLY FOR EACH LINE. IF THE CHILD READ EVERYTHING IN LESS THAN ONE MINUTE, NOTE THE EXACT NUMBER OF SECONDS REMAINING ON THE TIMER. OTHERWISE, MARK '00' SECONDS.

TASK 5 – READING COMPREHENSION

After the child has finished reading, **take the card from the child** and ask the first question. If the child does not give any response after 10 seconds, repeat the question, and give the child another 5 seconds to respond. If the child still does not answer, go to the next question.

Ask only those questions that correspond to the lines of text read by the child, up to the last line the child was able to read.

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

RESPONSE : 1=CORRECT, 2=INCORRECT, 3=NO RESPONSE

LANGUAGE OF RESPONSE : 01 HAUSA, 02 ZARMA, 03 KANURI, 04 FULFULDE , 05 TAMASHEQ, 96 OTHER (SPECIFY)

ID	NAME	A	B	C	D	E	TIME REMAINING	AUTO STOP	A1.	A2. LANGUAGE	B1.	B2. LANGUAGE	C1.	C2. LANGUAGE	D1.	D2. LANGUAGE	E1.	E2. LANGUAGE
01		|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|
02		|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|
03		|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|
04		|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|
05		|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|
06		|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|
07		|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|
08		|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|
09		|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|
10		|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|	|__|	|__|__|

After finishing the test, say "Very good effort! Thank you!"

INTERVIEW RESULT **Village ID:** |___|___|___| **School ID**|___|___|___| **RE**
AFTER THE QUESTIONNAIRE HAS BEEN COMPLETED, FILL IN THE FOLLOWING INFORMATION:
INTERVIEWER/SUPERVISOR NOTES: USE THIS SPACE TO RECORD NOTES ABOUT THE ASSESSMENTS.
RE2A. NAME OF DATA ENTRY CLERK -1ST ENTRY: _____ DATA ENTRY CLERK NUMBER: |___|___| DATA ENTRY DAY/MONTH/YEAR: |___|___| / |___|___| / |2|0|1|4|
RE2B. NAME OF DATA ENTRY CLERK -2ND ENTRY: _____ DATA ENTRY CLERK NUMBER: |___|___| DATA ENTRY DAY/MONTH/YEAR: |___|___| / |___|___| / |2|0|1|4|

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APPENDIX B

LOCAL LANGUAGE TEST BOOKLETS

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HAUSA

CAHIER

EGRA – SY 2013/2014

Version A

e	K	d							
ɑ	e	S	T	n	o	N	i	A	u
D	ɑ	i	ɑ	M	A	i	Z	u	e
I	Y	i	P	ɑ	ɑ	y	H	u	I
k	T	A	m	K	A	n	A	ƙ	R
ƴ	w	o	D	E	k	ɑ	A	S	j
g	S	C	A	N	n	H	r	t	f
n	L	i	K	u	I	i	A	Ɓ	m
ɑ	A	W	’	n	R	n	A	B	ɑ
Y	I	Ɗ	ɑ	ɑ	g	s	R	Y	S
ɑ	ɑ	u	m	T	B	c	k	d	A

ku	suka	wasa		
ke	ta	ina	ni	ragi
ne	soro	gini	boka	turke
taɓi	wasa	icce	tuwo	kai
sha	magani	cikin	tsari	daji
wuta	uba	inna	hatsi	kauye
arha	ƙane	iya	binne	alli
tarko	ana	jari	zomo	ido
sai	gwani	ita	rubutu	doya
kuɗi	taki	biri	kunne	cuku
ruwa	tela	haske	turmi	rawa

bi	tok	sar		
hala	kirum	dapa	jal	kokor
ju	kiru	fokan	tu	zala
yo	cine	yandi	nak	kot
tunu	fo	kilo	kido	lasha
se	ton	lasha	laza	badi
ani	zi	talo	lai	goda
kija	di	doru	zan	jiru
bapan	lene	moko	tati	wura
lete	nano	namab	subo	ripa
tati	lodi	naga	rati	yati

Gidan Adamu, mutane shidda ke akwai. Bayan maigidan da uwargidan mai suna Taroro, akwai yara hudu. Ila shi ne babbansu, Zara ke bi ma shi sannan Idi da ƴar autar su mashadadi. A cikin aikace-aikacen cikin gida, yara ƴan mata su ke kama ma uwarsu. Su kuma ƴan maza, suna kama ma ubansu aikin gona. Wannan yana hana su zaman banza. Da albarkar da aka samu ne ake saya masu tufafi.

ZARMA

CAHIER

EGRA – SY 2013/2014

Version A

e	c	D							
d	ɑ	S	i	Y	i	r	w	E	i
ã	l	ɲ	n	ẽ	k	O	h	ɑ	ɑ
o	ɑ	O	ɑ	N	m	R	b	o	A
r	ɑ	t	n	E	E	K	ŋ	B	f
n	G	ŋ	I	J	ɑ	ɑ	ɑ	E	Z
N	i	b	ɑ	o	A	o	A	A	y
U	u	G	k	g	u	A	S	o	E
i	ũ	i	m	p	r	t	õ	N	c
I	d	n	L	i	O	Y	d	ŋ	K
E	ĩ	d	n	S	G	b	ɑ	n	ɑ

habu	tira	kwayi		
mo	kar	do	ne	a
araŋ	taŋ	koy	adda	sanni
kaŋ	me	foobu	laabu	barma
kaanu	jase	kuru	fisi	baanu
hayni	ji	batu	arce	dooni
nga	caada	taasu	muusu	baŋa
fu	hasay	do	maasa	baaba
hilli	buuta	haw	ham	zaama
deeli	ku	ŋwaari	teeli	yo
cimsi	janti	niine	lemu	ka

be	ter	cog		
al	cal	ace	fik	curi
umo	lulo	deeci	rami	raadi
mol	bel	rik	wako	rado
copto	daaji	ngol	wisa	ɲob
ubdu	guta	aski	dowa	jire
soota	nooli	ani	kukki	taza
ter	il	kowa	zome	ala
sitti	zuma	usi	loge	naf
zolu	niba	afna	jico	basaf
sallo	tul	waro	bele	tilgo

Hunkuna Saafa habo no. Musa ɲa tun susubay da hinay. A soola, a na izo soola lokkol koyaŋo se. Wo din banda no a na habu fonda sambu. Musa ɲa konda lamti nda lafoy ga neera. Kaŋ a neera ga ban a day Musa se ceceena nda buuru. Wayna kanyaŋ banda no Musa ɲa ye ga ka fu.

KANURI

CAHIER

EGRA – SY 2013/2014

Version A

ɑ	u	sh							
u	O	A	y	p	U	Y	R	sh	g
ɑ	i	U	A	o	e	Y	f	ə	r
O	W	ɑ	ɾ	R	’	A	K	d	A
L	t	T	h	u	k	l	E	W	I
N	l	N	K	ɑ	i	E	ə	j	k
j	o	Ǝ	b	O	D	u	l	C	N
O	n	C	I	k	ɑ	b	A	i	e
N	Ǝ	i	d	R	m	Y	W	N	m
d	A	o	e	ə	r	G	ɑ	d	A
n	e	m	N	I	ɑ	j	n	K	m

wu	tayi	mana		
ti	balo	kora	kəla	tulo
sala	kaso	sa	bi	ngam
ni	bələm	kui	fe	kulo
jau	kawi	kamu	so	bəlaa
bara	kiari	bo	dina	worma
tada	bewo	fəlai	karaa	lokkol
collo	kanti	dal	kange	ngəla
kadi	bul	argəm	caldu	njo
kare	sheri	bik	tuno	mana
kəra	gattu	andi	yal	luwa

ki	ato	dima		
lo	peke	kosi	lid	sima
ki	rut	helo	loja	tati
rugo	dapi	gəso	tola	kisa
batəm	rika	kəmla	wele	pamu
lumo	kemo	kufa	fəna	dima
kepe	kərbam	go	mako	kola
siko	cifa	jora	rajo	ija
kosmo	mida	kiba	liro	rome
koto	sosu	taɾi	loko	soko
sotu	molu	lepsa	lomo	tarsom

Bindu suwa ləp cije ingi ngoje sələt kasalgadan. Ngimbo ngaye kəndawulan samde kare bərin cakke kiluwo. Kəla jawallen koinju Faji-a kattadəra. Karwu kəjia jandejai ngai duwon lokkollo leyera. Feledən yalla kəwu kəwuro sawigada bikkejai. Kanji laan aiya yejai, laan dokkor cadi, laa yen balo bakcai. Bikkejai ngai duwon har dunia ləmgeno. Təlәs casambarəna fadoro waldane kadəra.

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